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Article

Effects of the COVID-19 Global Crisis on the Working Capital Management Policy: Evidence from Poland

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Abstract: The paper aims to investigate the effects of the COVID-19 pandemic on working capital management policies among Polish small and medium-sized enterprises operating in Group Purchasing Organizations (GPOs). The results show that the firms adopted a moderate–conservative strategy for their working capital management. Moreover, the evidence confirms that the COVID-19 pandemic crisis did not change Working Capital Management (WCM) strategies significantly. The companies that have high financial security as a result of the high ratio of Liquidity, Quick, and cash conversion cycle (CCC) have tried to attract more new customers in the market by increasing the due date of accounts receivable so they can improve their sales performance, and also reduce the liabilities turnover to be able to work with more suppliers in the market. Moreover, among the various WCM strategies, the companies with a higher CCC ratio, along with those whose bulk of current assets consisted of accounts receivable and short-term investments, managed to have higher sales returns. Finally, our outcomes indicate that the firms operating in large cities have lower sales returns, meaning even Polish small and medium-sized enterprises' ability within GPOs with the aid of the central unit can also get high return on sales (ROS) results.

Keywords: working capital; SMEs; group purchasing organizations; COVID-19 pandemic; Poland

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1. Introduction

In early 2020, a new and infectious sickness called COVID-19 started in Wuhan China, and with its widespread prevalence all over the world, most countries have suffered from its economic destructive effects (Song et al. 2021). Strong evidence has suggested that the economic crisis raised by Coronavirus is completely different from past financial ones considering its reason, range, and severity (Song et al. 2021; Ding et al. 2020). Hence, the importance of the financial effects of the COVID-19 pandemic currently has attracted the attention of many financial and economic researchers around the world. The point to consider is that in times of financial crisis, one of the appropriate solutions to get rid of financial problems is to make appropriate decisions regarding working capital management policies (Salehi et al. 2019). Working Capital Management (WCM) talks about a plan that allows companies to use their Current Assets (CA) and liabilities efficiently, indicating maintaining enough liquidity to meet short-term debt and expenses (Tandoh 2020). Prior literature has shown unpredictable results about the influence of working capital management on company performance, finding both negative and positive effects (Salehi et al. 2019; Ebben and Johnson 2011; Singh et al. 2017; Akgün and Karataş 2020; Oseifuah 2018; Tsuruta 2019; Zimon and Dankiewicz 2020). It has also been stressed that the global economic disaster has increased the attention and possibly changed the attitude towards working capital management as an approach to rise company profitability (Gadelius and Larsson 2019). In today's complex and changing economic world, the decisions on working capital management strategies are some of the most important and challenging tasks for corporate executives since they can play a decisive role in improving

the financial situation of companies in times of crisis (Salehi et al. 2019), especially during the COVID-19 critical period. In times of crisis, particular attention should be paid to working capital management, as even the smallest mistakes in the area of working capital can lead to a loss of liquidity by companies (Chang et al. 2019).

Small and Medium-sized Enterprises (SMEs) can play a very important role in reducing the unemployment rate and creating economic prosperity in each country so that more than half of the Economic Value Added (EVA) in OECD countries is due to the SMEs sector, and approximately one-third of GDP in developing markets is the result of them (Nowakowska-Grunt et al. 2018; Agostino and Trivieri 2019; Zimon 2015; Wójcik-Jurkiewicz and Sadowska 2018; Dana 2012; Chauhan 2019; Cicea et al. 2019). Of course, the Polish market makes no exception, and much of its economic growth and prosperity depend on the activities of such companies (Zimon and Dankiewicz 2020). Another interesting point is that the evidence shows that small and medium-sized enterprises are more exposed to the devastating effects of the financial crisis than others because even short-term payment gridlocks can result in their insolvency (Zimon 2020a). Therefore, managers of such companies, which play a decisive role in the economic growth of any country, are strongly looking for strategies that can always improve their financial situation. It should be noted that the biggest challenge of SMEs is the lack of high purchasing power, especially when they have to compete with market leaders in times of the COVID-19 financial crisis. Higher purchasing power means purchasing goods at a lower price and having better trading conditions with suppliers. Accordingly, purchasing groups are the key to success for small and medium enterprises to compete with leaders in the market. Group Purchasing Organizations (GPO) are a set of firms from a similar or different industry that combine to make joint purchases (Lambe et al. 2002; Schotanus and Telgen 2007; Zimon 2020b; Popescu and Popescu 2019; Nollet et al. 2017; Hu and Schwarz 2011; Karabağ and Tan 2018; Sandberg and Mena 2015; Nollet and Beaulieu 2005). Considering the important points mentioned, this paper aims to analyze the WCM strategies of the SMEs sector operating in Group Purchasing Organizations (GPOs) in the Polish market. The article aims to examine the impact of the COVID-19 pandemic on the capital management policy among Polish small and medium-sized enterprises operating in GPO. The task of the analysis is to show whether there were any changes in the area of working capital management during the first months of the pandemic. Finally, we want to know which WCM policies improve the financial performance of the SMEs sector operating in Group Purchasing Organizations (GPOs).

The rest of the aforementioned study is organized as follows. The next part frames the study into a theoretical framework, hypotheses development, and literature. Section 3 shows the research design and outlines where data are obtained and the sample selection procedure; Section 4 then explains the main results and implications drawn from statistical analyses. Finally, the last section relates to the research conclusion and discussion.

