



# COVID SURVEY

by CECE, ERA and LECTURA



COMMITTEE FOR EUROPEAN  
CONSTRUCTION EQUIPMENT



EUROPEAN  
RENTAL  
ASSOCIATION



**LECTURA**  
*it's good to know*

# Company profiles

CECE



CECE is the recognized organization representing and promoting the European construction equipment and related industries. CECE represents the interests of national construction equipment manufacturer associations in Europe. The sector counts around 1200 companies that employ about 300,000 people directly and indirectly. Their annual revenues amount to ca. 40 billion euros. The sector's durable and innovative machinery are working tools to help to build the houses, offices, factories, roads, railways and bridges that serve citizens across the globe. Manufacturers invest and innovate continuously to deliver equipment with highest productivity and lowest environmental impact. Efficiency, safety and high-precision technologies are key.

CECE is a European network consisting of a Secretariat in Brussels and the National Association offices in the different countries. While the coordinating function is with the Secretariat in Brussels, much of the work of CECE is conducted by staff of the national associations and also industry representatives. The CECE network by this fits to the needs of the political structures of the European Union as well as the necessities of an industry with many small and medium-sized companies in addition to global players.

# BUILDING TRUST ENABLING INNOVATION

08  
OCT  
—

**LIVE**  
STREAMING

FREE REGISTRATION

VISIT [CECE.EU/  
CONGRESS](https://cece.eu/congress)



**#BUILDINGTRUST**

# Company profiles

ERA



The European Rental Association (ERA) is the representative association of the equipment rental sector in Europe. ERA represents around 5,000 rental companies in Europe, either directly or through 14 National Rental Associations and IPAF.

The key mission of ERA is to promote the rental concept in order to facilitate a continued growth of a sustainable and professional rental industry in Europe.

The Association is open to all European national rental associations and to all rental companies who have at least one operating location in Europe. The Association is also open to associate members who are stakeholders in the rental industry, such as equipment manufacturers or service providers.



## THE ERA SUSTAINABLE SUPPLIER FRAMEWORK:

### REDUCES THE ADMINISTRATIVE BURDEN

of supplier assessments for rental companies and their suppliers

### RAISES INDUSTRY STANDARDS

by allowing rental companies to consider suppliers against a common set of sustainability requirements

### PROVIDES CLEAR GUIDANCE

on the minimum requirements of rental companies and eliminates the need for repeat assessments

The image shows a 'SUPPLIER PERFORMANCE CHECKLIST' form. The form is divided into five main sections, each with a grid of criteria and assessment columns. The columns are labeled 'Requirement met' and 'Aspiration met', with sub-columns for 'Not met', 'Partially', and 'Fully'. The sections are:

- Section 1 - Corporate:** 1.1 Leadership, strategy and stakeholder engagement; 1.2 Management systems; 1.3 Business integrity including anti-corruption and bribery (ACB); 1.4 Data privacy.
- Section 2 - Operations:** 2.1 Resource efficiency and energy consumption; 2.2 Emissions and waste management; 2.3 Hazardous substances; 2.4 Health and Safety.
- Section 3 - Human Resources:** 3.1 Child labour; 3.2 Non-discrimination, diversity and fair treatment; 3.3 Human rights / Modern slavery; 3.4 Working conditions - wages, social security, working hours; 3.5 Union agreements/ workforce representation.
- Section 4 - Supply Chain:** 4.1 Supply chain engagement; 4.2 Conflict Minerals.
- Section 5 - Products and Services:** 5.1 Management of regional and global requirements and regulations; 5.2 Packaging: design, use, recycling (for products which use packaging) enter N/A if no packaging used; 5.3 Sustainability impact of products and services; 5.4 In use product and service health and safety promotion.

At the bottom of the form, there are fields for: Company Name; Product(s) / service(s) supplied; Name of person completing the form; Position of person completing the form; and Date of completion.

If you are a rental company or supplier, find out how the Sustainable Supplier Framework can benefit your business: <https://erarental.org/en/sustainable-suppliers>

# Company profiles

## LECTURA LECTURA

LECTURA has been the leading provider of machinery intelligence on the market since 1984. Our database contains over 144,290 heavy machinery models and provides evaluation of used machines through our online tools and digital solutions.

Our service offer also includes technical specifications and data enriching, product and market analyses, high value lines for individual categories, as well as specific manufacturers and models, country-specific price development determination for specific categories or models, and many other client-tailored services.

Our web portal LECTURA Press provides the latest news from the heavy machinery industry, exclusive interviews with industry experts and market leaders and publishes the quarterly online magazine the DigiMessenger in order to always bring the most relevant information to our readers.



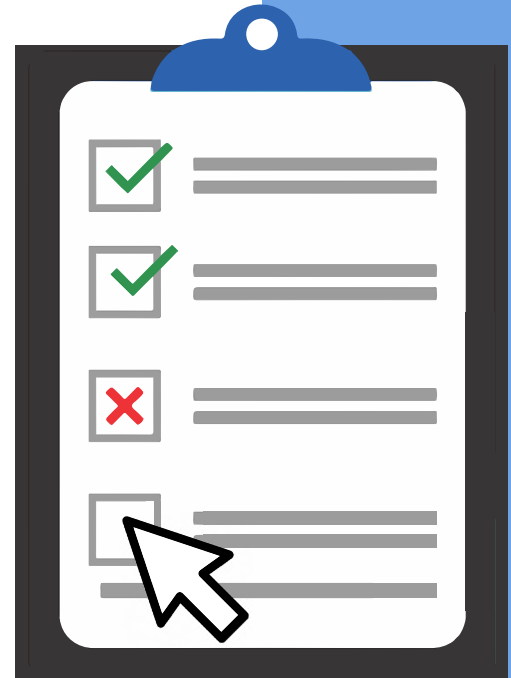
# LECTURA SURVEYS

raw data • analysis • comprehensive report

**500,000** professionals on LECTURA  
Specs every month

**800** replies  
every day

**8** language  
variants



# About the surveys

Whenever you want to improve and grow your business conducting a survey may help you. Despite the fact that there are plenty of research methods or strategies to understand your customers' behaviour, the easiest way to get information about people is to simply ask them. Understanding your customers' perspective and needs provides you with the most important information about the future development of your business and therefore determining priorities of its direction. Moreover, ongoing communication with your customers and demonstration of the interest in their needs helps maintain their loyalty.

LECTURA can get your survey in front of hundreds of thousands of industry professionals – your potential customers due to our large audience. More than 500,000 professionals research equipment on our ultimate buyer's guide LECTURA Specs every month. Moreover, they are actively engaging with our polls and surveys. More specifically, the engagement is about 4% which results in about 800 daily replies. We provided our clients already with surveys focused on e.g. telematics, spare parts or equipment rating, having collected tens of thousands of answers.

When wondering about the targeting, LECTURA can select your respondents' sample based on some predefined criteria: region/country of origin, industry and type of business. To reach the criteria we are able to target to place your survey on specific web pages only or provide you with 8 language versions – English, German, Spanish, French, Italian, Dutch, Polish and Russian (for English, German, Spanish, French and Polish with translation, too). Moreover, we provide our survey in two formats. In the first one we can show the survey questions in a widget which 'peeps' from the bottom of the page. In the second format potential respondents



are provided with a URL which can be given to them directly, such as including it in a newsletter email send out. However, we consider the former as more unobtrusive than the latter. Nevertheless, the final decision depends on your considerations. To make it more specific – the process of research collaboration with LECTURA is as follows. At the beginning we discuss the objectives of the research – who is it for, why, what information do you want to obtain via your survey. When all previously mentioned is clear, you create the questions which we place on the webpages. After some time, the data are collected and it depends on you whether you want to analyse them by yourself (we are able to provide you the raw data in .xls, .sav or .csv format) or let the LECTURA Surveys to analyse them for you and provide you with a comprehensive report of results.

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# Executive summary

The COVID-19 is a real phenomenon. The virus came out of nowhere and caused major problems both in our private lives and at work. The majority of companies all around the world had to apply various regulations and restrictions to ensure maximum safety for their employees and customers which resulted in shorter shifts, remote work or even business closures, both temporarily and definitely.

Nevertheless, the situation has been unequal and differed from region to region and from country to country. LECTURA cooperated with European Rental Association (ERA) and Committee for European Construction Equipment (CECE) in order to conduct a survey focused on the aftermath of the pandemic situation, targeting European-based machine owners, dealers, contractors, and rental companies. We ran the survey in 6 languages (English, German, French, Spanish, Italian, Polish) on our website LECTURA Specs which is the ultimate buyer's guide with a monthly visit rate of 500,000 professionals.

The data was collected from 26th May to 1st July and we gathered 30,279 responses in total. The analysed European sample is represented by 10,180 responses. The descriptive analysis is provided with detailed pie charts for each survey question, divided into the four targeted groups of visitors.

The detailed analysis is moreover enhanced with crosstabs and independence testing that provides side-by-side comparison of how different groups of respondents answered our survey questions while monitoring patterns and relationships between variables. This section is also enriched with a map of pie chart analysis per country that serves as a quick overview of the results within the European regions.

# COVID Survey by CECE, ERA and LECTURA

## Introduction

The coronavirus, called COVID-19, hit the heavy machinery industry hard and fast. Many companies had to adapt to the challenging situation and regulations set by local authorities which led to significant restrictions. A majority of manufacturers, dealers or rental companies were forced to operate under limited conditions. It is important to emphasise that the COVID situation has not been equal and the conditions for business differed from country to country. This is the reason why we asked our website visitors about their opinion on the outcomes of the crisis in connection with their business.

LECTURA recently ran an online survey in cooperation with European Rental Association (ERA) and Committee for European Construction Equipment (CECE) focused on the aftermath of the COVID-19 pandemic crisis. The aim of the research was to explore how the coronavirus crisis affected various sectors. The survey primarily targeted international contractors, dealers, rental companies and machine owners and further questioned them about the impact of COVID-19 and following restrictions on their business. The survey included questions about changing the business strategy, plans for the future, who the respondents expect support from and much more.

The survey was available in 6 languages and three different versions depending on the field of business on [LECTURA Specs](#) website, which is our ultimate machinery buyer's guide. We collected more than 30,000 responses from our professional audience.

Data was collected from 26th May to 1st July. The total sample size was 30,279. Despite the fact that we collected more than 30,000 responses from our professional audience (machine owners, contractors, dealers, equipment rental companies, service providers and others), we decided to analyse only data from the first four groups of respondents (sample size: N = 17,305). In this article we present only data from European sample (sample size: N = 10,180)

# General global statistics: Frequencies analysis

Measured period: **26th May – 1st July (37 days)**

Total number of survey respondents: **30,279**

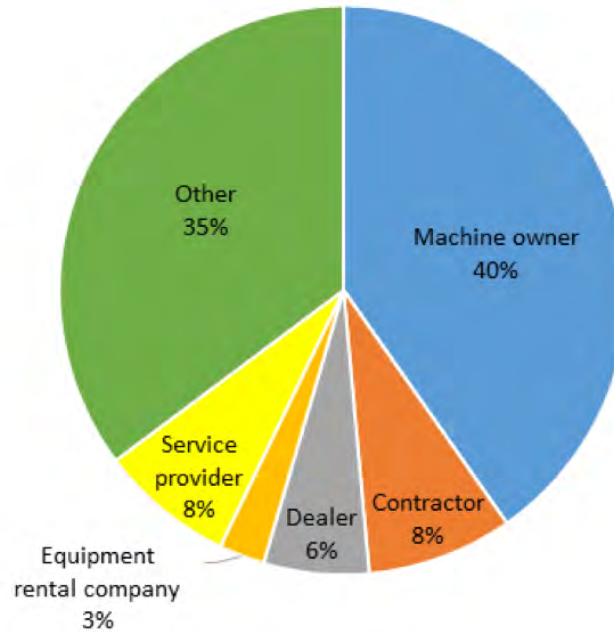
Our survey primarily targeted those respondents who marked themselves as either machine owners, contractors, dealers or equipment rental companies:

Total number of analysed survey respondents: **17,305**

We began our data analysis with frequencies analysis to explore the distribution of distinct values/categories within our questions. This type of analysis allowed us to get information about our respondents, their opinions about the coronavirus crisis and possible help-seeking strategies in order to improve their business strategy. To better understand the results pie charts are provided.

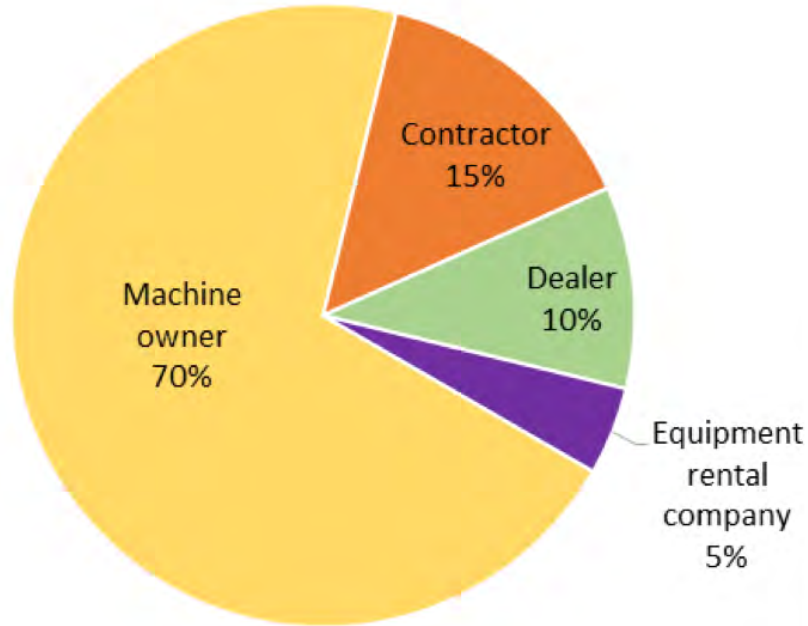
Furthermore, we used a goodness of fit test to explore whether our results from frequencies analysis are representative according to given populations. Based on goodness of fit test analyses results we discovered our results presented in the pie charts below are generalisable for the European population of machine owners, contractors and dealers ( $p < 0.001$ ). However, it seems that the distribution of our sample of European rental companies may slightly differ in some ways from the distribution of the entire population of European rental companies' representatives. Therefore, we discuss these findings below.

### All Respondents (30,279)



As you can see in the graph, 40% of the visitors claimed to be machine owners. The second largest group of visitors marked themselves as “others” as they probably did not find their profession among the options (35%). The third largest group, exactly 8% of people were contractors, 8% service providers, 6% dealers and the smallest group is represented by equipment rental companies (3%).

### Analyzed Respondents (17,305)



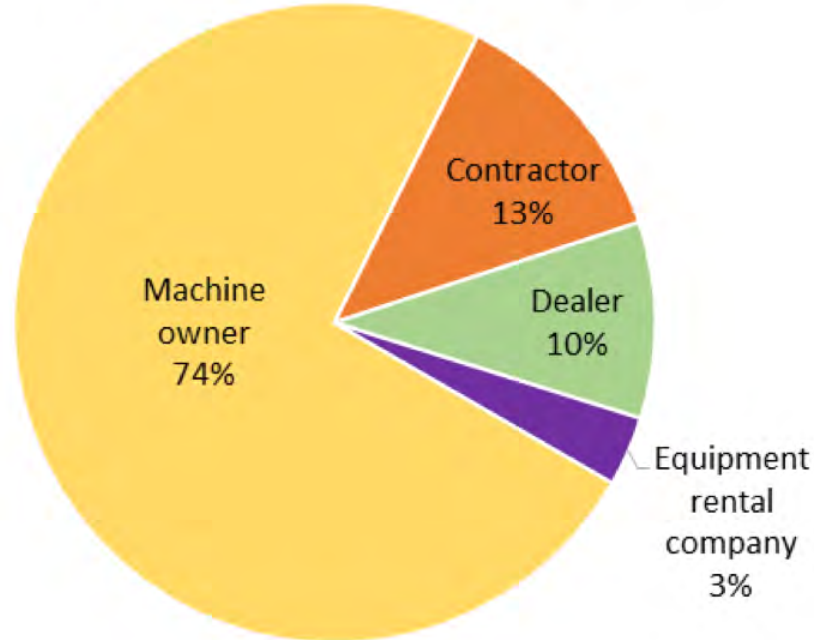
As mentioned above, our survey primarily targeted machine owners, contractors, dealers and equipment rental companies and these are therefore the groups we will further work with. The total number of 17,305 analyzed respondents consists mainly of machine owners (70%). The second largest group is made up of contractors (15%), the third one of dealers (10%) and the lowest number representatives seem to be from equipment rental companies (5%).



# European-based respondents

This survey report will target and analyze only those respondents who came from European countries (do not confuse with the European Union). You can see the percentual representation of each further analyzed group.

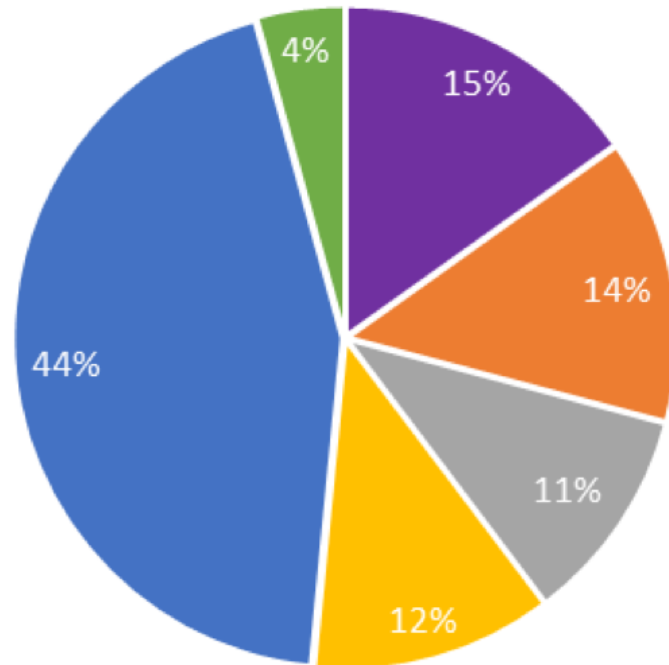
**Analyzed European Respondents (10,180)**



The majority of European respondents claimed to be machine owners (74%). The rest is divided into contractors (13%), dealers (10%) and equipment rental companies (3%).

# A Machine owners

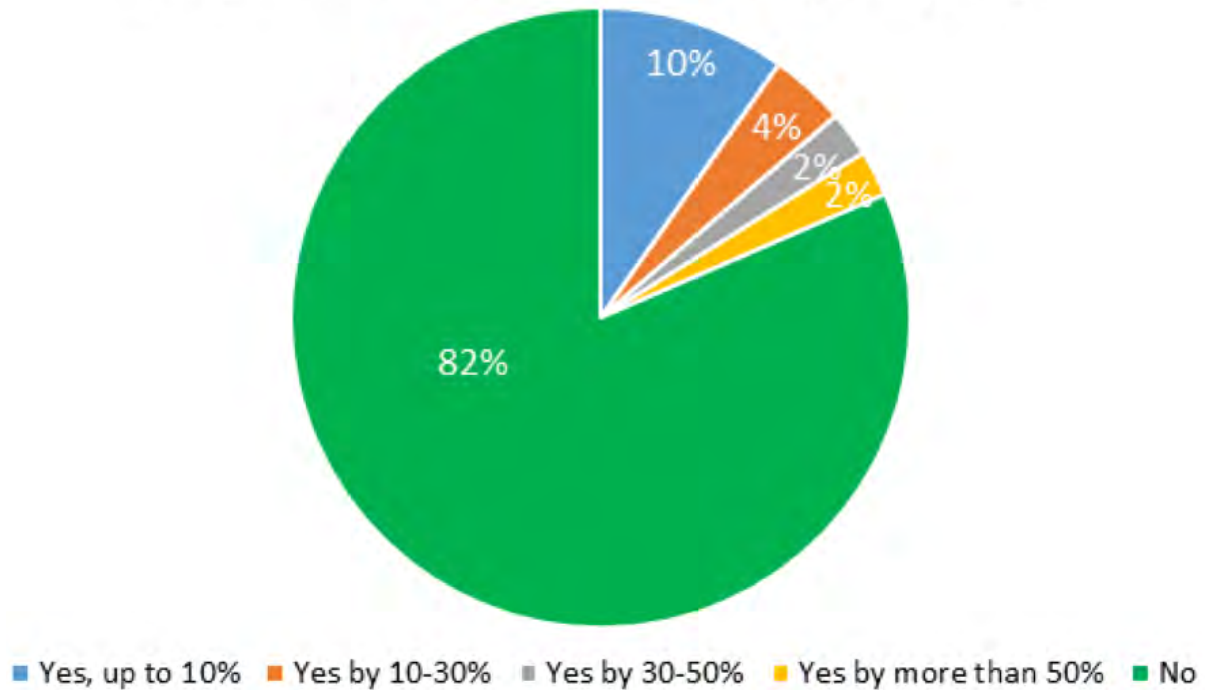
1) How did the Covid Situation impact your business in 2020 up to now?



- Decline up to 10%
- Decline by 10% - 30%
- Decline by 30% - 50%
- Decline by more than 50%
- No change
- Increase

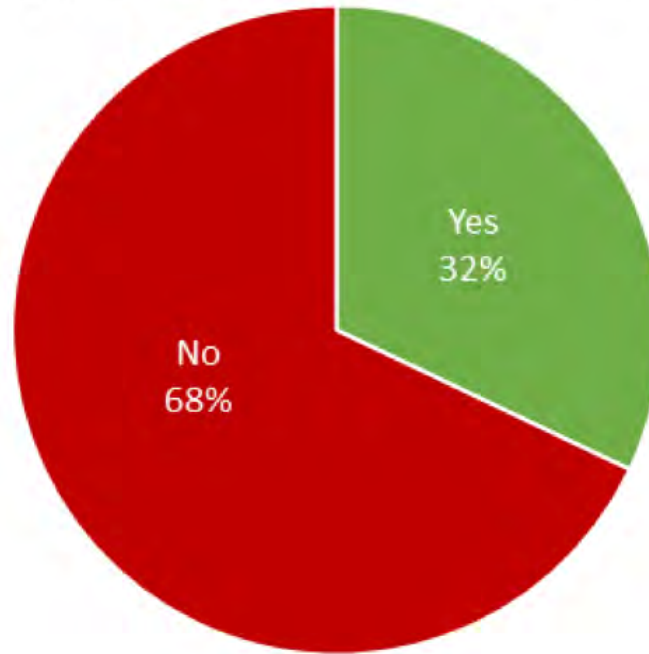
44% of the European machine owners stated that they experienced no change of their business during the COVID situation. On the other hand, 12% of machine owners reported a decline by more than 50%. Moreover, 52% of respondents in total announced negative impacts of the Coronavirus on their business. Surprisingly, 4% of machine owners based in Europe were lucky enough to profit from the situation and expand their business.

