HOW FIRMS IN THE SERVICE SECTOR CHANGED THEIR BEHAVIOR DURING THE COVID-19 PANDEMIC – A CASE STUDY FROM THE MORAVIAN-SILESIAN REGION

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ABSTRACT

The Covid-19 pandemic has had a significant impact on the service sector. This paper aims to assess how firms in the service sector changed their behavior during the covid-19 pandemic regarding innovations and using flexible forms of work. We obtained responses from approximately 300 companies operating in the Moravian-Silesian region service sector through a questionnaire survey. We show that the most common innovation firms use organizational and process innovation. Moreover, we found that larger, younger, and more internalized firms enjoyed more innovation during the pandemic than others. While changes in part-time jobs and agreements held outside the employment relationship are temporary, changes in home office use and outsourcing appear to be permanent.

KEY WORDS

Covid-19, pandemics, innovations, flexible forms of work, Moravian-Silesian region

JEL CODES

D22, M12, O32

1 INTRODUCTION

The Covid-19 pandemic has significantly impacted the service sector, as many businesses have had to either reduce their operations or close entirely due to government-imposed lockdowns and restrictions. This has led to job losses and reduced employment opportunities in the service sector.

For firms in the service sector, there are several ways their employees may be endangered due to Covid-19. These include (i) the risk of contracting the virus since service sector workers, particularly those in customer-facing roles, may be at higher risk of contracting the virus due to their frequent interactions

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with the public; (ii) health and safety concerns because workers may be concerned about their health and safety, as well as the health and safety of their colleagues and customers; (iii) reduced demand, which may lead to layoffs or reduced hours for workers or (iv) economic downturn, which has harmed many service sector businesses may lead to job losses or reduced employment opportunities.

Moreover, The Moravian-Silesian Region is one of the structurally affected regions and is characterized by several economic problems, such as a smaller supply of promising job opportunities, not only for young and qualified professionals, or worse conditions and lower attractiveness for business. Thus, the impacts associated with the pandemic may be more significant in structurally affected regions than in the case of other regions.

This paper aims to assess how firms in the service sector changed their behavior during the Covid-19 pandemic. Behavioral change is examined mainly on two levels – what innovations firms started to use and what flexible forms of work they introduced.

We obtained responses from approximately 300 companies operating in the Moravian-Silesian region service sector through a questionnaire survey. In recent years, there have been several studies on the impact of the Covid-19 pandemic. We add some new insights to the existing literature on this topic.

We assess individual innovations and flexible forms of work individually and, in the case of innovations, also according to different firm characteristics. In addition, through two rounds of questioning, we can see how each flexible form of work has changed over the pandemic and whether the changes are temporary or permanent.

We show that the firms use organizational and process innovation the most. Moreover, we found that larger, younger, and more internalized firms enjoyed more innovation during the pandemic than others. Also, the most used flexible forms of work during the Covid-19 pandemic include part-time jobs, home-office, outsourcing, and agreements held outside the employment relationship. While changes in part-time jobs and agreements held outside the employment relationship are temporary in nature, changes in the use of home-office and outsourcing appear to be permanent.

The paper's outline is as follows: Section 2 describes the general theoretical framework and provides a literature review. Section 3 presents our methods and data. Section 4 illustrates results of our research. Section 5 concludes.

2 THEORETICAL FRAMEWORK

The global pandemic has forced companies to change the way they operate. Many have had to adapt quickly to new technologies and processes to remain competitive and serve their customers. Many companies have shifted to remote working, streamlined their operations, and used digital tools to keep up with market demands. They have also implemented social distancing protocols, contactless payment systems, and increased hygiene and safety measures. Furthermore, companies have had to re-evaluate their marketing strategies, invest in digital infrastructure, and develop e-commerce capabilities to serve their customers better.

Moreover, Hashiguchi et al. (2022) find that, during economic downturns, countries that are able to prop up the economy through the domestic service sectors instead of domestic goods and foreign sectors are more resilient to negative shocks. This further underlines the importance of sector services during a pandemic.

In this paper, we want to focus on two areas of corporate behavior. First, we are interested in what innovations firms have started to introduce, and second, we are interested in the use of flexible forms of work that firms have not used before.[1]

2.1 The Covid-19 Pandemic and Innovation

Marques Santos et al. (2021) claim that the main elements influencing business innovation and growth are internal factors (such as the firm's size and age, management capacity, workforce skills, financing capacity, ownership), and external factors (like macroeconomic conditions, size of the market, regulation, government support, public infrastructure or knowledge flows, and networks). Their results show that the economic performance of innovative firms in 2020 was less affected by the coronavirus disease than non-innovative ones. The analysis also points out that organization and marketing innovations were the firms' primary patterns.

Gopalakrishnan and Kovoor-Misra (2021) suggest that firms with high human-physical interdependence in their core technologies are motivated to innovate through the creation and/or adoption to reduce human-physical interdependence in their core technology. Moreover, they claim that firms can face threat-driven or opportunity-driven innovations based on their industry.

