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THE EFFECT OF REGIONAL TYPOLOGY AND CONTEXTS ON PERFORMANCE OF EU-SUPPORTED PROJECTS IMPLEMENTED BY COMPANIES IN LATVIA

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Abstract

The European Union invests billions of euros in regional and business support programs aimed to foster development across the union. Although this funding in Latvia is regularly evaluated, its effect on reducing regional inequalities so far has mostly been inconclusive. Even when regional evaluation does take place, it does not consider contextual and typological aspects of territory, which are believed to have major impact on business. Therefore, the purpose of this research was to find out how typological and contextual aspects affect the performance of the European Union support to companies in Latvia, thus filling the gap between support evaluations and the impact of contextual aspects.

To achieve this, the authors interviewed 5 regional business experts, concluding that four specific contexts are relevant for Latvia. Then, in a survey of companies with 1,022 respondents, these contexts were evaluated for each district of Latvia. Finally, using a rich firm-level database, a counterfactual impact evaluation with propensity score matching was performed, taking into account the evaluation of contexts. The findings on contextual aspects point out to medium-term trends similar to prior expectations – performance of supported projects is better in areas with already more positive evaluation of contexts. However, the outcomes on typological aspects highlighted trends contrary to what was expected – projects in more rural and distant territories appear to outperform those in dense urban areas, and especially commuting areas. Results suggest that even though the European Union support had a positive effect on performance of companies, its effect on reducing territorial inequalities was short-lived at best.

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Glossary

0.01, 0.05, 0.10 level	Statistical confidence level of 99%, 95%, and 90%, respectively
1 NN, 2 NN, 3 NN	1, 2 or 5 (respectively) nearest neighbours matching method using PSM (see page 26)
Counties	Current territorial division units in Latvia (119 municipalities)
Districts	Territories in Latvia under territorial division before 2009 (see page 17)
Economic context	Economic structures (see page 13)
Ernst & Young	Ernst & Young Baltic Ltd (SIA)
EU	The European Union
Formal institutional context	Formal systemic / institutional structures (see pages 12, 13)
Informal institutional context	Informal systemic / institutional structures (see pages 12, 13)
IPA	Interpretative phenomenological analysis (see page 18)
LAU	Local administrative units (in Latvia - 119 counties)
Medium term	3 years
MoF	Ministry of Finance of the Republic of Latvia
NACE	European standard classification system for industries
Negative area	Area, where context evaluation is lower than average in Latvia
OECD	The Organisation for Economic Cooperation and Development
Positive area	Area, where context evaluation is higher than average in Latvia
pp	Percentage points
Projects	Projects implemented by companies in Latvia using EU funding (see page 22)
PSM	Propensity score matching (see pages 26, 27)
Short term	1 and 2 years
Spatial context	Spatial / geographic structures (see page 13)
SRS	State Revenue Service of Latvia (Valsts ieņēmumu dienests)
Treatment	Implementation of EU-supported project during 2007 to 2015
UR	Company registrar of Latvia (Uzņēmumu reģistrs)

1. Introduction

Since Latvia joined the European Union (EU) in 2004, the country has received a substantial financial support from several EU financial instruments. Cohesion policy, which determines the ultimate goals of such funding, is the EU strategy to foster the economic growth of less-developed regions and reduce regional disparities (European Comission, n.d.). Therefore, in Latvia these resources are generally aimed at benefiting the country's economy, fostering the development of entrepreneurship, and enhancing Latvia's business environment.

The funding is divided into three programming periods: 2004 - 2006, 2007 - 2013, and 2014 - 2020 (Ministry of Finance of the Republic of Latvia [a], n.d.). To ensure efficient funding and its distribution, the funding programs are evaluated on a regular basis. Although these evaluations cover many aspects of funding, they mostly focus on evaluating whether funding activities reached their goals and targets which were set before implementation. As a result, even though these evaluations often spot and mention regional discrepancies in Latvia, they do not particularly explore the reasons of differences and factors influencing them.

Furthermore, when evaluations do take into account regional aspects, they usually consider only simple administrative division. However, administrative territories are often non-homogenous and therefore limit opportunities to explore differences in depth. The topic of regional differences is often studied by analysing contexts - "circumstances, conditions, situations, or environments that are external to the respective phenomenon and enable or constrain it" (Muller, 2013, p. 11). Explained differently, contexts are the specific background factors and environment that different geographical locations have. The idea that contexts are crucial for entrepreneurship and business is explicitly presented by Friederike Welter. She claims that economic behaviour and performance can be better understood within historical, temporal, institutional, spatial, and social contexts (Welter, 2011). Later, in 2013, Sabine Muller applied the concept of contexts in a study carried out in Denmark. Among findings, she concludes that contexts undoubtedly influence entrepreneurship and business, and this influence could be regarded as an asset (beneficial for a particular company) or as a liability (limitation for a particular company) (Muller, 2013).