## 2) Did you have to sell part of your fleet to improve liquidity?



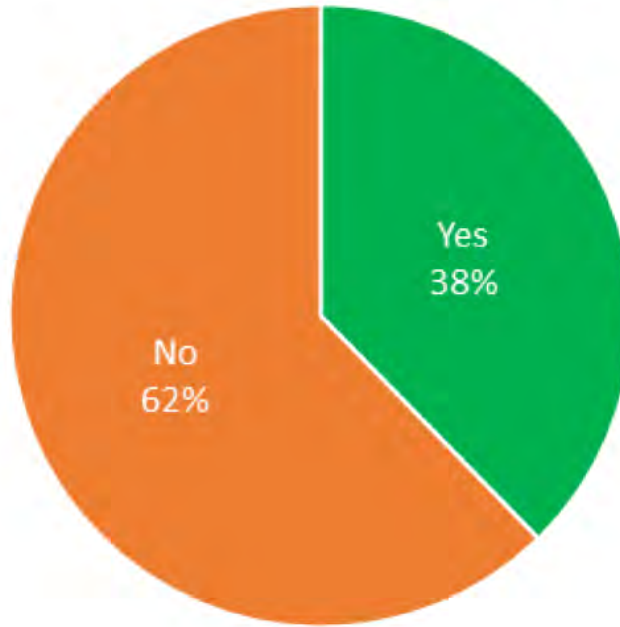
Almost 82% of respondents were not forced to sell part of their fleet in order to improve liquidity, however, 18% of respondents had to process some fleet reduction. More than a half of machine owners who had to sell a part of their fleet needed to sell only up to 10% of it.

### 3) Are you planning to reduce your CAPEX?



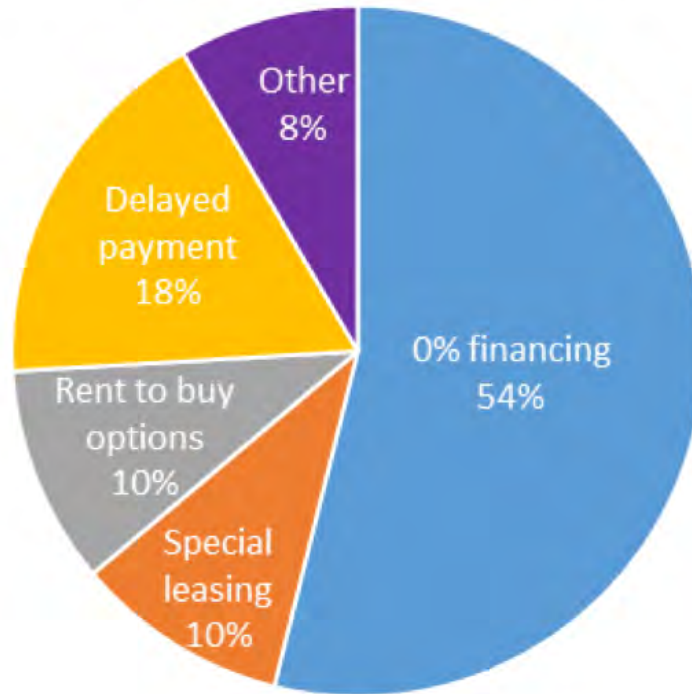
Almost one third of machine owners plan to reduce their capital expenditure in the future. On the other hand, 68% of respondents have no such intentions and aim to increase or at least level their CAPEX.

**4) Did the crisis impact your investments in more green equipment?**



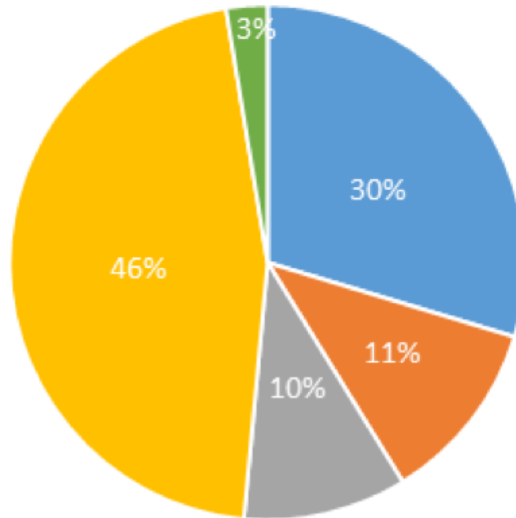
The majority of 62% does not plan to invest more resources in green equipment such as fully electric machines due to the crisis. The minority of 38% has been impacted by the crisis and invested more resources in eco-friendly equipment.

### 5) What would help you to invest in your fleet?



More than a half (54%) of machine owners think that 0% financing would be the optimal support in order to invest in their fleets. Other options seem considerably less popular: delayed payment 18%, rent to buy options 10% and special leasing 10%. Moreover, 8% of respondents did not agree with any of these possibilities and would select completely different ones..

## 6) What is the most urgent type of support your business would need?

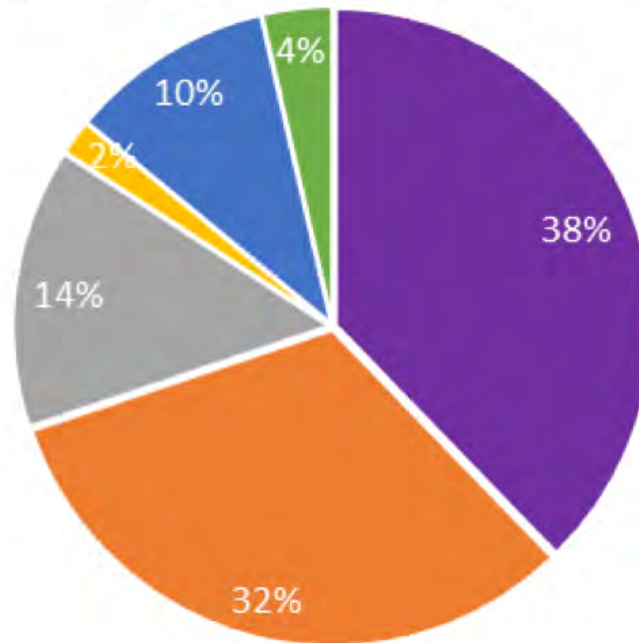


- Fiscal measures by national authorities
- Investment measures by European authorities
- Liquidity-related measures by banks
- No support is currently needed
- Other

The last question was focused on the most urgent type of support for the business. As we can see, 46% of contractors and machine owners are currently fine and no support is needed. Nevertheless, 30% of respondents would prefer fiscal measures by national authorities, 10% liquidity-related measures by banks and 11% investment measures by European authorities. Only 3% of respondents would need other types of support.

## B Dealers

1) What is your primary/main type of business?

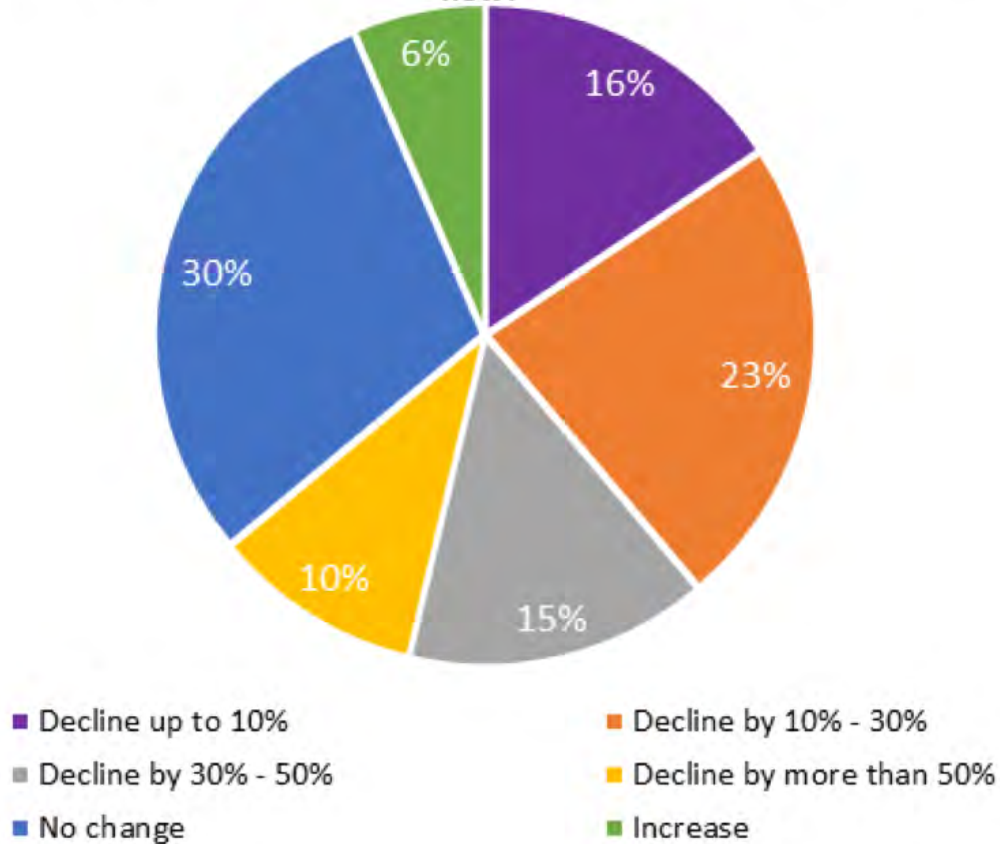


■ New machine sales ■ Used machine sales ■ Parts ■ Rental ■ Service ■ Other

The first question addressed to dealers helped to further specify the main field of business. As we can see in the graph above, 38% of European dealers primarily deal with new machines. A little bit less, 32% of dealers mostly profit from used machine sales. Other options are significantly less popular — 14% deals mainly with parts, 10% focuses on service and 2% of dealers are offering rental solutions. Only 4% of respondents prioritize completely different types of business.

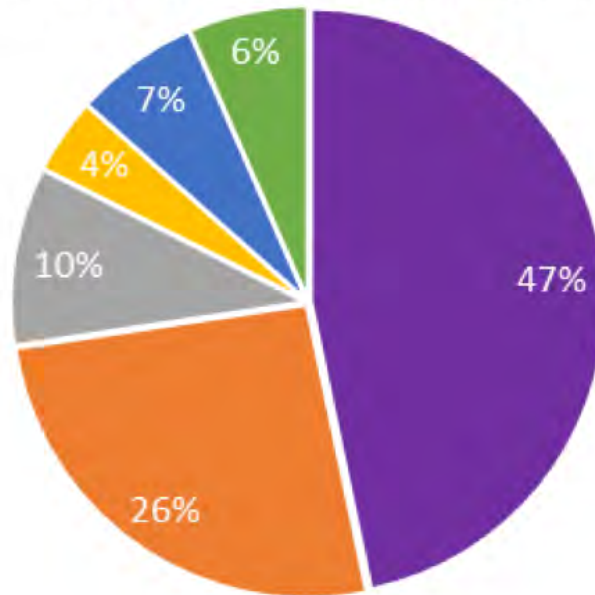


## 2) How did the Covid Situation impact your business in 2020 up to now?



The first question addressed to dealers helped to further specify the main field of business. As we can see in the graph above, 38% of European dealers primarily deal with new machines. A little bit less, 32% of dealers mostly profit from used machine sales. Other options are significantly less popular – 14% deals mainly with parts, 10% focuses on service and 2% of dealers are offering rental solutions. Only 4% of respondents prioritize completely different types of business.

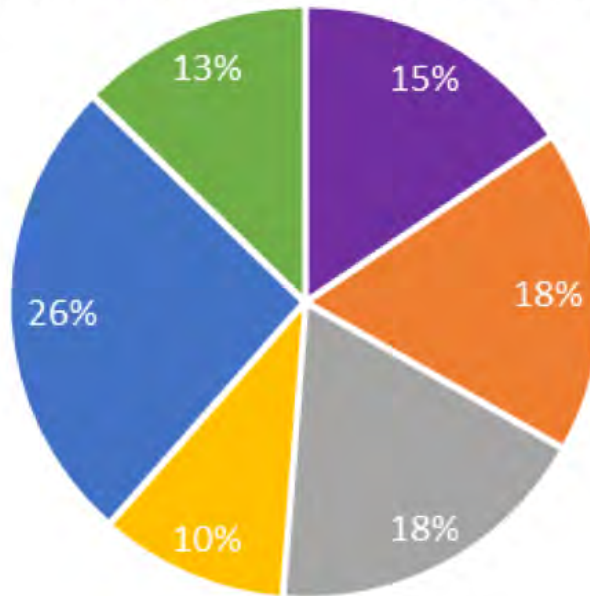
### 3) Which area of your business was mostly affected?



■ New machine sales ■ Used machine sales ■ Parts ■ Rental ■ Service ■ Other

Almost a half of questioned European dealers stated that the new machine sales business was the most affected area. The second most affected area was the used machine sales with 26% and the third position went to parts services with 10%. The rest of options consists of service (7%), rental solutions (4%) and other areas of affected business (6%).

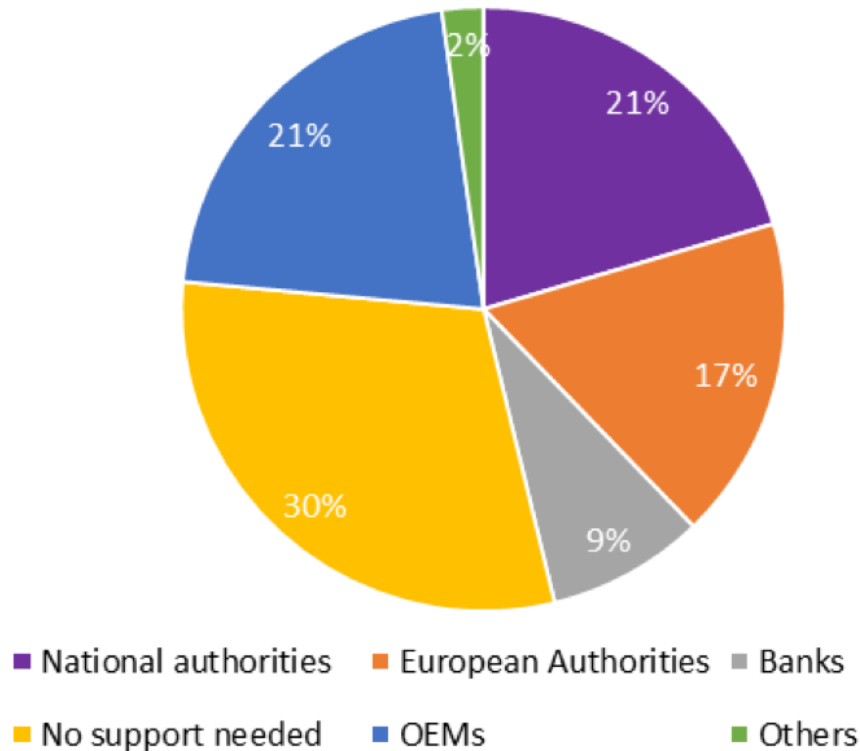
#### 4) Which area of your business was least affected?



■ New machine sales ■ Used machine sales ■ Parts ■ Rental ■ Service ■ Other

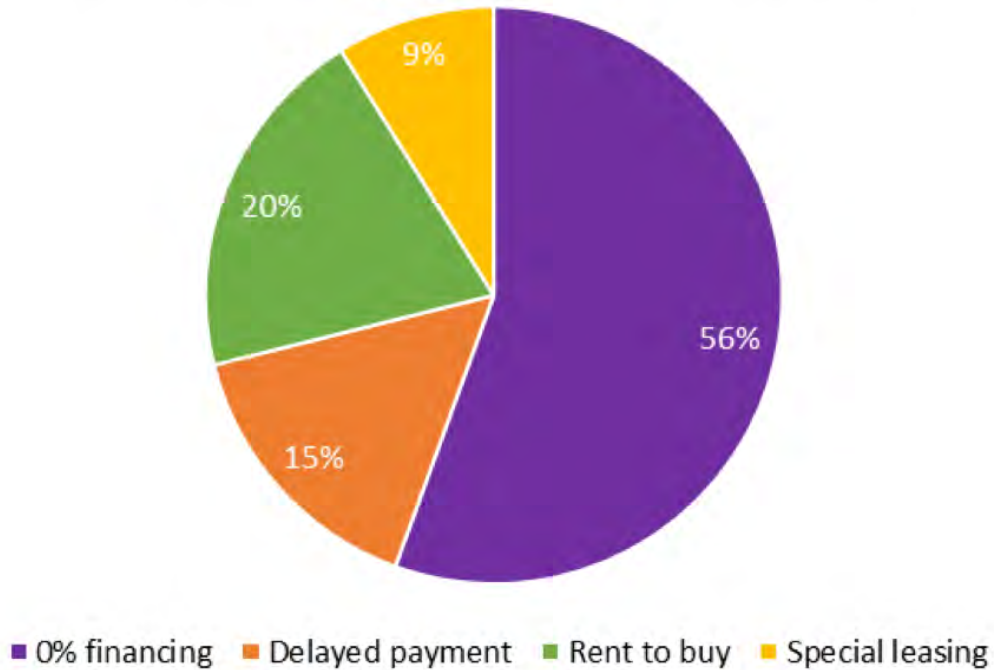
About 26% of European dealers announced that service was the least affected part of their business. Equally 18% of respondents marked used machine sales or parts as the least affected kind of business. Other options are again quite even: 15% new machine sales, 13% other and 10% rental.

### 5) Who would you expect mainly support from?



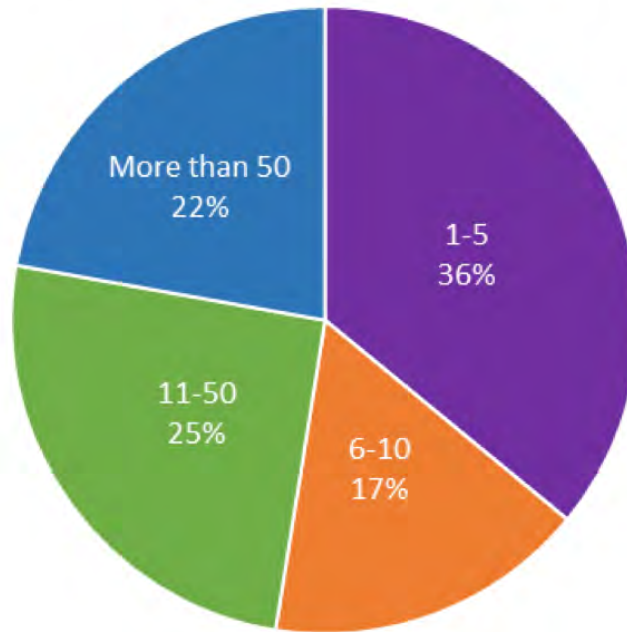
Close to 70% of European dealers would expect some kind of help. On the other hand, 30% of dealers stated that there is currently no support needed. Nevertheless, identically 21% of European dealers would expect some sort of support either from original equipment manufacturers or national authorities. A little bit less, 17% of respondents would expect help from European authorities and 9% from banks.

**6) What type of support would you consider most beneficial for your business?**



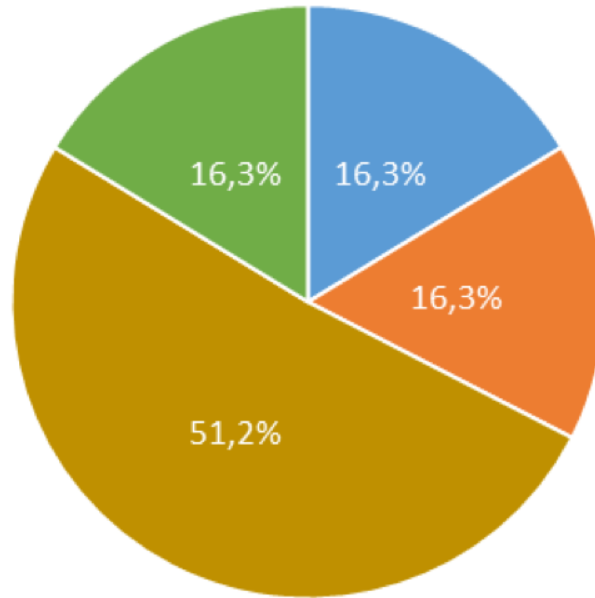
Over one half of European dealers (56%) considers 0% financing an optimal support for their business. Roughly 20% of respondents would prefer rent to buy options, 15% delayed payment possibility and only 9% of dealers are in favour of special leasing.

### 7) What is your company size in number of employees?



Over one third of all respondents (36%) stated that they work in a small company that employs up to five people and 17% announced to work within a group of 6-10 people. One quarter of European dealers (25%) worked in a mid-sized company with 11-50 co-workers. Finally, 22% respondents came from a company that has more than 50 employees.

**8) Because of Covid, did you change your business strategy and consider or already started to rent machines?**

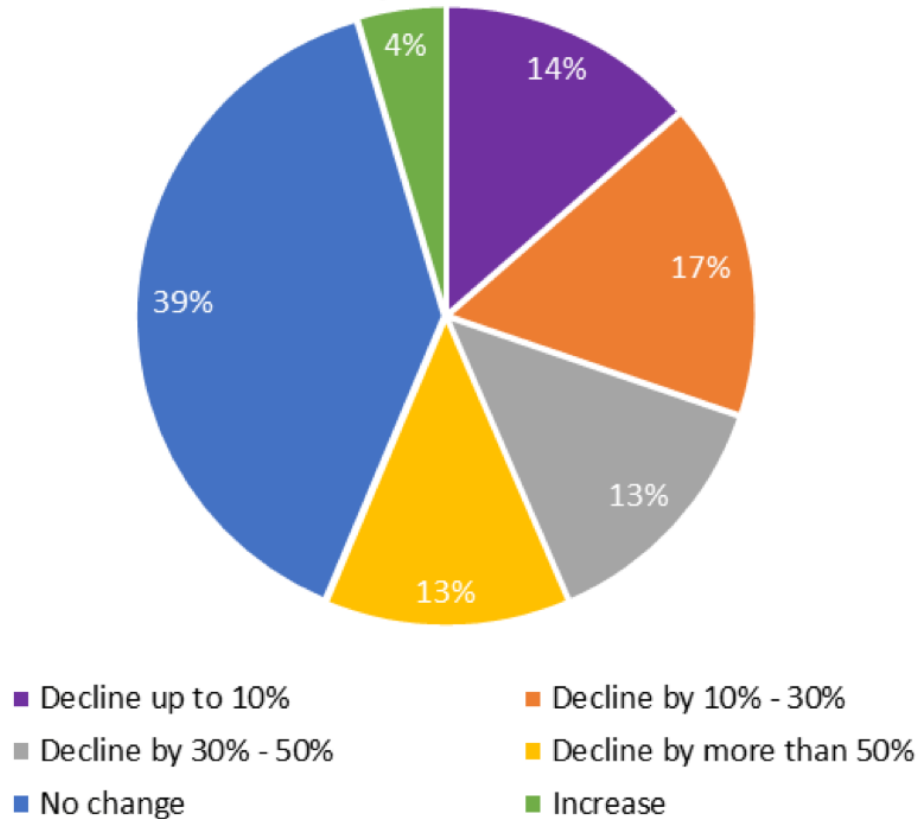


- Yes, we started to rent machines
- We are considering this option
- No, we do not plan to rent
- No, we are already renting

The last question for dealers was answered as follows – the majority of respondents (51.2%) do not plan to rent machines and the other three options are exceptionally even. Identically 16.3% of respondents started to rent machines in the corona times, 16.3% is considering this option and also 16.3% of dealers are already renting machines.

