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## The Impact of the Pandemic on the Functioning of a Company from the Food Industry Green Factory Logistics

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**Abstract:**

**Purpose:** The aim of this article is to present the impact of a pandemic on a food logistics company.

**Design/Methodology/Approach:** The article defines SARS-CoV-19, presents the GFLog company and shows the results of research that was conducted in the form of an expert interview in August and September 2020 during the global pandemic.

**Findings:** The result of the article is the presentation of conclusions regarding the impact of the pandemic on a food logistics company.

**Practical Implications:** Preparation of logistic enterprise management activities in the event of a global crisis or in the country.

**Originality/Value:** Until the pandemic occurred in the world, no one considered any human limitations. Enterprises were not prepared to work in such conditions. The presented views, supported by statements from the management of the logistics company, will allow to prepare an organizational and technical solution for operations in a possible future crisis.

**Keywords:** SARS-CoV-2, pandemic, coronavirus, logistics company, food industry.

**JEL codes:** A13, L22, L66, R11.

**Paper type:** Research study.

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## 1. Introduction

Historically, infectious diseases have been responsible for the greatest human death tolls. For example, the bubonic plague killed approximately 25% of the European population (Scott and Duncan, 2001). The microorganism invisible to the naked eye influenced the functioning of the whole world, turning almost all aspects of social life upside down. The SARS-CoV-2 virus (*Severe acute respiratory syndrome coronavirus 2*) belongs to the group of coronaviruses that causes an acute respiratory disease called COVID-19 (*Coronavirus Disease 2019*). The virus is transmitted by airborne droplets causing several symptoms of the disease, which as a consequence may be very dangerous to human life and health. Infections caused by this microorganism mainly affect the respiratory system, but are also dangerous to the nervous, digestive, urinary and blood systems. This is especially important for people with comorbidities.

The SARS-CoV-2 virus was classified into the third microbiological risk group on a four-level scale. This means that microorganisms can be ubiquitous in the environment, posing a serious health risk that may contribute to causing severe disease in humans. In contrast to the highest, fourth risk group, there are effective methods of prevention and treatment for this disease (Sołofit-Szymczak and Skowroń, *Microbiological hazards in offices*, *Work safety* 3/2005, source: <http://archiwum.ciop.pl/15030>). Table 1 below presents the existing groups of associated risk with the presence of microorganisms.

**Table 1.** Risk groups

| Group number | Factors   | Occurrence   | Prevention and treatment                                |
|--------------|---|--|---|
| Group 1      | possibly can cause diseases in humans   | insignificant  | insignificant   |
| Group 2      | can cause disease in humans and may be harmful                                      | it is unlikely that they are common in the environment           | there are effective methods of prevention and treatment |
| Group 3      | can cause severe disease in humans and their presence is a serious threat to health | they may be common in environment                                | there are effective methods of prevention and treatment |
| Group 4      | cause severe disease in humans and constitute a serious health hazard               | their presence in the environment is associated with a high risk | lack of effective methods of prevention and treatment   |

**Source:** Own study based on Sołofit-Szymczak M., Skowroń J., *Microbiological hazards in offices*, *Work safety* 3/2005, source: <http://archiwum.ciop.pl/15030>.

## 2. The Essence of SARS-CoV-2

In December 2019, a new coronavirus (SARS-CoV-2) emerged, sparking an epidemic of acute respiratory syndrome (COVID-19) in humans, centred in Wuhan,

China (Zhou *et al.*, 2020). On January 30, 2020, the World Health Organization (WHO) declared the outbreak of an epidemic as the public health emergency of international concern (source: Eurosurveillance Editorial Team. Note from the editors: World Health Organization declares novel coronavirus (2019-nCoV) sixth public health emergency of international concern. *Euro. Surveill.* 25, 200131e 2020). WHO gave the provisional name of the causing disease as Acute Respiratory Disease 2019-nCoV. And on February 11, 2020, the International Committee on Taxonomy of Viruses (ICTV) decided to name the virus coronavirus, the second severe acute respiratory syndrome (SARS-CoV-2), and WHO finally named the disease as COVID-19 (source: Coronaviridae Study Group of the International Committee on Taxonomy of Viruses. The species severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARS-CoV-2. *Nat. Microbiol.* 5, 536–544, 2020). On March 11, 2020, the WHO declared the disease a pandemic, following large epidemics of the disease in many countries, which resulted in the deaths of almost 1.5 million (source: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>) of people in the world. Disease transmission is mainly carried out by the following mechanisms:

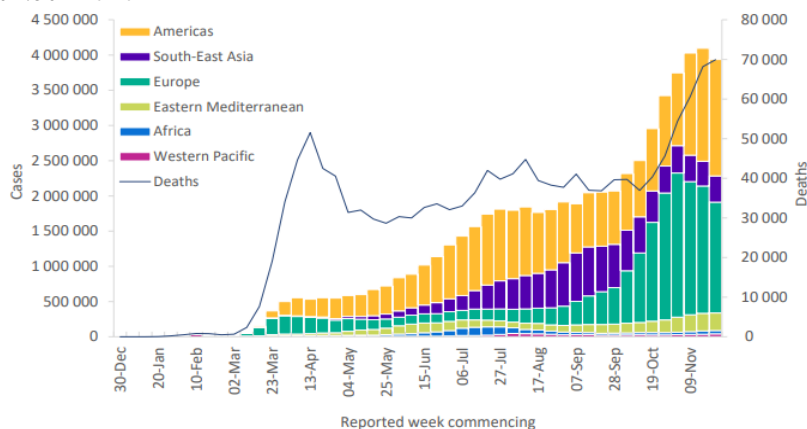
- the droplet route when coughing and sneezing, when the droplets may get into the mouth, nose, eyes or be inhaled by people nearby, usually less than 1.8 m away,
- infection is possible by touching a surface or object containing the virus and then touching one's mouth, nose or possibly eyes, but this is not considered the main way of spreading the virus, and may remain infectious on inanimate surfaces from several hours to even a few days,
- patients may be contagious up to two weeks after the symptoms of the disease have disappeared, and the symptoms may disappear after the first week (*COVID-19: Clinical information and treatment guidelines*, International Pharmaceutical Federation, source: <https://www.nia.org.pl/wp-content/uploads/2020/04/FIP-Przewodnik-COVID-19-PL-002.pdf>).

The following precautions are recommended to reduce the risk of infection and to limit the spread of WHO disease:

- wash your hands regularly and thoroughly using an alcohol-based hand rub or water with soap,
- keep at least 1 meter distance from other people,
- avoid crowded places,
- avoid touching your eyes, nose, and mouth,
- isolating even with minor symptoms such as cough, headache, mild fever until recovery,
- in the event of fever, cough and difficulty breathing, please ask for medical help,

- keep up to date with the latest information from trusted sources such as WHO or local and national health authorities (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>).

**Table 2.** COVID-19 cases reported weekly by WHO Region, and global deaths, as of 29 November 2020



**Source:** World Health Organization, <https://covid19.who.int/> of December 6, 2020.

It can be concluded that the disease is comparable to the ordinary flu, but its course and the effects it causes are different, which resulted in taking unusual measurements to limit the spread of the threat (Grima *et al.*, 2020; Khan *et al.*, 2020). In Poland, the first coronavirus patient appeared at the beginning of March this year. On March 10, the Polish government decided to cancel all mass events, and a day later it was decided to close all educational institutions and universities (<https://www.premier.gov.pl/wydarzenia/aktualnosci/premier-podjelismy-decyzje-o-odwolaniu-wszystkich-impres-masowych.html>). The next step was to introduce, from March 14, the state of epidemic threat, which in accordance with the Act on preventing and combating infections and infectious diseases in humans (the Act of December 5, 2008 on preventing and combating infections and infectious diseases in humans. Journal of Laws 2008 No. 234 item. 1570, as amended) introduced restrictions in the scope of:

- a ban on entry of foreigners to Poland,
- introducing a 14-day quarantine after arriving in the country,
- restrictions on the operation of shopping malls,
- suspension of international air and rail connections (this did not apply to cargo traffic),
- gatherings of over 50 people and all celebrations: private, public, religious, local government, administrative,
- the operation of the gastronomy segment – restaurants could only sell food to go.

In a separated (smaller than the country) risk area, the above restrictions were also established, but also:

- temporary limitation of specific scopes of business activity,
- temporary regulation of the supply of certain types of articles,
- obligation to undergo quarantine,
- place of quarantine,
- ban on leaving the quarantine facility,
- temporary limitation of the use of premises or land and the obligation to secure them,
- an order to evacuate at a specified time from specific places, areas and objects,
- an order or prohibition to stay in specific places and facilities and in specific areas,
- the sick and people suspected of having the disease must not leave the zero zone,

(<https://wiadomosci.onet.pl/kraj/koronawirus-w-polsce-stan-zagrozenia-epidemicznego/bq36skx>).