Another territorial aspect worth analysing is the type of territory. Territorial typologies are different classifications assigned to administrative territories by the EU and OECD to better describe them (e.g. rural or urban, coastal or non-coastal). Therefore, an analysis of comparing performance of projects between areas of different types or areas whose specific contexts are different may unveil how different territorial types and contexts

affect the performance of projects. This is the aim of this thesis. By analysing the local contexts of different Latvia's regions, the thesis set to explain differences and disparities in performance of EU-supported projects. To achieve that, the following research question was developed: **How do typological and contextual aspects affect the performance of the EU-supported projects implemented by companies in Latvia in the 2007 – 2013 programming period?**

For this thesis, the EU-supported projects carried out by companies in Latvia are the projects executed within certain funding activities of the European Union structural fund's Operational program No. 2 in the programming period of 2007 - 2013. The chosen activities, summarised in Table 2 (page 22), aim to improve the business performance and provide monetary funding as grants (not supposed to be repaid) for business operations. The programming period of 2007 - 2013 was chosen as it is the latest completed programming period of the EU funding in Latvia. This thesis measured the performance of projects as in the evaluation by Ernst & Young Baltic Ltd. (2018) - the effect on turnover growth of companies, which was calculated using counterfactual analysis.

For robust results, a propensity score matching approach was used to compare supported companies with similar, but not supported companies, as it was done in the forthcoming economic policy paper "Importance of EU regional support programmes for firm performance" by Benkovskis, Tkacevs, & Yashiro (2019). Since there was no previous data on contextual aspects in Latvia, relevant contexts were determined in interviews with experts and later evaluated in a survey of 1,022 companies.

While Benkovskis et al. (2019) analysed how internal aspects of a company affect the performance of a project, this research explored the effect of external factors, thus broadening the understanding of EU-supported projects' performance. Additionally, it also narrows the research gap between business performance and contexts, which, as suggested by Welter (2011), was previously understudied. Finally, since the expected support of the EU funds to Latvia after 2020 is expected to shrink by 7-30%, the findings of this thesis could be an important information for policymakers and institutions responsible for the EU funding in Latvia (Cabinet of Ministers of the Republic of Latvia, 2004).

First, in the next section, the theory on this topic is summarised. Afterwards, the third section describes the applied methodology, while the fourth and the fifth sections present the results, their interpretations, and implications. Lastly, the authors provide concluding remarks.

2. Literature review

The literature review is split into four parts and defines the literature and theory used in the thesis. The first part presents background and studies of the EU funding in Latvia. The second part explains the theory of contexts, their definition, discrepancies among regions, and summarises previous research on the topic. The third part explores typological territorial division approaches for analysis of particular aspects and their effects. Accordingly, the fourth part compiles hypotheses based on the reviewed theory. Consequently, by using the theory presented here, the authors of the thesis aimed to explore which contextual and typological aspects are relevant, how they affect business, and what is their expected effect.

2.1. Background, evaluations, and studies of the EU funding in Latvia

Latvia is one of the largest recipients of the EU regional supports (Benkovskis, Tkacevs, & Yashiro, 2019). To be more specific, during the period of 2007 to 2013, Latvia received a total of slightly more than 4.5 billion EUR within the 3 operational programmes: Human Resources and Employment received (583,103,717 EUR); Entrepreneurship and Innovations (696,281,634 EUR); Infrastructure and services (3,251,062,283 EUR) (Ministry of Finance of the Republic of Latvia [b], n.d.). Accordingly, the largest financial instruments providing the support are the EU structural funds responsible for the Cohesion policy implementation - European Regional development fund, European Social fund, and Cohesion fund (Ministry of Finance of the Republic of Latvia [c], n.d.). A research carried out in 2011 by Stockholm School of Economics in Riga (Stockholm School of Economics in Riga, 2011), concludes that EU funds in Latvia increase labour productivity and real income, which, in turn, increases private consumption and investment, leading to a better state of economy. The impact of EU funds on the economy is regarded as significant and positive, which is why it is important to understand the factors affecting the success of the funding.

As already mentioned in the Introduction, the EU funding in Latvia is evaluated on a regular basis. The evaluations most relatable to this thesis are the evaluation by Ernst & Young Baltic Ltd. in 2018 and an evaluation of activity No. 1.3.1.1.1., which is related to employee training, performed in 2014 - 2015 by the Ministry of Finance of the Republic of Latvia (MoF) and Centre for Research on Impact Evaluation. The first, an ex-post evaluation "Evaluation of the contribution of European Union funds to entrepreneurship support in 2007 – 2013 programming period and impact assessment of these investments", assesses the contribution of the funding towards higher added value, productivity, and other business

performance measures, as well as promotion of innovations. The evaluation covers 11 activities of the Operational Program "Entrepreneurship and Innovations" and one activity of "Human Resources and Employment". The evaluation performed analysis both on the efficiency of implementation (how many programs implemented, how good was the process etc.) and the impact of funding (counterfactual impact evaluation). Conclusions drawn proposed that the implementation could have been more efficient and that activities focused on business development in the regions might have been insufficient to solve regional development problems (Ernst & Young Baltic Ltd., 2018).