## C Contractors

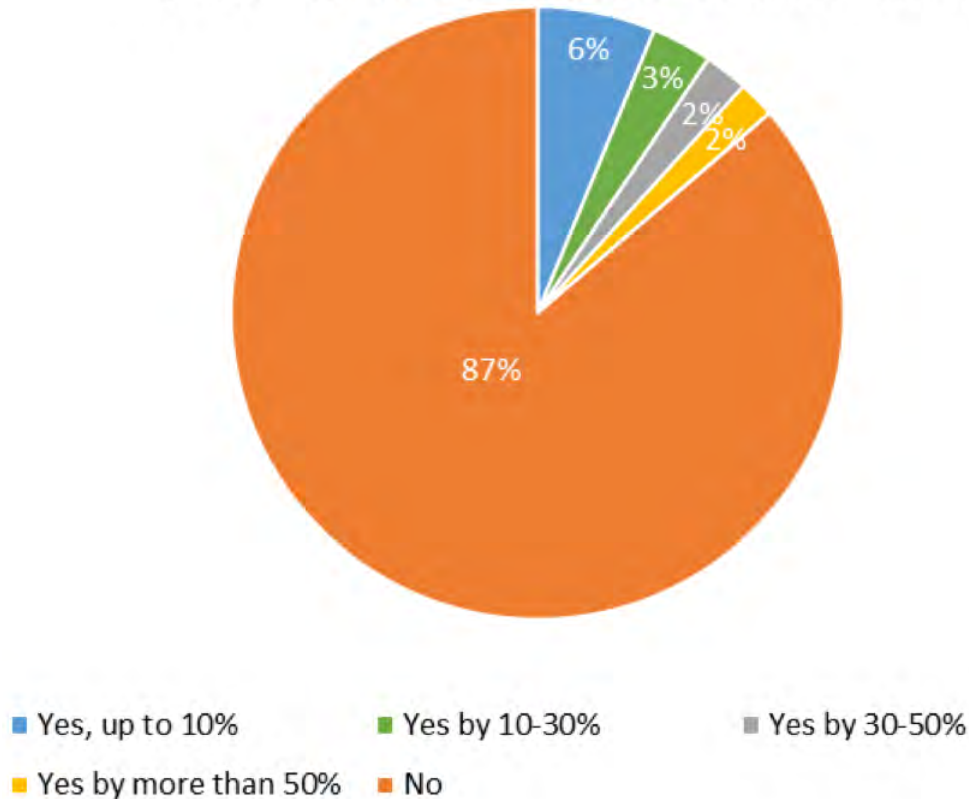
### 1) How did the Covid Situation impact your business in 2020 up to now?



As we can see, 39% of European contractors experienced no change within their business during the COVID situation. Decline up to 10% was registered by 14% of respondents, whereas 17% of respondents announced a higher percentage of decline by 10-30%. Equally 13% of European contractors dealt with a decline by either 30-50% or even a decline by more than 50%. About 4% of contractors reached an increase of their profit.

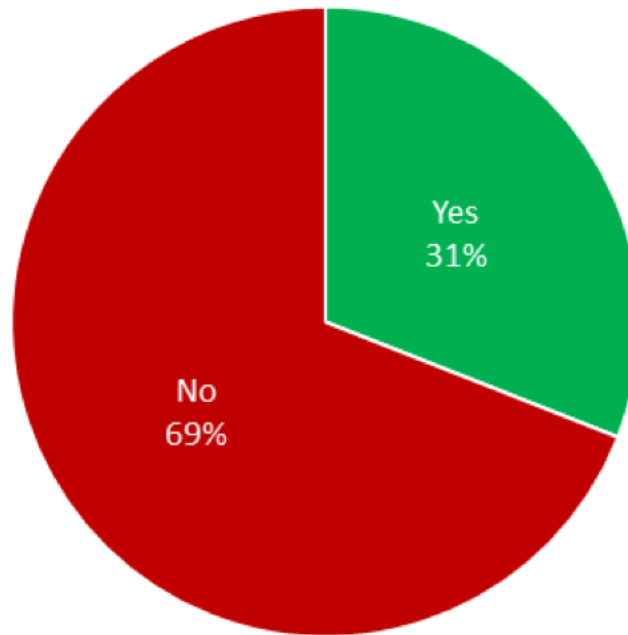


## 2) Did you have to sell part of your fleet to improve liquidity?



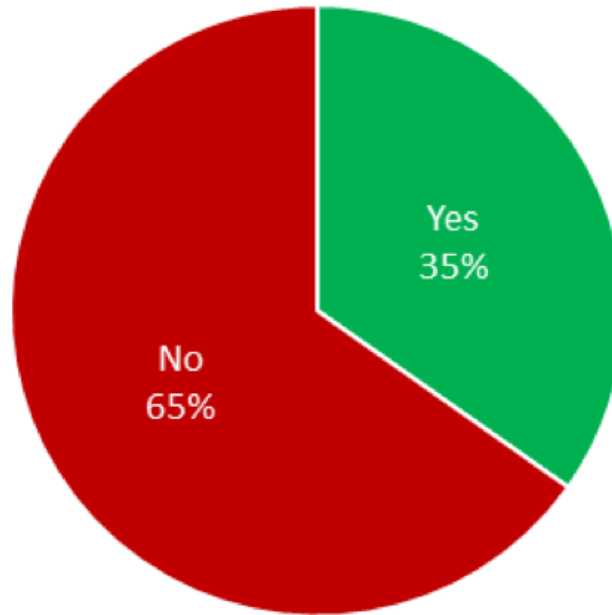
The results here are almost unanimous, 87% of European contractors did not have to sell a part of their fleet in order to improve liquidity. Up to 6% of respondents from the remaining 13% had to sell up to 10% of their fleet. The other options gained approximately the same percentage: 3% of contractors had to sell 10-30% of fleet, 2% of contractors had to sell 30-50% of their fleet and also 2% had to sell more than 50% of fleet.

### 3) Are you planning to reduce your CAPEX?



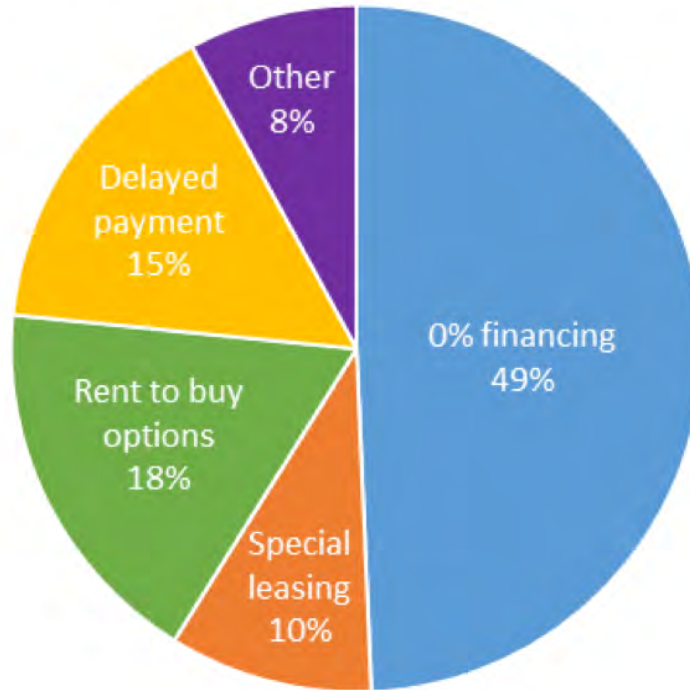
Almost 70% of European contractors announced no plans to reduce their capital expenditure. On the other hand, 31% of respondents expressed concerns and possibility to reduce their CAPEX in the future.

#### 4) Did the crisis impact your investments in more green equipment?



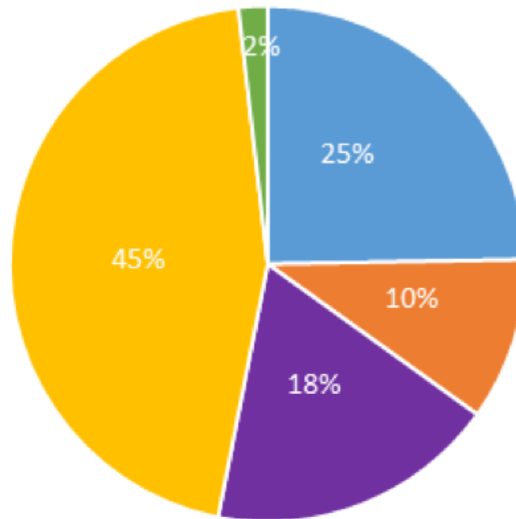
The majority of 65% does not plan to invest more resources in green equipment due to the crisis. Nevertheless, the minority of 35% either invested or plan to invest more resources in eco-friendly equipment.

### 5) What would help you to invest in your fleet?



Nearly a half of European contractors would welcome 0% financing as the optimal solution to investing. The remaining options are significantly less popular: 10% for special leasing, 18% for rent to buy options, 15% for delayed payment and 8% of our respondents would select completely different ways.

## 6) What is the most urgent type of support your business would need?



■ Fiscal measures by national authorities

■ Investment measures by European authorities

■ Liquidity-related measures by banks

■ No support is currently needed

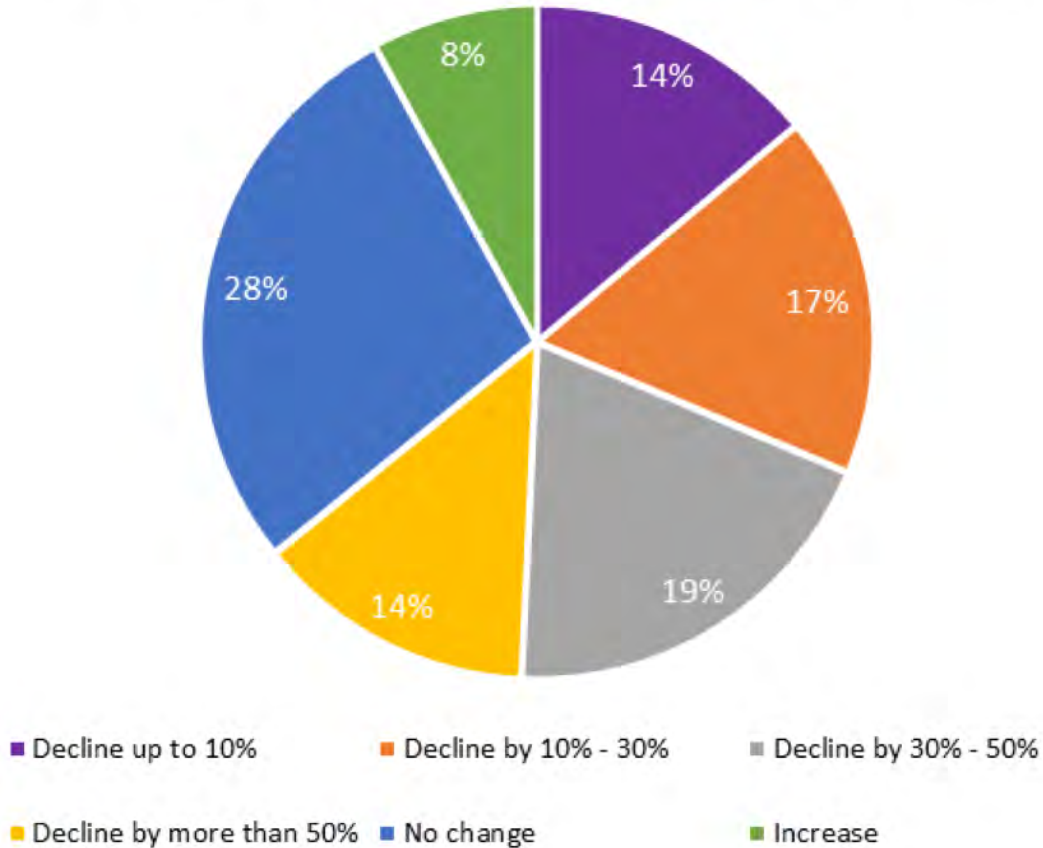
■ Other

Exactly one quarter of European contractors would mostly welcome fiscal measures by national authorities as the most urgent type of support for their business. Nevertheless, 45% of contractors do not currently need any kind of support. Liquidity-related measures by banks seem to be the right option for 18% of respondents and 10% of contractors would prefer investment measures by European authorities.

## D Rental companies

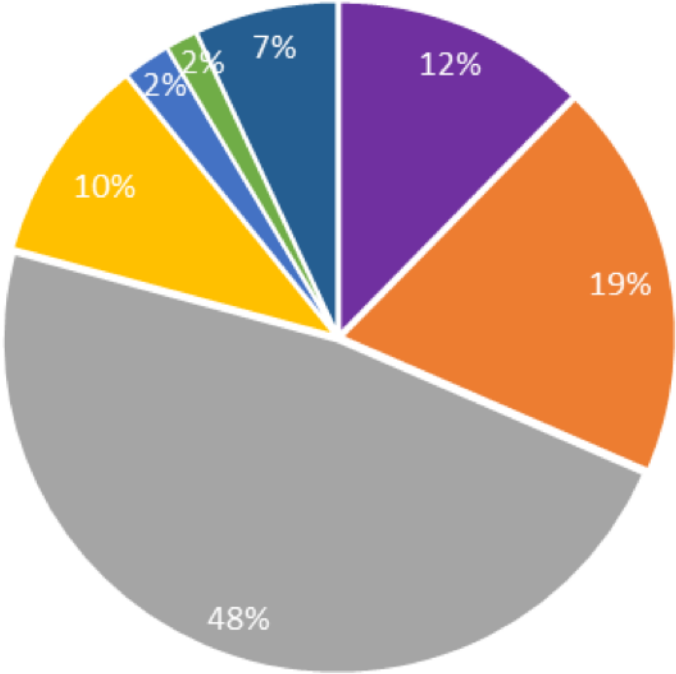
The most of results (presented in pie charts) gathered from equipment rental companies' data are generalisable for the European population of equipment rental companies' representatives ( $p < 0.001$ ). However, according to goodness of fit test rental companies who are going to change their capital investments and rental companies without this intention are, despite our results, equally distributed in European population ( $X^2(1,124) = 0.806, p = 0.37$ ). The same pattern appeared for green equipment ( $X^2(1,115) = 3.83, p = 0.05$ ); although in this case we were able to accept this result as marginally significant - still higher, but not by much, probability our results sufficiently reflect the situation in the population. However because only a few people responded to the last question about the most beneficial type of support we were not able even perform testing.

**1) How did the Covid Situation impact your business in 2020 up to now?**



Roughly 8% of representatives from European rental companies announced an increase of profit during the COVID situation and 28% registered no change. However, a total of 64% of the European rental companies have seen some level of decline of their business due to the crisis. The most frequent level of dropdown was a decline by 30-50% that was faced by 19% of European rental companies.

2) Which area of your business was hit?



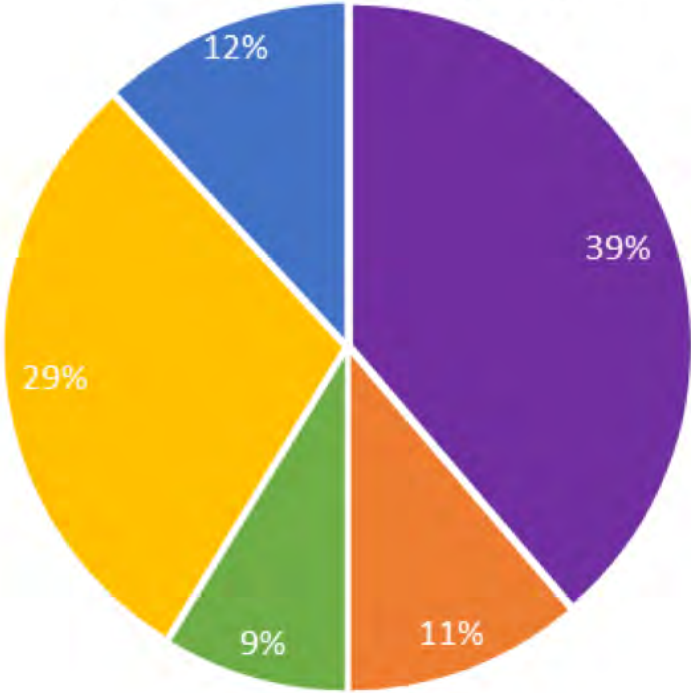
- Equipment sales
- Short term rental
- Short rental/Equipment sales
- Long rental/Short rental/Equipment sales
- Long term rental
- Long/Short rental
- Long rental/Equipment sales

Approximately 48% of European rental companies state that short term rental was the most affected area of business. Regarding the long-term rental, 19% of respondents indicated this area as the most hit one. Only 12% of representatives of European rental companies marked equipment sales as the most problematic business area. Moreover, this question could have been answered by multiple



selection as some companies could have provided a number of services to their customers, but corresponding values of multiple choices seem negligible compared to single answers.

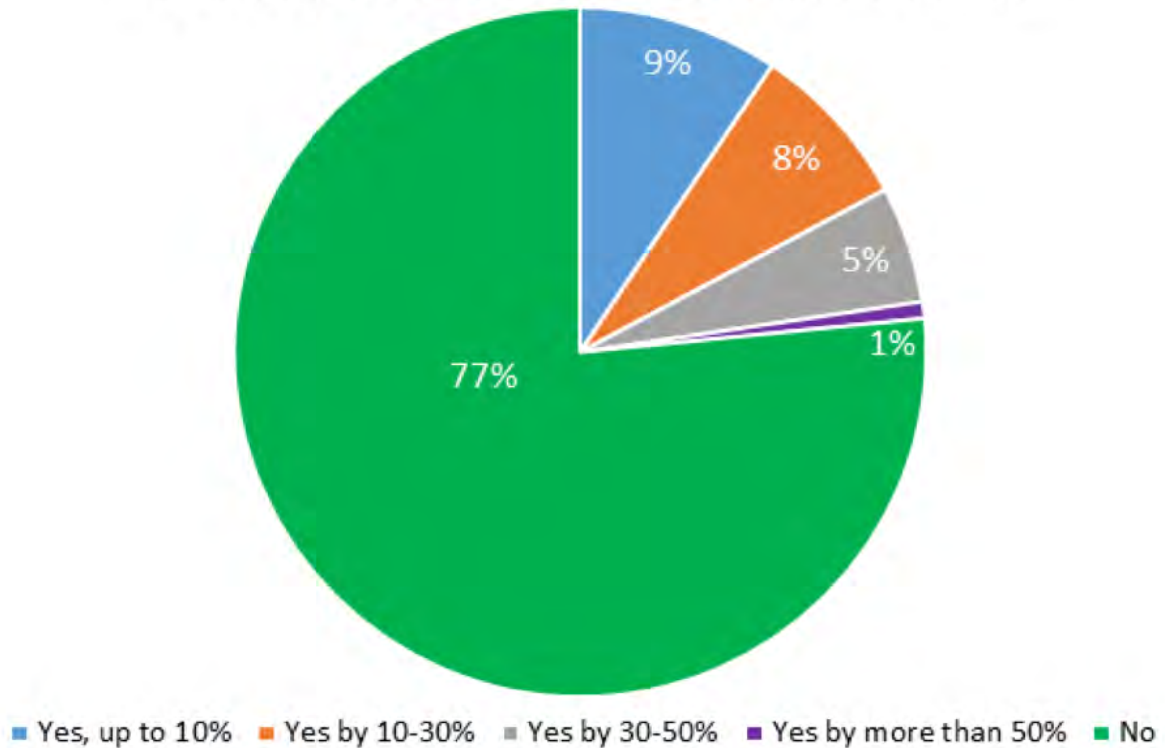
### 3) What type of company are you?



■ Specialist construction ■ Specialist AWP ■ Specialist cranes ■ Generalist ■ Other

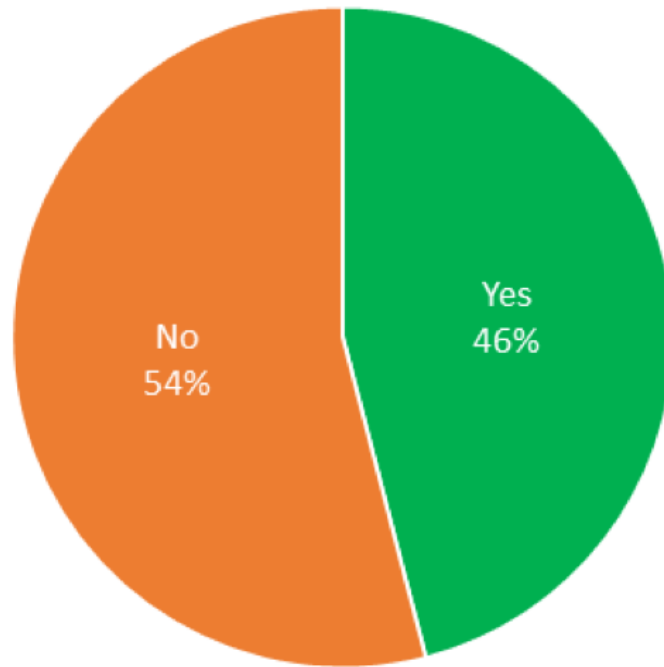
European rental companies were divided as follows: 39% specialist construction, 29% generalist, 11% specialist AWP, 9% specialist cranes and 12% specialized in other fields of business.

#### 4) Did you have to sell part of your fleet to improve liquidity?



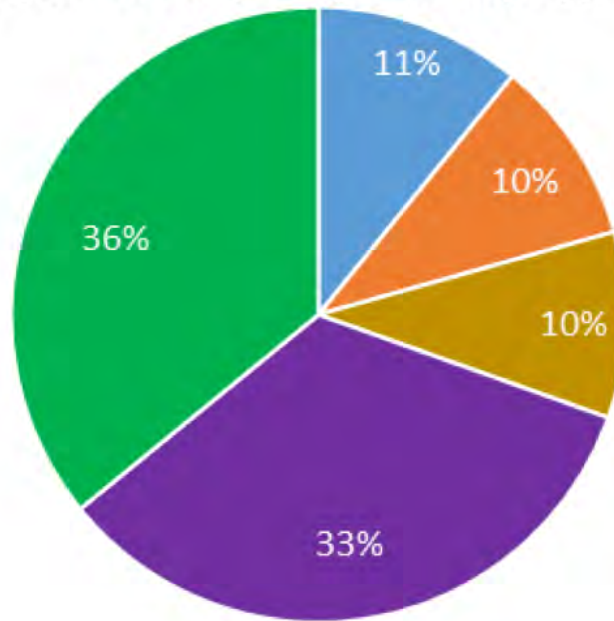
The majority of 77% of European rental companies did not have to sell any part of the fleet in order to improve liquidity. Around 9% of respondents had to sell up to 10% of the fleet, 8% of respondents had to get rid of 10-30% and 5% of representatives were forced to sell 30-50% of their fleet. Only 1% of European rental companies was unable to keep over 50% of the fleet.

### 5) Are you planning to reduce your CAPEX?



Up to 46% of rental companies plan to reduce their capital expenditure in the future. On the other hand, 54% of respondents have no such intentions and aim to increase or at least level their CAPEX in the near future.