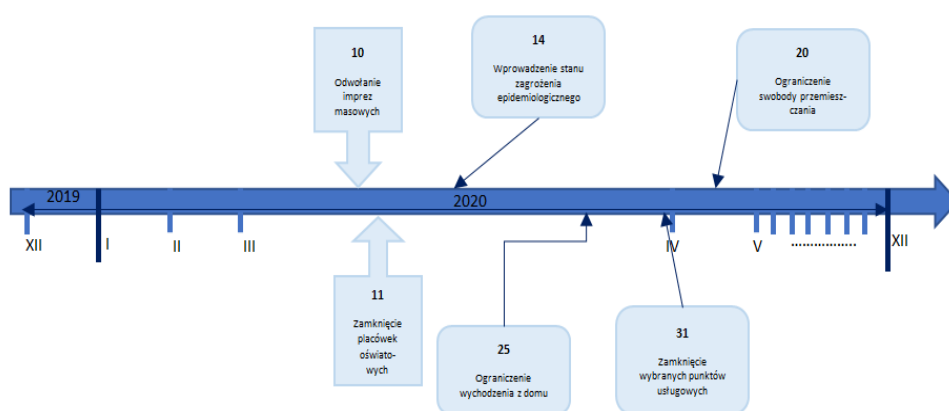
It is worth noting that one of the central emotional responses during a pandemic is fear. Humans, like other animals, possess a set of defensive systems for combating ecological threats (LeDoux, 2012). Negative emotions resulting from threat can be contagious (Kramer, Guillory, and Hancock, 2014) and fear can make threats appear more imminent (Cole, Balcetis, and Dunning, 2013). A meta-analysis found that targeting fears can be useful in some situations, but not others: appealing to fear leads people to change their behaviour if they feel helpless to act (Witte and Allen, 2000). Another challenge is that people often exhibit an ‘optimism bias’, the belief that bad things are less likely to befall oneself than others. While optimism bias may be useful for avoiding negative emotions (Strunk, Lopez, and DeRubeis, 2006), it can lead people to underestimate their likelihood of contracting a disease (Sharot, 2011) and to therefore ignore public health warnings (Wise, Zbozinek, Michelini, Hagan, and Mobbs, 2020)

### **3. Pandemic in Poland**

On March 25, the Polish government introduced restrictions on leaving home to the absolute minimum, related to going to work, shopping for food, walking a dog, visiting a pharmacy or a doctor (<https://www.gov.pl/web/zdrowie/wprowadzamy-nowe-zasady-bezpieczenstwa-w-zwiazku-z-koronawirusem>). Further restrictions were introduced on March 31 and included, among others, closing all cosmetic, service, hairdressing and rehabilitation points. The restrictions also introduced the number of people in the store – a maximum of three people could stay there, per one cash register, moreover, in workplaces there is a requirement to distance at least 1.5 meters between workstations. From April 20, there was a slow defrosting of the

economy, which began, among others, with the introduction of freedom of movement and the introduction of new rules in trade, where the requirement was introduced that in premises up to 100 m<sup>2</sup> - 4 people per cash register, over 100 m<sup>2</sup> - 1 person per 15 m<sup>2</sup> of space. As of May 30, the obligation to cover the mouth and nose in open spaces was abolished, while maintaining social distance, the limit of people in shops, restaurants and churches was abandoned, and the organization of events and gatherings up to 150 people was allowed. On the other hand, on June 6, the following activities were resumed, cinemas, theatres, swimming pools, gyms, and amusement parks (<https://wiadomosci.onet.pl/kraj/koronawirus-w-polsce-kolejne-restrykcje-i-zakazy-co-wolno-a-czego-nie/wetrcdt>).

Figure 1. Stages of introducing pandemic counteraction



Source: Own study.

The restrictions presented above were a derivative of the situation around the world and influenced the functioning of the entire economy of the country. In order to minimize the effects of the pandemic, the Act on special solutions related to the prevention, counteraction and combating of COVID-19 was introduced (the Act of March 2, 2020 on special solutions related to the prevention, counteraction and control of COVID-19, other infectious diseases and those caused by them. Journal of Laws 2020, item 374), which set out the principles and procedures as well as tasks of public administration bodies in the field of preventing and combating SARS-CoV-2 infection and the spread of an infectious disease in humans.