The second ex-post evaluation is "Evaluation of the Operational Program's "Human Resources and Employment" activity No. 1.3.1.1.1. – Support for employee training to improve company's competitiveness" performed by MoF. Its aim was to evaluate the implementation and effectiveness of the activity. The activity was implemented in two calls; the counterfactual impact evaluation of the first call was performed by Centre for Research on Impact Evaluation. The evaluation concluded that the implementation was better for the companies in the second call; nevertheless, it is highlighted that companies that received the support value it a lot since it helps their business. Besides, although most often insignificant, calculations present a positive impact of support on companies. Furthermore, the evaluation also presents regional disparities in terms of how large proportion of companies in the region received funding (Ministry of Finance of the Republic of Latvia [d], 2015).

In 2011, a paper on topic of the EU funding to Latvia's regions by Vitola and Senfelde was written. Although it is not an official evaluation and was done in the middle of the planning period, its purpose was to create a preliminary evaluation of the allocation of the EU funding in Latvia's territories. They conclude that in relative values more financing was received by the least developed regions; however, it was due to large and infrequent infrastructure projects, while in nominal terms better developed regions received more. Article highlights the fact that in 2007 the socioeconomic disparities among regions in Latvia were the highest in the EU (Vitola & Senfelde, 2011). Additionally, Vitola and Senfelde claim that the financial support per capita of the Operational Program "Entrepreneurship and Innovation" was neutral in terms of correlation with socioeconomic development in the region. This highlights that it is likely that Latvia's regions have considerably different contextual aspects, yet the EU funding has not been able to offset the differences.

Additionally, in 2019 a forthcoming economic policy paper "Importance of EU regional support programmes for firm performance" was created (Benkovskis, Tkacevs, & Yashiro, 2019). This paper investigates the effects of the EU regional support on various

performance indicators of companies in Latvia. The paper analyses a very similar firm-level dataset to the one used in this thesis and it has a target group of 480 companies supported in similar programs of same programming period (2007 – 2013). Based on specific indicators of each company (labour productivity, age, turnover etc.), a propensity score indicating the probability of a company to receive EU support was calculated. Then, by employing a non-experimental matching approach and difference-in-difference method, the effect of EU regional support was determined on various indicators. The paper concludes that, in comparison to companies not supported, the EU regional support immediately increased a supported company's employment, turnover, and capital stock per employee; however, the productivity is increased only two years after launching a project. Besides, the paper highlights that the productivity gains are more pronounced for companies that were less productive and larger before participating in an EU-supported project, while the effect on employment is higher for initially smaller companies. Interestingly, Benkovskis et al. (2019) also tested for effect of the region where a company is located, but no significant effect was found. Therefore, while this forthcoming economic policy paper explores the effect of internal contexts of a company (its size, productivity etc.) on the outcome of support, this thesis focused on external aspects – the context of the area where a company operates.

2.2. Contexts

There are three main works from which the authors drew upon when defining contexts, proving their impact on entrepreneurs and companies, and proving their importance. Chronologically, the works fit as follows: Gary Johns, "The essential impact of context on organizational behavior" (2006); Friederike Welter, "Contextualizing Entrepreneurship – Conceptual Challenges and Ways Forward" (2011), and Sabine Muller, "Entrepreneurship and Regional Development: on the interplay between agency and context" (2013). Besides, these works are linked to each other since in newer works references to previous were found. In 2006, Johns based substantial parts of his work on Mowday & Sutton's (1993) paper. The work done by Johns was later referenced by Welter in 2011. Then, in 2013, Muller references Welter's approach to contexts and their importance.

2.2.1. Definition of contexts

Johns (2006) defines contexts as "situational opportunities and constraints that affect the occurrence and meaning of organizational behaviour, as well as functional relationships between variables" (p. 386), and he recognizes that many contexts are related to each other.

Johns provides an example of a high-quality employee training usually being considered as a positive influence on the environment. However, if the employee finds himself in a setting where the superiors are less prone to accept change, which could be brought about because of the training, the improvements are not delivered to the work environment and the positive influence is minimized. Johns (2006) also elaborates on different manifestations of contexts, which could be a result of a notable event, a result of other contexts, an interplay of two other contexts, a constant in a given situation, and others, highlighting the unpredictability of contexts. He also proposes two levels of analysis - omnibus and discrete contexts. Omnibus context is defined as the broader understanding of contexts, a compilation of many. However, discrete context is defined by specific contextual variables, which might be an influence on both individuals and companies. This thesis focused on the discrete context approach.

