

A Study on European Start-Up Companies compared to Maltese Start-ups

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Abstract—This research compares European start-up enterprises to Maltese businesses. The goal of this research is to offer a clearer picture of how far progress has been achieved by comparing data from prior years to more recent data using the European Start-Up Monitor. The data was formatted using Power Bi for better viewing. This project was a success in terms of developing visualization, although there were few data sources for Maltese data.

Index Terms—Start Ups, Malta, Europe, Visualization, Power Bi

I. INTRODUCTION

Start-ups are a critical element for the economic vitality of any country it is also the pipeline for small or medium enterprises (SME) and future high-growing companies. Across Europe, start-ups contribute to make countries economically and socially vibrant by redefining the technological landscape and creating markets of tomorrow. Start-up businesses are the first process to having an established SME. In 2018 all European SMEs firms constituted 99.8% of both European and Maltese economy [1] [2]. A better understanding of start-up companies in Europe would be helpful in a way that one can be able to identify what leads up to SMEs. The aim of this study is to gain a better understanding of other start-up businesses in various countries in Europe. For this study The European Start up Monitor (ESM) will be used. The ESM is used for a better overview of challenges, characteristics and potential that a start-up business can have.

As a researcher I want to identify the countries are similar to Malta in terms of high ranking with statistics. The theory entails that potential start-up businesses can benefit from an interactive report about similar progress. The motivation behind this study is derived from wanting to become a business owner myself. Therefore, this can be beneficial in such a way that it would be easier to identify what factors might make a business more successful and how other countries are performing within the EU, while also taking into consideration that generalize business operations is also an option.

This study is relevant to Malta as it is a member of the European Union and future entrepreneurs who are interested in starting up their own business will be able to review the data gathered. This will also be beneficial to innovators who are willing to invest in start-up businesses in Europe. Businesses

themselves will also be able to benefit from this, due to being able to conduct research on the highest performing countries and seeing how they can adapt to their right methodology and possibly perform better.

II. LITERATURE REVIEW

Start-up enterprises are increasing in number in Malta, due to business incubators that invest in comparatively small local businesses. Businesses can be funded in a variety of ways, including the founder's money, family and friends, government subsidiaries, private equity bank loans, or business incubators and accelerators. Malta has business incubators which are organizations with the aim of helping local start-ups enhance their competitive advantage. [3] Malta Enterprise has created a number of incentives to promote and expand various industries in order to foster the development of creative businesses. Malta Enterprises offers rewards to businesses that demonstrate a commitment to growth and an improvement in the value of employment. They concentrate on ICT development, healthcare, biotechnology, marine service, logistics, and other areas. [3] Success factors include many aspects of commercial operations such as events, activities, and expos. Typically, young entrepreneurs lack the necessary resources to launch a firm, therefore they seek out incubators to reduce their chances of failure due to inability to develop their business, form management teams, or acquire funding [4].

Business accelerations help start-ups by providing services such as mentorship, office space, education programs, and financial assistance. Accelerators are reducing start-up failure rates in Malta, whereas growth rates are significantly greater than the regional average [3]. Businesses are often positively impacted by Business Accelerators because they increase the chances of becoming successful entrepreneurs and creating value networks. When a firm is expanding and seeking to succeed, credibility is critical. However, due to the newness of the firm, this is tough to maintain. When a company pursues credibility, it becomes more appealing to relevant parties. The stakeholders of a business have the most effect on its development. As a result, accelerators are accessible to give new effect on corporate action, structure, activity, and strategy. Credibility also has an impact on whether or not a

firm is successful. Success also tends to accelerate company adaptation to legitimacy [5].

Malta enterprise provides a variety of programs. For example, a program called "Business START" which provides seed and growth funding for small start-ups. Applicants in this program are still in the early stages of development and may receive an initial grant of up to 10,000 euros to assist them expand their business idea. Start-ups must demonstrate a solid business strategy in order to be considered for further funding connected to full-time employment, which can range from 25,000 euros each quarter to a maximum of 200,000 euros [3]. Local start-ups applying for these government funding are expected to undertake an interview to present their experience and objectives, as well as further describe the idea in further details. A presentation, a case study, or a few brief questions will be used as part of the selection process to determine the kinds of project the entrepreneur will be performing. Because the goal of these programs is to enhance the Maltese start-up ecosystem and make the country into an ideal place for start-ups, Malta enterprise will have no ownership of the firm of the application [4].