Lien and Timmermans (2021) showed that agility is particularly relevant for the Covid-19 crisis. Firms that had established an agile organization prior to the crisis were more likely than other firms to implement crisis-induced innovation.

There are different types of innovation that firms could use. Christa and Kristinae (2021) discuss the importance of product innovation. It is also essential to distinguish whether the firm innovated its product or adopted an innovation already available on the market. Process innovation is implementing a new or significantly improved production or delivery method. Process innovations are essential for coping with the Covid-19 pandemic because they can help organizations quickly and effectively adapt to the changing circumstances caused by the pandemic. For example, process innovations can help companies to implement new safety protocols and procedures to protect employees and customers from infection or develop new ways of delivering goods and services that maintain social distancing. Marketing innovations are essential for coping with the Covid-19 pandemic (see e.g., Wang et al., 2020) because they can help organizations adapt to the changing market conditions and consumer behavior caused by the pandemic. For example, marketing innovations can help companies create new digital strategies that take advantage of online channels, such as social media and e-commerce platforms. Also, organizational innovations can help organizations adapt to the changing circumstances caused by the pandemic quickly and effectively (see e.g., Mai et al., 2022). Organizational innovations can include changes to an organization's structure, governance, or culture and the introduction of new management practices or technologies. For example, organizational innovations can help companies to create more flexible and agile structures that can quickly respond to the changing needs of the market and customers, such as by implementing remote working (Kutieshat and Farmanesh, 2022).

[1] The questionnaires also asked about compensation programs (question 24). We asked about 9 different compensation programs (Late filing of tax returns or withholding tax statements; Postponement of the VAT control declaration deadline; Temporary cancellation of the EET obligation or postponement of the start of the last wave of EET; Postponement of other taxes – road tax, real estate acquisition tax; Antivirus program; COVID financial instruments; "Twenty-five" program (compensation bonus); COVID Support Programme – Rent; "Nursing allowance" for self-employed persons). Most of the firms that were eligible were receiving at least some type of support. However, due to the relatively low absolute number of respondents, the individual responses were diluted so that it was not possible to perform statistically significant tests on the effect of each type of support. Testing whether there was a difference between firms that drew at least some support and those that did not was again not possible due to the low number of firms that did not draw support. Thus, in terms of aid use/non-use, we consider our sample to be homogeneous and the results of the analysis hold for both groups.

In our paper, we, therefore, deal with five types of innovations:

- Product innovation new to market – introduction of a new or significantly improved service before your competitors.
- Product innovation new to company – introduction of a new or substantially improved service that was already available from your competitors.
- Process innovation – introduction of a new or substantially improved method of service delivery.
- Marketing innovation – the introduction of a new marketing method, including substantial changes in design or packaging, market positioning, promotion, or pricing.
- Organizational innovation – introducing a new organizational method into your processes, workplaces, organizational and external relationships.

2.2 The Covid-19 Pandemic and Flexible Forms of Work

The Covid-19 pandemic has changed the perception of flexible working for both employees and employers. According to Spurk and Straub (2020) employers are now more likely to use flexible work forms. Moreover, Diab-Bahman and Al-Enzi (2020) claim that most employees agreed that old working conditions must be reviewed, and the majority enjoyed the flexible conditions. Forbes et al. (2020) claim that managers are much more positive about working from home since the lockdown (the number of managers who thought a worker needed to be physically present in the workplace decreased from 57.3% to 37.5% during the pandemic) and that managers intend to encourage more homeworking in the future (70.1% percent of managers said they are now supporting more flexible working requests).

Unlike most authors who examine flexible forms of work as a whole, we look at each form separately, as each may have been affected differently by the Covid-19 pandemic. While it is clear that the pandemic has contributed to the increase in forms such as the home office, it needs to be clarified for part-time jobs. Part-time workers were a particularly vulnerable group during the pandemic. If firms had to resort to layoffs during the pandemic, it is likely that they first laid off part-time employees. On the other hand, Hean and Chairassamee (2020) find that part-time employment increased during the US lockdown as full-time workers shifted to part-time jobs. Nevertheless, Forbes et al. (2020) show managers' willingness to employ part-time employees is significantly lower than for other flexible forms of work, especially in public administration.

In addition, because the survey was conducted in two waves and we also asked questions about future developments, we are at least partially able to assess whether the use of flexible forms of work was only temporary or permanent.

In our paper, we investigate seven types of flexible forms of work:

- part-time jobs,
- home-office and remote access,
- job sharing,
- sharing employees with multiple employers,
- use of outsourcing/ self-employed person,
- agreements held outside the employment relationship,
- agency employment.

3 METHODOLOGY AND DATA

3.1 Methodology

To answer whether a firm's different characteristics affect its innovation, we use Fisher's exact test (Fisher, 1922). It is a statistical significance test used in the analysis of contingency tables, which is particularly suitable for small sample size analysis. It calculates how many ways the cutoff frequencies can be reached and then evaluates the probability that the above-observed configuration can be obtained by chance alone. Thus, in this test statistic, the primary outcome

probability (p-value) is the probability that determines whether the null hypothesis is valid when comparing the chosen significance level of the α (0.05) test. If the p-value of the test is less than the chosen α, we reject the null hypothesis of independence of variables X and Y. Alternatively (in case of many observations), we use Pearson's χ^2 test (Pearson, 1900).