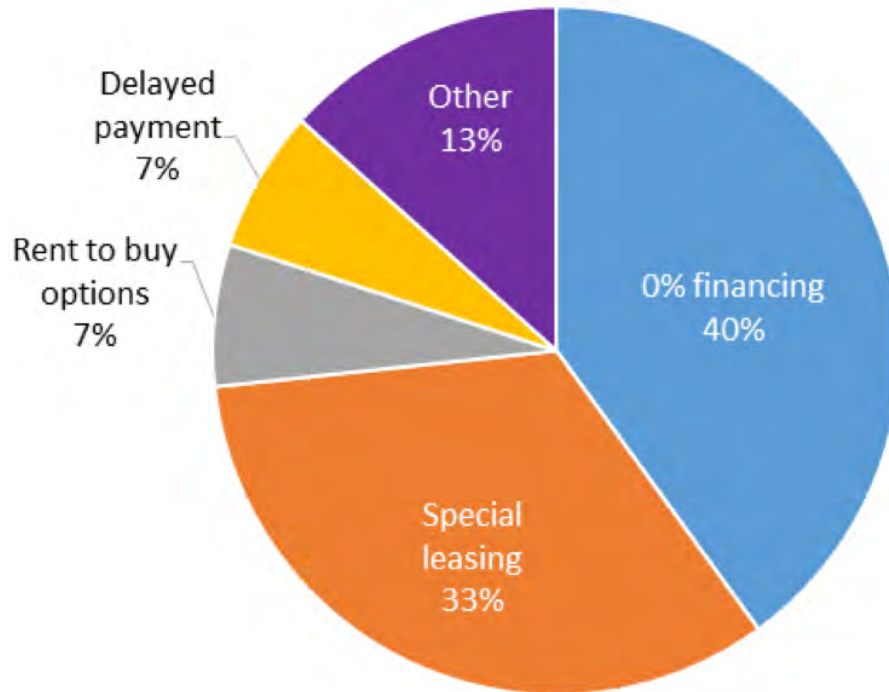
### 7) Who would you expect mainly support from?



■ National authorities ■ European authorities ■ Banks ■ No support needed ■ Other

Exactly one third of European rental companies (33%) currently need no support. Nevertheless, 11% of respondents would expect help from national authorities and identically 10% of respondents would expect support either from European authorities or banks. Furthermore, 36% of European rental company representatives would choose completely different kinds of support.

**8) Which type of support is the most beneficial for your business?**



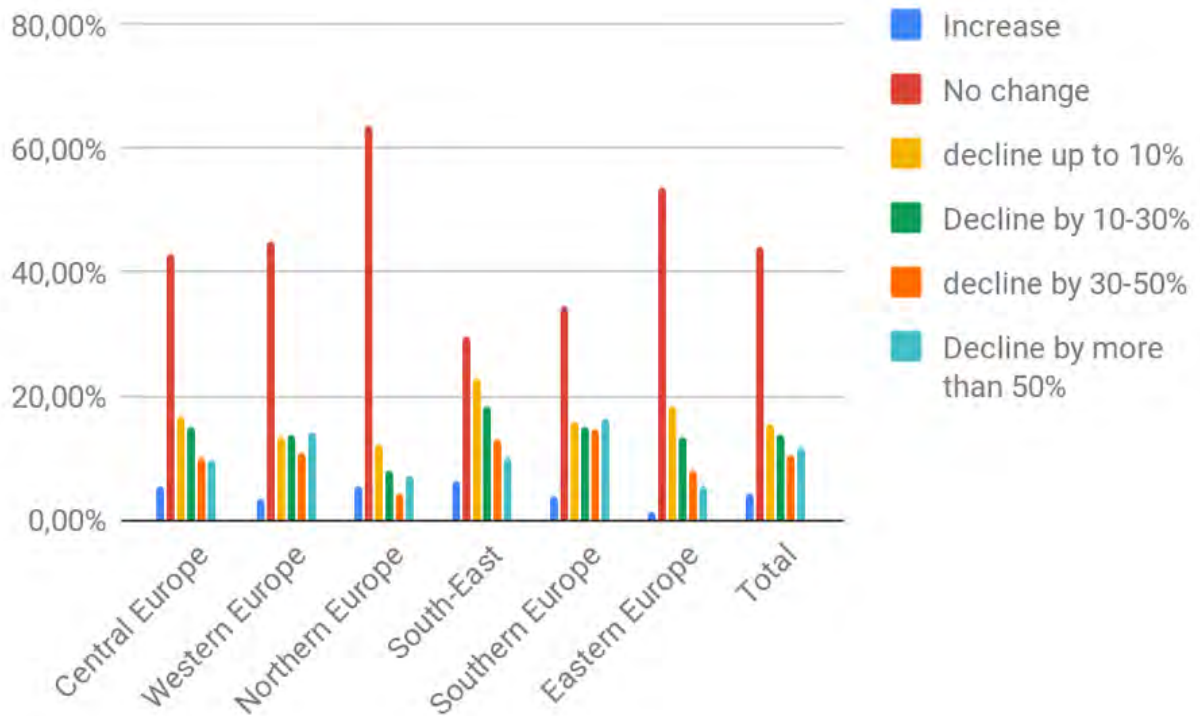
Reflected by 40% of respondents, 0% financing seems the most beneficial type of support for business in total. Moreover, special leasing was chosen by one third of all respondents. The remaining three options are significantly less popular: delayed payment 7%, rent to buy options 7% and other types of support 13%.

# Associations between variables: Crosstabs and independence testing

Furthermore, we decided to explore whether there are some relationships/ patterns among survey questions (for example demographic characteristics of our respondents e.g. field of business, type of company, country and coronavirus crisis impact and strategies how to deal with it).

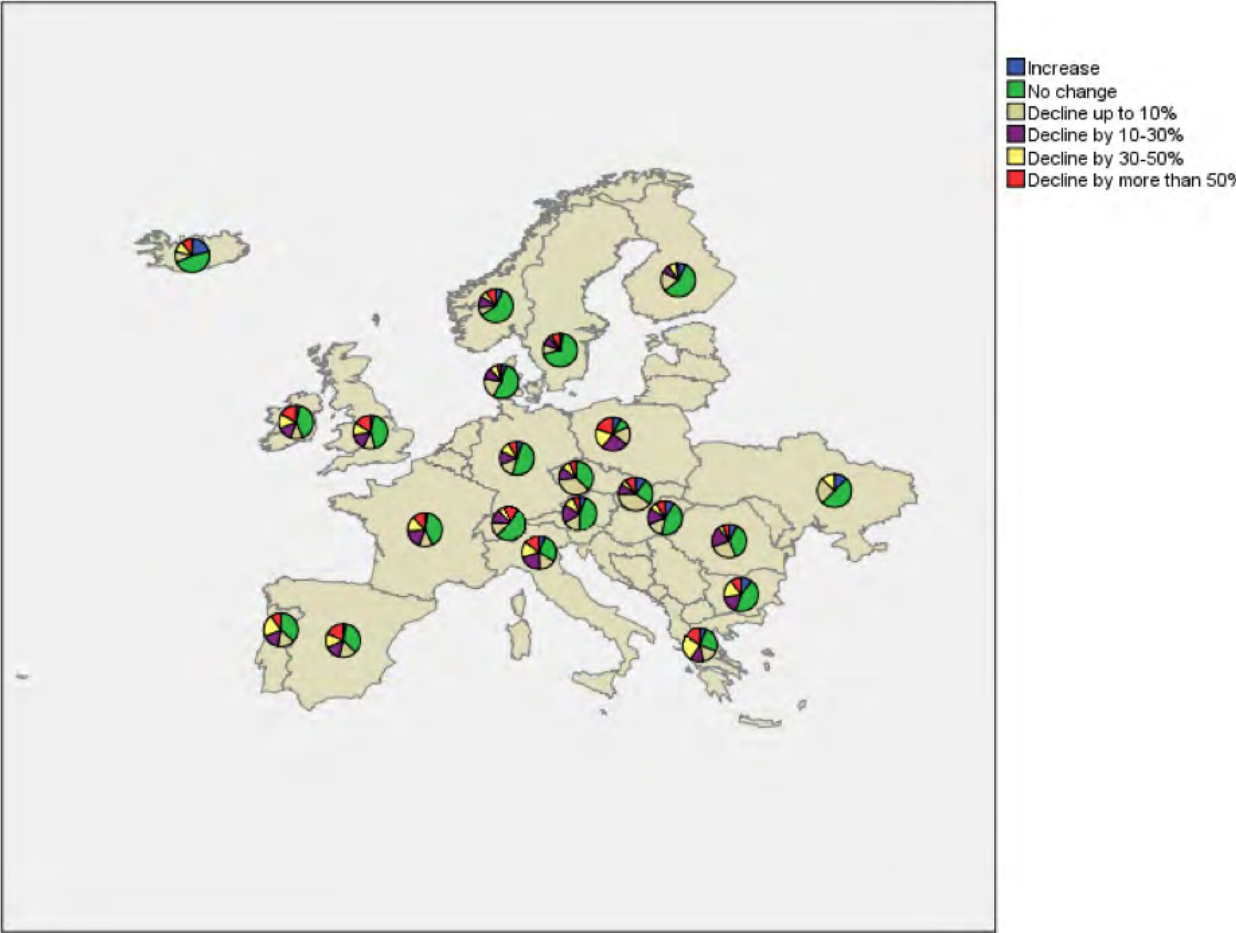
For that purpose, we used crosstabs analysis which provides a side-by-side comparison of how different groups of respondents answered our survey questions. Moreover, we conducted Pearson's chi-square test of association/independence if possible to explore whether the frequencies/percentages are being observed by chance or whether they follow some patterns. To better understand patterns and relationships between variables bar charts are provided.

First of all, we analysed whether the intensity of coronavirus crisis impact and respondents' region of origin are independent of one another or whether there is an association between the variables. If there is no relationship between region of origin and the intensity of coronavirus crisis impact, then the respondents who suffered from different intensity of coronavirus crisis impact should be equally spread across the different regions. Our statistically significant results  $\chi^2(25, N = 3470) = 140.259, p < 0.001$  indicate that there are some differences between European regions in coronavirus crisis impact – for instance looking at South-East and Southern Europe results we discovered less sharp distribution among the option – specifically compared to other regions there were relatively less respondents who reported no change and relatively more people who claimed that they suffered from decline.

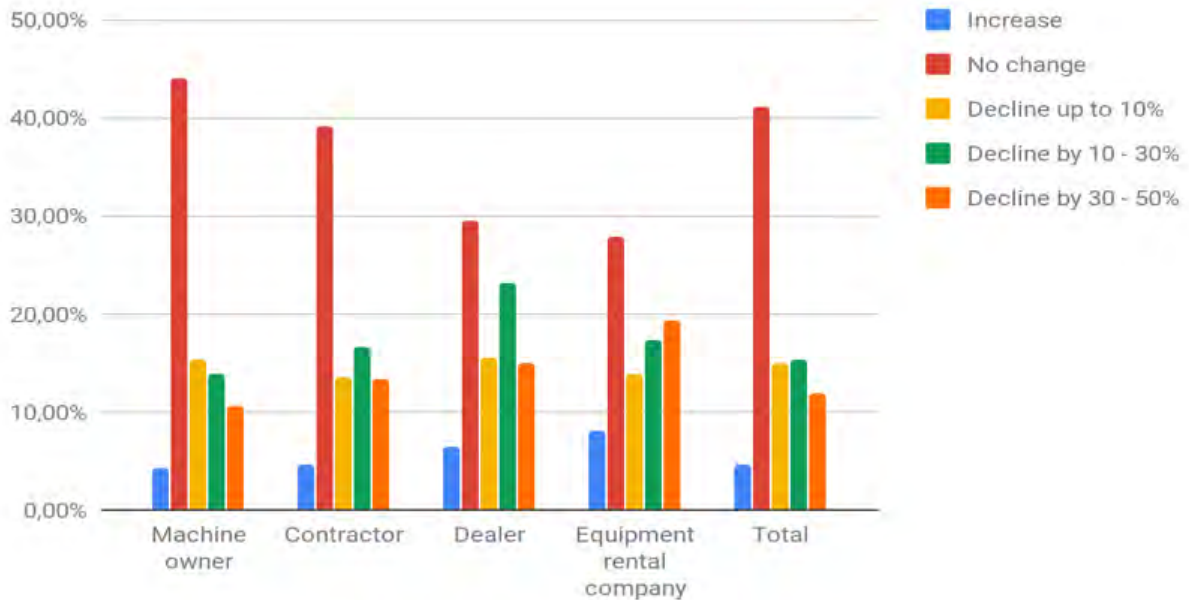


Looking closer to the distribution per separate countries it seems results mentioned above sufficiently reflect the situation in the countries. Therefore, some patterns can be observed. For example, the Scandinavian countries suffered the less. On the other hand, looking at results from Western and Southern European countries – the situation was quite different. For instance, almost ¼ of Spanish respondents said that they suffered from more than 50% decline – similar situation may be seen in the UK and Ireland. According to existing information about coronavirus crisis in Europe, this is not surprising – Spain and United Kingdom have been the most affected European countries since the beginning of the crisis. Further looking at Italy, which was considerably affected, too, one may conclude that duration of the crisis may

correlate with the decline (unfortunately the current research design does not allow us to confirm the statement). Furthermore, despite the fact, that central European respondents reported mainly no change during the crisis – 1/3 of Poles said that they suffered from decrease more than 30%. These findings lead us to think about some historical-political circumstances or differences in national economy which may



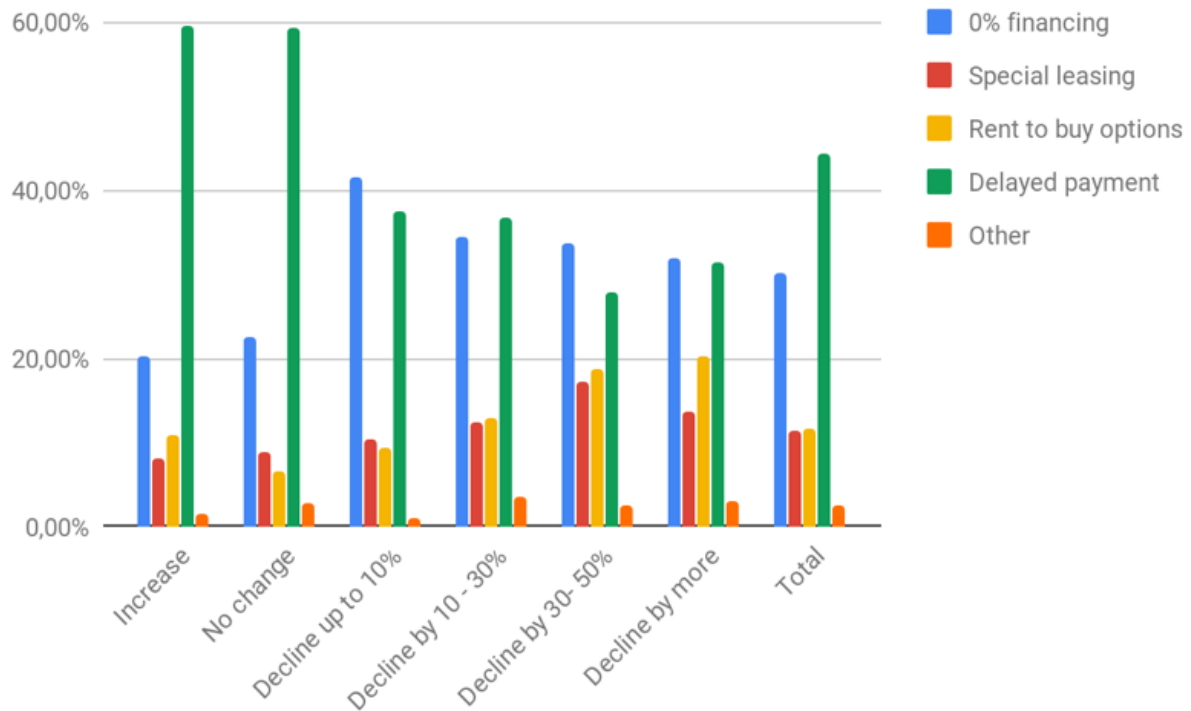




Last but not least we tried to discover whether there is a relationship between the field of business and perceived beneficial support. Like the previous results the result was statistically significant:  $\chi^2(12, N = 1728) = 57.805, p < 0.001$ , however the effect size was small ( $V = 0.106, p < 0.001$ ). Respondents from different fields of business prefer different types of support. It is important to note that on the one hand most dealers and equipment rental companies view 0% financing as the most beneficial support, on the other hand machine owners and contractors preferred delayed payment. However, 0% financing is the second most beneficial type of support according to respondents from these two groups. Moreover, equipment rental companies consider special leasing as the second most beneficial type of support...



Moreover, we were curious whether the intensity of coronavirus crisis impact itself affects the perception of types of support mentioned above. As can be seen by the graph, the crisis impact affects perceived utility of various types of help ( $\chi^2(20, N = 1693) = 147.007, p < 0.001; V = 0.147, p < 0.001$ )



To conclude despite the fact that all of these results had small effect sizes they were all statistically significant. These findings indicate that the distributions mentioned above reflect the situation in the population and not only in our sample.

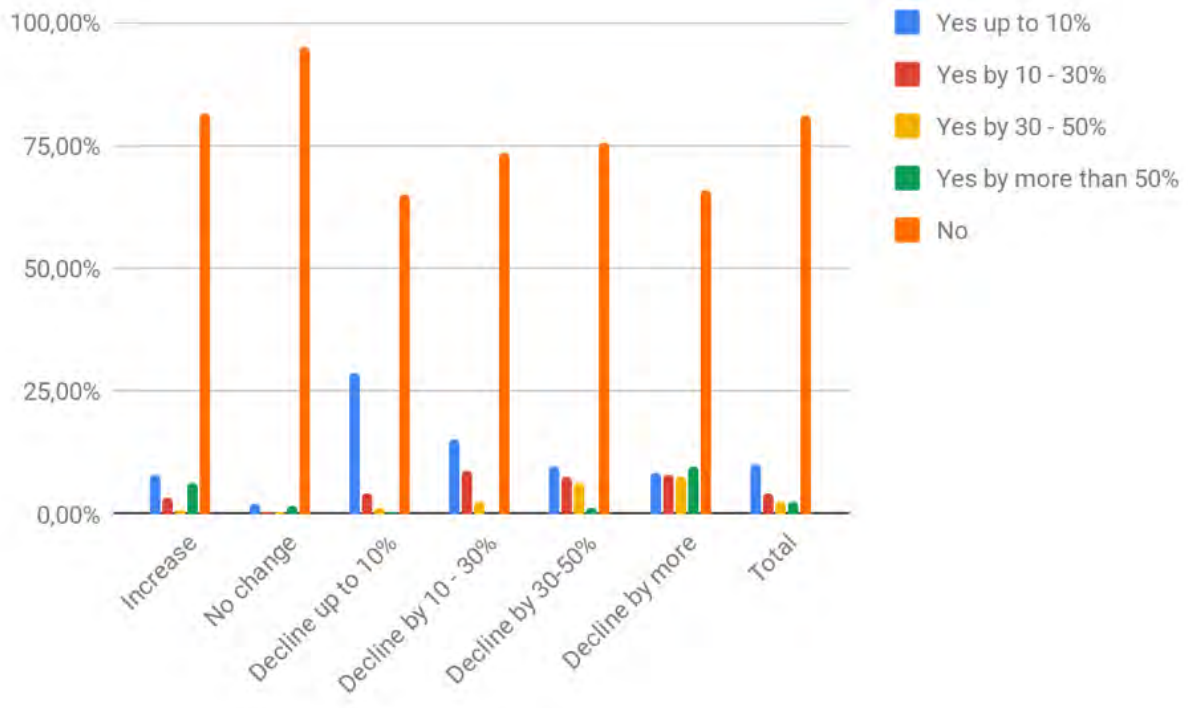
Then similarly to the nature of previous analyses we conducted crosstabs and chi-square tests within each category (field of business) of respondents. First of all we focused on demographic characteristics if provided (e.g. number of employees, type of company, main type of business) and their association with coronavirus crisis impact and business strategy then we tried to explore whether the intensity of coronavirus crisis impact affects business strategies of our respondents, help seeking strategies and plans for the future.

# A Machine owners

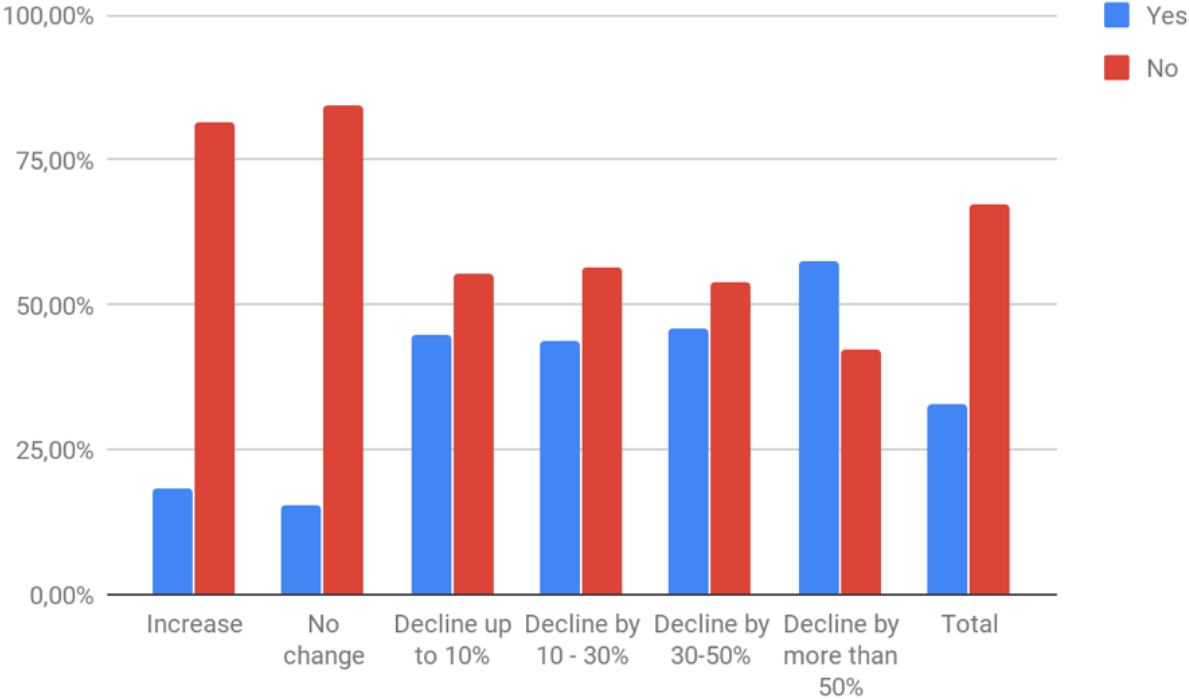
The influence of the intensity of coronavirus crisis impact on business behaviour

Unfortunately, Machine owners' and Contractors' survey version did not provide us much information about the identity of respondents. On the other hand, we were able to explore whether the intensity of the coronavirus crisis impacted business strategy and possible solutions.