In 2011, Welter builds on Johns (2006) work, where she acknowledges his definition of contexts and the split into omnibus and discrete contexts. She also puts forth five main omnibus contexts, which might affect entrepreneurship - social, spatial, institutional, temporal, and historical. Discrete context examples include the characteristics of geographic displacement, social norms and beliefs, implemented policy and regulatory measures, network structure, and others. Welter argues that setting a unified way of defining contexts is nearly impossible because of the many forms they can take.

Muller (2013) referenced Welter's (2011) work and accepts the proposed definition of contexts: "circumstances, conditions, situations, or environments that are external to the respective phenomenon and enable or constrain it" and, likewise to Welter, accepts that context can be either an asset or a liability. Furthermore, Muller adds that contexts can be distal or proximate, meaning that they are either "farther apart in distance or time" (p. 11) or otherwise. However, while doing so, she also acknowledges that "we have no theory for context, no rules for it, and no clear idea of what limits it may have" (p. 12), which she has cited from Scharfstein (1989). Therefore, the authors of this thesis accept Muller's definition of contexts as the most appropriate in light of analysing performance of companies.

Muller (2013) also explains contents of contexts. Spatial context is linked to geographic location and environments like "neighbourhoods, communities, industrial districts and clusters". Social contexts are "networks, household, and family". Institutional context is defined as both formal and informal arrangements. Additionally, she argues that rural condition should be a context of its own because it brings about one-of-a-kind combinations of circumstances and allows to research entrepreneurs from such viewpoint.

2.2.2. Relevance and importance of context research

The three aforementioned authors - Johns (2006), Welter (2011), Muller (2013) - write about contexts having a significant influence on entrepreneurs. Johns (2006) argues that studying contexts is imperative because of three main reasons. First, it helps to understand person-situation interactions. Second, a lot of variation between research results could be explained if contexts were more thoroughly researched, which could help to drive the quality of research upwards. Third, a better understanding of contexts would help to better implement the results of research in real life. Moreover, Welter (2011) advocates that the "context lens" is what allows to take a broader view of entrepreneurship and find causalities of practices and actions, which result in certain outcomes. Taking a step back, Muller (2013) explains the importance of discovering and acknowledging contexts in the fact that entrepreneurship takes place among all of the contexts and interacts with them, which means that understanding contexts might help to improve the work carried out in companies.

Despite the relevance acknowledged by researchers, all of them are calling out for further research regarding contexts. Johns (2006) highlights that it is not the case that there are absolutely no studies about contexts, yet "unrecognition" or "underappreciation" prevails. Welter (2011) in the conclusion of her work points out that there is still a lack of inter-discipline studies. However, Muller (2013) tries to fill in the gap by conducting a qualitative research in Denmark, where she studied 28 different companies in 3 rural regions using qualitative approach. Nevertheless, she does not attempt to quantify any of the contexts and only suggests that there is a relationship between contexts and entrepreneurs, also proposing that interplay between financial side of business and contexts should be further discovered.

2.2.3. Narrowing contexts

In the already mentioned research carried out in Denmark, Muller (2013) proposes to divide applicable contexts into four groups and into different variables or factors, presenting theoretical effects analysed by previous scholars. The four contexts described by her are (1) systemic/institutional structures, (2) economic structures, (3) social structures, and (4) spatial/geographical structures.

(1) Systemic/institutional structures are separated into two parts - formal and informal. Formal structures may be characterised by "policy, support and initiatives; fostering technical knowledge base; encouraging entrepreneurial activity; government support and policies; local empowerment; elimination of legal and administrative obstacles;

entrepreneurial expertise or support services" (p. 62). Informal structures may be characterised by such factors as "entrepreneurial culture that promotes risk-taking, creativity and innovation, entrepreneurial attitude, dynamism, and entrepreneurial ability; presence of social acceptance of entrepreneurial activities / legitimacy of entrepreneurship; entrepreneurial environment (many new small and young firms in a region and/or presence of other entrepreneurs); positive public attitude towards entrepreneurship" (p. 62). Both formal and informal structures, based on previous papers, have shown positive effect as contexts towards entrepreneurship.

(2) Economic structures are described by "availability or presence of human capital; proportion of highly skilled/educated labour, high level of knowledge, education; availability of / access to financial capital (for example - local banks, angel investors, seed capital); concentration of venture capital activity; high household incomes; proportion of SMEs in the population of existing firms; knowledge-intensive industry". Aforementioned factors have been discussed to have positive impact on entrepreneurship. However, there are many factors which have been argued to have an ambiguous or negative impact on entrepreneurs, such as "unemployment rate; high proportion of women in the population; specialization of industry; sectoral diversity; agglomeration, cluster, regional innovation systems" (p. 63).

(3) Social structures in Muller's work are described by one positive factor, which is "social capital and networks", and one factor, impact of which has not been proven to be positive or negative - "community capital" (p. 63).