3.2 Data

Using the Magnusweb database, we created the database of companies to be approached in the questionnaire survey. The database included companies that fulfilled the defined selection criteria (CZ NACE and headquarters/operating location in MSK) and had a specified e-mail contact. 12,344 entities have met these criteria (which constitutes the core set of the research sample). The e-mail was successfully delivered to 11,590 addresses (92.9%), 2,490 subjects (21.5% of those delivered) clicked on and read the e-mail at least once, and the total number of reads was 4,578 (39.5%). The number of clicks on the questionnaire was 366 (3.2%). The primary data collection took place from 7th October to 1st November 2021. A total of 168 questionnaires were collected during this period.

In 2022, a second survey was carried out in two phases to ensure the highest possible response rate. The primary data collection took place from 13th July to 5th October 2022. A total of 151 questionnaires were received during this period. For both surveys, this represents 320 respondents. In the first phase, 13,187 companies were contacted, with 25.3% of companies opening the e-mail and 2.3% clicking through to the questionnaire. Due to the low response rate, firms were subsequently re-contacted. In the second phase of this survey, the e-mail was sent to 11,845 subjects, with the difference in the number of subjects compared to the first phase being due to a reduction in the number of inactive firms and also a reduction in the number of firms that did not wish to receive a similar e-mail again and also the number of firms that completed the questionnaire in the first phase. In the second phase of this survey, 25.1% of firms opened the e-mail, and 1.7% of subjects clicked through. The full text of the questionnaire is in the Annex.

4 RESULTS

An essential factor in the impact of the Covid-19 pandemic was the respondents' subjective assessment of the situation. Respondents answered the question: "How has the pandemic affected the overall situation in the company?" on a Likert scale of 1 – significantly worsened to 5 – significantly improved, where a value of 3 here, therefore, indicated a neutral attitude of no change. It is unsurprising that for more than half (53.5%) of the respondents, the situation concerning the Covid-19 pandemic has worsened their business activities (1–2 Likert scale). 37.12% of the respondents rate the impact of the pandemic as neutral, and only 9.37% of the respondents have seen an improvement, see Fig. 1.

4.1 Innovations

First, we present aggregate data for all firms. In the next step, we then examine whether factors such as age, size, and location play a statistically significant role in whether firms have innovated.

Fig. 2 shows an overview of the innovations implemented about their intensity. Most firms did not implement any innovations listed here during the pandemic. If some of the innovations were implemented, they were primarily organizational innovations (44.82%), followed by process innovations (39.13%) and marketing innovations (28.09%). To a lesser extent, there were then product innovations, where a distinction was made between a product innovation new to the firm (i.e., the product innovation was already in place in the market, but the firm did

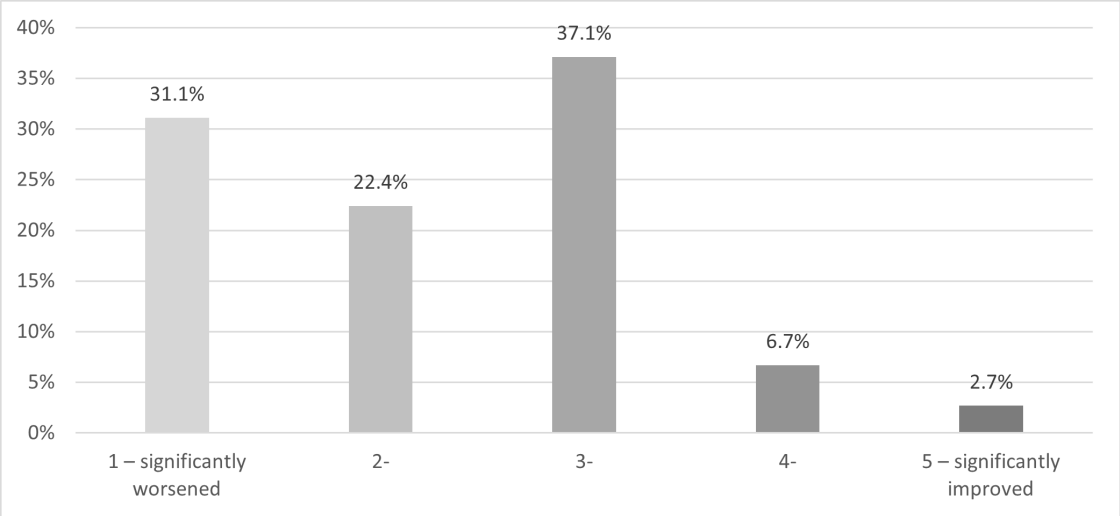

Fig. 1: Impact of the pandemic on the overall company/business situation (%)