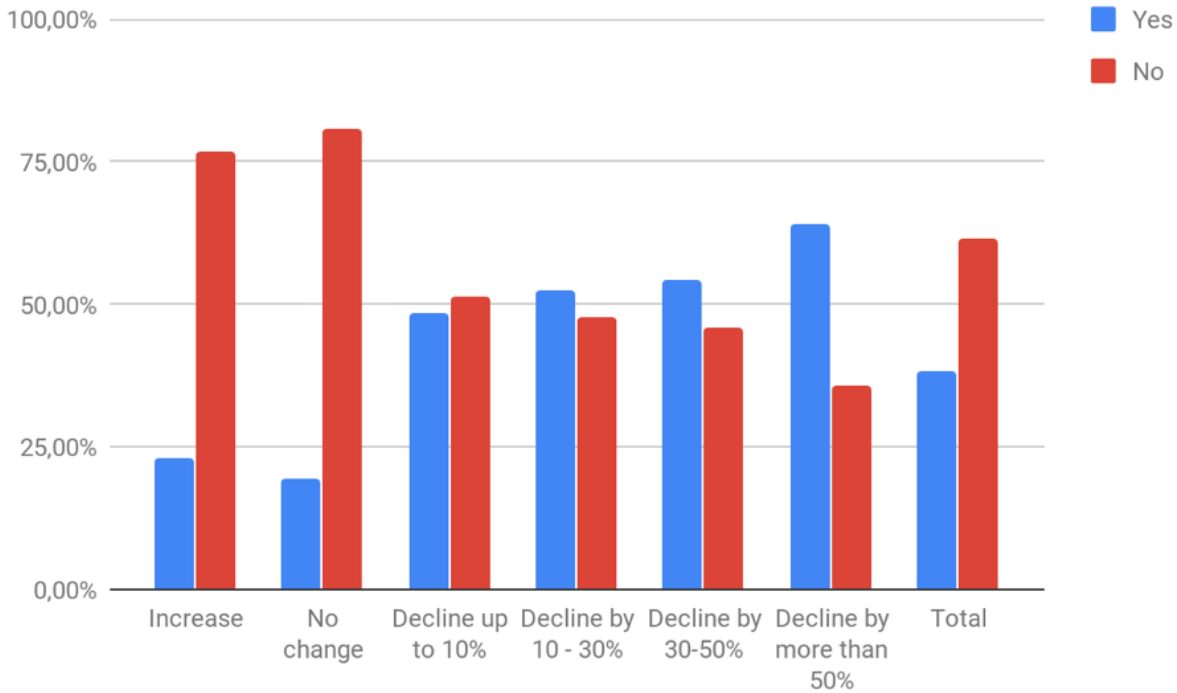
Firstly we discovered a statistically significant relationship ( $\chi^2(20, N = 2922) = 578.126, p < 0.001, V = 0.222, p < 0.001$ ) between the intensity of coronavirus crisis impact and need for improving business liquidity via selling part of the fleet. The deeper the decline caused by the crisis was, the more willing were respondents to sell part of their fleet (the more frequent were responses within categories indicating the need to sell part of the fleet, respectively).



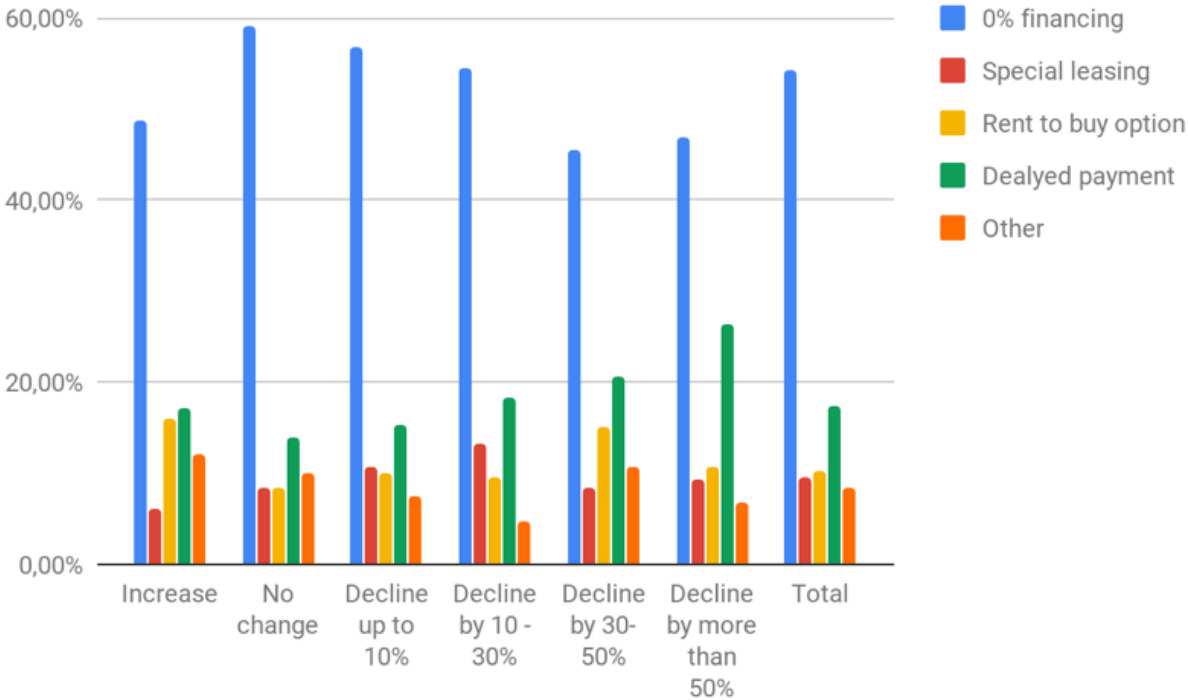
Then we focused on the association between the intensity of coronavirus crisis impact and respondents' plans to reduce capital investments. We found a statistically significant relationship ( $\chi^2(5, N = 2767) = 339.889, p < 0.001$ ) with medium effect size ( $V = 0.35, p < 0.001$ ). These results indicate a very high probability that machine owners who reported deeper decline during the coronavirus crisis were more willing to reduce their capital investments.



Similar patterns were found in a case of relationship between the intensity of coronavirus crisis impact and change in investments of green equipment ( $\chi^2(5, N = 2433) = 325.941, p < 0.001; V = 0.366, p < 0.001$ ). The deeper the decline during the crisis was the more willing were respondents to change their mind in a case of investments in green equipment.

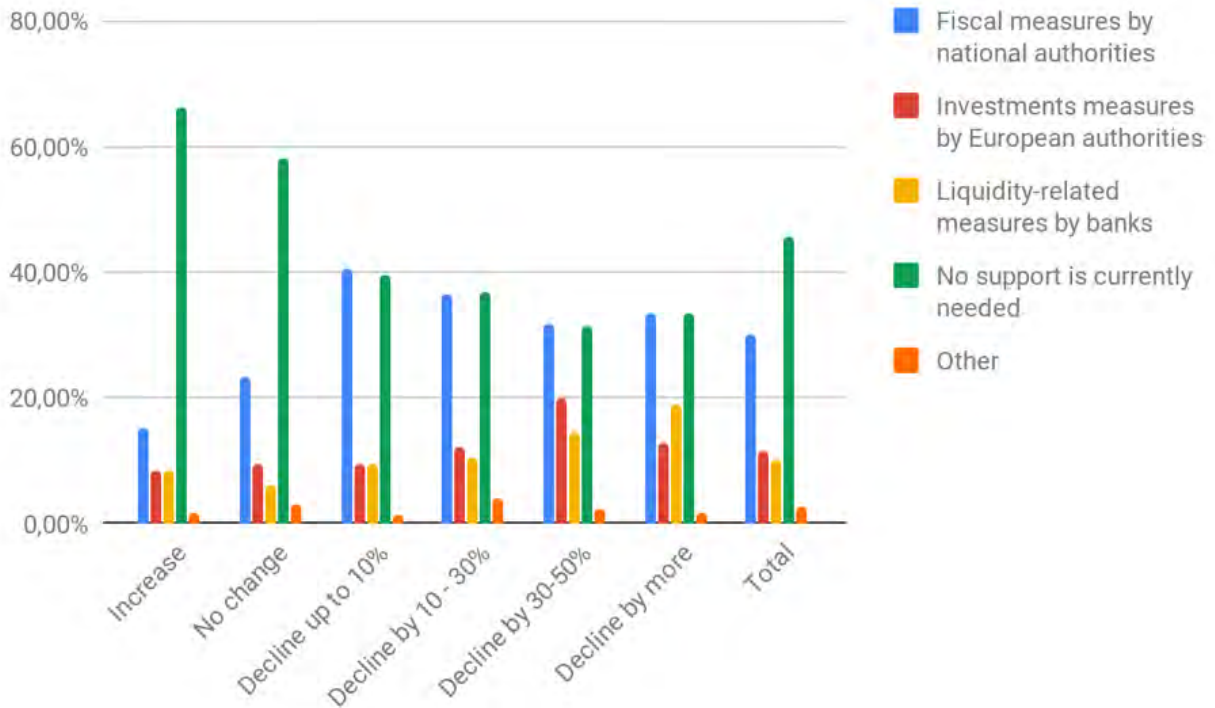


After that we were curious about the help-seeking strategies. Firstly, we tried to explore whether there is a relationship between the intensity of coronavirus impact and perceived utility of support. Despite the very small effect size ( $V = 0.088$ ,  $p < 0.001$ ) we found a statistically significant result ( $\chi^2(20, N = 1815) = 55.641$ ,  $p < 0.001$ ) indicating the relationship between the intensity of crisis impact and perceived utility of support.





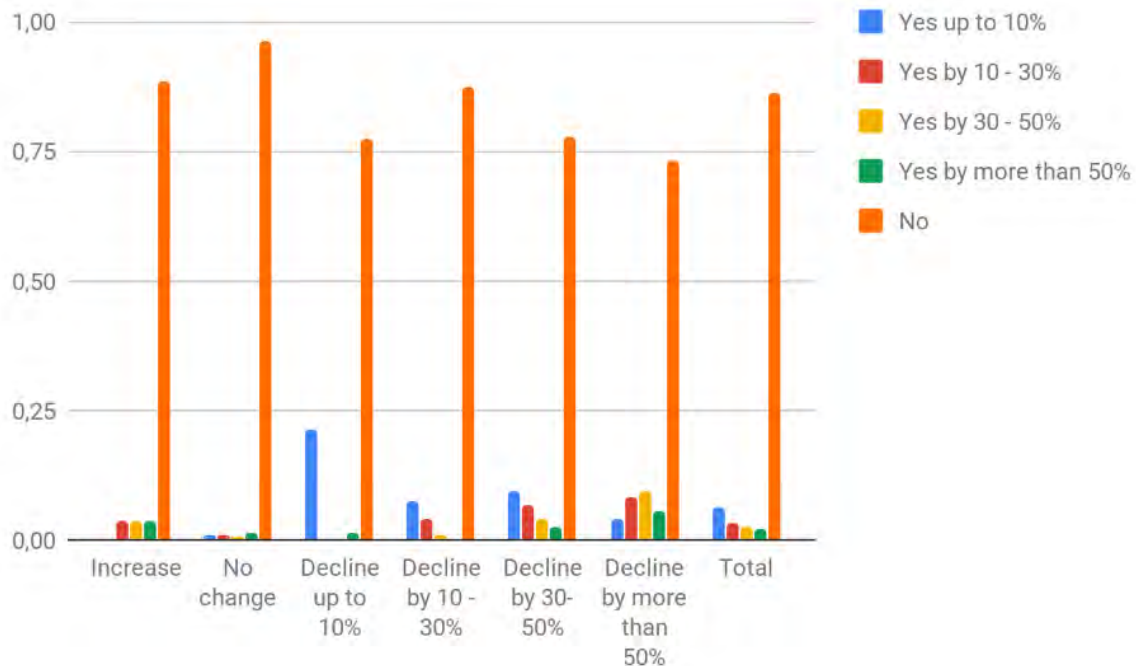
Then we focused on perceived urgency of different types of support. Similarly, we found a statistically significant result ( $\chi^2(20, N = 1359) = 109.928, p < 0.001$ ) and small effect size ( $V = 0.142, p < 0.001$ ). Machine owners who reported deeper decline during the coronavirus crisis perceived higher urgency of more types of support.



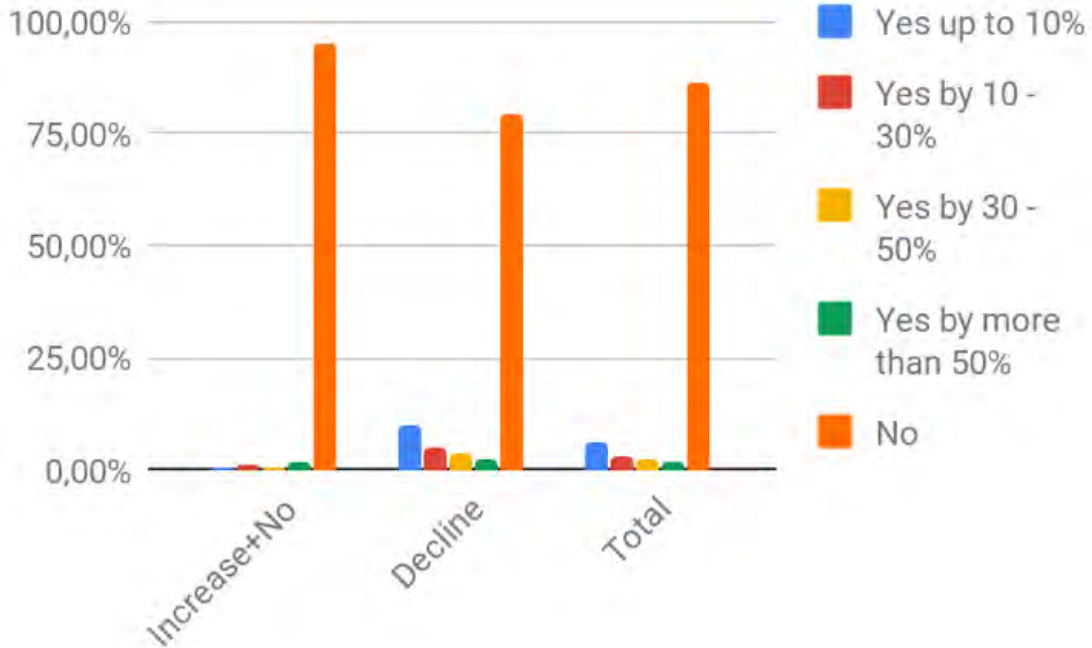
## B Contractors

### The influence of the intensity of coronavirus crisis impact on business behaviour

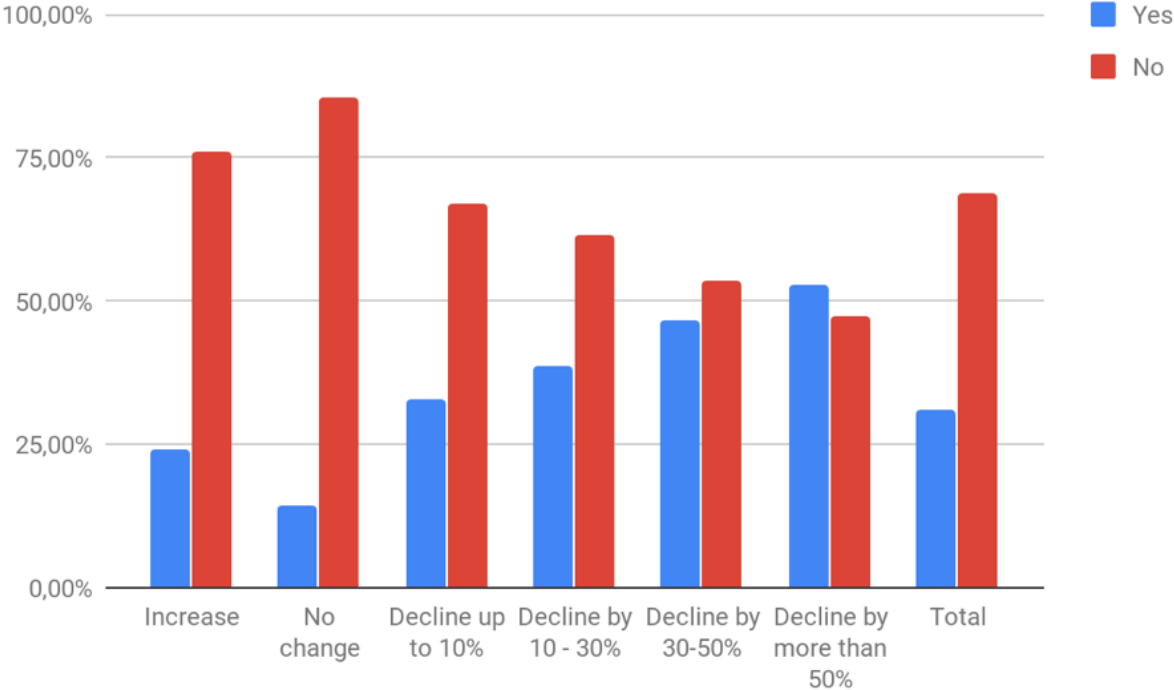
Similarly, to machine owners we analysed whether the intensity of coronavirus crisis impact affects the need for improving business liquidity via selling part of the fleet. Unfortunately, only a few respondents from contractors' sample responded to all questions of the survey so we were not able to conduct chi-square test analysis in purpose to decide whether our results are statistically significant. Therefore, we present bar charts only to provide you at least results from the current sample of respondents. It is important to note that regardless of the intensity of the coronavirus crisis impact, the most of respondents claimed that they had not sold their fleet.



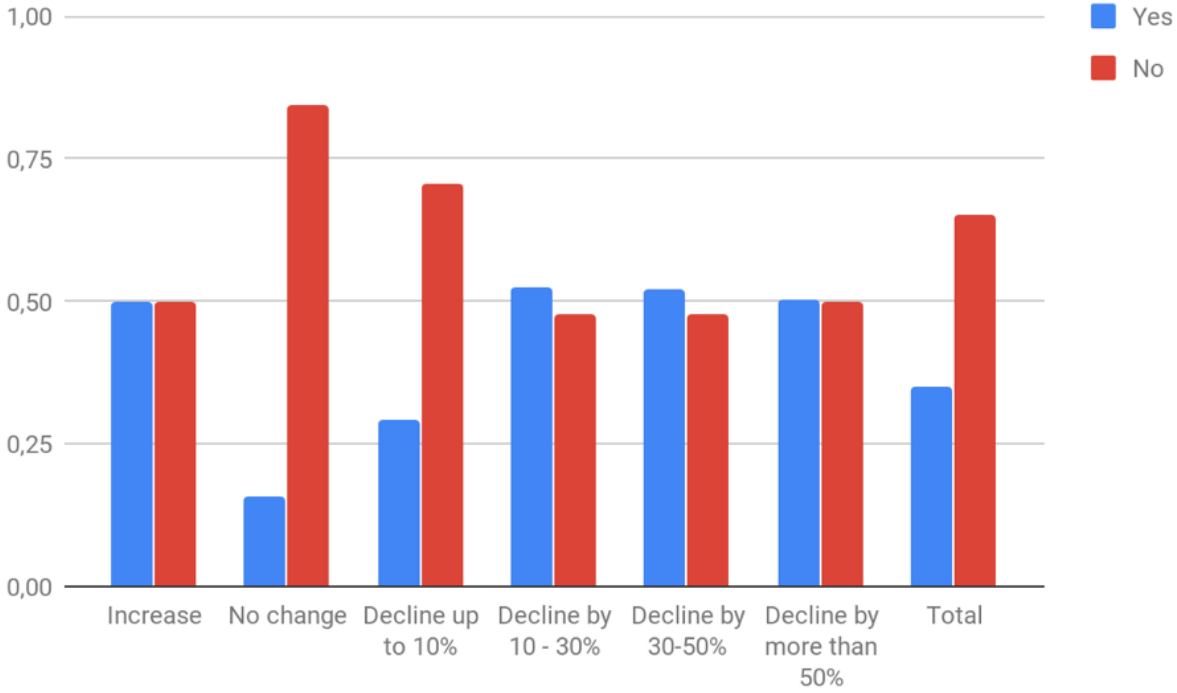
Another possible solution of the problem of violated chi-square test assumptions is to recategorize our Coronavirus crisis impact variable and focus on differences between respondents who reported increase/no change and respondents who suffered from decline. Using this approach we are free to say there is a statistically significant relationship between the intensity of the coronavirus crisis impact and the need to sell part of the fleet ( $\chi^2(4, N = 561) = 33.23, p < 0.001; V = 0.224, p < 0.001$ )



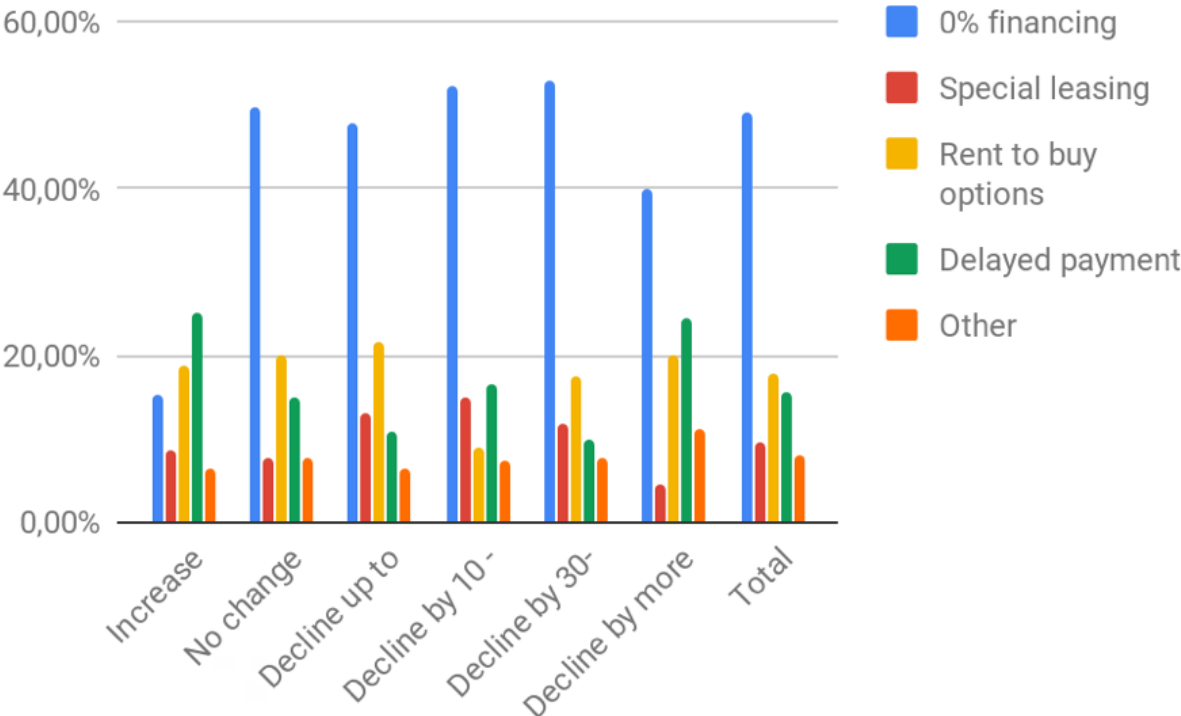
Then we focused on respondents' plans to reduce capital investments. We found a statistically significant relationship ( $\chi^2(5, N = 531) = 52.683, p < 0.001$ ) with medium effect size ( $V = 0.315, p < 0.001$ ). Contractors who suffer from more negative and intensive coronavirus crisis impact would probably reduce their capital investments.