Another reaction of the Government aimed at counteracting the effects of the pandemic was the introduction of provisions called the anti-crisis shield (the Act of April 16, 2020 on special support instruments in connection with the spread of SARS-CoV-2 virus, Journal of Laws 2020, item 695), which was several legal solutions based on five pillars, i.e., maintaining jobs, supporting companies, subsidizing the health service, strengthening public investments and the financial system. A set of laws was prepared, among others, by the Ministry of Development, Finance and the Ministry of Family, Labour and Social Policy, whose main goal was

to help entrepreneurs and employees in the face of the increasingly serious effects of the spread of SARS-CoV2 coronavirus at: [https://businessinsider.com.pl/firmy/przepisy/tarcza-antykryzowapomocdlaprzedsiebiorcowipracownikow/yr4w4jn?utm\\_source=businessinsider.com.pl\\_viasg\\_businessinsider&utm\\_medium=referral&utm\\_campaign=leo\\_automatic&srcc=ucs&utm\\_v=2](https://businessinsider.com.pl/firmy/przepisy/tarcza-antykryzowapomocdlaprzedsiebiorcowipracownikow/yr4w4jn?utm_source=businessinsider.com.pl_viasg_businessinsider&utm_medium=referral&utm_campaign=leo_automatic&srcc=ucs&utm_v=2)).

The support consisted of, among other things, exemption from paying SII contributions, co-financing employees' salaries up to 40% of the average monthly salary, paying a standstill benefit for employees in the amount of approx. 2,000 PLN for principals and the self-employed and a number of other facilities aimed at maintaining financial liquidity and protection against bankruptcy. Many enterprises took advantage of the help offered to save their companies and jobs.

#### **4. Characteristics of the Company: A Case Study**

Green Factory Logistics company is the largest Polish logistics operator specializing in the storage and transport of food products at controlled temperatures of 0-15 degrees Celsius. The company has three distribution centres with a total warehouse space of nearly 20,000 m<sup>2</sup>, which are located in Błonie in Mazovia, Niepruszewo (Greater Poland voivodeship) and Sosnowiec (Silesian voivodeship). Groupage, pallet, and full-pallet deliveries are made 7 days a week with 24-hour supervision.

Delivery services are provided based on the resources of a fleet of 200 refrigerated semi-trailers equipped with mobile devices, having advanced telematics systems, enabling full control of cargo tracking and transfer of registered values to the TMS system, as well as temperature control of the transported cargo from the online computer. The quality of the services provided is confirmed by the following certificates, IFS, FRC and the BIO certificate for storage and transport at controlled temperatures of fresh and processed products, which means that it meets all the requirements ensuring the traceability of these products at every stage of the supply chain.

The category of organic food is the most dynamically developing sector of the food market in Poland, and its presence in retail chains favours the popularization and availability of the BIO offers of products. The BIO trend is not only the development of crops, production, and processing, but also services related to the entire supply chain, in which logistics, transport and storage are an important link. Currently, the company employs 180 employees and is a company belonging to the Green Holding capital group, within which there are specialized entities whose goal is to create an integrated business module for the full supply chain of food products in the system: "from farm to table". The farming divisions of Green Holding are formed by two companies: Primavega, specializing in traditional field crops, and Smart Innovations Vegetables, responsible for the innovative cultivation of lettuces in the hydroponic system.

The companies Green Factory and Fino Verde are responsible for the production, which specialize in the offer of ready-to-eat salads, salad mixes and culinary concepts based on leafy green vegetables. The companies are dedicated to the domestic, Western European, and Eastern sales market, in traditional, modern and Ho-Re-Ca channels. Green Factory Logistics is dedicated to the logistics of food products requiring controlled temperatures, and GF Trans is responsible for international transport, while Green Factory Bronisze is responsible for specialized distribution of products in the wholesale channel in the country (<https://www.logistyka-chlodnicza.pl/poznaj-gfl/lata-doswiadczen/>).