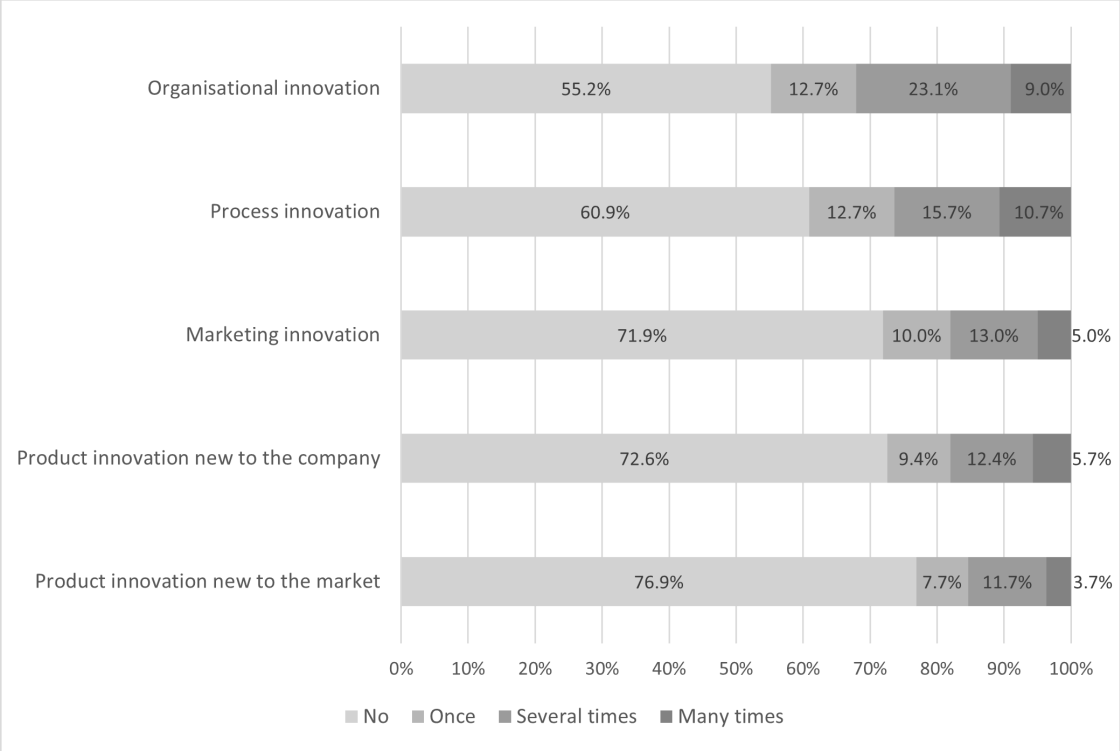

Fig. 2: Innovations during the Covid-19 pandemic (%)

not yet possess it) and an innovation new to the market (i.e., it was a completely new innovation in the market).

Firms also had the opportunity to name the innovation in question, and the list was extensive. The most common organizational innovations were the introduction of home-office teleworking and online meetings or employee training. Process innovations included:

- online communication with customers,
- the introduction of new e-shops,
- online consulting or improvements to existing processes, and
- investments in new technologies and software.

Some companies have even been forced to restructure their processes to more cost-effective ones. For example, marketing innovations generally included improvements to existing online platforms for communicating with customers. Product innovations included expanding existing services, such as those that can be implemented primarily online, expanding additional services, such as parcel outlets, or, in the catering sector, most often offering packaged meals.

To assess the role of firm size, age, and local scope, we recalculated the response values on an index normalized both vertically and horizontally. The index calculation provides an overview of the importance of each value in the context of rows and columns. For example, if all values in the contingency table were equal, each value would have an index of 1. If the index is less than 1, it is less important than the other items in its row and column. If the index exceeds 1, it is more important than the other entries in its row and column. Thus, this calculation standardizes the values considering both the vertical and horizontal structure of the sample. Tab. 1 to 3 depict the results.

4.1.1 Firms' Size (Number of Employees)

The innovations, in terms of the number of employees or terms of firm size, would be dominant in large (251 or more employees) and medium-sized firms (51–250 employees), especially in the areas of process, marketing, and innovation (see Tab. 1). One can say that larger firms have more resources to implement innovation or have their teams dedicated to this area. However, it is essential to note that firms without employees (self-employed), in neither case, did achieve zero values in any innovation. In each type of innovation, they achieved values higher than one in at least one frequency.

It is questionable whether the firm size is directly related to innovation. So, we calculated χ^2 test of independence. The null hypothesis states that random variables X and Y are independent, meaning that the probability of a particular variant of random variable X occurring does not affect the occurrence of a particular variant of random variable Y. The test is based on comparing the observed frequencies (measured) and the so-called expected frequencies (calculated under the assumption of the null hypothesis) of each combination of random variables X and Y. A single contingency table was created, where the values were summarized within each innovation and the frequencies of (non-)realization of the innovation (separated into yes/no frequencies). Thus, Fisher's test was not appropriate in this case, as the number of observations reached large values, $n = 1485$. The χ^2 statistic is 62.4215, and the p-value is 0.0001. Therefore, the null hypothesis can be rejected, and the result is significant at $p < 0.05$. Hence it can be concluded that the relationship between firm size and innovation is non-random. Tab. 1 shows that for all types of innovation, larger firms are more likely to innovate than smaller firms.

