FBD DATA REPORT 2021 – Groningen and Friesland, the Netherlands

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Report on the SME situation in the Northern Netherlands – profiles, challenges and opportunities for FBD and Dutch SMEs

ABOUT FUTURES BY DESIGN

Futures by Design is a joint INTERREG project carried out in the North Sea Region between January 2019 and January 2022 with the aim to support small to medium enterprises in becoming more successful via digitizing business processes, increasing productivity and stimulating growth. While SMEs are the drivers of local economic development and success, not all of them are natural innovators who embrace the change towards digital business processes and modern technologies. Futures by Design is set to help the companies that struggle with digitization and may have room for improvement in their efficiency and productivity.

Within the project, partners in Groningen and Friesland, the Netherlands, Antwerp, Belgium, Osterholz, Germany, Cambridgeshire, UK, and Halland, Sweden collaborate with local SEMs for them to become more data-driven and skilled in technologies that facilitate their sustainable growth, innovativeness and productivity. The project partners provide support to the firms via workshops, knowledge sharing and customized digital tools.

INTRODUCTION

Futures by Design (FBD) as an INTERREG project is only one of many initiatives aimed at supporting business growth and digitization and thereby fostering innovation. In an earlier report, we presented the concept of Futures by Design and its chosen measures to facilitate innovation and increase productivity among SMEs in six different regions in the Netherlands, Belgium, Germany, Sweden and the United Kingdom (Koster & Bay, 2020).

The Northern Netherlands form a distinct economic region with predominantly (very) small firms and a large potential for innovation. The firms local to this region are characterized and profiled in this report, the challenges and opportunities the Dutch SMEs face are illustrated and solutions based on interactions with the Futures by Design project are presented. Data in this report is based on the first encounters with local SMEs as well as the yearly conducted local Innovationmonitor survey (Noord Nederlandse Innovatiemonitor, RUG & SNN 2020). The Innovationmontior is an initiative by the VinCi center of expertise of the University of Groningen Faculty of Economics and Business in collaboration with the Samenwerkingsverband Noord-Nederland (SNN) amongst other strategic partners. They collect survey data from more than 700 out of 7,800 local SMEs ever year and make the reports publicly available.

The first section of this report describes the state and situation of local firms of small to medium size in the Northern Netherlands based on the data collected and reported in the Innovationmonitor of the Northern Netherlands. The second part is dedicated to difficulties

and barriers that companies and their owners face in their day-to-day work as well as in their innovation efforts. Special attention is given to the COVID-19 pandemic. Lastly, a summary of the results and their application in the Futures by Design project context are presented.

SECTION 1 *(characteristics & profiles of firms)*

The economic region of the Northern Netherlands comprises the provinces of Drenthe, Friesland and Groningen and is home to many small-scale firms, a majority of which have less than 10 employees. The age structure of the firms represented in the Innovation Monitor is as follows: A little more than half of the companies are classified as mature firms, i.e., they have been operating for over 10 years, the other half of the companies equally fall unto the companies of starting firms (younger than 2 years), young firms (<5 years) and adolescent firms (<10 years). The share of staring companies participating in the Innovation Monitor survey has doubled within the last year. Most companies are located in the province of Groningen (41%), a third is Frisian and roughly a quarter of the SMEs is located in Drenthe. The SMEs described in the Innovationmonitor operate in a variety of sectors, the most common of them being industry, agriculture, forestry and fishery, consulting, research and specialized business services, as well as the general service sector. A complete overview can be found in Table 1 below.

Sector	Percentage of SMEs
Consulting, research and business services	25%
Construction	8%
Service	16%
Retail, trade, vehicle maintenance	7%
Manufacturing, agriculture, forestry and fishery	30%
Information and communication	7%
Hospitality	5%
Rental services and transport	2%

Table 1: overview of SME sectors (Innovationmonitor)

To better understand the innovation potential and efforts brought forward by SMEs in the Northern Netherlands, the Innovationmonitor reports on the different types of innovations introduced by the companies between 2017 and 2019. Almost two thirds of the surveyed firms (61%) describe having introduced new of strongly improved products within the last two years. Less companies declare having implemented new or improved methods or business processes in the same period (17-41%). The reported percentages are fairly stable over the course of the three most recent Innovation Monitor measurements. An increasing number of SMEs reports more sustainable innovations, such as lower energy usage, lower CO2 emissions, using more sustainable materials and increasing the number of materials being recycled, in the latest survey period. About a third of all participating SMEs have also shown social innovations benefitting either social cohesion, health and well-being of employees,

clients and society or taking on new staff members from groups furthest from the labor market.