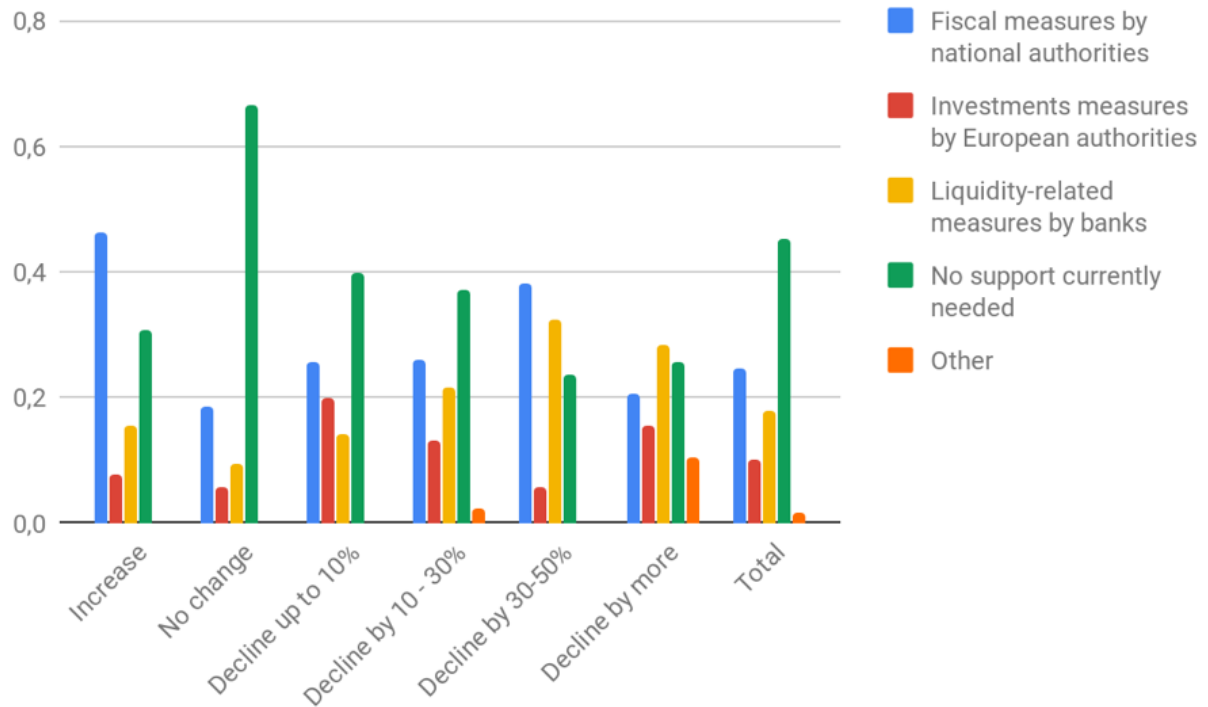
Similarly, contractors who suffer from more negative and intensive coronavirus crisis impact would probably change their mind in green equipment investments. Our results were statistically significant ( $\chi^2(5, N = 487) = 59.450, p < 0.001$ ) with medium effect size ( $V = 0.353, p < 0.001$ ).



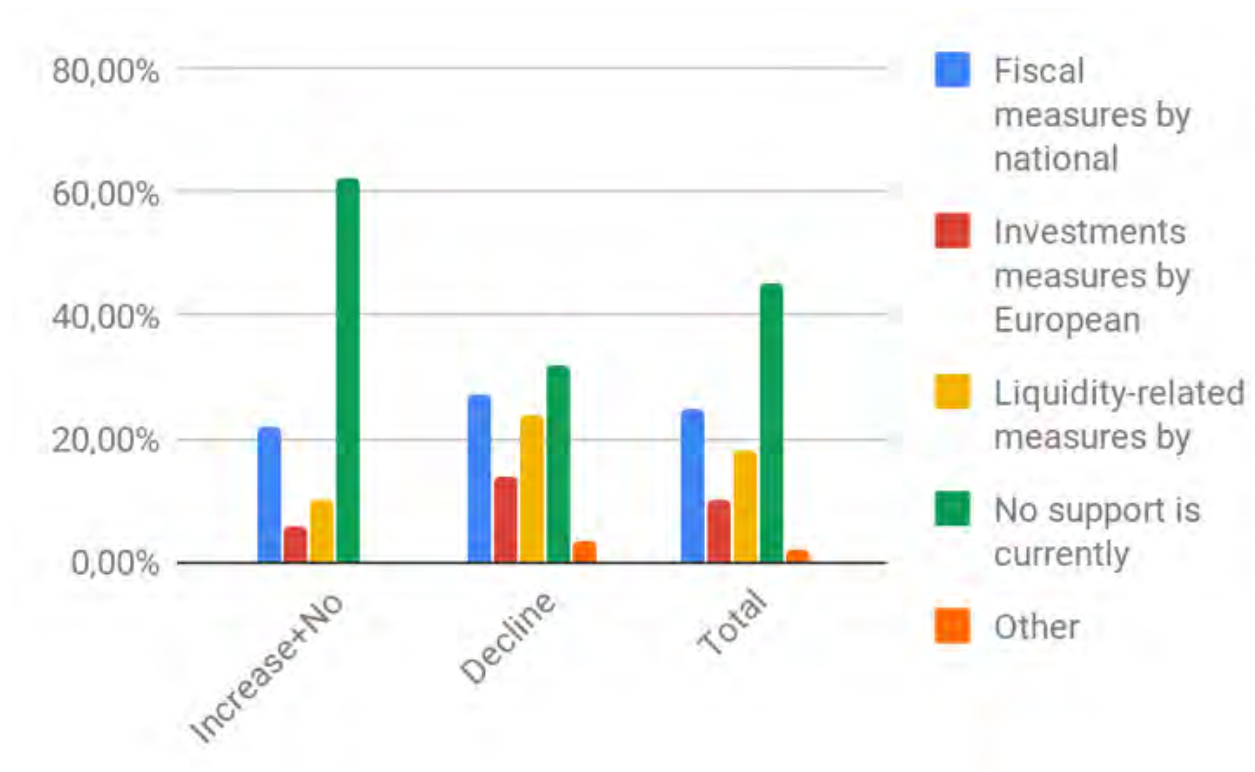
Despite the fact that we were not able to conduct chi-square test to analyse the relationship between the intensity of coronavirus crisis impact and preferred or beneficial type of support we provide you bar charts reflecting the distribution of responses in our sample of European contractors. Regardless of the intensity of the coronavirus crisis impact contractors from our sample preferred mostly 0% financing followed by delayed payments and rent to buy options. However, then we tried to re-categorise the intensity of the coronavirus crisis impact, too. We realised that the intensity of coronavirus crisis impact does not influence the preferences of support significantly ( $\chi^2(4, N = 366) = 2.55, p = 0.64$ ).



Similarly, most of respondents claimed that they did not need any support during the crisis. On the other hand, contractors suffering from decline by 30-50% claimed they would appreciate support from national authorities and respondents reporting decline by more than 50% would reckon liquidity related measures by banks.



Again, we recategorized the intensity of coronavirus crisis impact variable and conducted the chi-square test analysis providing us with information that the intensity of coronavirus impact associates with support expectations  $\chi^2(4, N = 274) = 30.22, p < 0.001; V = 0.33, p < 0.001$ .





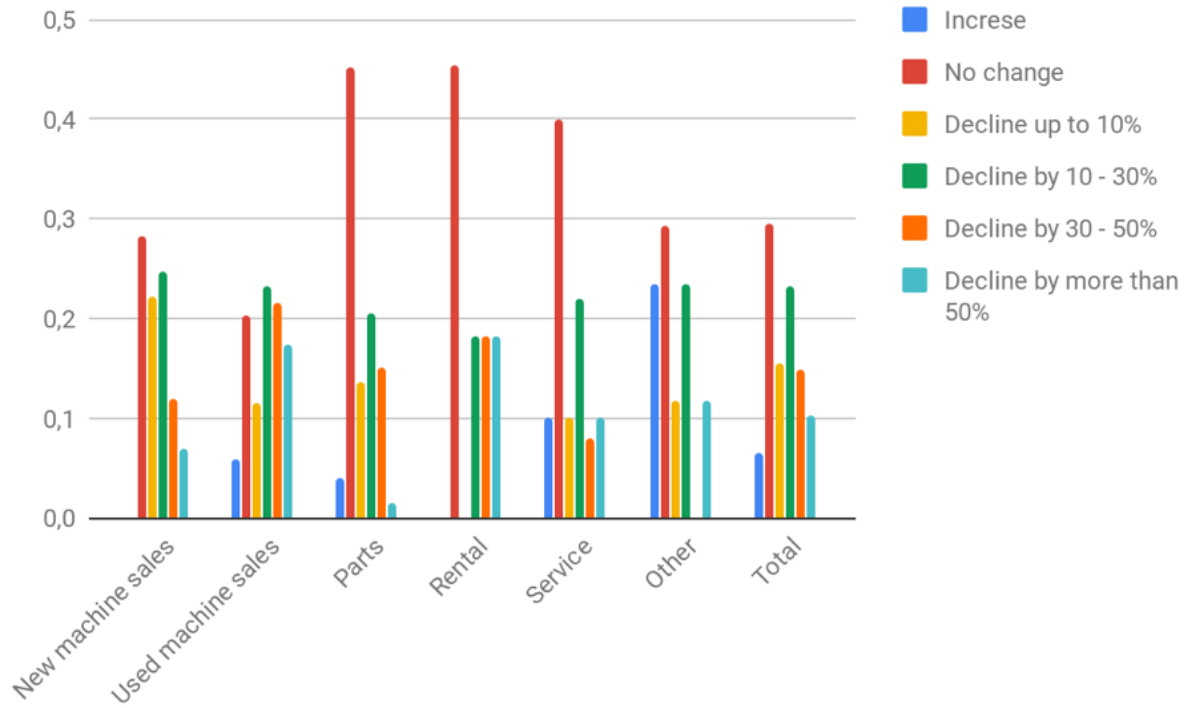
# C Dealers

Dealers' version of survey provided us with some demographic characteristics of our respondents. Therefore, we decided to explore whether the main type of business and company size in number of employees have some relationship with the intensity of coronavirus crisis impact and business strategies of our respondents, help seeking strategies and plans for the future. Then we analyzed whether there are some relationships between the intensity of coronavirus crisis impact and business behaviour of our respondents.

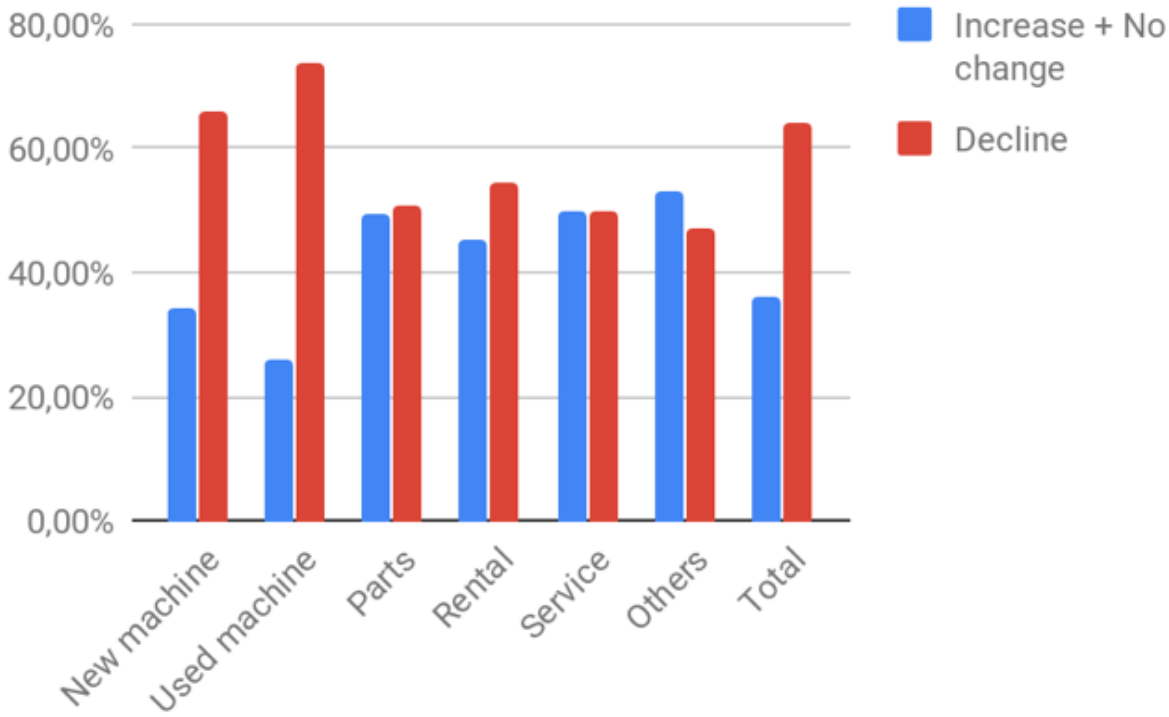
The relationships between primary type of business and the intensity of crisis impact/  
business behaviour

Firstly, we were curious about the influence of the main type of business of the dealers on coronavirus crisis consequences. Unfortunately, only a few respondents from each category/type of business responded to all questions of the survey so we were not able to conduct chi-square test analysis in purpose to decide whether our results are statistically significant. Therefore, we present bar charts only to provide you at least results from the current sample of respondents.

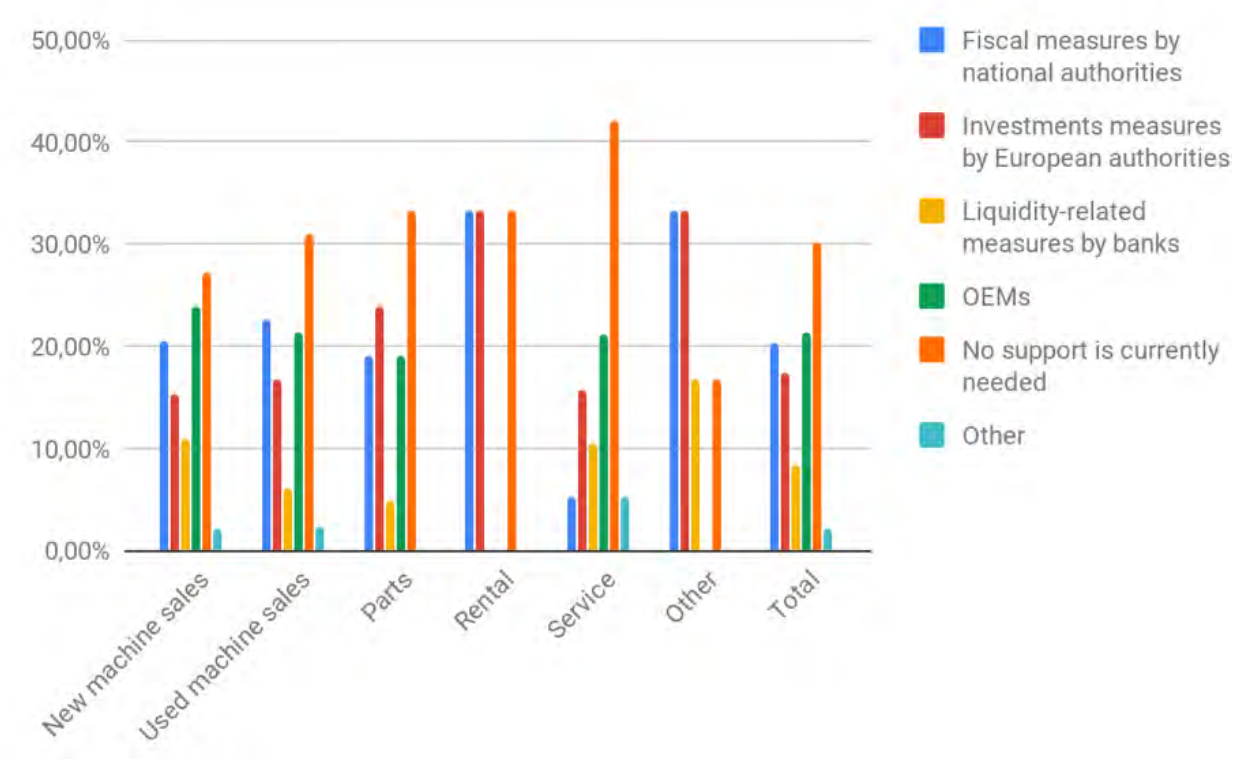
Our respondents from European dealers' sample, except for dealers who focus mainly on used machine sales, claimed that they had not been affected by the coronavirus crisis so far. This response was followed by the one claiming decline by 10 - 30% which was the most common response among dealers specialising in used machines sales.



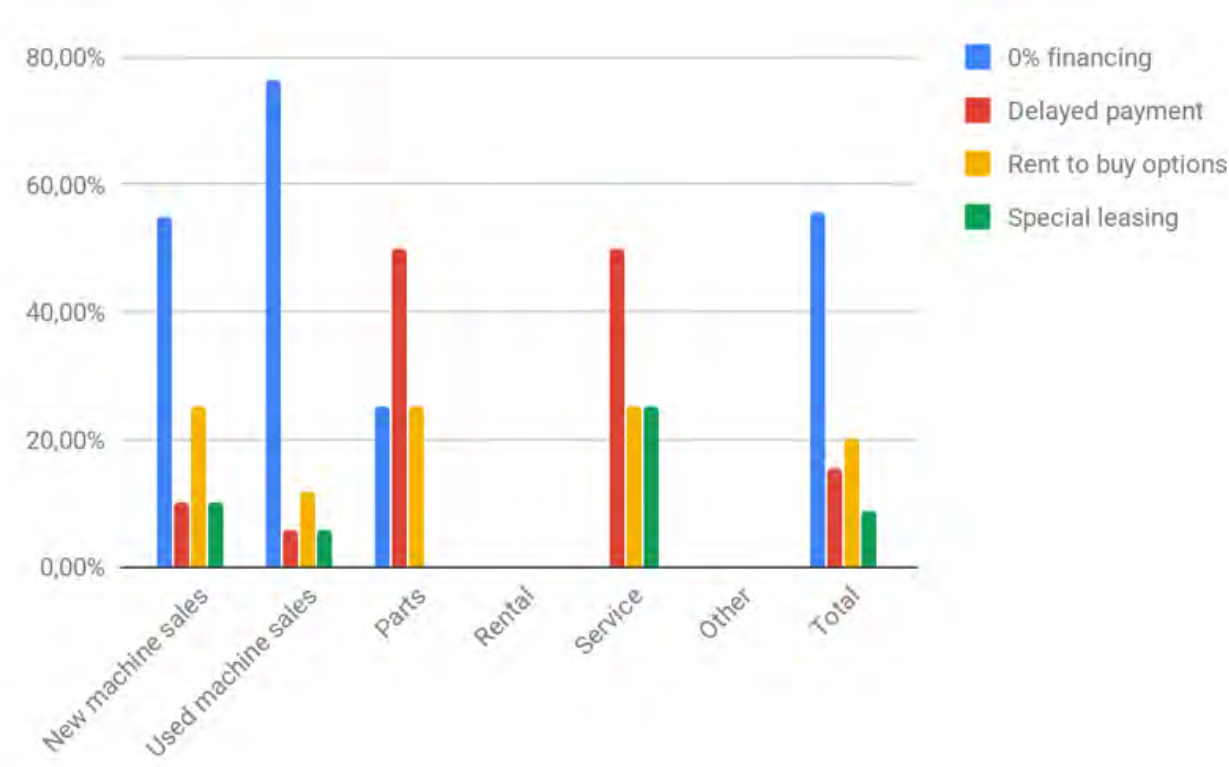
After recategorizing the intensity of the coronavirus crisis impact variable, we found statistically significant results. The primary type of business affects whether the dealers undergo decline or not:  $X^2(5, N = 525) = 19.937, p = 0.001; V = 0.195, p = 0.001$



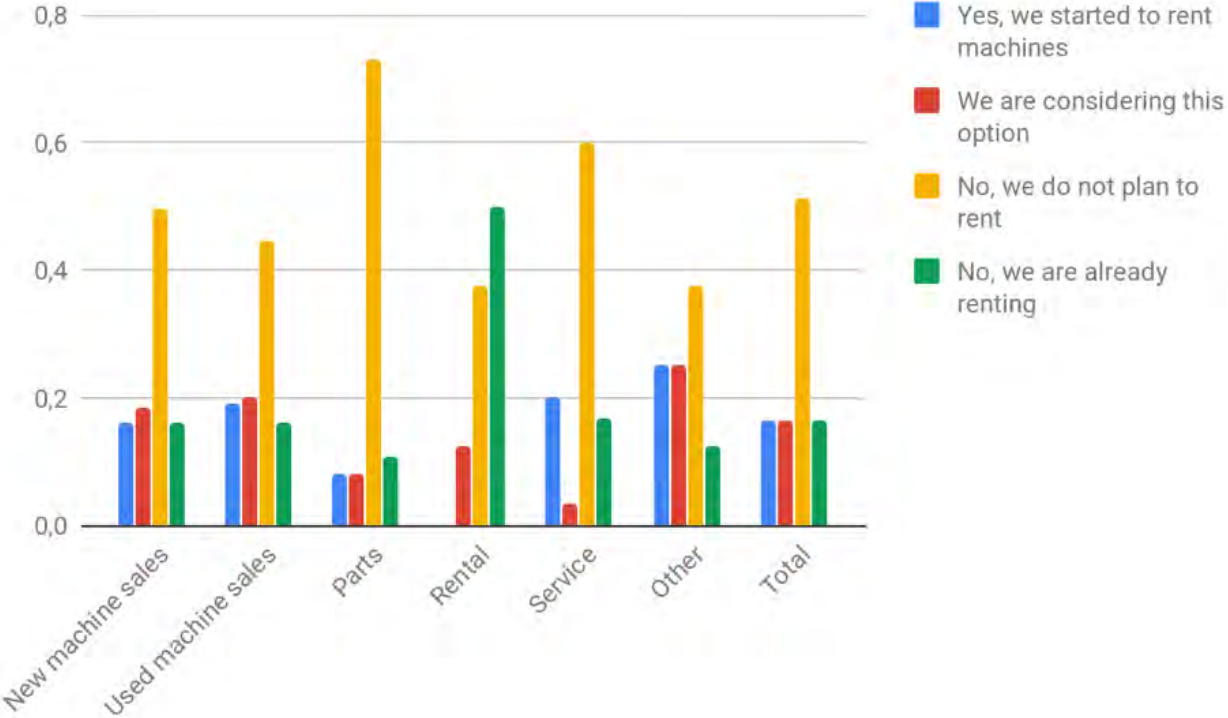
Similar to findings above, dealers from the European sample mostly claimed they did not need support while undergoing the crisis. On the other hand, the second most frequently chosen response was the one claiming support from national authorities followed by OEMs and European authorities.



Unfortunately, in the case of the utility of concrete type of support we do not have much data to provide information about all business categories of dealers. But overall, they would mainly prefer 0% financing.

