SMEs revenue change during the Covid-19 crisis

<u>**Key Points**</u>

<u>There are some recommendations for all SMEs and recommendations from our analyses for firms with positive revenue or decline in revenues.</u>

1. Having an innovative strategy before the crisis is good for all SMEs. However, if you are performing well (positive revenue), do not change your existing innovation strategy or start a new innovation project.

2. If you experience revenue decline, it's better to focus on the home market rather than export.

3. Help packages are better utilized by firms that are performing well. They likely have a better understanding of where to deploy the financial resources. However, firms that are not performing well may be unable to utilize the financial assistance in an efficient manner. Therefore, they will benefit from consultation from the public sector on how to improve their management of the crisis.

4. In SMEs that are performing well, it is best to avoid drastic changes in leadership or how top management communicates with employees. We find that no change in leadership was a significant signal for growth in revenue.

5. SMEs located in the Midtjylland region experienced a less severe drop in revenue compared to SMEs located in Hovedstaden (the capital region). This might be due to the ecosystem present in such regions for small enterprises.

6. Firms that laid off employees fared worse than their counterparts. This was evident for SMEs experiencing growth or decline in revenue.

<u>**Analyses**</u>

In order to gain a better understanding of factors impacting revenue change in the firms we surveyed, we divided the firms into three groups based on the direction of change as reported by the respondents: 1) firms with a positive revenue change, 2) firms with a negative revenue change, and 3) firms with no revenue change. We find that around 230 firms experienced a positive change in revenue, approximately 130 firms saw a negative change in revenue, and 115 firms saw no significant change in revenue.[1]

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[1] 581 firms were excluded from this analysis because they were missing key variables like revenue change and/or other key variables deployed in the regression model.

Distribution of firms in the data

Source: SMV Project
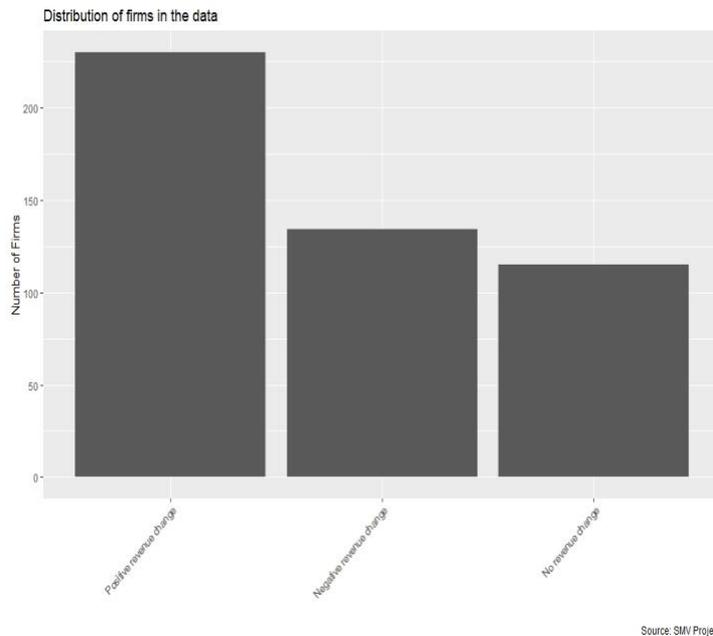
The aim of this project is to examine all possible factors that might aid or impede firms from improving their revenue throughout the Covid crisis. In order to achieve this, we included all possible factors that might affect firm revenue positively. Our analysis considered variables concerning the size, employment structure, and organization design, as well as location and the industries of SMEs, that might impact change in revenue of firms during the crisis[2]. Below, we discuss the variables that acted as significant predictors of change in revenue of the surveyed firms during the Covid-19 crisis.
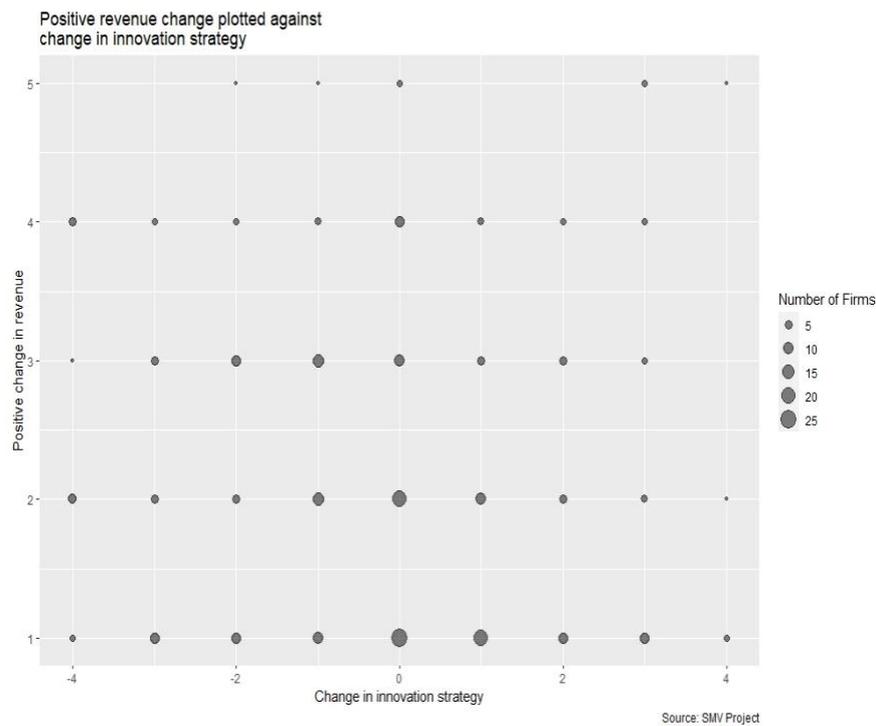
Positive revenue growth sub-sample analyses