4.1.2 Firms' Age

Tab. 2 presents the indexed innovation variables from the firm's founding date perspective. The results suggest that innovation was the most crucial area for firms founded in 2019.

However, it was only marketing innovation, process innovation, and product innovation within the firm. For the other categories, no innovations were recorded for these firms. Organizational innovations were most important for firms founded between 2011 and 2015, and new-to-market innovations for firms founded between 2016 and 2018. It can be assumed that firms with more prolonged market presence also have more experience, not only in innovation. Therefore, the relationship between innovation and firm founding date was subjected to a χ^2 test of independence. The calculation analogy was the same as in the previous case, and again a summary contingency table with $n = 1469$ was constructed. The χ^2 statistic is 14.0138, and the p-value is 0.0072. The result is significant at $p < 0.05$. We can reject the null hypothesis, and the relationship between innovations implemented during the pandemic is related to the year of establishment of the firm.

Tab. 1: Innovation by company size/number of employees (index)

Company size	No	Once	Several times	Many times
Product innovation new to the market				
0	1.09	0.67	0.71	0.84
1–10	1.02	1.03	0.86	0.98
11–50	0.87	1.66	1.74	0.00
51–250	0.72	0.72	2.36	3.00
251 and more	0.87	2.15	0.00	4.50
Product innovation new to the company				
0	1.06	1.03	0.59	1.09
1–10	1.05	0.56	1.05	1.01
11–50	0.85	2.26	1.23	0.45
51–250	0.69	1.83	2.23	0.97
251 and more	0.92	0.00	1.34	2.91
Process innovation				
0	1.17	0.81	0.59	0.87
1–10	1.00	1.08	0.82	1.14
11–50	0.68	1.60	1.94	0.71
51–250	0.73	0.43	2.46	1.03
251 and more	1.10	0.00	1.05	1.55
Marketing innovation				
0	1.10	0.62	0.63	1.24
1–10	1.04	0.65	1.05	1.00
11–50	0.79	2.28	1.37	0.51
51–250	0.70	2.75	1.69	0.00
251 and more	0.70	1.65	1.27	3.30
Organizational innovation				
0	1.25	0.65	0.72	0.69
1–10	1.04	1.02	0.94	0.88
11–50	0.51	1.60	1.43	1.97
51–250	0.51	1.74	2.15	0.00
251 and more	0.61	0.00	0.72	5.50

Note: If the index is less than 1, it is less important than the other items in its row and column. If the index exceeds 1, it is more important than the other entries in its row and column.

Tab. 2: Innovation by date of company establishment (index)

Establishment	No	Once	Several times	Many times
Product innovation new to the market				
Before 2000	1.04	0.72	1.15	0.24
2001–2010	1.03	0.71	1.05	0.81
2011–2015	0.91	1.65	0.90	1.90
2016–2018	0.88	1.76	0.77	2.70
2019	1.30	0.00	0.00	0.00
Product innovation new to the company				
Before 2000	1.06	0.70	1.03	0.59
2001–2010	1.07	0.90	0.99	0.25
2011–2015	0.93	0.70	1.37	1.58
2016–2018	0.78	2.50	0.55	2.53
2019	1.03	0.00	1.00	2.32
Process innovation				
Before 2000	1.01	0.81	1.06	1.07
2001–2010	1.01	0.96	1.21	0.66
2011–2015	1.01	0.50	1.08	1.43
2016–2018	0.86	2.31	0.43	1.09
2019	1.44	0.00	0.79	0.00
Marketing innovation				
Before 2000	1.05	0.63	1.16	0.51
2001–2010	0.97	1.36	1.04	0.58
2011–2015	1.06	0.63	1.13	0.45
2016–2018	0.79	2.03	0.52	3.38
2019	1.21	0.00	0.00	2.65
Organizational innovation				
Before 2000	0.97	0.81	1.27	0.73
2001–2010	0.97	1.18	0.94	1.10
2011–2015	1.00	1.00	0.64	1.94
2016–2018	0.99	1.42	0.88	0.78
2019	1.81	0.00	0.00	0.00

Note: If the index is less than 1, it is less important than the other items in its row and column. If the index exceeds 1, it is more important than the other entries in its row and column.

4.1.3 Firms' Local Scope

The last structure presented is a view of innovation and its intensity by firm scope (see Tab. 3). The importance of product innovation in the market was particularly evident for international firms. Process, organizational, and marketing innovations were necessary for firms with a national scope. Finally, product innovations new to the firm were most important for firms with local scope.