(4) Spatial/geographic structures, which mostly have proven to have a positive impact on entrepreneurship, are "availability of infrastructure (hard and soft); existing regional assets/resources; attractive living conditions and natural amenities; proximity to universities or research institutions; regional entrepreneurial dynamism, role models, regional entrepreneurial capacity/capital; regional environments that promote diversity and creativity; proximity to urban centres". One inconclusive factor is named as "regional spirit, spirit of place, norms, local ethos or code of conduct" (p. 63).

All of the factors described above were taken into account by the authors of this thesis to create a base for further investigation. These factors contributed to understanding of the contextual phenomena and help to create foundation for further narrowing of contexts applicable to Latvia's case. The further narrowing was done by interviewing regional business experts from each of the 5 planning regions. This process is described in the Methodology section of this thesis (see page 17).

2.3. Territorial typology

In addition to grouping territories into one area by looking at similar evaluations of contexts, another way of grouping similar territories is using territorial typologies proposed by the European Parliament and the European Council. Territorial typologies are different classifications assigned to administrative territories to better describe them. They can be assigned both on NUTS 3 level (in Latvia – 6 statistical regions) and LAU level (in Latvia – 119 counties). Since the geographical evaluation of funding in Latvia considers planning or statistical regions, to explore previously unobserved aspects, the LAU (municipal) level shall be used. For this level, the most relevant typologies for analysis according to Eurostat are: (1) degree of urbanisation; (2) functional urban areas; and (3) coastal areas (Eurostat, n.d.). The relevance of these typologies is highlighted by the Regulation 2017/2391 of the European Parliament and of the Council of 12 December 2017, which adds typologies to the Regulation 1059/2003 – the regulation that establishes a common statistical classification of territorial units in order to enable the collection, compilation and dissemination of European statistics at different territorial levels of EU (Official Journal of the European Union, 2017).

2.3.1. Degree of urbanisation

The degree of urbanisation (DEGURBA) provides an analytical and descriptive view on urban and rural territories. Based on the pattern of population, it classifies an area into one of the three types (Eurostat [a], n.d.):

- densely populated area (city);
- intermediate density area (town or a suburb);
- rural area (thinly populated area).

The original DEGURBA typology was introduced in 1991. Like the current typology, it also classified an area into the abovementioned types. However, it was based on population patterns of local administrative units, which in practice considerably differ in size. This made the results of analysis distorted and limited the comparison between countries with different size of local administrative units. Therefore, in 2010 a new typology was created. The new method first observes population density based on grid cells in size of 1 km^2. Depending on the density and population of a cell, as well as cells surrounding it, a cell can be assigned to be a rural grid cell, an urban cluster cell, or a high-density cluster cell. Then, based on proportion of the population living in the mentioned types of cells, the local administrative unit is classified into one of the three types of areas (Eurostat RAMON, n.d.):

- densely populated area, if at least 50% of the population lives in high-density clusters;
- intermediate density area, if less than 50% of the population lives in rural grid cells and less than 50% lives in a high-density cluster;
- thinly populated area, if more than 50% of the population lives in rural grid cells.

The classification of all local administrative units in the European Union is made by Eurostat, and for this thesis a database with data from 2011 is used (Eurostat RAMON, n.d.).

2.3.2. Functional urban areas

While the DEGURBA approach considers the patterns of population, it misses another important effect – the effect of nearby highly urbanised areas. That is, two similarly populated areas grouped in same category by the DEGURBA approach might not in practice be very similar if one area is located close to a highly urbanised centre, while the other area is a more remote one. Consequently, the functional urban areas (FUA) approach is based on two types of areas:

- cities (densely populated areas in the DEGURBA approach);
- commuting zones.

Cities and commuting zones together create so called functional urban areas (FUA). These areas, however, do not cover the whole territory; therefore, a third type of area is automatically created – non-FUA (Eurostat [b], n.d.). The methodology of creating such territorial division is similar to the one of the DEGURBA – first, grid cell analysis (considering population density and pattern) is done, then urban centres and cities (densely populated areas in DEGURBA) are classified, and then the commuting zones are charted. The commuting zone is the territory around a city where at least 15% of residents work in this city (Eurostat [c], n.d.). In fact, this approach and methodology is shared by EU and OECD; consequently, their classification of areas by this approach corresponds (OECD [a], 2013). For this thesis, a readily available data on LAU level territories in Latvia (119 municipalities) regarding FUA approach complied by the OECD is used (OECD [b], n.d.).

2.3.3. Coastal areas

The final typology used in this thesis was the coastal areas approach. The purpose of this approach was to observe the effect of the sea shore, since the exit to maritime links can be a major factor for development. Unlike the previous two approaches, it does not use

territorial grid and population statistics. Instead, it divides territories purely on geographical basis. This classification recognises two areas:

- coastal areas;
- non-coastal areas.

Both areas are on the LAU level. The coastal area consists of LAUs which border the coastline or are close to it – that is, at least 50% of their surface territory is no further than 10 kilometres from the coastline. The non-coastal area is the remaining territory (Eurostat [d], n.d.). The data on this territorial division is regularly gathered by Eurostat and is publicly available; thus, the 2016 dataset of it was used in this thesis (Eurostat RAMON, n.d.).