Among the SMEs to have a positive change in revenue during the two rounds of surveys, firms that changed their strategic innovation process experienced less growth in revenue. Furthermore, employee layoffs negatively impacted SMEs that experienced growth in revenue. Among the SMEs that did well from the perspective of revenue growth, firms that laid-off employees fared worse than their counterparts. The scatter plot below roughly indicates the number of firms in the sample that responded with change in their innovation strategy and change in revenue. In addition, industrial sectors that entail long-term projects (e.g., construction and manufacturing, trade and repair of vehicles) fared worse than their

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[2] We also performed VIF (variance inflation factor) tests to make sure that there were no major issues with multi-collinearity. The VIF for all the models was less than 5.

counterparts in accommodation & food services industry. Another finding that might seem obvious but is nonetheless important to highlight, is that SMEs receiving help packages from the government performed better in comparison to other firms in the sub-sample of SMEs experiencing positive growth during the Covid crisis.


And finally, another interesting result from our analyses is that SMEs who reported no change in leadership communication experienced greater growth compared to others in the positive revenue sub-sample. Although the box plot below shows that were a greater number of companies that indicated no leadership change during the crisis, there is no significant difference in the distribution of the two categories of firms.

Positive revenue change plotted against leadership change in April

Source: SMV Project
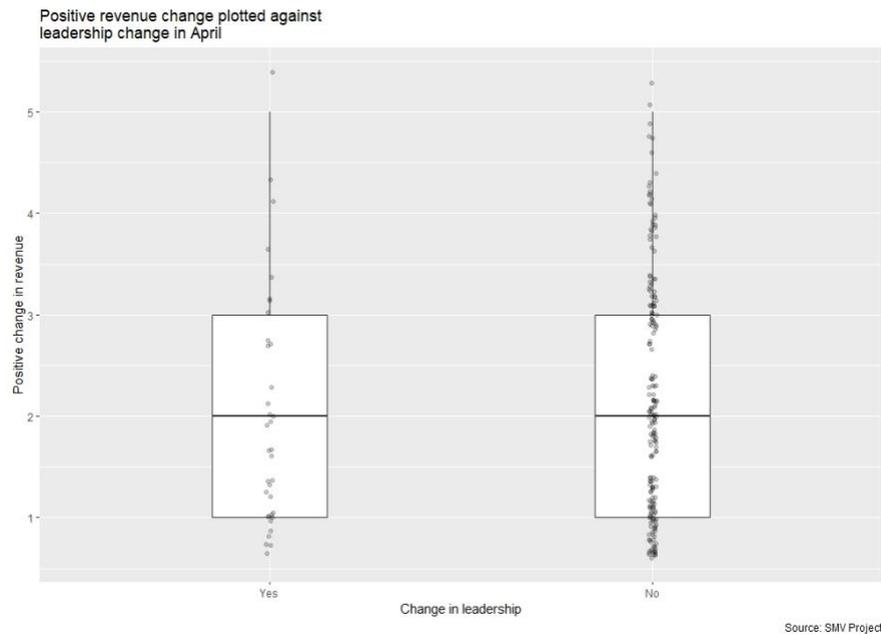
Revenue decline (negative revenue growth) sub-sample analyses

We conducted a similar analysis to understand predictors of revenue loss in firms during the Covid-19 crisis. The three key factors that explained negative change in revenue were 1) employee layoffs. As expected, firms that laid-off employees experienced a much more severe drop in revenue as compared to their counterparts who also did not fare well. 2) location characteristics. One region that stood out in the analyses of negative revenue is Midtjylland. SMEs located in the Midtjylland region experienced a less severe drop in revenue compared to SMEs located in the capital region (hovedstadsregion). 3) exportation of goods. There is evidence that firms that did not export their products were less likely to experience a decline in revenue compared to other SMEs in the sub-sample. In other words, among SMEs not performing well, those that paid greater attention to overseas markets experienced a greater decline in revenue. The box plot below shows a higher concentration for firms that responded with a 'No' to the question of exporting their products outside Denmark.

In addition, we wanted to examine the policy consequences of providing help packages to SMEs within different regions across Denmark. We find some evidence that SMEs that received help in the Nordjylland and Syddanmark regions did worse than those who did not receive government support and were located Nordjylland or Syddanmark, as well as those that received help but were not located in either of these two regions. In essence, SMEs that were doing poorly in the Nordjylland and Syddanmark regions fared worse after obtaining help packages.