2. Literature Review

Small and medium-sized enterprises (SMEs) are crucial for the quality of life and socio-economic development as they lead to job establishment, poverty mitigation, and economic progress, in both emerging and developed countries (Erdin and Ozkaya 2020; Gherghina et al. 2020). The most important point is that the SMEs sector had been hit hard by the 2008 economic crisis and it was an informative lesson for managers of such units to always consider the sufficient financial reserves to alleviate future financial shortages so that they can be more flexible in times of crisis. One of the disadvantages of managing SMEs, especially when they have to compete with larger firms in the market is the non-existence of high buying power, which may lead to their bankruptcy. In fact, SMEs' strength in negotiations with the manufacturer is small (Zimon and Dankiewicz 2020). It seems that firms operating in Group Purchasing Organizations (GPOs) will not have such problems because it is a group of cooperating firms that together facilitates material, data, and cash flow from suppliers to final receivers (Zimon 2020a).

Purchasing groups are an example of multi-stakeholder organizations. They are created by companies that make purchases together, they achieve the so-called scale effect (Zimon 2020a). The huge purchasing power of the entire group allows getting attractive prices and trade credits for all members of the group. These two elements are already a powerful "weapon" in the fight against competition. Each purchasing group is headed by the Central Unit whose task is to organize orders and conduct negotiations with producers. Its task is to satisfy the best offers from producers (Zimon 2020b). The literature provides information about the benefits of both corporate social responsibility and intellectual capital in terms of increasing profits. it is worth carrying out research in this direction in purchasing groups in the future (Popescu and Popescu 2019).

Purchasing groups are popular all over the world and operate in practically every industry. More purchasing groups are created in the health care sector, but they also appear in the construction, automotive, and aviation industries (Zimon 2020b; Nollet et al. 2017; Hu and Schwarz 2011). Their functioning and effectiveness largely depend on whether the units that make up the group want to cooperate with each other. Cooperation and trust are very important elements without which it will be very difficult for this type of organization to succeed.

Most often, purchasing groups are made up of SMEs operating in the same industry. There are also multi-branch purchasing groups, but in their case, the effect of scale is blurred as subsequent divisions into smaller groups occur in the group, which reduces the effectiveness of operations (Zimon 2020a, 2020b). Compliance with the general good is the greatest problem faced by enterprises operating in any multi-agency organization. The presidents of individual companies have to make some choices, they have to act together, which is very difficult to achieve. They have to choose a few strategic producers from the whole group of suppliers and they have to give up the rest. Choosing too many supplies weakens the scale effect. They need also to decide on a given range of a given manufacturer. Until now, acting independently in the market, they made their own choices and established the inventory management policy. Now some changes have to take place in order for the scale effect to be as large as possible. Inventories and recipients are the key elements influencing the level of working capital. Operating within purchasing groups allows one to significantly optimize the working capital management losses.

Empirical evidence has shown that working capital management can have a significant impact on firms' performance in times of financial crisis (Akgün and Karataş 2020; Baveld 2012) because it affects current assets, short-term liabilities, revenues, and costs of operations (Zimon and Dankiewicz 2020). During the Coronavirus economic crisis, managers should be sensitive to a sufficient level of working capital for their firms to stay still resilient and competitive. To achieve sustainable development, companies must always use the right working capital strategies because setting a good level of net-working capital causes the optimization of the costs of managing it and maintaining financial liquidity (Zimon and Dankiewicz 2020). Research on this area is still scarce, particularly in providing empirical evidence on the SMEs' policy changes in working capital management during the COVID-19 crisis. Thus, this study is going to determine what kind of insight the SME sectors with the largest share in the total economic value added of a country have towards their working capital policies during the economic crisis. For a closer look, unlike in the previous research, our study tries to analyze most of the working capital management policies in full in the Polish market. We also tend to know if the managers of such companies are conservative or aggressive. Had they taken appropriate measures regarding working capital management before the financial crisis? What are their decisions about working capital policies during the financial crisis caused by the Coronavirus? Finally, which WCM policies have improved corporate financial performance? The main goal of this research is to find the answers to such challenging questions, and undoubtedly, the outcomes of this paper can act as a catalyst to more comprehensive and detailed research on WCM in times of financial crisis in any economic environment.