Tab. 3: Innovation by company location (index)

Location	No	Once	Several times	Many times
Product innovation new to the market				
Local	1.03	1.14	1.00	0.00
Regional	1.13	0.30	0.79	0.32
National	0.90	1.33	1.26	1.54
International	0.91	1.39	0.91	2.42
Product innovation new to the company				
Local	1.05	1.62	0.71	0.00
Regional	1.09	0.51	0.94	0.82
National	0.91	0.88	1.46	1.39
International	0.96	1.18	0.72	1.88
Process innovation				
Local	0.99	1.38	1.12	0.41
Regional	1.13	0.91	0.66	0.87
National	0.90	0.62	1.15	1.80
International	0.97	1.26	1.13	0.67
Marketing innovation				
Local	1.00	1.17	0.90	0.88
Regional	1.02	1.04	1.07	0.46
National	1.01	0.68	1.04	1.35
International	0.94	1.24	0.96	1.42
Organizational innovation				
Local	1.04	1.15	1.02	0.49
Regional	1.08	0.91	0.85	1.03
National	0.97	0.89	0.93	1.51
International	0.88	1.12	1.31	0.79

Notes: Local = municipality and surrounding municipalities; regional = city, region, several regions; national = whole Czech Republic. If the index is less than 1, it is less important than the other items in its row and column. If the index exceeds 1, it is more important than the other entries in its row and column.

The question is whether the firm scope is directly related to innovations and their frequencies. One could say that the larger the market in which the firm operates, the more intense the innovation, as firms must face more competitors. Again, this relationship was subjected to a χ^2 test of independence, where a contingency table was constructed with $n = 1075$. The χ^2 statistic is 10.4979, and the p-value is 0.0147. The result is significant at $p < 0.05$, and the relationship between the variables is non-random. There is a relationship between firm scope and innovations implemented during the Covid-19 pandemic.

4.2 Flexible Forms of Work

First, we investigated whether firms that used flexible forms of work coped with the pandemic better than others. Thus, we examined the statistical dependence of two features for the next dichotomous question: whether successful/unsuccessful firms used flexible forms of work. The procedure for constructing the contingency table and calculating Fisher's exact test was analogous to the previous cases. The contingency table (2×2) again contained the aggregate value of the firm's situation (worsened/improved) and the answer to the dichotomous question, "Have you or do you use any of the flexible forms of work?"

In the case of flexible forms of work, the Fisher exact test value is 0.7783. The result is not significant at $p < 0.05$. We do not reject the null hypothesis and can conclude that whether firms have used flexible forms of work is not related to the firm's situation in the context of the Covid-19 pandemic.

We then sought to understand how firms have changed their behavior and whether it is temporary or permanent. As can be seen from Fig. 3, the most used flexible forms of work during the Covid-19 pandemic include part-time jobs, home-office (where the most significant increase was noted), outsourcing, and agreements held outside the employment relationship. It is interesting to look at Fig. 4, which calculates from both surveys how much firms used flexible forms of work before, during,

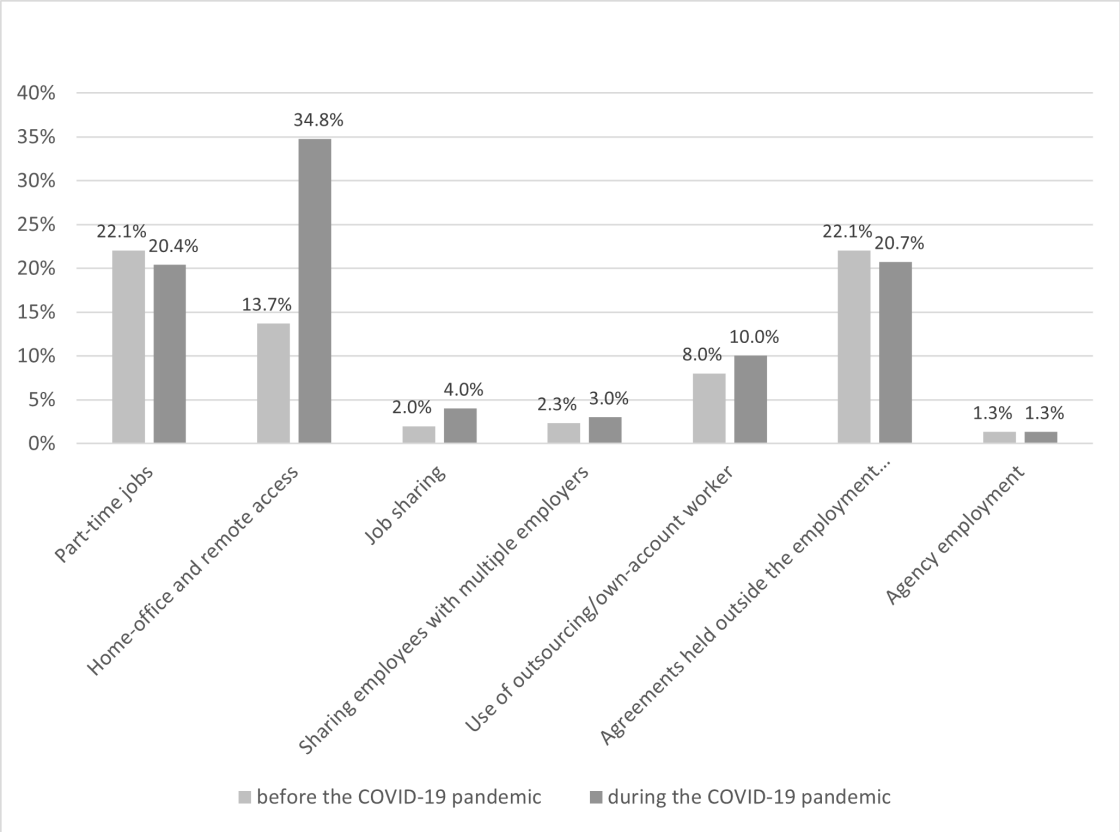

Fig. 3: Change in the use of flexible forms of work before and during the Covid-19 pandemic (%)