Negative revenue change plotted against frim being exporter

Source: SMV Project
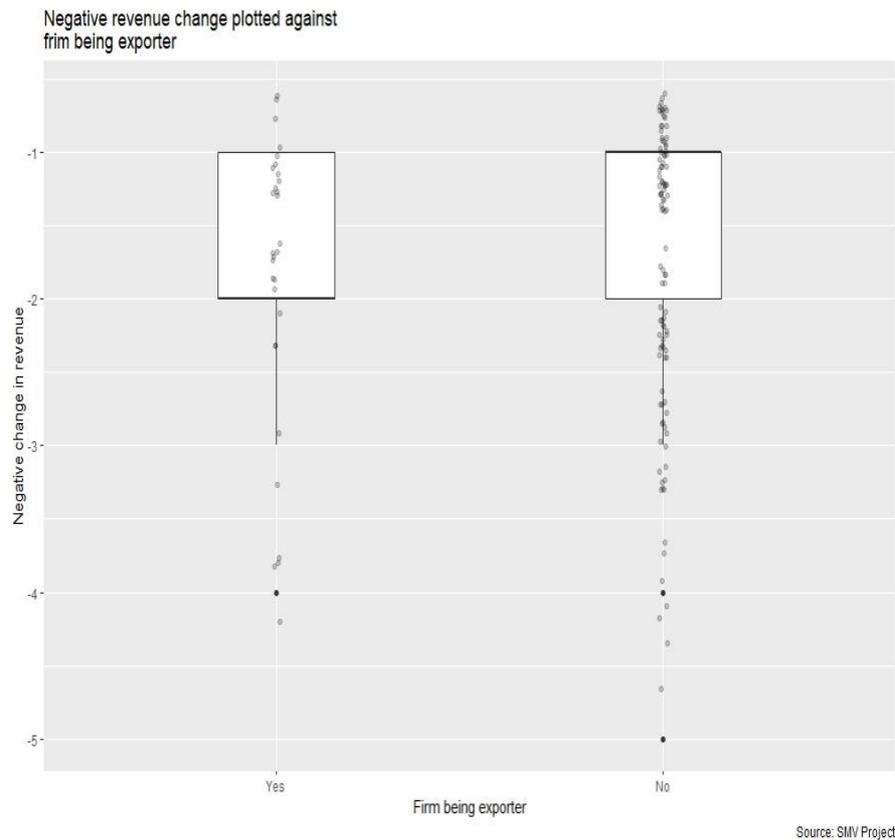
Discussion

The analysis above presents some key factors associated with a change in revenue during the Covid crisis. Change in revenue is our key dependent variable and is derived by subtracting revenue from two rounds of survey. Additionally, some of our explanatory variables, such as help packages, are taken from the first round of survey. Nonetheless, it should be noted that we cannot necessarily claim causality in our arguments.

Our results provide a clearer idea about the possible factors affecting revenue, allowing us to speculate how and why these variables significantly affect revenue either positively or negatively. SMEs that laid-off employees likely did so in response to decreasing demand, which resulted in a reduction in revenue. Although we cannot say with certainty, it is possible that laying off permanent employees would cause disruption, which may in turn reduce revenue of SMEs. Instead of firing employees, SMEs could try to use flexible employment contracts that might allow them to keep their personnel gainfully employed part time.

SMEs that are performing well should be wary of making drastic changes in their innovation strategy and embark on innovation projects during the Covid crisis. If they have positive revenue growth, it is advised to focus instead on catering to their existing client base. Also, it should be noted that we have no information on how these SMEs performed after the crisis abated somewhat in 2021. Our research also shows that help packages have improved growth for firms that were already on a growth trajectory. We speculate that these growing SMEs knew how to deploy resources more efficiently compared to SMEs that experienced a decline in revenue. On the other hand, firms that were performing poorly were unable to utilize the help package efficiently, resulting in a further decline in revenue. Therefore, one policy suggestion is to first examine the growth trajectory of SMEs, as those that are losing revenue may require consultation to optimally use help packages provided by the government. Interestingly, firms that did not experience a change in leadership performed better than firms that experienced a change in leadership in the positive revenue growth sub-sample. We speculate that change in leadership affects firm strategy and performance in the long term, and it is therefore difficult to evaluate the impact of a change in leadership within a few months.

Another interesting finding from our analyses is that firms that did not export goods were less likely than their counterparts in the revenue decline sub-sample to experience a drop in revenues. We can speculate that SMEs that did not export goods were less likely to experience a negative change in revenue as compared to SMEs heavily reliant on overseas clients due to Denmark's comparatively effective handling of the crisis in comparison to other major overseas markets. Another possibility is that the Covid crisis more adversely affected export-oriented companies than companies primarily providing services in Denmark. To conclude, our research on firm response during the Covid-19 crisis sheds light on the heterogenous impact of the crisis contingent on various firm and industry characteristics.