## **5. The Case Research**

The basic method used in the research process was the diagnostic survey method using the expert interview technique. The expert interview is an interview with a respondent who is assumed to be knowledgeable about the subject of the research. Thanks to the courtesy of the company's president, 3 people took part in the survey: the manager of the transport department, the manager of the warehouse department and the president of the company. The survey was conducted from July 15 to September 15, 2020. The purpose of the interview was to obtain information on the functioning of the company in the pandemic era. The interview consisted of 5 open-ended questions.

***Question 1:*** *What challenges did the company have to face to ensure the continuity of its logistics services?*

*President of the company:* A pandemic is a big challenge for a logistics operator, especially if there are additional restrictions resulting from the need to ensure the health safety of employees and the continuity of the plant, warehouses, and logistic operations. Strategic logistics activities related to, for example, the smooth functioning of warehouses, completion, forwarding and transport cannot be fully remotely carried out. Here, a team of employees is needed to perform activities in a specific place at a specified time, especially since we work with very demanding products, such as fresh food products. Perfect organization of all elements and logistic stages for this type of goods is necessary so that they can reach distribution centres and then store shelves. Securing these stages of the process, while meeting the rigors of safety and pandemic prevention, was the greatest challenge.

*Warehouse department manager:* For us, the greatest challenge was to ensure the health safety of employees and to maintain the team needed to work on current warehouse operations. We created twin teams that worked shifts, without the possibility of changing the composition. The changes did not have (and do not have contact with each other), for this purpose, the break between changes was extended and the traffic in common spaces such as the canteen was changed – here the hours of use of the canteen were set, as in the case of smoking rooms. Warehouse workers were isolated from employees of other departments, just as the warehouses were



closed to anyone not directly working there. Drivers and carriers were also banned from entering the warehouse. Another factor that we had to deal with was the unpredictable volume of orders to be handled and, of course, the fear of what would happen to the order if one of our customers (food producers) was quarantined, the consequence of which would be partial, temporary, or entire production stoppage.

*Transport manager:* Overnight, we found ourselves in a situation where the planning of transport activities took place in real time. We were not able to predict the number of orders placed in advance, because the restrictions resulting from the operation of retail outlets, the introduction of shopping hours for the elderly, and restrictions on customers who can shop at the same time significantly affected the transport and logistics of fresh food products. Simultaneously with the introduction of changes in commercial establishments, the purchasing model of Poles changed, who began to accumulate food supplies by choosing food products with a long shelf life, and fresh products such as meat or cold cuts began to be bought not only for current consumption, but also “in stock” for freezing. In addition, the introduction of the lockdown principle, social isolation and finally – the most important for transport maximum restrictions on international transport and a drop in fuel prices – definitely influenced the condition of transport. We had to face a situation in which it was impossible to plan transport based on historical data (number of orders to be completed). The stopped international transport resulted in a rapid increase in drivers looking for work and orders – this, of course, translated into a lower margin on services.

We must also not forget that the introduction of sanitary restrictions resulted in the fact that production and logistics companies as well as distribution centres changed the order handling system, loading, and unloading of goods – for example, prohibiting drivers from, e.g., leaving the cabins and moving around the workplace. Drivers who so far (during unloading, completion, and loading) had the opportunity to use social spaces adapted for them to rest or refresh themselves, were deprived of such opportunities during COVID-19. Moreover, the documentation related to the acceptance or collection of transport required (and still requires) to be transferred “without contact”. It was also a big challenge to secure appropriate resources and an appropriate amount of means for disinfecting hands, gloves or masks for drivers serving the company’s fleet, for example due to the lack of availability of products or even prohibitive prices.

**Question 2:** *What has the company taken to address COVID-19?*

*President of the company:* For us, the most important thing at the beginning was to ensure the safety of our employees so as not to disrupt the continuity of supplies. We strengthened the hygiene standards, introduced regular disinfection, ozonation of rooms, breaks between shifts, and increased the frequency of washing refrigerated trailers. We made sure that the transport required the minimum number of loading and unloading of goods, we controlled the temperature even more rigorously at each

stage of delivery. The dynamically changing situation required searching for individual solutions each time with our business partners and customers. In the interests of health and safety of employees, we provided the teams with masks, helmets, gloves, introduced hand disinfection at the entrance and exit of the warehouses, we ordered half-hour breaks between shifts – so that the teams would not “cross” in the shared social and office space. We have also introduced a remote work model in departments where it can be applied.