Various research results on the appropriate level of working capital are like a double-edged sword. Some scholars believe that a high positive net working capital weakens the corporate financial liquidity as there are additional financial costs that increase firms' bankruptcy probability (Lind et al. 2012; Kieschnick et al. 2013). However, some researchers argue that companies with a high level of working capital are likely to have better financial safety (Deloof 2003; Madhou et al. 2015; Dalci and Ozyapici 2018). The crucial point is that during a crisis, the liquidity management policies of all companies will be affected (Campello et al. 2010), but companies with weaker financial capacity are likely to suffer more because banks and financial institutions rarely lend to them (Ivashina and Scharfstein 2010). Banks remarkably reduce offering loans during the financial crisis; thus, market liquidity and economic activities might go down (Ivashina and Scharfstein 2010; Baker et al. 2016). In this regard, Handley and Limao (2015) argue that ambiguous atmosphere and uncertainty are barriers to investment and entry into new markets (Handley and Limao 2015). However, investment during periods of financial uncertainty can be more profitable because it provides more investment opportunities rather than a more considerable risk. In fact, enterprises can increase profitability by expanding their share of the market. It seems that a significant decrease in investment during the financial crisis is not the result of a lack of innovation and creativity in the market, but rather the lack of credit allocation of financial institutions to companies. An increase in the cost of capital reduces the net present value of budgeted projects and makes it difficult to forecast the future cash flows of plans and innovations (Tandoh 2020). Working capital management not only is very important for firms with fewer financial resources but also they are effective when firms are expanding their investments during economic retrieval periods (Le 2019). Thus, to get rid of financial problems in times of crisis, managers should use appropriate working capital policies. In general, the WCM approach consists of three main groups including aggressive, conservative, and moderate strategy (Tandoh 2020; Zimon and Dankiewicz 2020; Weinraub and Visscher 1998). The aggressive strategy is expected to have a higher risk and higher returns, while the conservative approach is linked to lower risk and lower returns (Weinraub and Visscher 1998). In short, a high level of receivables and liabilities, as well as a low level of stocks, inventories, and short-term investments, are characteristics of the aggressive strategy (Zimon and Dankiewicz 2020; Zimon 2020a). On the other hand, the purpose of the conservative approach is to remove entirely the client insolvency risk (Zimon and Dankiewicz 2020). Reducing receivables from customers, maintaining high stocks, and timely settlement of liabilities are features of the conservative strategy (Zimon 2020b). Lastly, the moderate strategy aims to minimize the disadvantages of conservative and aggressive strategies and to maximize their advantages. The moderate strategies are divided into two strategies: a moderate–aggressive strategy and a moderate–conservative one. The moderate–conservative strategy is based on the principles of the conservative strategy, and the moderate–aggressive strategy is designed according to the aggressive strategy (Zimon 2020b). Knowledge on an approach a company chooses seems to depend more on liquidity status since maintaining adequate liquidity can be the key to a company's long-term financial success. This means that the WCM plan a firm design has an important influence on the minimum liquidity requirement. Today's business world sometimes faces unexpected challenges such as financial crises. Therefore, due to the ambiguity in the business environment, companies should maintain a minimum liquidity requirement to be able to be flexible in times of crisis so that they can overcome their problems (Chang et al. 2019; Schilling 1996).

3. Research and Methodology

The study sample consists of 61 small and medium-sized enterprises (SMEs) operating in Group Purchasing Organizations (GPOs) in the Polish market from 2015 to 2020. Of the studied sample, 30 of them are single-branch and the rest are multi-branch. The SMEs sector was intentionally selected for the study because, during the financial crisis, such units are more vulnerable and their bankruptcy likelihood is high in Poland. Therefore,

the results of changes in their working capital management policies can be interesting for researchers in this field. According to the purpose of our research, the five years between 2015 and 2019 are considered as the period before the COVID-19 pandemic and the time during COVID-19 is March-June 2020. The data for all months of the 2020 year do not exist. SMEs mainly submit incomplete financial statements and many of their financial documents are not available to review in more detail, making it very hard to gather data from the financial statement. Therefore, obtaining information on the financial statements of companies in the Polish market seems to be a bit more complicated and time-consuming than in other countries. Due to the widespread prevalence of the COVID, individuals could not contact companies directly to obtain further information; therefore, using published data for internal control reports, we collected data for 2020 (COVID-19 pandemic period). Descriptive statistics were calculated using the statistical mean, median, maximum, and minimum values for the most important financial indicators that are related to the working capital management strategy. A relatively comprehensive review of working capital management strategies of small and medium-sized enterprises, which are the most important factor in Poland's economic growth, was conducted using financial liquidity, short-term receivables turnover ratio in days, short-term liabilities turnover ratio in days, inventory turnover ratio in days, cash conversion cycle (CCC), operating cycle (OC), the share of working capital, short-term receivables, short-term investment, and inventory ratios in the structure of current assets. In fact, the present study aims to analyze if the COVID-19 global crisis has changed the WCM policies in the SME sector. Eventually, we are also looking at which working capital strategies have improved financial performance (ROS). To do this, given different statistical conditions, and the Ordinary Least Squares Regression is used in this study.

4. Results

4.1. Descriptive Statistics

The descriptive statistic is a summary statistic that quantitatively describes the characteristics of a collection of information (Ding et al. 2020; Enqvist et al. 2014). To analyze the data, the descriptive statistics including minimum, maximum, mean, and median are presented in the table below. In fact, for better understanding and accurate comparison between data values in the period before COVID-19 and during the COVID-19 pandemic, comparative descriptive statistics are shown in Table 1 as follows:

What stands out from table one is regardless of the COVID-19 pandemic crisis, small and medium-sized companies in GPOs, which play a major role in the economic growth of the Polish market, may generally adopted the moderate–conservative policy from 2015 to 2020 regarding their working capital management. In fact, the significant figures obtained concerning the ratios of liquidity, quick, OC, and CCC highlight the existence of financial security among these companies. Further, receivables turnover in days is shorter than liabilities turnover, and inventory turnover in days is smaller than the receivables collection period, whereas both elements confirm probability of using a moderate–conservative policy by such companies. The important thing to acknowledge is that high costs and low efficiency of current assets management are still the disadvantages of using the moderate–conservative policy (Zimon and Dankiewicz 2020). Looking at the details of the current assets (CA) structure in the SMEs sector, the information shows that the firms had tried to use the conservative policy for forming their CA arrangement by increasing a share of inventory compared to receivables from customers. However, as soon as the COVID crisis occurred, in terms of quantity, the firms partly increased the share of inventory and decreased the share of receivables in their CA structure in comparison with the past, showing a movement to the moderate–aggressive strategy. Looking at the ROS variable, it is clear that corporate sales returns have been somewhat affected by the COVID crisis. Additionally, if we want to examine the effects of the COVID crisis on WCM policies, considering that the ratios of liquidity, quick, OC, and CCC have decreased compared to their values before, we can say that the financial security of companies during the COVID-

19 pandemic was somewhat worse. Moreover, in line with the aggressive approach, the firms surged receivables turnover to attract more customers in the market, while they tended to defer the payment date of their debts to suppliers as much as possible. Taking together, all of the mentioned above points in the descriptive statistics are related to the general situation of the research data, and no specific conclusion can be drawn; however, to examine the significance of the COVID-19 crisis effects on WCM policies, regression models are needed, which will be analyzed following.