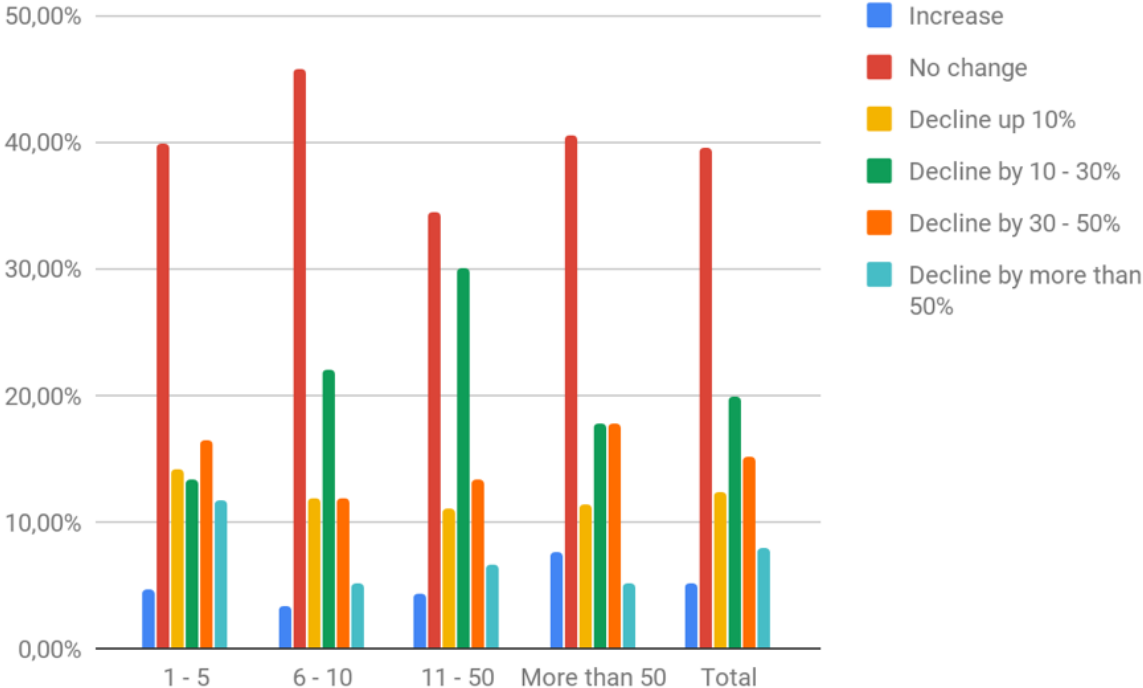


Almost all categories of dealers claimed that they did not plan to change business strategy. Only dealers specialised on renting machines naturally reported that they had been already renting before the crisis.



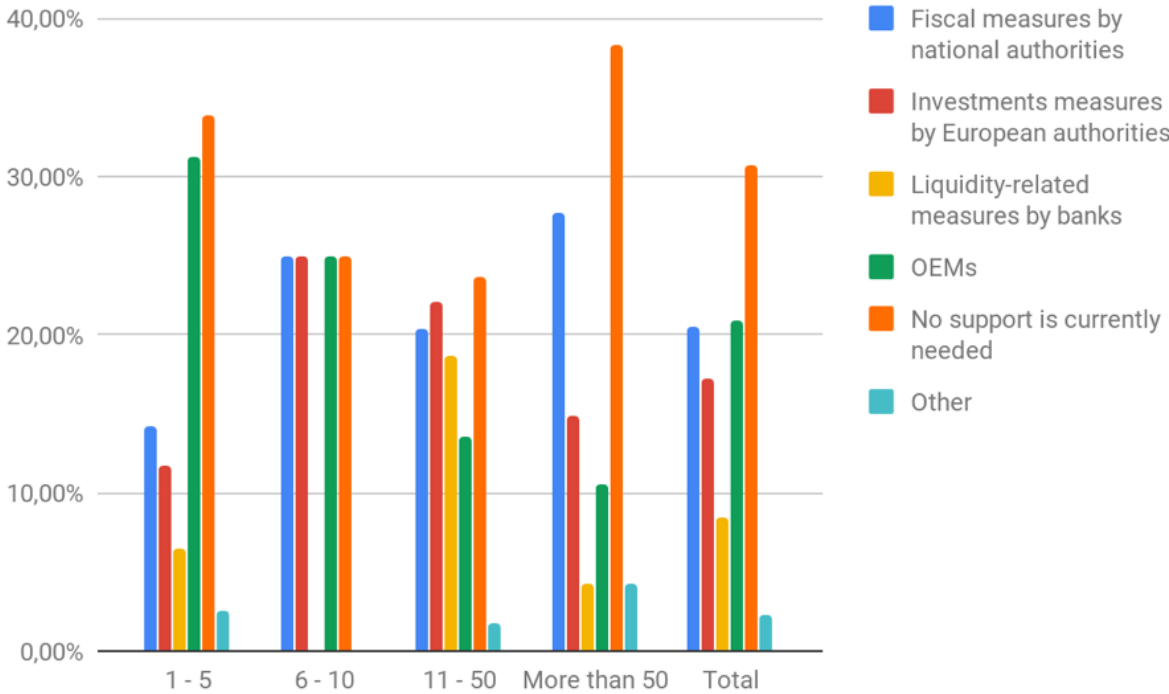
### The relationships between company size and the intensity of crisis impact/business behaviour

Similarly, we explored the potential influence of company size in the number of employees on coronavirus crisis intensity and its consequences. It seems that there is no relationship between company size in number of employees and intensity of coronavirus crisis impact ( $\chi^2(15, N = 356) = 15.886, p = 0.390$ ). According to the distribution visualised in the bar chart below, it seems that there is no distinct difference between categories.

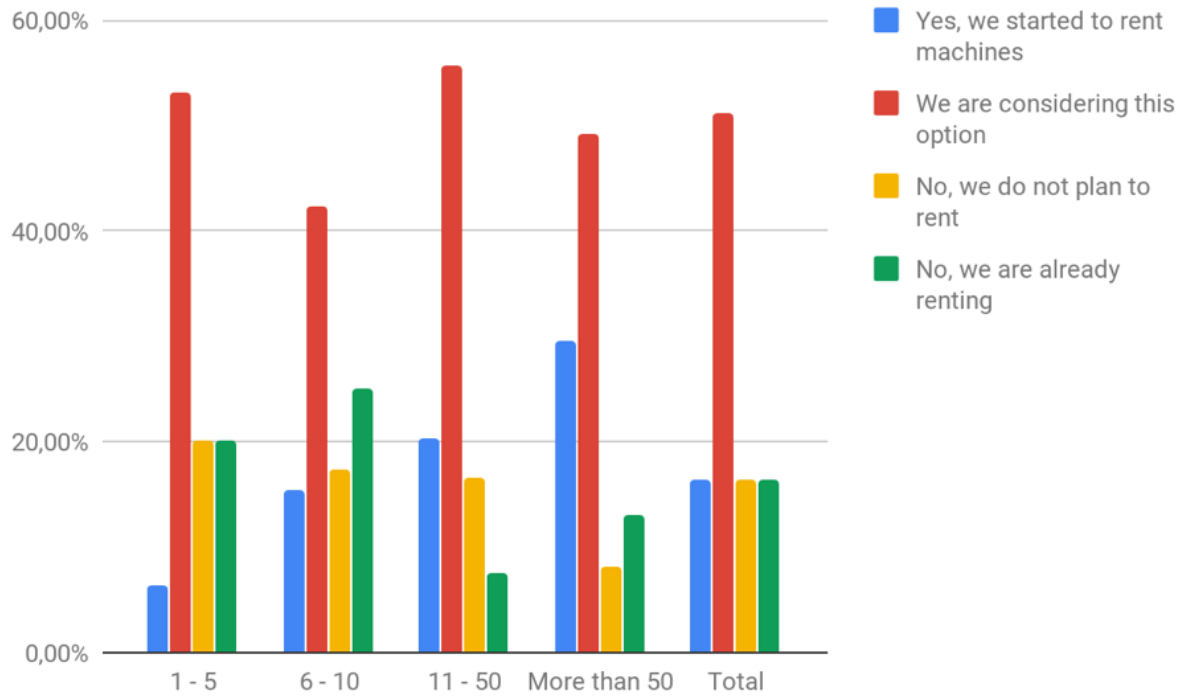


In the case of other consequences of coronavirus crisis impact and their possible relationship with the size of the company we are not able to make any clear conclusion. Despite the fact that our sample of European dealers provided us some information about its distribution according to specified conditions (e.g. company size), we are not able to generalise our results to the entire population of all European dealers.

However, it seems that regardless of their company size respondents mostly claimed that they do not need any support followed by support from OEMs and fiscal measures by national authorities. Dealers from our sample reported that in their opinion the most beneficial type of support is 0% financing. They also claimed that they are considering changing the business strategy and start renting.

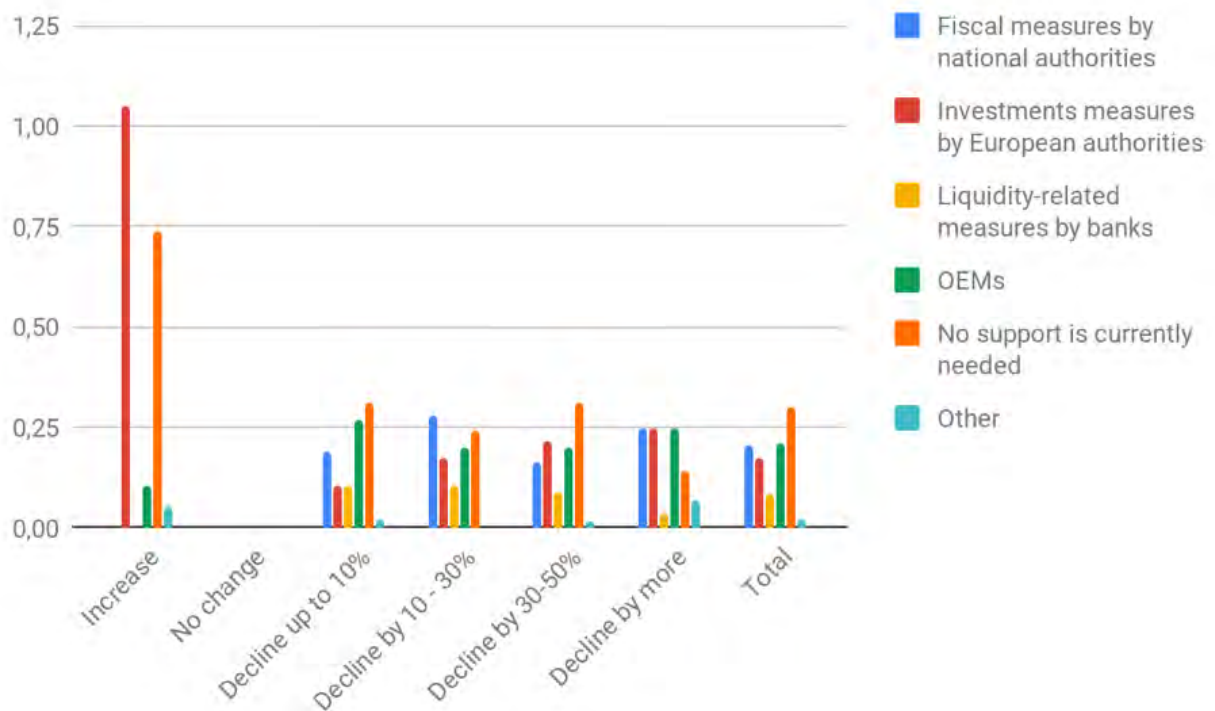


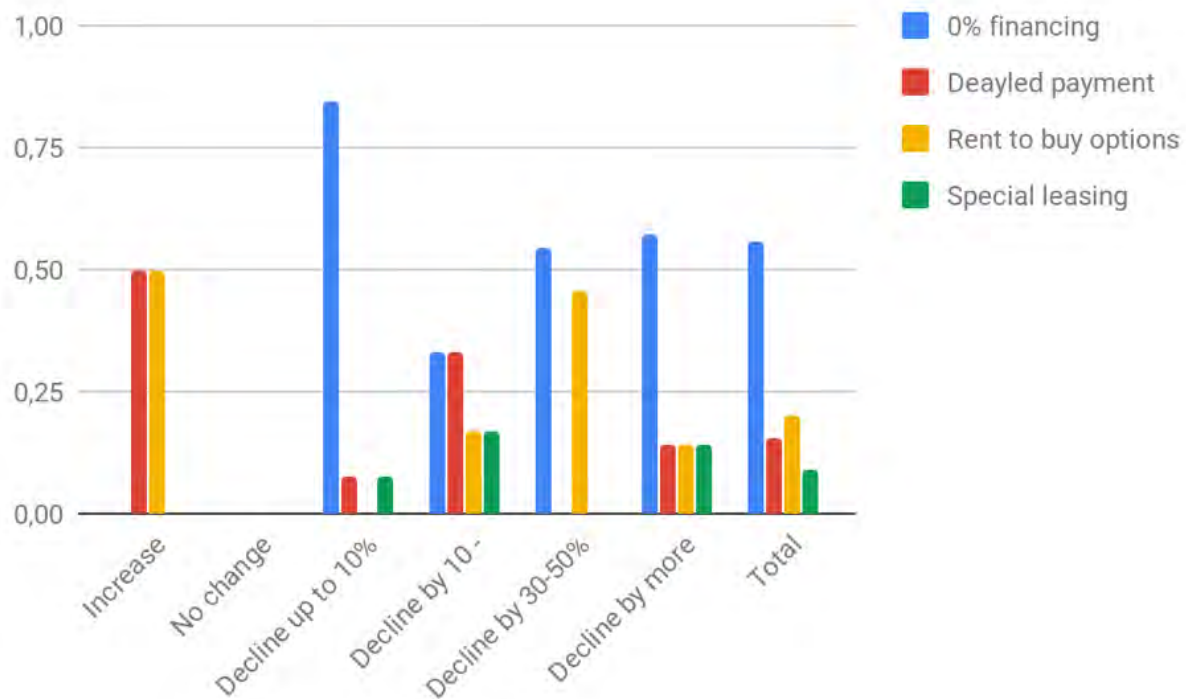




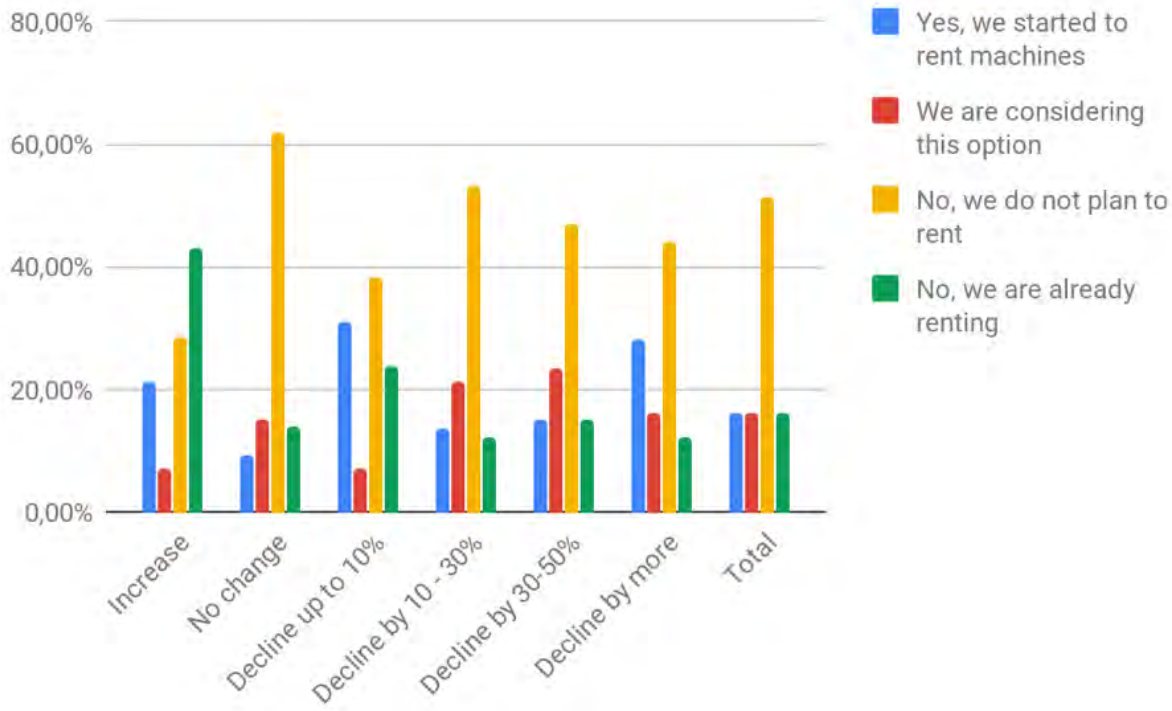
## The influence of the intensity of coronavirus crisis impact on business behaviour

After that we similarly to the previous group of respondents focused on potential relationships between intensity of coronavirus crisis impact and help-seeking strategies. Because only a few respondents answered both questions we provided only bar charts and results of our sample which won't be generalised to the population of all European dealers. The respondents mostly claimed they would appreciate support from national authorities and OEMs. Those who reported increase during the crisis period reported they would appreciate support from European authorities. Moreover, according to our respondents regardless of intensity of the coronavirus crisis impact they considered 0% financing as the most beneficial type of support followed by rent to buy options and delayed payments.

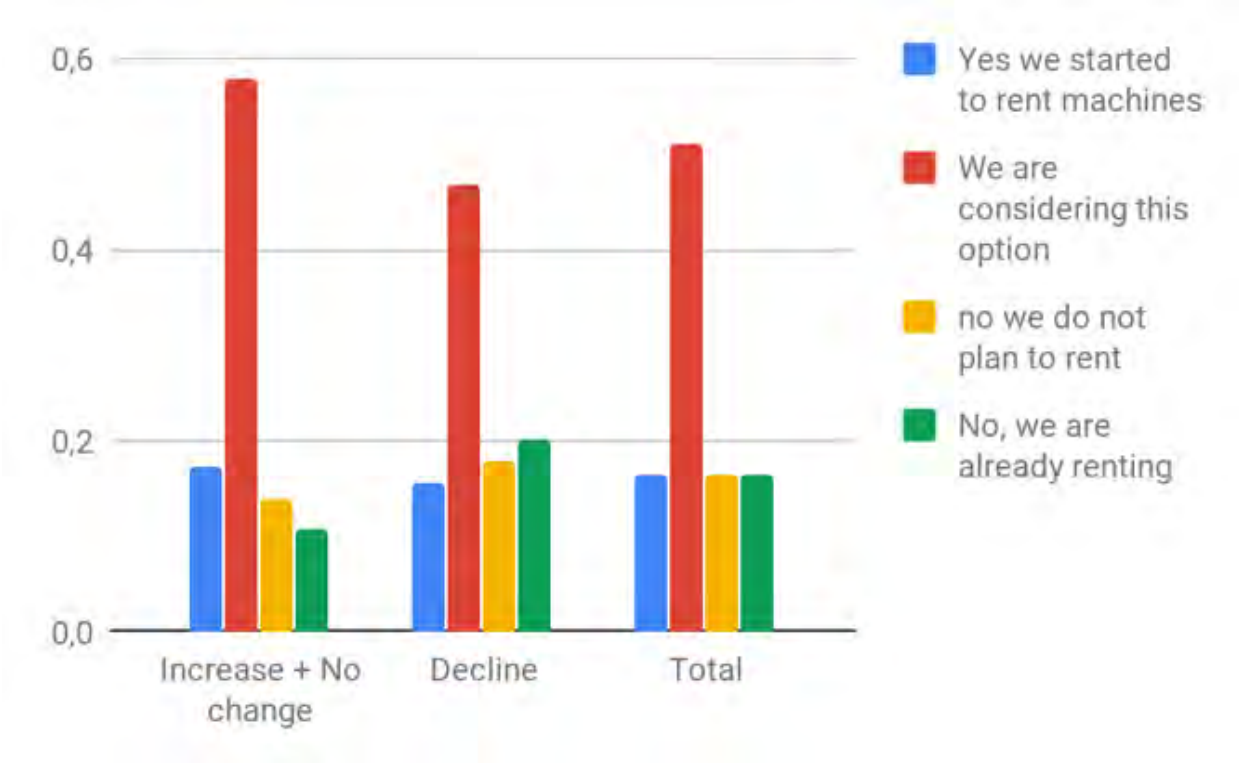




Most of the respondents did not plan to start renting. Interestingly only dealers who reported increase during the crisis period claimed they were already renting.



Unfortunately, we were not able to test this model and needed to re-categorize it. On the other hand, after this modification we found a marginally statistically significant relationship between the coronavirus crisis impact and need to change business strategy ( $X^2(3, N = 301) = 6.339, p = 0.096$ ).