2.4. Hypotheses

Considering the reviewed theory, the authors formulated 7 hypotheses for testing. These hypotheses are summarised in Table 1.

No.	Hypotheses	Reasoning
1.	Performance of the projects in area with positive formal systemic/institutional structures (context) will be better than in area with negative context.	According to Muller (2013), positive presence of the context has a positive impact on entrepreneurship through better institutional support.
2.	Performance of the projects in area with positive informal systemic/institutional structures (context) will be better than in area with negative context.	According to Muller (2013), positive presence of the context has a positive impact on entrepreneurship through more entrepreneurial society.
3.	Performance of the projects in area with positive economic structures (context) will be better than in area with negative context.	According to Muller (2013), positive presence of the context has a positive impact on entrepreneurship through better capital accessibility.
4.	Performance of the projects in area with positive spatial/geographic structures (context) will be better than in area with negative context.	According to Muller (2013), positive presence of the context has a positive impact on entrepreneurship through better infrastructure and resources.
5.	Projects implemented in densely populated areas (according to DEGURBA) will outperform projects implemented in other DEGURBA areas.	Transportation hubs, economic activity centres, and high population density are positive factors for entrepreneurship.
6.	Projects implemented in city areas (according to FUA) will outperform projects implemented in commuting zone and non-FUA area.	Transportation hubs, economic activity centres, and high population density are positive factors for entrepreneurship.
7.	Projects implemented in coastal areas will outperform projects implemented in non-coastal areas.	Accessibility of the sea is most often a beneficial aspect for business.

***Table 1**. Hypotheses of the research. Created by the authors.*

3. Methodology

The methodology of this thesis consists of several steps which lead to the final counterfactual analysis. To perform the necessary analysis, both quantitative and qualitative methods were used, and data was gathered from both primary and secondary sources. The general steps of the research are visualised in Figure 1.

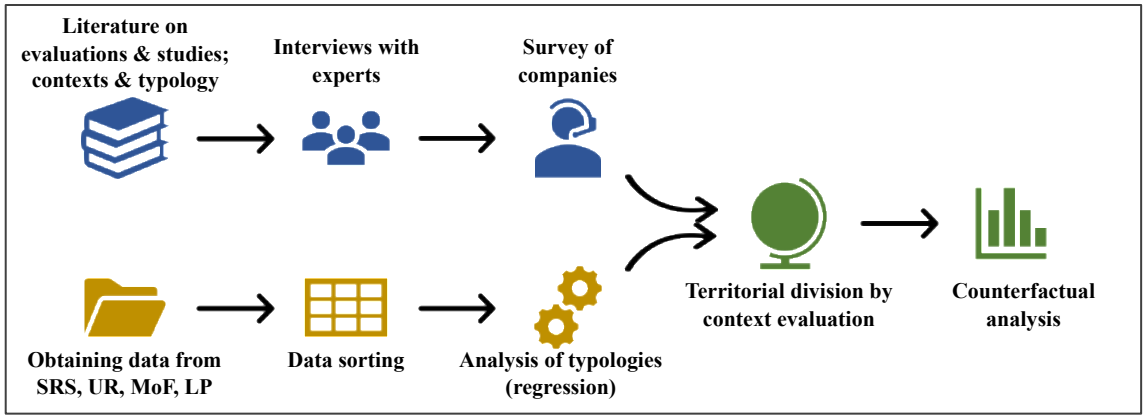

Figure 1. *Steps of the research. Created by the authors.*

3.1. Primary data

For the analysis of contexts, primary data from interviews with experts and a survey of companies was used. Since the theory on the topic of local contexts and their effect on business does not suggest a universal categorization of contexts and means of measuring them, the most suitable categorization and measurements for Latvia were explored in interviews with experts. Then, the evaluation of local contexts in different territories in Latvia was obtained through a survey. The chosen territorial division was the administrative division before 2009 into 26 districts and 7 republic cities (Informatīvais portāls "Pilsētas", n.d.). This division was chosen since districts are smaller than statistical or planning regions, while using the current division into 119 counties would make collecting significant number of survey responses from each territory not feasible.

3.1.1. Creation and execution of interviews

The authors conducted interviews with a regional business expert from each planning region of Latvia, in total 5 – one in Riga (on December 13, 2018), Kurzeme and Zemgale (both on December 10, 2018), and Vidzeme and Latgale (both on December 7, 2018). The interviewed experts from Riga, Kurzeme, Zemgale and Vidzeme were Dace Grīnberga, Baiba Kūma, Nauris Pauliņš, and Māris Ozols, respectively. At the time of interviews, they were Heads of Entrepreneurship department of the respective planning region. For the interview in

Riga, two more persons joined - Ilgvars Francis and Rūdolfs Cimdiņš, the former being a Specialist in the Entrepreneurship department and latter being Head of Spatial planning department. The person interviewed from Latgale was Vladislavs Stankevičs, who at the time of the interview was Head of Latgale special economic zone, but during the period from 2006 to 2013 he was Head of Entrepreneurship department of the planning region. Since responsibilities of their institutions include providing information relevant for business in the region, the experts have experience and knowledge regarding business development specifics in the region.