*Transport department manager:* Introducing and enforcing new rules of working with drivers was a big challenge, because due to their movement and contact with many locations throughout Poland, they were perceived as a potential group of high risk of disease and virus transmission. That is why we have introduced the obligation to wear masks by drivers (on the premises of the workplace), the necessity to stay in the tractor cabin during logistic processes with the load and the inability to use social rooms and thus contact with other drivers. Our clients and target recipients, i.e., food producers and production plants as well as distribution centres of commercial networks, have also introduced their COVID-19 safety and prevention procedures. The most important was the sanitary regime prohibiting the driver from leaving the cabin during logistic operations or, for example, necessarily with disposable protective clothing for the driver. Hand disinfection, covering the mouth and nose remain in the COVID-19 preventive standard. All of them unanimously introduced the order to “isolate” drivers (they will absolutely remain in the cabins while waiting for the order to be completed), which unfortunately had a negative effect on the mood of this professional group.

*Warehouse department manager:* We have introduced an isolation of employee shifts and a non-contact transfer of tasks and a ban on staying in warehouses for people who do not perform work related to warehouse operations. An important activity was also external communication with clients, whom we informed on an ongoing basis about the preventive actions taken, guaranteeing not only the quality of the services provided, but also the security of their implementation and the continuity of the supply chain.

***Question 3: How do you think the pandemic affected the company?***

*Transport manager:* It was difficult time for transport as supply chain management was based on unpredictable data that was not reflected in historical data. The dynamics of increasing sanitary requirements or changing procedures of individual, internal procedures or distribution centres required constant response. The beginning of the pandemic also means concerns about the implementation of the sales budget or customer retention. The transport and logistics of food products requiring controlled temperatures, i.e., fresh ones, with a short shelf life, depend on the demand. In the case of the new situation, it was difficult to forecast the level of consumer demand for the category of products we serve. On the other hand, we were concerned about maintaining the production continuity of our clients, because

production plants in which coronavirus outbreaks were detected were sent to quarantine. As a result, we began to look for ways and opportunities to diversify the service offer and introduced flexible services in the field of delivery and transport.

*Warehouse department manager:* A well-functioning human factor is important in the work of a warehouse that handles an assortment of food products and deals with cross docking and picking logistic loads. Many activities are still performed by people and their decision-making as to how to handle processes is crucial. Warehouse and warehouse operations, especially resulting from picking orders for fresh products with a short shelf life, it is not able to function properly without employees. Therefore, the staff operating in this part of the organization was particularly well taken care of, and at the same time alternative solutions were sought to ensure the continuity of work, in the event of a need to quarantine a given shift.

**Question 4:** *Have you used remote work? In what areas of activity?*

*President of the company:* Even before the pandemic, nobody thought that a large logistics operator could carry out tasks remotely in any way. The COVID 19 situation forced us to remodel the work system in areas that made it possible. Due to the specific nature of our business, we have used a remote and hybrid work model for our employees. Departments such as the Customer Service and Sales Office have been delegated to work remotely. The remaining Departments related to transport and warehouse management have been divided into teams delegated to work remotely and continuing stationary work. The condition for the use of the hybrid model and remote work in such strategic areas of the company was a stable IT infrastructure, allowing for connection with integrated systems managing the planning and task implementation processes. This model has proven successful, and we do not rule out that in the future we will offer employees the option of working in a hybrid system: remotely and stationary.

*Warehouse department manager:* In the case of the warehouse management team, people who perform administrative or managerial work using tele-information systems were assigned to remote work. Employees in the positions of a warehouse keeper, shift leader, forklift operator, records worker, warehouse document settlement department (receipts and releases), due to the specificity of the position, had to work stationary, while maintaining the regime. The quality department was obligatorily excluded from remote work.

*Transport manager:* Definitely yes. With the structure of the organization we have, for example, Manager, Deputy Transport Manager, Leader and Deputy Leader, we could divide the team so that some people could work remotely – thus we created two teams with a mirror image of competences and responsibilities. All this so that in the event of an infection or illness in one team and thus the need to send employees to quarantine – the other team could take over all duties and ensure

continuity of work. Therefore, remote work with the above-mentioned division of teams was used in practically every field related to transport, except for drivers and service technicians of trailers and tractors. However, I would like to emphasize that the solution that we introduced, i.e., the creation of two mirror teams in the transport division, could be used in the logistics company with an appropriate structure. This model is only possible in large companies. It can be said that remote work secured the team that was still working stationary.