and after the pandemic and whether they plan to use them in the future.

In the case of part-timers, there is an evident decline during the pandemic. This can be explained by the fact that firms that were forced to reduce their operations and lay off employees preferred to lay off part-time workers. Therefore, after the end of the restrictive measures, the number of part-time jobs has returned to pre-pandemic levels, and firms do not plan to make significant changes in their use in the future.

For obvious reasons, the number of companies that started using home-office more than doubled during the pandemic. This decline after the end of the restrictions, while somewhat diminished, remains considerably higher than before the pandemic. About one in ten firms that did not use home-office before the pandemic are using it and plan to use it in the future.

A slight increase can also be observed in the case of outsourcing. More interestingly, companies plan to use this tool even more frequently in the future than they did before or during the pandemic. In the case of agreements held outside the employment relationship, we can observe a similar trend as for part-time jobs. These agreements were also less used during the pandemic than before (it is easier for employers to terminate an agreement than an employment relationship). Nevertheless, firms plan to return to the original level. Other flexible forms of work were not sufficiently represented to draw statistically significant conclusions. They are retained in both graphs for completeness and less rigorous analysis.

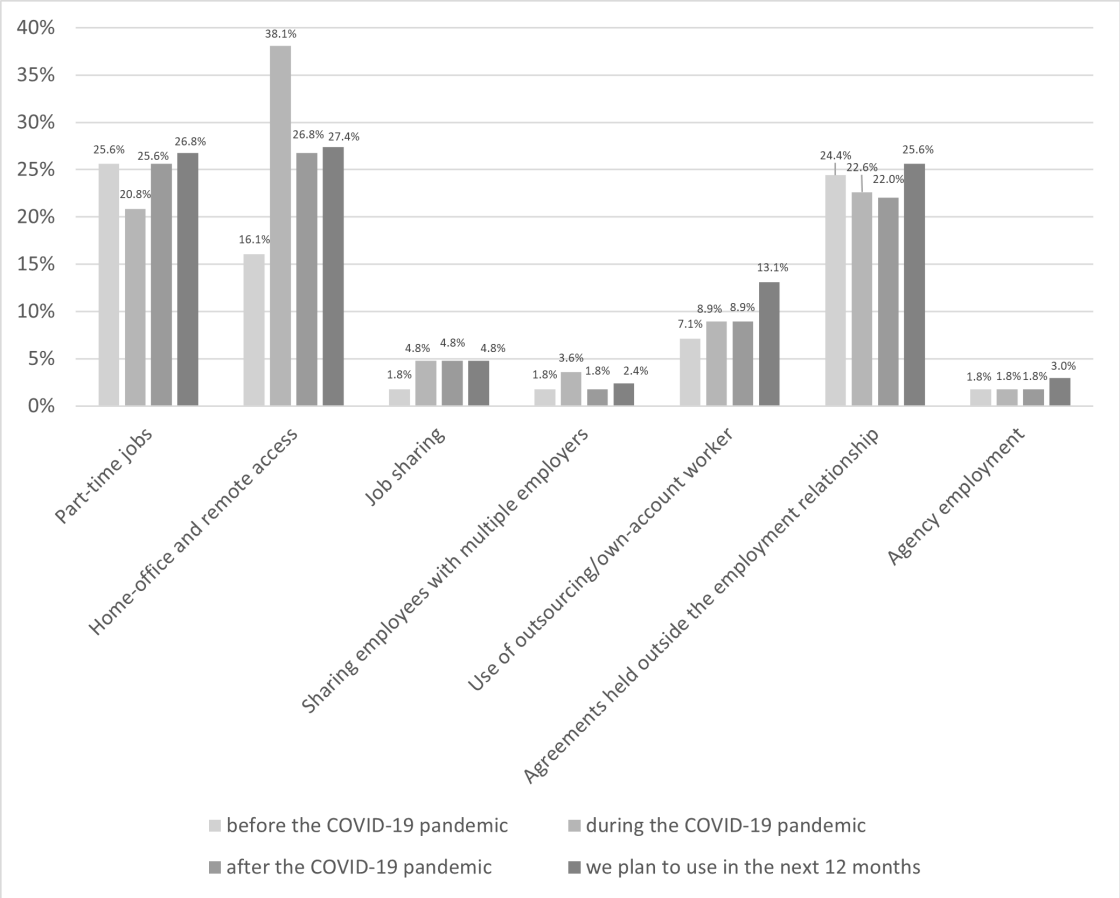

Fig. 4: Change in the use of flexible working arrangements after the Covid-19 pandemic (%)

In terms of the temporariness or longevity of the changes, part-time and out-of-work arrangements have experienced a temporary decline. They are returning to their original levels after the pandemic. On the other hand, firms have used and plan to continue to use home-office and outsourcing to a greater extent after the pandemic.