Table 1. Comparative descriptive statistics.

Variable Name	Mean	Median	Maximum	Minimum
Return On Sales (ROS) (before COVID-19)	0.0377	0.0270	0.1800	0.0000
Return On Sales (ROS) (during COVID-19)	0.0363	0.0300	0.1400	0.0100
Liquidity (before COVID-19)	2.4183	1.7000	15.0000	0.7000
Liquidity (during COVID-19)	2.4016	1.7000	11.5000	0.9000
Quick Ratio (before COVID-19)	1.2131	0.8000	8.2000	0.1000
Quick Ratio (during COVID-19)	1.1901	0.8000	6.1000	0.3000
Receivables turnover in days (before COVID-19)	69.1262	64.1000	156.0000	11.0000
Receivables turnover in days (during COVID-19)	70.9180	66.0000	141.0000	23.0000
Inventory turnover in days (before COVID-19)	65.7501	65.0000	138.0000	4.0000
Inventory turnover in days (during COVID-19)	62.9672	61.0000	116.0000	12.0000
Operation Cycle (before COVID-19)	134.7864	133.0000	269.0000	72.0000
Operation Cycle (during COVID-19)	133.8852	131.0000	221.0000	88.0000
Liabilities turnover in days (before COVID-19)	81.3700	72.1000	295.0000	9.0000
Liabilities turnover in days (during COVID-19)	84.5082	74.0000	187.0000	15.0000
Cash Conversion Cycle (CCC) (before COVID-19)	53.5063	53.0000	166.3000	−134.0000
Cash Conversion Cycle (CCC) (during COVID-19)	49.3770	52.0000	129.0000	−25.0000
Inventory in Current Assets (before COVID-19)	0.4758	0.4800	0.8400	0.1000
Inventory in Current Assets (during COVID-19)	0.4796	0.4900	0.8000	0.1100
Receivables in Current Assets (before COVID-19)	0.4669	0.4800	0.9000	0.1000
Receivables in Current Assets (during COVID-19)	0.4462	0.4600	0.8400	0.1200
Short Investment in Current Assets (before COVID-19)	0.0536	0.0300	0.4300	0.0000
Short Investment in Current Assets (during COVID-19)	0.0698	0.0600	0.2600	0.0100

Descriptive Statistics of Qualitative Variables

Variable	Status	Description	Frequency	Percentage
Multi-branch	1	If the company is a single branch	30	0.49
	0	If the company is a multi-branch	31	0.51
Big city	1	If a city has a population of more than 200,000, it is a big city	22	0.36
	0	If a city has a population of less than 200,000, it is a small city	39	0.64
Big firm	1	If a company's annual revenue is at least USD 10 million, it is a big firm	17	0.28
	0	If a company's annual revenue is between 1 and 9 USD million, it is a small firm	44	0.72

Source: Own research.

To understand the overall situation of companies, we used some dummy variables as control variables. The second part of descriptive statistics relates to qualitative variables. As it turns out, almost half of the small and medium-sized companies are single-branch and the other half have multiple branches. According to the figures, almost two-thirds

of these companies operate in densely populated provinces, which makes the role and importance of such companies more colorful in terms of people's welfare and economic development, but unfortunately, in recent years almost 72 percent of these companies had relatively low-income levels.

4.2. Conclusive Statistics

Panel data point to a dataset, based on which observations examined by many sectional variables are often selected randomly during a given period. Since the panel data contain both aspects of time series data and sectional ones, employing appropriate statistical explanatory models that describe the specifications of the variables is more difficult than the models used in sectional and time-series data (Salehi et al. 2018, 2019).

4.3. F-Limer and Hausman Tests

In accounting research, when data are collected for several firms over a particular period, we are dealing with longitudinal data (pooled or panel). Hence, as data are longitudinal, the type of assessment of a model must be determined at first. According to the principles of econometrics, in the first step, it is necessary to use the F-Limer (Chow) test to check whether the research model should be estimated based on the ordinary least squares (OLS) or panel data method (Salehi et al. 2018, 2019). The null hypothesis (H0) suggests that there is no difference between the estimated coefficients for individual cross-section and the estimated coefficient for individual mass, meaning there is no necessity to estimate the model by using the panel data (Salehi et al. 2020). In general, given the results obtained from the F-Limer test in this paper, as the p-value of its H0 is less than 0.05 for all research models, the preference of the OLS method is accepted, while the panel data method is rejected. However, in the case of confirming the use of the panel data method, the Hausman test is used to determine whether panel data with fixed effects should be used or panel data with random effect (Salehi et al. 2018, 2019, 2020). Based on the results of the F-Limer test, which confirms that all research models are compatible with OLS regression, it can be concluded there is no longer any need for a Hausman test (Salehi et al. 2019).