The conducted interviews were semi-structured face-to-face interviews and their structure was exactly the same for every interviewee (see Appendix A for standard interview questions). Hague (2016) suggests that semi-structured interviews often is a good step in the beginning of research process as it helps to explore issues that are not yet known. The advantages of face-to-face interviews are that it is possible to get better explanations, the depth of the interview can be managed using probing questions, and interviews yield more legitimate outcomes since the respondents are more devoted and the interviewer is able to better judge the accuracy of the answer. However, the disadvantages include the costliness of the interviews, which in this case constituted the travel expenses of visiting each of the regional centre expert offices during working hours in different parts of Latvia. Nevertheless, by doing this, authors were able to conclude which contexts (out of all possible contexts presented in the Literature review on pages 12-13) are relevant for Latvia's regions, as well as how they should be categorized best and what measurements should be used.

3.1.2. Analysis of interviews

The conducted interviews were analysed using interpretative phenomenological analysis (IPA), which is mentioned by Rapley (2007), where he introduces general process of analysis approach. The analytic approach is further explored in Smith and Osborne (2008), where the authors of this thesis obtained the relevant arguments for using this technique and the steps taken to analyse the interviews.

The main idea of IPA is to gain insight and study meanings of particular experiences or events from the perspective of interviewees. The most common data collection tool for IPA is semi-structured interviews, and when employing IPA, "meaning is central, and the aim is to try to understand the content and complexity of those meanings rather than measure their frequency" (Smith & Osborn, 2008). As the aim of the interviews in the scope of this thesis was to gain additional insight into regional contextual aspects, this analysis provides

the perfect framework consisting of 7 steps. The first step is to read (listen to) a single transcript (interview) and note initial comments and ideas, which was performed by the authors of the thesis at the time of the interviews. The second step is to generate initial themes and transform comments into themes. This step was performed by the authors after listening to recordings of the interviews and writing summaries. The third step is to create initial list of themes, while the fourth step is to cluster themes into connected areas. These steps were performed by the authors after several reviews of the summaries. Step five asks to create a list with ordered themes and sub-themes, which authors performed and included in the final list of themes and sub-themes positioned as seventh step. The sixth step asks to repeat the process for different transcripts (interviews) and perform steps 1-5 for each interview individually. Methodology of interview analysis described here allowed authors to arrive to 4 distinct themes (contexts) and a total of 8 sub-themes (survey questions). These contexts and questions are presented in the Analysis of results section (see page 28).

3.1.3. Creation and execution of the survey

To evaluate local contexts from the viewpoint of entrepreneurs, a survey was used. It was a structured direct survey with direct process – the authors created a formal questionnaire with the questions asked in a prearranged order. To gain as true and unbiased responses as possible, the survey was made anonymous. For higher response rate, it was administered in Latvian or Russian. The questions were fixed-response alternatives, requiring to use a set of predetermined answers (Malhotra, 2012).

According to Moser & Kalton (1979, p. 357), the creation of a survey can be divided into two stages. The first stage is to assemble items (statements) in a way to avoid "excessively complex, ambiguous items, or items involving double negative", and other similar deceiving propositions. The second step is choosing a rating scale. According to Moser & Kalton (1979), the most common way for measuring (evaluating) the strength of a person's attitude (experience) is to present him/her with a statement and then a number of possible answers of varying intensity. This is in line with Muller's (2013) approach to interviews: experience with contexts shapes the attitude towards them, which is the interest of this survey – to evaluate the contexts. The chosen scale was a Likert five-category one, which is suitable for the answers not to be too disperse or too dense (Moser & Kalton, 1979), and allows to attribute a score to each answer for cross-territory comparison.

After the respondent indicates where the respective company is located, each question consists of a statement, and a respondent is asked to evaluate whether he/she (1) disagrees,

(2) rather disagrees, (3) nor agrees, nor disagrees, (4) rather agrees, or (5) agrees. The main strength of a survey is that it provides consistency in the way the questions are asked to the respondents and it was possible to extract data considering the intentions of the thesis, and to differentiate between respondents from different territories, comparing their answers. As the main disadvantages to survey method, Malhotra (2012) mentions that 'participants may be unable or unwilling to provide the desired information' (p.328). However, the survey did not contain sensitive questions and it was designed to be short and simple.