SECTION 2

The challenges SMEs in the Northern Netherlands face in the process of innovating are as diverse as the SMEs themselves. Many innovation barriers are commonly experienced by a wide range of SMEs. This report mainly focuses on the challenges that SMEs reported in the Innovationmonitor survey conducted by SNN. These have a slightly different focus than the ones mentioned in the report on Barriers and drivers for data driven innovation among SMEs (Giovannetti, Davies, Walsh, Willis & Little, 2020) published earlier by the FBD project team.

The challenge that is mentioned by the largest group of SMEs in the Innovationmonitor is a lack of creative business ideas (58%). Other barriers are mentioned with frequencies between 22% and 35%, they include but are not limited to difficulties finding partners for innovative collaborations, lack of financial resources, problems finding skilled new staff members, worries about a proper evaluation of technical and economic risks associated with innovations and difficulties transforming creative ideas into concrete innovation projects.

It becomes clear from the Innovationmonitor reports of 2018 to 2020 that the number of innovation barriers that SMEs experience is increasing. This might be due to the rise in complexity of technical advancements, more flexibility in labor and output markets, and the unmanageable amount of information sources and bureaucracy linked to innovating.

Connecting SMEs in the Northern Netherlands, so that they can collaborate in their innovations and make business processes more efficient, is one of the main goals of several regional initiatives aimed at creating SME hubs or incubators that facilitate networking and knowledge sharing activities (FBD; Groningen Digital Business Centre, VentureLab North). The shortness of financial resources is addressed by governmental subsidies but not completely alleviated, as finances are not the only or even the biggest problem with innovating that SMEs experience. In addition, many SMEs are discouraged by the amount of bureaucracy they have to go through when applying for a governmental subsidy and as a consequence never apply for one.

Despite all perceived challenges and barriers, the surveyed SMEs, on average, have been able to generate 25% of their revenue in 2020 via newly introduced products of services. The complete breakdown of SME turnover by innovation can be found in Table 2.

Innovation potential was found to be stronger for SMEs that kept their inventions and improvements a trade secret.

Turnover made by	Share of turnover in 2020
Product or service innovations, newly introduced to the market	25%
Product or service innovations, new for the SME but not the market	14%
Products or services, unchanged or slightly adjusted	61%

Table 2: Innovation potential of SMEs reflected in turnover (Innovationmonitor)

COVID-19 as challenge

As part of the Innovationmonitor 2020, 110 SMEs have also reported on their handling the COVID-19 measures and restrictions. As expected, a majority (63%) of the firms have already seen a substantial loss of revenue two months after the pandemic control measures were implemented. However, 58% of the surveyed SMEs stated they continue their work as normally as possible with the restrictions in place. This might be due to the fact that many SMEs in the sample operate in the agricultural or manufacturing sectors, which are deemed essential and can continue their work, and the specialized business service industry which includes many office workers who can continue their jobs mostly without constraints. Just a small group of 8% has made major adjustments to their strategy of generating revenue. Furthermore, the innovationmonitor finds that the most innovative SMEs reported the lowest decreases in profit as a consequence of the pandemic control measures, while they also made permanent adjustments to their sales strategy. Those SMEs mainly fall into the category of small or micro-firms. Adjustments to the pandemic-related restrictions in any way seem more difficult to make for newly started companies than the more established ones.

Even if the time of measurement of the effects of COVID-19 on the SMEs was rather early in the course of the pandemic, the results demonstrate that the SMEs in the Northern Netherlands are ready to make changes to their business processes and ways of working in order to provide increasingly good products and services to their customers. To some extent, the SMEs have already made these changes, some even permanently. The interest in new collaborations is affirmed by a third of the participating companies as a result of the corona crisis.