5 DISCUSSION AND CONCLUSIONS

We try to assess how firms in the service sector changed their behavior during the Covid-19 pandemic. To do so, we investigate two areas – innovations and flexible forms of working.

We found that despite all the harmful effects of the Covid-19 pandemic (not only) on the economy, positive effects can also be observed, especially in innovation. Depending on the type of innovation, we found that every second to fourth firm introduced some innovation. The most common innovations were organizational and process innovations. This can be explained mainly by the fact that firms were forced to change work organization due to pandemic measures. Therefore, larger firms (with more employees) were more innovative. This may be because they have more resources than smaller firms, and innovation brings them more significant economies of scale. This is also related to the fact that firms with a

larger scale (international presence) innovated more.

The most used flexible forms of work during the Covid-19 pandemic include part-time jobs, home-office, outsourcing, and agreements held outside the employment relationship. It is interesting to see the part-time attrition. While Hean and Chairassamee (2020) find that part-time employment increased during the US lockdown as full-time workers shifted to part-time jobs, we conclude that firms were more likely to terminate part-time jobs during the pandemic. However, this is only a temporary change, as the number returned to the same level. Firms were thus forced to lay off part-time workers temporarily and are now only returning to the original situation.

In contrast, the situation is different for home-office and outsourcing. The significant increase in home-office was understandably due to government action and often by direct order. However, one in ten companies that did not use home-office before the pandemic, plan to use it in the future. The pandemic has thus contributed to more flexible working in the future. This is even more evident with outsourcing, which firms plan to use even more in the future than they did during the pandemic.

Based on our findings, it is also possible to formulate general recommendations for the government. The government should encourage and support innovation in the service sector through funding and resources that will help firms of all sizes and with an international scope continue introducing new organizational and process innovations. Moreover, the government should also help smaller firms maintain competitiveness. Also, it is necessary to introduce policies and regulations that ensure the protection and promotion of flexible forms of work, such as home-office and outsourcing, for firms that plan to use them in the future. Finally, the government must provide support and resources to firms and part-time workers to help mitigate the negative impacts of temporary layoffs during a pandemic and facilitate a smooth transition back to pre-pandemic levels of part-time employment.

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8 ANNEX

The full text of the questionnaire:

1. How has the Covid-19 pandemic affected the overall situation in your company?
2. How do you assess the current overall situation in your company?
3. Has there been a reduction in your economic/business activity during the Covid-19 pandemic?
4. During the Covid-19 pandemic, did the following innovations occur in your company?
5. Please give an example or examples of an innovation you introduced during the Covid-19 pandemic, and you consider to be the most innovative or beneficial.
6. Do you believe that at least one of the above innovations helped your company to cope with complications associated with pandemic measures?
7. Compared to most of your competitors, do you believe that you are currently:
8. How would you characterize your current practices towards suppliers?
9. How would you rate the financial health of your company?
10. Please estimate your revenue development in 2022 (compared to 2019):
11. In your opinion, to what extent is the current situation of your company influenced by the following factors?
12. Did you have employees at the time of the Covid-19 pandemic?
13. Have you used or do you use any of the flexible forms of work?
14. Please indicate whether you have used or plan to use the flexible forms of work listed below:
15. What barriers have you faced or are you facing in using flexible forms of work?
16. What do you see as the main advantages of flexible working?
17. What do you see as the main disadvantages of flexible working?

18. In addition to the above flexible working arrangements, have you introduced any or any other flexible forms of work?
19. The number of employees during the Covid-19 pandemic in your company compared to the period before pandemic:
20. What changes in the number of employees compared to the Covid-19 pandemic period do you plan to make in the next 12 months:
21. How many employees do you plan to hire/fire in the next 12 months?
22. In your opinion, to what extent are the planned layoffs/recruitment affected by the following the factors listed below?
23. In your opinion, what impact has the Covid-19 pandemic had on:
24. Which of the following assistance/reliefs has your company benefited from since the start of the Covid-19 pandemic?
25. Has your company used any of the employment protection aids?
26. How would you rate the overall administrative burden of processing aid applications in your industry in the context of the Covid-19 pandemic?
27. Main object of your business:
28. Date of establishment of your business:
29. Headquarters of your company:
30. Size of the municipality in which your firm is located:
31. Legal form:
32. Current number of employees of your company:
33. The scope of your company:
34. Please indicate the title of your current position:
35. Your age:
36. Your education:
37. Your sex:
38. Did you participate in Phase 1 of this survey?

Note: Since the original questionnaire was in Czech, it has been translated into English for the purposes of this article ex-post.

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