4.4. Heteroskedasticity and Multicollinearity Tests

Lack of heteroskedasticity problem is another main assumption of a regression model. According to Moradi et al. (2020), if homoscedastic disturbances, when heteroscedasticity is present, will yield consistent estimation results of coefficients that are not effective. The white test can be used to investigate heteroskedasticity problems. In general, since the amount of p-value in the white test among our different models is greater than five percent, it can be concluded that there are no heteroskedasticity problems about the research models. Furthermore, to measures the severity of multicollinearity in a regression analysis, we can use the variance inflation factor (VIF). The VIF index measures how much the variance of an estimated regression coefficient is increased due to collinearity. As for the VIF value, if the VIF of the estimated model coefficients is less than 10 there would be no linearity problem (Salehi et al. 2018; Thompson et al. 2017; Kim 2019). Our output demonstrates that the value of all independent variables in all models is less than five, which means that there is no linearity concerning the research hypotheses.

4.5. The Results of the Research Models

All companies in any industry need adequate financial liquidity for their economic growth; however, liquidity management is complicated since it relates to current assets, short-term liabilities, and profitability (Zimon 2020b). Liquidity ratio is one of the financial ratios that is obtained by dividing cash assets into current liabilities, but this ratio of liquidity is divided into two parts: the current ratio and the quick ratio. The liquidity ratio can show a company's ability to meet its debts. The complicated relationship between profitability and liquidity makes it very difficult to choose the right liquidity management strategy, especially during the occurrence of a financial crisis. Thus, in the first stage,

this article aims to examine whether the effects of the COVID-19 financial crisis have led to drastic changes in liquidity policies of firms operating in GOP. As for the first research regression model, it can be noted that financial liquidity is defined as a dependent variable. To analyze the influence of the independent variable which COVID-19 crunches, we construct a dummy variable. To put it another way, if it is during the COVID-19 pandemic, this indicator variable equals one; and if the time is related to the time before the Coronavirus crisis, it equals zero. Furthermore, to analyze more accurately, we use various control variables in our study, including Big firm, the number of firm branches, and the population of cities where companies are located. In short, Multi-branch is an indicator variable equal to one when the firm is a single-branch, and it is zero if the firm is a multi-branch. The name of another indicator variable is Big city. If a company operates in a city with a population of more than 200,000 people, this dummy variable is equal to one; and when it operates in a sparsely populated city and is equal to zero. Finally, to determine which small and medium-sized firms have high revenues and which have more financial constraints, we construct a kind of indicator variable, called the Big firm. Therefore, if a company's annual revenue is at least ten USD million, it is a big firm and equals one, zero otherwise (Table 2).

Table 2. The results of the first research model.

Variable	Coefficient	Std. Error	*p*-Value
C	2.0410	0.4131	0.0000 ***
COVID-19 Pandemic Crisis	0.0059	0.4697	0.9900
Multi-branch	1.2324	0.5082	0.0175 ***
Big city	−0.0010	0.0072	0.8794
Big firm	0.4301	0.1920	0.0277 **

5% significance level (**); 2% significance level (***). **Financial Liquidity** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

As for the results obtained from Table 2, it can be said that the COVID-19 financial crisis has not changed the financial liquidity policy among small and medium-sized firms within GPOs in the Polish market. Moreover, the outputs showed that branch companies and those with a higher level of income managed to have better financial liquidity compared to multi-branch and weaker ones. However, companies operating in more crowded areas had a worse liquidity situation. The quick ratio is another financial ratio in the liquidity sector. This ratio is calculated by dividing current assets (excluding inventory and prepaid expenses) by current liabilities. This ratio looks more cautiously at the firm's ability to meet short-term liabilities and examines the firm only by considering assets that have faster liquidity. Thus, our second research model aims at evaluating if the COVID-19 global crisis has changed the quick ratio as a WCM policy. We want to know if the COVID financial crisis has made it difficult for the SMEs sector to meet its short-term debts (Table 3).

Table 3. The results of the second research model.

Variable	Coefficient	Std. Error	*p*-Value
C	1.0248	0.2066	0.0000 ***
COVID-19 Pandemic Crisis	−0.0155	0.2349	0.9474
Multi-branch	0.5413	0.2542	0.0362 **
Big city	−0.0159	0.3607	0.9648
Big firm	0.2049	0.0413	0.0000 ***

5% significance level (**); 2% significance level (***). **Quick Ratio** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

The results show that the COVID-19 pandemic did not affect the quick ratio significantly, which indicates that the managers of such companies are very conservative and have thought of a solution before the crisis. The results of variables related to Multi-branch and Big firm also approve that single branch and richer companies were more successful in meeting their short-term debts. Regarding liquidity management, managers may have more problems maintaining it at an appropriate level because it refers to the management of short-term liabilities, inventory, short-term receivables, and cash. According to a conservative approach, firms tend to decrease receivables turnover and increase liabilities turnover to grow their financial liquidity so that they can react appropriately to the market during critical economic times. Moreover, inventory turnover in days is defined as another important ratio that allows investigating the liquidity management strategies. The key point is that inventories will increase financial liquidity ratios when security reserves are generated (Zimon 2020b). Therefore, in the next three models (Tables 4–6), we aim to examine whether the COVID financial crisis has changed the working capital policies related to the receivables, liabilities, and inventories turnover.