SECTION 3

As could be expected, the Innovationmonitor shows that investments in R&D pay off in terms of innovative products and services but they also often are a substantial expense that drastically lowers the profit margin for the year of investment. However, the investment in internal or external research and development and the subsequent innovation is likely followed by an increase in efficiency or profitability. New technologies that have been implemented by SMEs in the past two years include production processes with lower emissions, sensor technology, Internet of Things, robotization, Big Data, machine learning and AI. The Innovationmonitor shows that especially SMEs which invest in their own R&D use these aforementioned technologies as well as SMEs on the larger end of the size distribution. Internet of Things and sensor technology are the innovative technologies most commonly used by SMEs surveyed in the Northern Netherlands (34% and 39%, respectively). In the third and fourth place are Big Data (29%) and AI and machine learning (21%). All these data-driven technologies provide opportunities for SMEs to work more efficiently and make evidence-based business decisions. Futures by Design sees possibilities for many SMEs to still improve in that area. This idea is supported by the data on technologies relevant but not yet used by SMEs presented in the Innovationmonitor 2020 (Table 3). Implementing these technologies via collecting and analyzing data can be useful for making business processes smoother,

booking, selling or marketing processes easier or more easily customized, and sales predictions and staff planning more accurate. Overall, using data science to support business processes has been shown to bring SMEs a higher profitability, productivity and a more efficient workflow (McAfee et al., 2012; Brynjolfsson et al., 2011).

Technology	Not relevant	Relevant but not used	Relevant and in use
Internet of Things	36%	30%	34%
Smart sensors	36%	25%	39%
3D printing	64%	20%	16%
Robotization	52%	29%	19%
Big Data	38%	33%	29%
Blockchain	58%	33%	9%
AI, machine learning	53%	26%	21%
AR, VR	70%	22%	8%
Drones, autonomous vehicles	73%	17%	10%
Nanotech	81%	13%	5%
Industrial Biotech	75%	11%	14%
Photonics	86%	9%	5%
Hydrogen	77%	15%	8%

Table 3: relevance and usage of various technologies among SMEs

Data on innovative collaboration with external parties shows that many SMEs in the Northern Netherlands work closely together with their clients and suppliers, as well as in partnerships with universities or other higher educational institutes. While there is still potential for about half of the surveyed SMEs to improve their collaborations with clients, suppliers, and experts form universities or consultancies, even more potential still lies in the not so common membership in an innovation network or incubator. Between 12% and 23% of the SMEs reported participating in such a hub where firms with a similar goal come together, network and collaborate to realize their ambitions. The Innovationmonitor shows that collaborations have a positive influence on the societal orientation as well as the number of social innovations delivered by the firms.

Further, the analyses presented by SNN (2020) show that different approaches work best to encourage different types of innovations among SMEs. An innovative landscape (with testing facilities for new products or services) benefits the societal orientation of the firms and the number of sustainable innovations introduced. For social innovations, it seems as if incubators are a more effective support strategy.

SECTION 4

Based on the state of the SMEs in the Northern Netherlands and their reported experiences Futures by Design is able to customize the information and support provided to the regional SMEs to best benefit a data-driven operation. The findings presented in the most recent Innovationmonitors (2018-2020) affirm our belief that new technologies, such as big data, AI

or machine learning, can free up innovation potential in SMEs and collaborations of different sorts can foster social and sustainable innovations. In seeking collaborations with the SMEs as well as offering a platform to connect with other firms form the same region, the FBD project partners form a variety of institutions aim to increase the efficiency of small to medium-sized firms and help them implement innovations that further benefit business growth. These desired results could strengthen the local economies of the regions participating in the FBD project.

More specifically, the strategy followed by Futures by Design consists of assessing the data maturity or skill level of the SMEs and then helping them advance from their individual level and reach goals that are relevant to them. By taking into account the digital literacy skills of the companies when discussing the development plan, we hope to make new technologies more accessible to SMEs. In addition to individual sessions with the companies, we provide (digital) tools which support the firms in their journey towards more data-driven processes. With the social and process support, we believe that SMEs are able to accomplish small but visible improvements which will motivate them to keep implementing new technologies into their workflows. In an effort to continue our support remotely, the project partners also provide the SMEs with relevant information on the development of new technologies and tools.

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