**Question 5:** *Has the pandemic affected the company's trade volume? If so, to what extent?*

*President of the company:* We work for the food industry, the products of which are on the list of the so-called first consumer needs. For us, the first weeks of the pandemic were a time of increased work and implementation of much higher orders. Therefore, we maintained the level of sales and even its growth in individual product categories. The time of isolation favoured cooking at home, which in turn drove the consumption of fresh products such as meat, cold cuts, and dairy products. The range of products that we delivered has changed slightly – orders for fresh meat, traditional sausage and delicatessen products and basic dairy products have increased.

*Transport department manager:* When it comes to transport, especially those providing services to the fresh food sector, we did not feel any changes in the number of cars sent to the distribution centre of commercial networks. It does not mean that we accepted and shipped the same amount of freight for the same period. The situation related to trade restrictions definitely influenced the volume and value of orders, which translated into transport and forwarding planning. Nobody was able to predict in advance how many cars, with what assortment, will be delivered to a given distribution centre. The FTL (*Full Track Load*) turned out to be a problem, because international transport ceased to function (temporarily) and overnight international drivers and international transport companies ceased to function. To minimize losses, international carriers began to provide domestic transport offering non-market (lower) rates.

*Warehouse department manager:* In the case of warehouse operation, the number of orders significantly increased, although the assortment offer changed, e.g. more orders with basic dairy products than with premium dairy products, the same applied to such categories as: meat and cold cuts – a much larger assortment of basic meat poultry than e.g. waterfowl. It can be said that we have achieved an increase in the turnover of goods, with the same dream, although the producers sold and produced a cheaper, mainstream assortment for the consumer. To sum up – we currently service 4,000-5,000 more pallets per month than in the period before the pandemic.

## 6. Results

At Green Factory Logistics, the pandemic accelerated the inevitable, i.e., the digital transformation, as the emergence of a new reality, i.e., the digital economy, can be clearly seen. On the one hand, it is an opportunity that needs to be taken advantage of in business, and on the other – also a threat. The period of social quarantine and isolation definitely influenced the dynamics of the e-commerce sector development. This is evidenced by the number of online points of sale that has been established in recent months and the number of sales transactions concluded via the Internet or using the application. Direct, safe, and contact-free delivery of products to the consumers' door definitely won their trust, which resulted in the increased demand. Online platforms specializing in the sale of food products, including fresh products, recorded higher results. In the case of food, the increase in sales in the online channel concerned large urban agglomerations – due to logistics costs and the availability of direct deliveries from stores.

At the same time, the shopping basket of consumers choosing traditional stationary purchases has increased. The closure of gastronomy, educational institutions or remote work increased the frequency of home cooking and eating at home. In this situation, logistics, especially those providing services to the food sector, has a chance to develop their services and strengthen their competitive advantages, especially on local markets. Considering the very functioning of companies, it turned out that remote work is not only possible, but also effective provide that employees have access to operating systems, which translated into an increase in investments in the IT area, and digital transformation is simply a necessity for business. In the case of logistics, customer service or transport management can be performed remotely, without negatively affecting the supply chain. The same applies to quality management – the temperature and humidity level in the warehouses in the presented company is monitored automatically and each anomaly is immediately signalled using the SMS application.

It is worth noting that the digitization of automation and robotization is inevitable, but it should be remembered that it is not always possible to create algorithms that will allow 100% of process automation. It should be remembered that the transport of food products, especially based on order picking for a specific customer or to be a commercial network, will not be fully automated, because there are too many variables, so it is necessary to provide a stable, modern TMS (*Transportation Management System*). It is an essential transport investment that can be compared to an investment in a stable team of drivers. The pandemic has shown that in the case of transport, there are two main essential factors for success: IT systems and people. Logistics of fresh food products, even during a pandemic, should not experience any major drops in sales and implementation. The assortment portfolio will certainly change in such situations because consumers buy and will buy basic products, known and relatively universal, from which they can prepare meals at home. The pandemic will not be a good time to introduce product innovations in the field of

food or premium products, as the demand for such a range is limited. An important conclusion is also the need to establish closer cooperation with local producers and service providers, as this makes the supply chain independent of the situation on international markets. Today, the local supply chain is a guarantee of business continuity.

In general, it can be assumed that the pandemic forced changes and adaptation to the existing situation. The statements of the respondents are consistent with the investments in the IT area and the human factor.

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