Table 4. The results of the third research model.

Variable	Coefficient	Std. Error	*p*-Value
C	75.4054	5.1982	0.0000 ***
COVID-19 Pandemic Crisis	3.6584	5.9094	0.5375
Multi-branch	−13.7459	6.3943	0.0345 *
Big city	2.9738	9.0727	0.7439
Big firm	15.0810	1.0396	0.0000 ***

10% significance level (*); 2% significance level (***). **Receivables turnover** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

Table 5. The results of the fourth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	102.5517	7.3329	0.0000 ***
COVID-19 Pandemic Crisis	5.8768	8.3360	0.4828
Multi-branch	−36.9468	9.0201	0.0001 ***
Big city	−0.0753	0.1279	0.5579
Big firm	22.0163	3.4080	0.0000 ***

2% significance level (***). **Liabilities turnover** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

Table 6. The results of the fifth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	60.7978	4.2040	0.0000
COVID-19 Pandemic Crisis	−1.0690	4.7791	0.8235
Multi-branch	6.0993	5.1714	0.2416
Big city	0.0336	0.0733	0.6474
Big firm	11.4860	1.9538	0.0000 ***

2% significance level (***). **Inventory turnover** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

With respect to the short-term receivables turnover ratio, the COVID-19 global crisis did not have a significant effect on it. This implies that the risk of liquidity shortage does not seriously threaten such companies during COVID-19, perhaps because managers had considered sufficient cash reserves for their companies before the crisis. By reviewing control variables, the outcomes also indicate that single branch companies were more successful in collecting their accounts receivable in a shorter period than multi-branch ones, whereas higher-income companies increased their receivables turnover due to lack of liquidity problem to absorb more customers in the market.

In the previous model, as the evidence insignificantly showed COVID-19 crisis led to the situation when firms collected receivables from customers much faster. This research model shows an increase in the dates of repayment of liabilities towards suppliers, confirming the position of borrowers of the SMEs within GPOs. Further, we find strong documents that single branch enterprises tended to have shorter debt maturities to pay lower interest rates, although larger companies preferred to pay their debts with longer maturities.

As evidence shows, the financial crisis caused by the Coronavirus has not had a significant impact on inventory turnover policies among Polish SMEs. It is noteworthy that larger companies had significantly higher inventory turnover, which seems to have been due to their conservative policies and increased inventory levels. This significant positive relationship between inventory turnover and larger companies is quite justifiable and logical because the previous results on financial liquidity and quick ratios fully confirm the claim that large companies have high liquidity due to their conservative policies. In other words, the firms with high-income levels are expected not to lower their inventory level and maintain it at an optimal level. In the research literature, the cash conversion cycle (CCC) has been widely applied as a useful and comprehensive measure of working capital management because it is a measure of the liquidity risk entailed by a growth (Zimon 2020b; Deloof 2003; Enqvist et al. 2014; Prempeh and Peprah-Amankona 2019; Yeboah and Agyei 2012; Blair and Durrance 2014; Marvel and Yang 2008; Cowan et al. 2016). CCC measures how long a firm will be deprived of cash if it upturns its investment in inventory to develop customer sales. A short CCC means a quick collection of receivables and delays in payments to suppliers, which is connected with positive financial performance due to it affects the effective use of working capital (Enqvist et al. 2014). Even though there is a negative association between CCC and profitability, managers must always make a trade-off between liquidity and profitability when managing working capital. Hence, in the next research model, we are going to know if the COVID-19 global crisis has a significant effect on the CCC strategy among small firms in the Polish market (Table 7).

Table 7. The results of the sixth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	32.3198	6.0502	0.0001 ***
COVID-19 Pandemic Crisis	−4.5336	6.8778	0.5116
Multi-branch	32.4968	7.4422	0.0000 ***
Big city	0.1458	0.1055	0.1710
Big firm	3.5479	2.8118	0.2105

2% significance level (***). **Cash Conversion Cycle** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

According to the results of the table above, we can suggest that there is a negative and insignificant connection between the COVID-19 pandemic crisis and CCC. This implies that in case of the occurrence of the virus, small firms partly shorten CCC to improve their liquidity level to be more flexible, but give being insignificance of the coefficient of the COVID-19 crisis' variable, there are not enough reasons to prove this argument. Moreover, single-branch small firms mainly were keen on increasing CCC, indicating that their priority had probably been to increase sales and attract more customers instead of keeping cash. An Operating Cycle (OC) refers to the days required for a business to receive inventory, sell the inventory, and collect cash from the sale of the inventory, which plays a major role in improving the efficiency of a business. A shorter OC shows that a company can recover its investment quickly and has enough cash to meet its obligations, while a company's longer OC indicates a longer time required for its inventory sales to return to liquidity. In the case of firms operating within GPOs, better use of economies of scale, optimization of deliveries, and more advantageous buyer's credit from the supplier should lead to a reduction in the receivables turnover ratio in days (Zimon and Dankiewicz 2020). In general, another of the main objectives of this article is

to examine whether the Coronavirus economic crisis has led to changes in the speed of OC policies (Table 8).

Table 8. The results of the seventh research model.