Taking that into consideration, visualizations are useful tools for data processing. Data sets are always growing in size, however the greater the data collection, the more difficult it is to analyse and evaluate the data. A big amount of data will also slow down the display, decreasing the possibility of it operating properly. It was observed that when data was presented, the user could easily understand the data being presented and clarify conclusions. Data may be graphically illustrated using a variety of conventional layouts. Points are commonly used to represent positions, whereas arrows are commonly used to represent lengths, routes, connections, and boundaries. These designs are used to construct infographics, statistics, and mapping. The visualizations are then made interactive so that the user may customize how the data is displayed. Sliders, buttons, tables, and combo boxes are used to accomplish this. Interaction entails creating and modifying queries to provide a different visualization whilst utilizing the very same data. Differences could be underlined by using points or maybe even a pigmentation. Visualizations are often presented together within PowerPoint presentation, allowing the audience to navigate between visualizations as desired. With the progression of time, visualization software began placing greater emphasis on the development to customize visualizations by incorporating methods such as scaling, 3D movement, rotating, filtration, and detailed selections. The user was also given the ability to recreate a visualization by modifying query parameters and applying user interface elements. [6] [7]. These tools will be discussed further after the data has been collected in the following chapter.

III. RESEARCH METHODOLOGY

This study had to find out whether to accept or reject the following hypothesis:

1. Do start-up companies find it useful to have an interactive report?

2. Can start-ups achieve a better performance with the help of business incubators?

3. Is it possible to build a report utilising data from previous data reports?

4. Could future start-ups find an interactive growth report useful?

5. What types of service business incubators offer to local starting businesses?

A secondary quantitative technique was used to determine whether to accept or reject the usage of visual elements in start-ups. This research study will be based on statistics from the European Start-up Monitor (ESM). Data was extracted from documents published in 2018 and 2019.

Data from numerous European counties was included in the report; the countries from which the data could be evaluated over the course of two years were selected. The topics in the statistics report were all underlined, thus the information was broken down into the following groups: Gender Distribution, Start-up Demographics, Sector Distribution, Revenue Distribution, Financing Sources, and Business-to-Business. The dashboard for dynamic visualization in Power BI will be used to gather the data. An initial CSV file containing relevant data about European start-ups is created, and Power BI was used to link this data. Using methods suggested in the literature, data was analysed in Power BI, and visualizations were produced based on the concepts found in the material. Prototype Analysis: The visualizations' objective is to provide users with a better knowledge of the state of start-ups in Europe. Based on the visual aspect of things, having illustrations makes it simpler to understand. Due to the use of diagrams to clearly convey data when selecting a column, the visualizations both achieve their aim and are user-friendly. The user will be able to change the visuals so that they may select a certain country and look at specific statistics about it. Due to the representation of different types of data, patterns have been used to easily detect differences across countries and different presentations.

IV. FINDINGS & DISCUSSION OF RESULTS

Project Evaluation

This research focused mostly on 12 European nations, with Malta being included in some statistics because it is a member of the ESM in the following year. To determine if data analysis through the development of visual reports has any advantages, a power BI dashboard was developed.

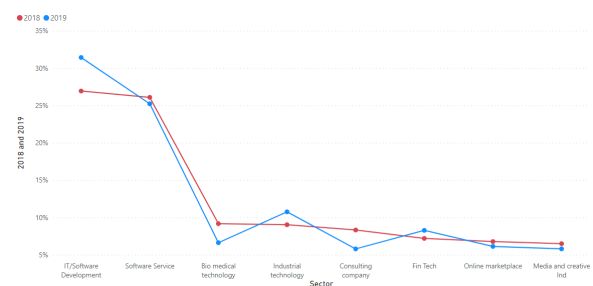


Fig. 1. Sector Distribution

Sector Distribution

This visualisation it is analysing the sector distribution between each country and the type of sector they most operate in. It was found (Fig.1) that in 2018 and also in 2019, IT/Software development had the highest average rating of 31.43. and 26.94, while the industry in Media has the lowest average rating. The reason for this may be that the sector of software is more demanding in today's industry because of more jobs and business being platformed using software development whereas Media its very limited to what can be started as a business.

Gender Distribution

The second visualization is based on whether founders are mostly men or woman. It can be acknowledged that start-ups are mostly founded by men however in 2019 there was a slight significant increase in startups being founded by women. Furthermore in 2018, Poland had the most percentage rate in being founded by woman however, there was a decrease of amount of almost 9% in the following year.