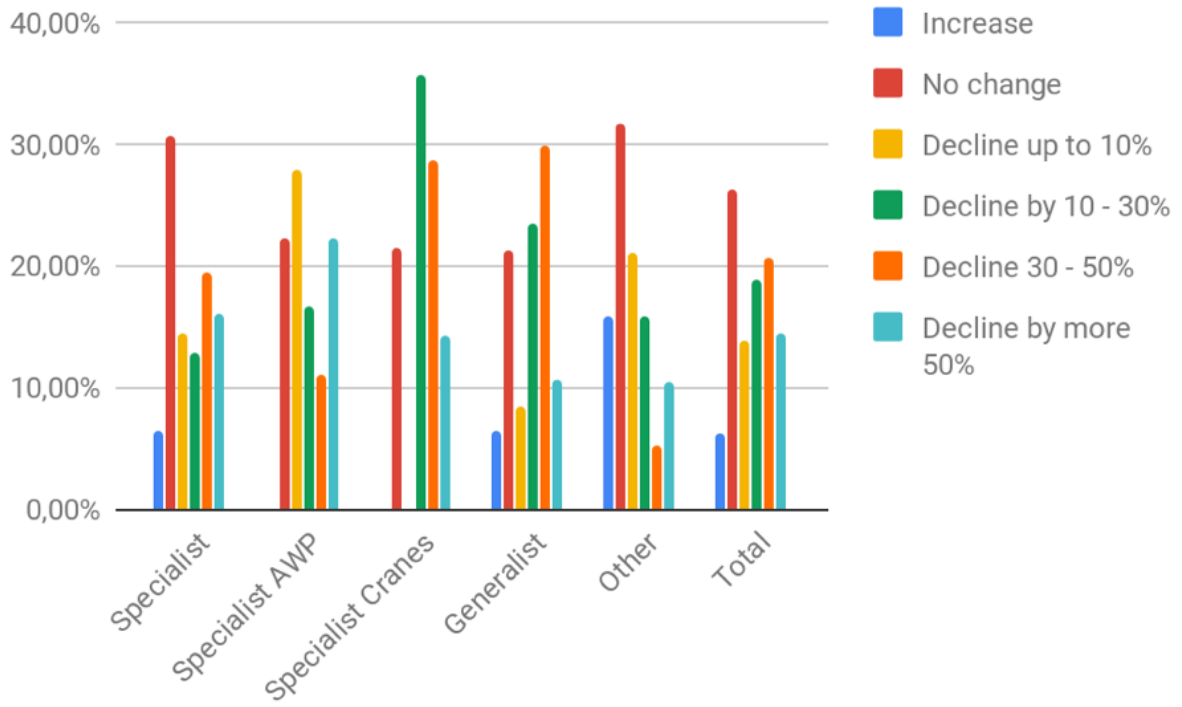


# D Equipment rental companies

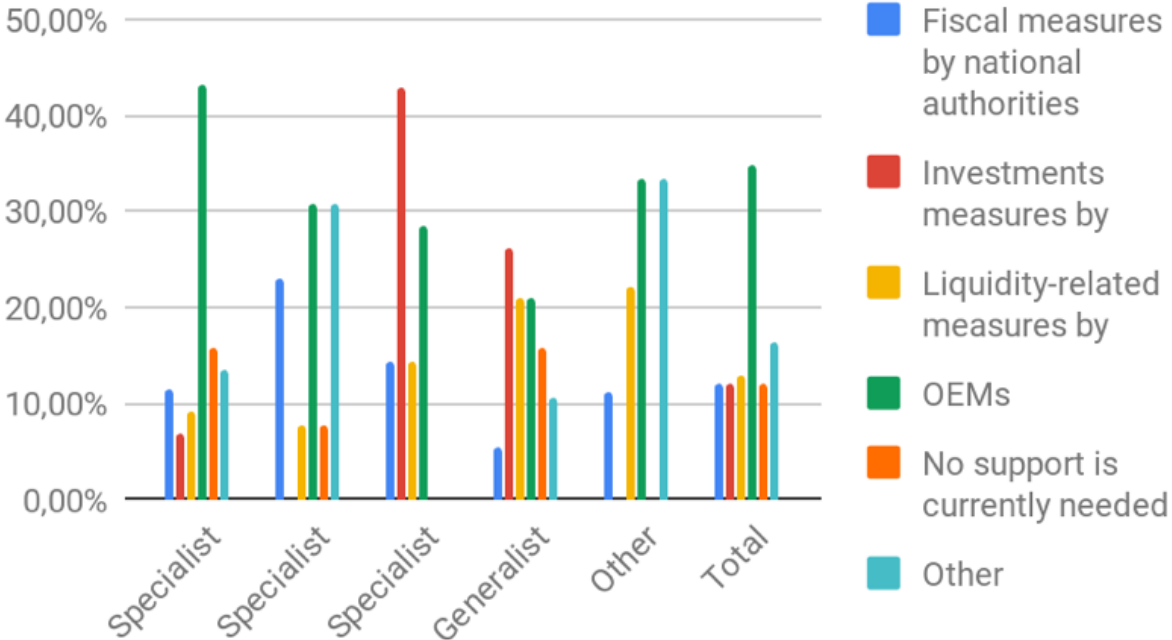
## Relationships between type of company and the intensity of crisis impact/business behaviour

Equipment rental companies' version of survey provided us with some demographic characteristics of our respondents, too. Consequently, we decided to explore whether the type of rental company has a relationship with the intensity of coronavirus crisis impact and business strategies of our respondents, help seeking strategies and future business plans. Unfortunately, most of our analyses did not allow us to use statistical testing because of the small sample size of rental companies' survey version. Therefore, we present mostly bar charts visualising results from our sample. On the other hand, some of the results are generalisable and we will discuss them below.

As mentioned above we are not able to make a clear conclusion about the relationship between type of rental company and the intensity of the coronavirus crisis impact until we recategorize the coronavirus crisis impact variable. However according to the chart, the most of respondents and especially specialist construction claimed they did not see any change. On the other hand, specialist AWP mostly reported decline up to 10%, specialist cranes declined by 10 - 30% followed by decline by 30 - 50% and the most of generalists claimed that they had suffered from decline by 30 - 50% .

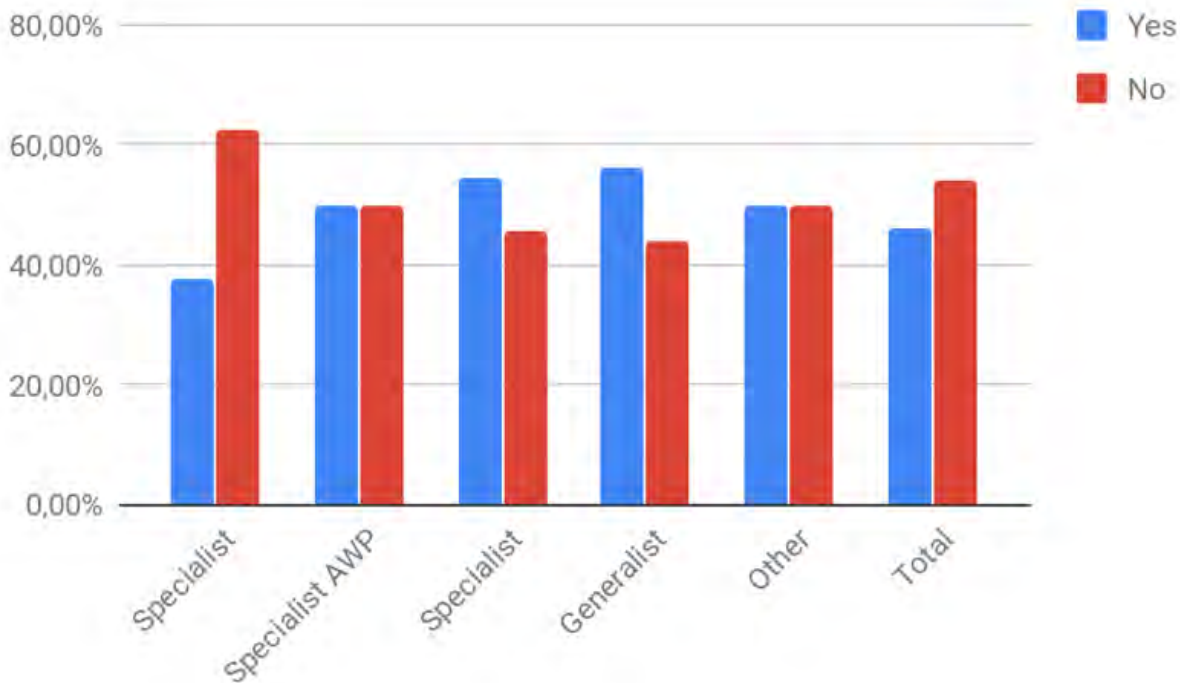


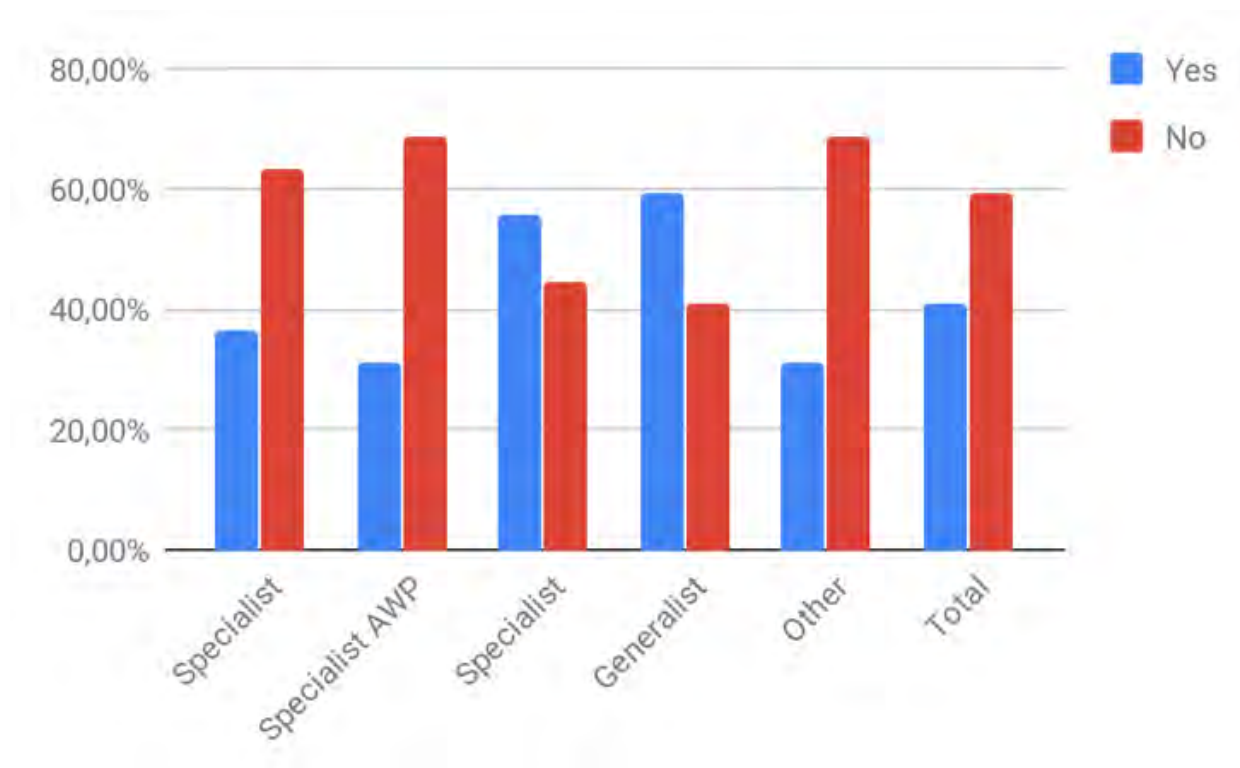
Our respondents from equipment rental companies mostly prefer support from OEMs however Specialists and generalists would rather appreciate support from European authorities. Regardless of the type of rental company the most beneficial support was 0% financing according to our respondents.





Surprisingly, we discovered that there is no difference between types of rental company and need to reduce capital investments ( $\chi^2(4, N = 124) = 3.165, p = 0.531$ ). Based on these and previous results the need to reduce capital investments is equally distributed in the population of European rental companies regardless of the type of rental company. Similarly, regardless of the type of rental company ( $\chi^2(4, N = 115) = 5.455, p = 0.244$ ) the willingness to change investment to green equipment is equally distributed in the population of European rental companies.

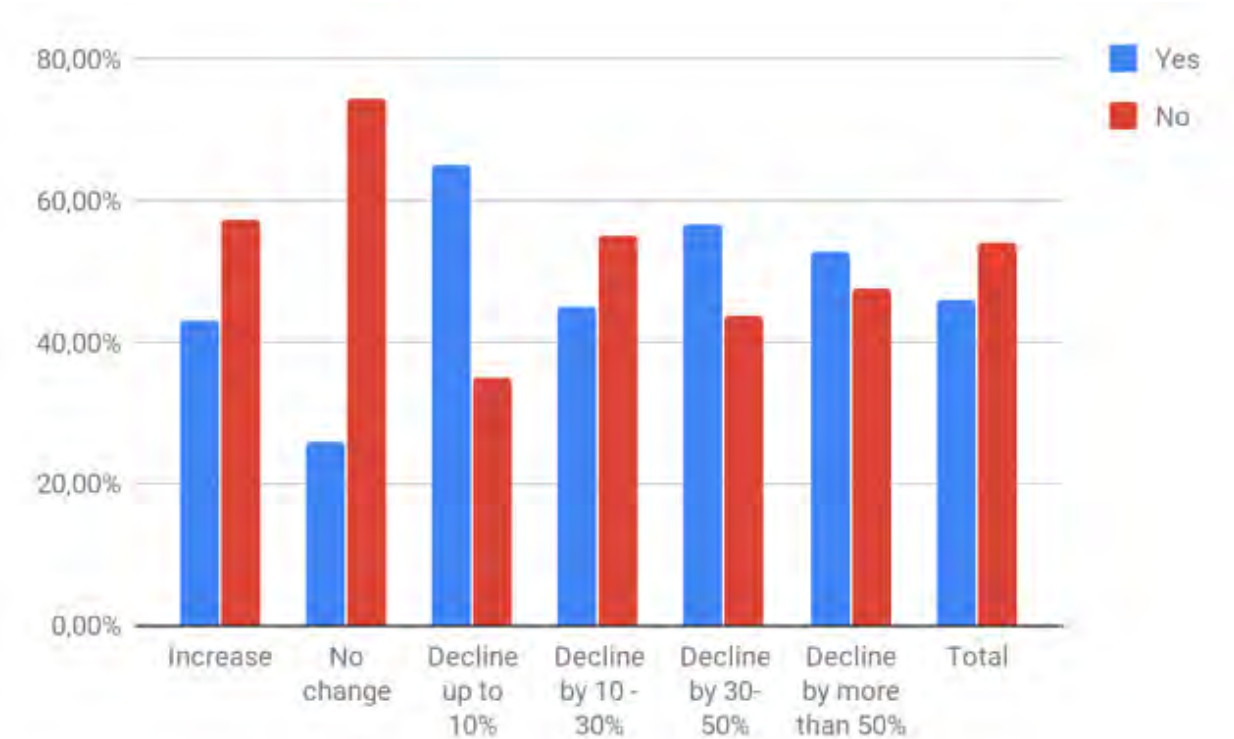




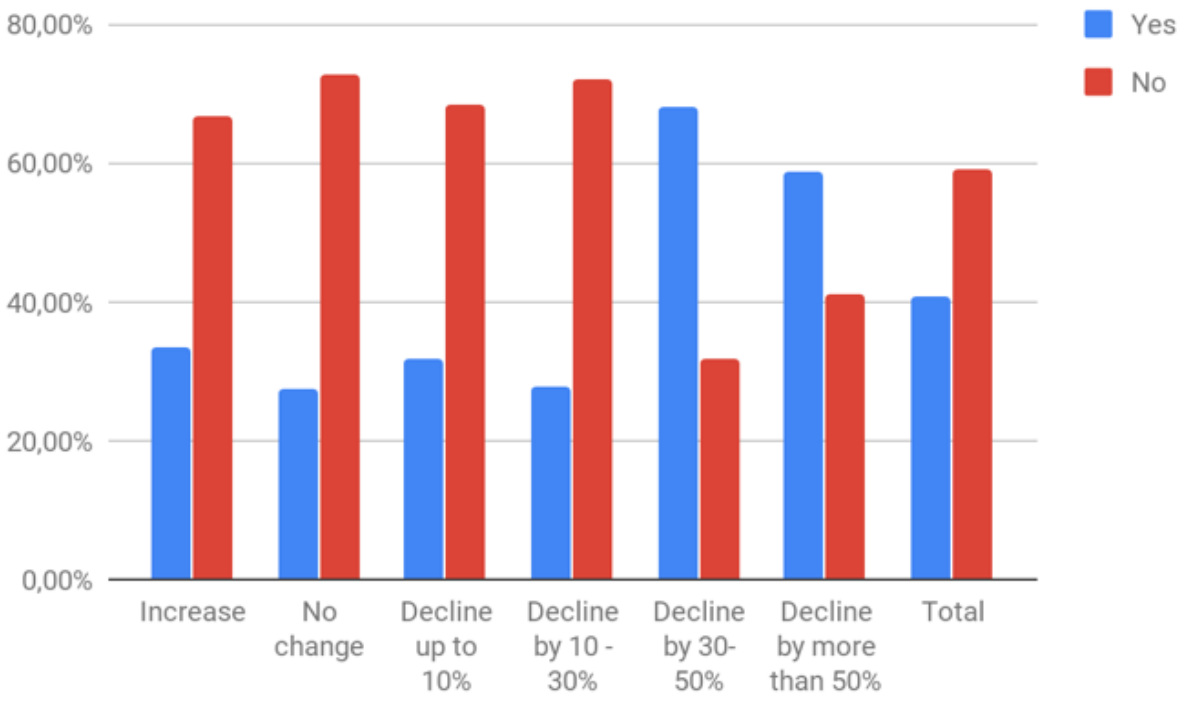
It is possible that regardless of the specialisation European equipment rental companies did not have to sell their fleet to improve liquidity. We decided to omit the rest of analyzed questions for rental companies as the completion rate was very low and results would be biased.

### Relationships between the impact of COVID and following reactions/strategies

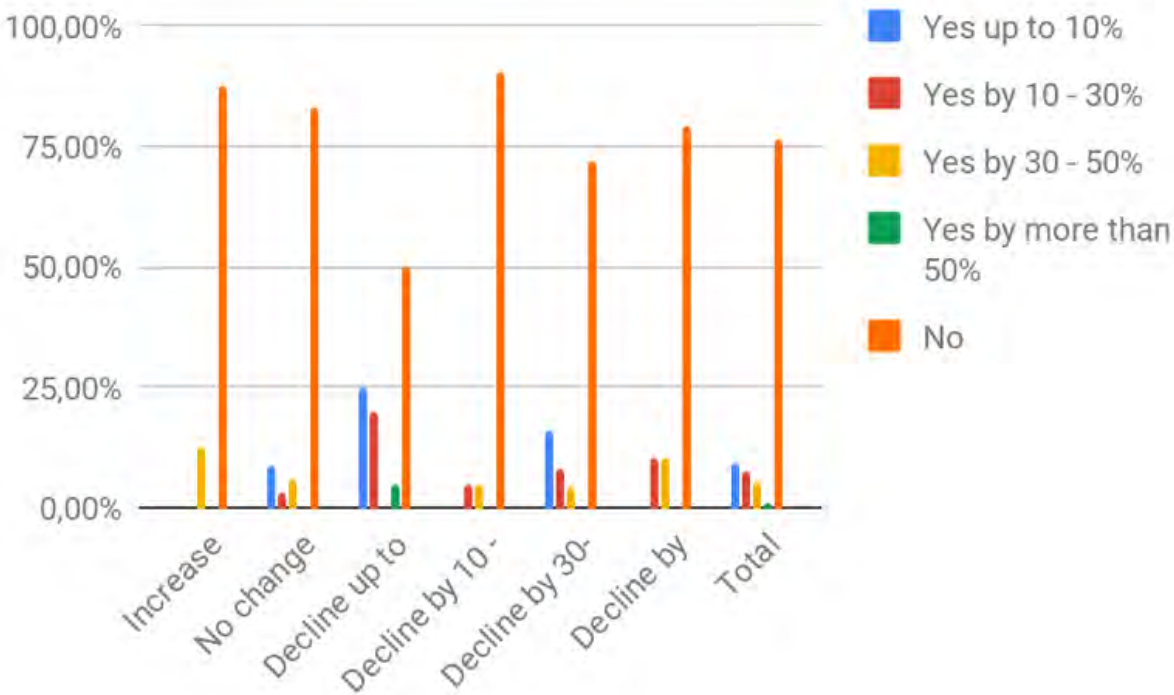
Then we explored whether we found relationships between the intensity of coronavirus crisis impact and business behaviour of European rental companies. Interestingly we realized that there is only marginally significant relationship between the intensity of coronavirus crisis impact and need to reduce capital investments  $\chi^2(5, N = 124) = 10.103, p = 0.072 (V = 0.285, p = 0.072)$  indicating smaller probability of generalisability to the entire European equipment rental companies population.

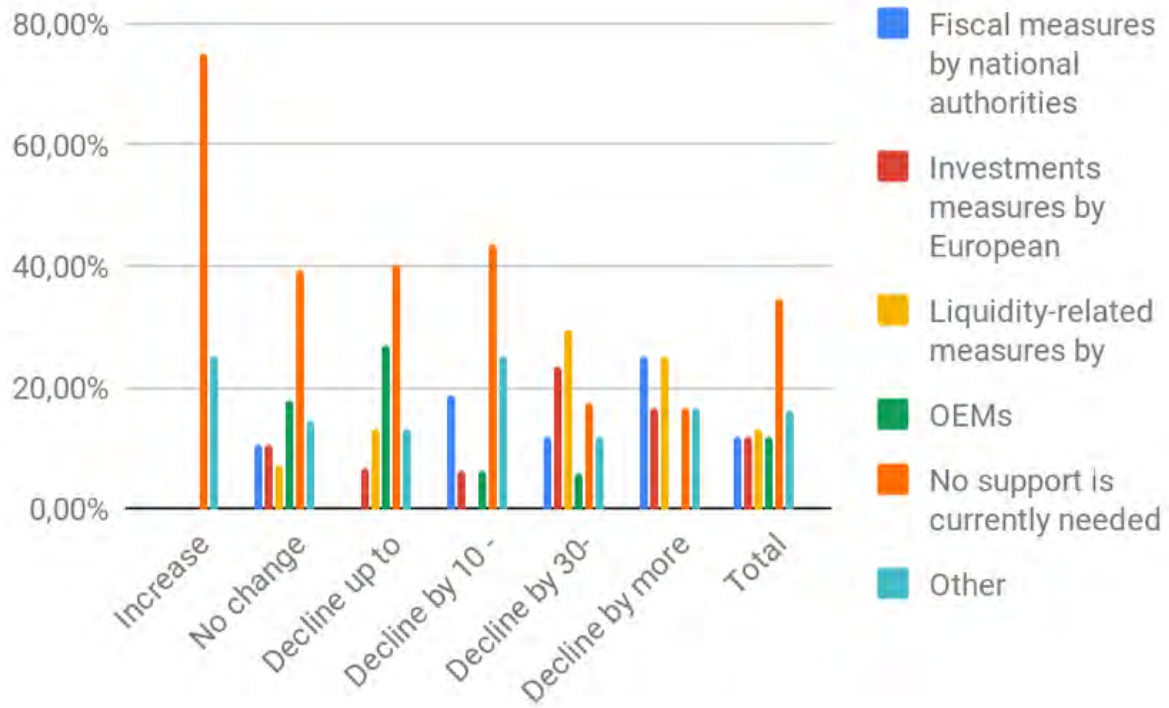


Similarly for the relationship between the intensity of coronavirus crisis impact and change in investment to green equipment  $\chi^2(5, N = 115) = 13.679, p = 0.018$  ( $V = 0.345, p = 0.018$ ), despite the fact that the results show significant relationship between the intensity of coronavirus crisis impact and change in investment the probability of generalisability is smaller.



In the case of the need to sell part of the fleet and help-seeking strategies we are able to provide bar charts only again. On the other hand, they come from only a small sample, so we do not want to make any conclusions from them.





# Conclusion

Despite our expectation that the coronavirus crisis hit the heavy machinery industry hard our results surprisingly provided us with information against this claim. The most of our respondents regardless of their field of business reported that they had not seen any change of their business during the crisis. On the other hand, we found there are some differences in the distribution of the intensity of changes between respondents, depending on their field of scope and region of origin.

Somewhat interestingly we discovered that the Scandinavian countries were affected less compared to the rest of the Europe. The mostly hit countries were on the other hand South European countries and South-West counties. We consider these findings not surprising because these countries were found to be the most hit European countries in general. However, we wonder whether the political-economical history or other national specificities may influence the results in some of the Eastern and Central European countries.

Furthermore, based on statistical procedures used in the research, we have been able to prove that these results apply to the European population. Similarly, we discovered that depending on the field of business respondents prefer different types of support - for example most of European contractors and machine owners would appreciate delayed payments. On the other hand, dealers and equipment rental companies consider 0% financing as the most beneficial. Moreover, most of our frequency analyses and goodness of fit testing provided representative results, too. Therefore, we are free to recommend some results from our research as basic information for interventions settings or further research.

Unfortunately, because of the small completion rate we were not able to conduct chi-square tests of independence to deeply explore possible relationships between characteristics of respondents from particular fields of business. According to this limitation, we would like to recommend a slightly altered methodology in further research.