Variable	Coefficient	Std. Error	*p*-Value
C	134.3394	5.7528	0.0000 ***
COVID-19 Pandemic Crisis	2.3150	6.5397	0.7242
Multi-branch	−3.4319	7.0764	0.6290
Big city	0.0806	0.1004	0.4239
Big firm	25.2542	2.6736	0.0000 ***

2% significance level (***). **Operating Cycle** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

The outputs indicate that the COVID-19 pandemic increased the time small firms in Poland took to receive inventory, sell the inventory, and collect cash from their inventory sale though it is not statistically significant. It shows that the crisis has insignificantly weakened the purchasing and payment power of people in the market, which subsequently leads to a fall in firms' liquidity power. Our findings also assert there is a positive and significant linkage between Operating Cycle and Big firm. It seems that larger companies used the aggressive policy in relation to their operating cycle because their income levels are higher and they have fewer liquidity problems. After reviewing all the research years between 2015 and 2020, it was found that the general policy of small companies in creating the structure of their current assets was based on the moderate–aggressive approach. The fundamental question now is whether small and medium-sized enterprises in GPOs have made fundamental changes to their current asset structure policies during the COVID-19 global crisis. To find this answer, in the next three regression models we intend to examine the effects of the COVID-19 crisis on the ratios of the share of inventory, short-term receivables, and short-term investment in the structure of current assets.

According to Table 9, documents show that the economic conditions caused by the Coronavirus crisis did not cause small Polish companies to make significant changes in the role of inventory in the structure of their current assets. In the structure of the current assets of companies located in densely populated provinces, there is a significant decrease in inventory, although higher-income firms tried to increase the inventory level in the structure of their current assets.

Table 9. The results of the eighth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	0.4939	0.0207	0.0002 ***
COVID-19 Pandemic Crisis	0.0096	0.0236	0.6853
Multi-branch	0.0025	0.0255	0.9221
Big city	−0.0009	0.0003	0.0075 ***
Big firm	0.1186	0.0096	0.0000 ***

2% significance level (***). **Share of inventory in CA** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

The results (Table 10) confirm that the COVID economic crisis has not caused significant changes in the structure of companies' current assets about accounts receivable from customers. There was a meaningful linkage between Big city and Big firm with the ratio of the share of receivables in the current assets structure, too. This means high-income companies and those operating in more populous areas have tended to attract more customers on credit.

Based on the results obtained from Table 11, COVID-19 Pandemic Crisis could not play a major role in changing the policies related to short-term investment in the SMEs sector in Poland. Additionally, there was no noteworthy association between the variables of Multi-branch and Big city with this ratio. However, higher-income firms mainly were into increasing the level of short-term investment in CA structure. So far, in this study, the impact of the COVID-19 global crisis on various working capital management policies is fully explored. The next goal of this study is to determine which of the working capital management policies have been able to improve the ratio of Return on Sales (ROS) of companies and whether the COVID crisis has played an important role in the corporate financial performance (ROS), (Table 12).

Table 10. The results of the tenth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	0.4376	0.0208	0.0000 ***
COVID-19 Pandemic Crisis	−0.0026	0.0237	0.9117
Multi-branch	0.0067	0.0256	0.7927
Big city	0.0006	0.0003	0.0880 *
Big firm	0.0749	0.0096	0.0000 *,**

10% significance level (*); 5% significance level (**); 2% significance level (***). **Share of receivables in CA** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

Table 11. The results of the eleventh research model.

Variable	Coefficient	Std. Error	*p*-Value
C	0.0651	0.0104	0.0001 ***
COVID-19 Pandemic Crisis	0.0116	0.0118	0.3294
Multi-branch	−0.0031	0.0128	0.8095
Big city	0.0002	0.0001	0.1817
Big firm	0.0081	0.0048	0.0977 *

10% significance level (*); 2% significance level (***). **Share of investment in CA** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + ε. **Source:** Own research.

Table 12. The results of the twelfth research model.

Variable	Coefficient	Std. Error	*p*-Value
C	−0.0021	0.0465	0.9632
COVID-19 Pandemic Crisis	−0.0010	0.0048	0.8288
Multi-branch	0.0061	0.0059	0.3047
Big city	−0.0002	7.88E-05	0.0025 ***
Big firm	0.0052	0.0094	0.5811
Financial Liquidity	−0.0027	0.0064	0.6644
Quick Ratio	−0.0017	0.0124	0.8876
Short-term receivables turnover	−0.0002	0.0002	0.3446
Short-term liabilities turnover	2.14×10^{-5}	0.0001	0.9040
Inventory turnover	7.95×10^{-5}	0.0002	0.7597
Cash Conversion Cycle (CCC)	0.0003	0.0001	0.0445 **
Operating Cycle (OC)	7.22×10^{-6}	0.0001	0.9661
Share of inventory in CA	−0.0135	0.0490	0.7835
Share of receivables in CA	0.0429	0.0235	0.0725 *
Share of investment in CA	0.2284	0.0716	0.0021 ***

10% significance level (*); 5% significance level (**); 2% significance level (***). **Return On Sales** = β0 + β1 COVID-19 Crisis + β2 Multi-branch + β3 Big city + β4 Big firm + β5 Financial Liquidity + β6 Quick Ratio + β7 Receivables Turnover + β8 Liabilities Turnover + β9 Inventory Turnover + β10 CCC + β11 OC + β12 Share of inventory in CA + β13 Share of receivables in CA + β14 Share of investment in CA + ε. **Source:** Own research.