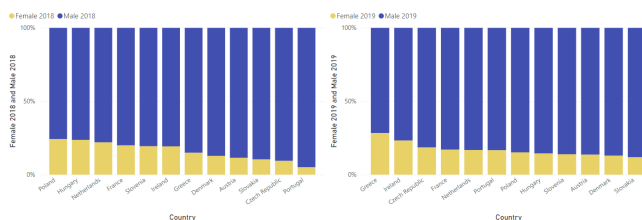


Fig. 2. Gender Distribution

Stages of Start-ups

The countries in this research were mostly in the start-up stage or even in the seed stage which happens to be the first two stages. The most difficult challenge being faced by start-ups in both 2018 and 2019 was Profitability. In 2019 it could be identified that the second main challenge being faced is Cash-flow / Liquidity however, in 2018 the second highest was Sales / Customer Acquisition. Since the creation of incubators and business accelerations were adding up by the time, this was increased by 2019 to 35% when in 2018 it was at 26%.

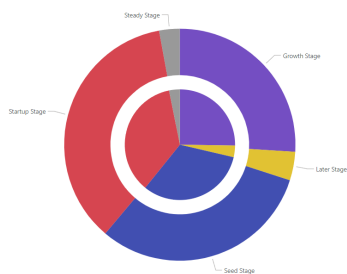


Fig. 3. Stages of Startups

Finance Distribution

It could be identified that there was an increase in the amount of new business being opened in 2019. With the support of the business first programmes offered by Malta Enterprise, that will assist founders in hiring more people,

there has been a significant increase in the launching of new businesses in Malta as a result of business incubators. The majority of developed ecosystems, like those in Germany or France, intend to increase their work-forces, while more developing ecosystems, like those in Malta, Slovakia, the Czech Republic, or Poland, are catching up in terms of the development of their start-up ecosystems. Additional employees to be employed the next year are rated as well in the statistics. Slovakia's statistics between 2018 and 2019 can be seen to have significantly improved.

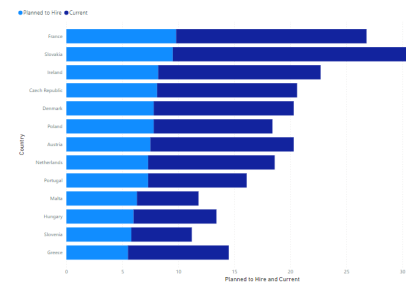


Fig. 4. Jobs Creation

Revenue Generated to Revenue Distribution In this visualization, the revenue generated by start-ups was displayed according to the countries. It could be identified that in 2019 there were most start-ups generating higher revenue than in 2018 such as Slovakia, Austria, Ireland, Greece, Denmark, and Portugal. On the other hand, it could be identified that business in Slovakia are generating a significant higher amount of revenue than the past year

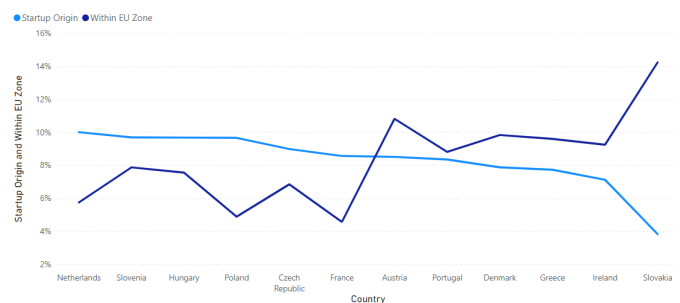


Fig. 5. Revenue Distribution

Business to Business Business target their clients before they start operating however, this does not necessarily mean that they do now change their target market. Most start-ups engage in Business to Business (B2B) markets and generate their revenue entirely or mainly through working with other businesses. In fact, businesses may address the market to other business which would make them a B2B business or else, a business may cater for customers which makes it a B2C business. However, this could be combined, and businesses would be able to cater for both allowing the business to have a broader market. In 2018, It could be acknowledged that start-ups generate most of their revenue through B2B activity with a percentage being of 71.7%. In 2019 there was a significant

difference to having most countries with a relatively high figure and it could also be identified that more start-ups started catering the business-to-business sector, especially in Malta, Slovenia, Poland, and Belgium.

V. CONCLUSION

It could be concluded that it is possible to create an interactive visualization entailing start-ups in Europe. Because of the interaction factor and the ability to visually separate data due to colours, graphs, and buttons, analysis has been made simpler. If they are interested in expanding their businesses internationally, potential start-up enterprises may find this information beneficial in determining which nations are performing well. Investors that want to make additional investments in start-up businesses may find this helpful. Companies could be interested, but more investigation is necessary. Especially investing companies or companies that are willing to expand their business might be interested in supporting this tool. This research was extremely limited due to the time allocated to carry out research together with the lack of information available regarding local start-ups. Study was also limited due to collecting data from only two years and not having all European countries. The fact that only secondary research has been done is another setback. Future research are advised to include additional data, including data from both domestically and from other nations. Due to the enterprise being somewhat restricted with the information that was provided to me at the time and to determine whether they would be interested in interactive visualizations, my investigation into local business incubators was rather constrained.

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