Our findings indicate that the COVID-19 pandemic did not affect corporate financial performance, but firms operating in densely populated areas had a poorer financial performance. Contrary to our expectations, the results showed a significant and negative relationship between CCC and ROS. In other words, since firms with higher CCC have more financial safety, they adopt the aggressive strategy. Accordingly, companies that sold their goods more on credit and were able to increase the maturity of their receivables succeeded in attracting more customers in the market and, consequently, had more operating profit margin. Finally, regarding the CA structure, in the case of the companies that paid special attention to the importance of accounts receivable and short-term investments in the structure of their current assets, their operational efficiency is very satisfactory, which is somewhat consistent with the moderate–conservative approach.

5. Discussion

Group purchasing organizations are popular "tools" whose task is to improve the competitive position of SMEs. They work and arise in virtually every industry. The biggest problem in the case of the functioning of purchasing groups is agreement and reaching a common plan at the level of CEOs. Working in groups means giving up certain suppliers, or choosing one of two. This choice must accept several dozen or hundreds of presidents. Therein lies the problem. For example, not every CEO likes Audi cars, and this supplier can be chosen by the group, and such a brand must then be used (Zimon and Zimon 2020).

Many studies have shown that entities operating within these groups obtain favorable prices for the goods and materials purchased, as well as favorable trade credits. These two elements are nowadays a key "weapon" in the fight against competition (Schotanus and Telgen 2007; Zimon 2020b; Popescu and Popescu 2019; Zimon and Zimon 2020) Moreover, they also have a great influence on the management of working capital. Working capital optimization is usually a choice between high liquidity or high profitability. The impact of working capital management on the company's performance, profitability and liquidity has been confirmed in several studies conducted around the world (Ding et al. 2020; Enqvist et al. 2014; Zimon and Zimon 2020; Vahid et al. 2012) in various industrial sectors, e.g., the restaurant and automotive industries (Vahid et al. 2012; Bei and Wijewardana 2012; Mun and Jang 2015; García-Teruel and Martínez-Solano 2007). The relationship between profitability and working capital management arouses great interest among scientists, and this relationship has also been confirmed on the example of studies conducted by American, Belgian, Greek, and Spanish small and medium-sized enterprises (Kieschnick et al. 2013; Bei and Wijewardana 2012; Mun and Jang 2015; García-Teruel and Martínez-Solano 2007). In the literature, there are studies in which the role of trade credits is presented as the key to the safety of enterprises during the crisis (Lu et al. 2021; Talwar et al. 2021; Wójcik-Jurkiewicz et al. 2021). This carried out some signals that during the pandemic, companies tried to apply a moderately conservative working capital management strategy. High financial liquidity ratios, CCC and lower results of the receivables turnover in days in relation to the liabilities turnover ratios in days indicate the use of a safe strategy built on conservative principles. The research shows that the best results in terms of liquidity and profitability are achieved by the largest enterprises operating in large cities. Previous studies on the management of working capital, liquidity and profitability showed that when the level of working capital increased, financial liquidity decreased profitability. The group of the largest companies operating in GPOs achieves by far the best results in the area of financial security and profitability. This is due to the scale of turnover and the margin that these units can achieve in large cities. Certainly, 4 months is a short period to determine in 100% whether the changes in the management of working capital during the COVID-19 pandemic will be and are permanent. However, this is an attempt to show how companies operating in purchasing groups functioned in the first stage of the pandemic.

6. Conclusions

In general, based on the results obtained from descriptive statistics, the analysis showed that Polish small and medium-sized enterprises operating in the group purchasing organizations (GPOs) mainly used the moderate–conservative strategy by managing working capital. In fact, receivable turnover from customers is shorter than liability turnover to suppliers; moreover, inventory turnover is lower than the receivable collection period. The relatively high results of the ratios of liquidity, quick, cash conversion cycle (CCC), and operational cycle (OC) also highlight that the SMEs sector in GPOs focused on financial safety. Our results also showed that the COVID-19 global crisis did not have a significant impact on working capital management policies, which is consistent with the findings of Gadelius and Larsson (2019) in the Swedish market, as well as Chang et al. (2019) in the US market (Gadelius and Larsson 2019; Chang et al. 2019). However, our outcomes show that since single-branch firms have a high ratio of Liquidity, Quick, and CCC and try to minimize receivable turnover, their financial liquidity situation is remarkable. On the other hand, the results of Liquidity, Quick, and OC ratios confirm that because larger firms do not have liquidity problems, they have tried to increase their receivables, liabilities, and inventory turnover. The goal of bigger companies is to be able to attract more new customers in the market and to improve their liquidity by paying off debts with longer maturities. In the last stage of this paper, we aimed at knowing which WCM strategies have affected corporate financial performance. First, there is a positive and significant association between CCC and ROS. This implies that the firms with a longer CCC strategy could improve their sales efficiency. In fact, companies that sold their goods more on credit and increased the maturity of their receivables have had more operating profit margin. Strong evidence also proved that companies that used more receivables and short-term investments in their current asset structure had higher sales returns. Moreover, the firms operating in large, densely populated cities have significantly lower sales returns. This result can be interpreted that even Polish small and medium-sized enterprises within GPOs are not good and big enough to facilitate material, data, and cash flow from suppliers to final receivers.

A big problem with the research into the COVID-19 pandemic is the lack of data and the short period that can be analyzed. This is a weakness in every paper on the pandemic. However, this paper attempts to assess changes in the policy of managing working capital in SMEs that took place in the first months of the pandemic in Poland. In the future, based on full financial reports from subsequent years of the pandemic, it will be possible to compare and assess whether the authors made a correct assessment.

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