Initially, the survey was distributed to local companies by the interviewed experts. However, almost all responses were gathered by the authors performing telephone assisted survey technique. Malhotra (2012) notes that there are two types of traditional telephone surveys - "phone a sample of participants, ask series of questions, record on paper", and computer-assisted telephone interviews ("computer dials participants, computer checks responses and personalises survey"). However, in the case of this thesis, the authors chose a sample, asked the series of questions, and noted down answers immediately in the survey form on Qualtrics platform. As the survey was non-adjustable, the questions were always asked in one particular order to minimize any possible biases. In case a respondent was willing to answer only in written form, a link to the electronic version of survey was sent to the e-mail address provided.

The population of telephone assisted survey was the pool of companies with data available in Firmas.lv (Firmas.lv, n.d.). Sampling frame was all companies that had the last available turnover larger than 10,000 EUR, which is chosen as a minimum level indicating that the company is active (it is unlikely that a company with smaller turnover was actively operating full-time since the average yearly gross salary in Latvia in 2017 was at similar level (Centrālā Statistikas Pārvalde, 2018)). Next, probability sampling without replacement was used: the authors employed random number generator to acquire a list of 80-90 companies from the list of companies for each territory (the number chosen because of expected response rate being at 50% level as suggested by Malhotra (2012)) and did not include the same company in the list more than once.

The goal of the survey was to obtain at least 30 responses from each of the 33 districts in Latvia. Even though 30 responses might not provide statistically significant result at 0.05 level, it is the minimum size of a large sample and gathering even more responses was not feasible for this thesis. Moreover, in some territories there were no more than 100 – 150 potential respondents, of whom approximately half were approached, and 30 responses

gathered. Therefore, gathering more than 100 responses (which is the suggested number by Malhotra (2012) for significant results at 0.05 level) might not be practically possible at all.

3.1.4. Analysis of the survey

Based on the answers (and their score) in the five-point Likert scale, an average for each territory was calculated for each of the contexts and each territory was assigned to one of the two territories – "positive" or "negative" - depending on whether the context there was evaluated above or below the Latvia's average. According to Malhotra (2012, p.415), the use of interval scale permits to use such statistical techniques as range, mean, and standard deviation, which in this case were applied. Moreover, Malhotra (2012, p.435) points out that often constructs (contexts in this case) may have several characteristics, meaning that several items could be used to measure each of the dimensions. In the case of this thesis, each context was measured by 2 questions, which were determined as the most suitable and applicable in the case of Latvia after the conducted interviews (see page 28).

3.2. Secondary data

3.2.1. Overall description of the original secondary data

Secondary data on the European Union funding activities in Latvia in 2007 - 2013 programming period was obtained from the Ministry of Finance of the Republic of Latvia (MoF). The acquired dataset included information on all projects implemented in the six chosen funding activities in Latvia in 2007 - 2013 programming period: 2.1.2.2.1., 2.1.2.2.2., 2.1.2.2.4, 2.3.1.1.1, 2.3.2.2.1., and 2.3.2.2.2. Even though the programming period ended in 2013, almost half of the projects were executed in the two following years. The activities were chosen based on the information provided by a webpage "ESfondi.lv" (Ministry of Finance of the Republic of Latvia [e], n.d.). To analyse the effect on companies from the supported projects, it was necessary to choose activities that (1) provide funding for projects to companies, (2) support projects that are aimed to improve business performance, and (3) the funding has to be in grant form (not repayable). Therefore, the funding programs "Human resources and employment" and "Infrastructure and services" were eliminated from the choice, yet the program "Entrepreneurship and innovations" included various relevant funding activities (mentioned above). In total, this dataset contained information on 4,052 unique projects executed by 1,497 companies. The funding received from the EU and company financing varied broadly: the minimum co-financing intensity (all of the financing

received from the EU and other public sources divided by total financing) was 22.63%, maximum was 90%, but the average was 56.87%. The activities are summarised in Table 2.

No. of activity	Name of activity	Number of supports granted	Sum of supports granted, EUR
2.1.2.2.1.	Development of new products and technologies	78	7,010,350
2.1.2.2.2.	Development of new products and technologies - support for implementing new products and technologies into production	112	34,937,825
2.1.2.2.4.	Program for development of new products and technologies in SMEs	22	238,513
2.3.1.1.1.	Penetration of foreign markets - outer marketing	3,734	19,772,778
2.3.2.2.1.	Support to SMEs in Special support areas	98	6,995,571
2.3.2.2.2.	Support to investments into creation or reconstruction of production facilities	8	10,102,455
Total		**4,052**	**79,057,492**

Table 2*. List of the EU funding activities observed in this research. Created by the authors using data from MoF.*

The necessary data on performance of all companies in Latvia for period from 2007 until latest available data (2017) was obtained from State revenue service (SRS). In this dataset, information about 148,741 unique companies was obtained. Although not all entries contained information, the authors saw no other better source for such information than SRS. To acquire additional information on companies (location, legal type, date of registration and termination), data from the company registrar (UR) was obtained from their official webpage (Uzņēmumu reģistrs, n.d.). This dataset provided information about 404,146 unique entities.

3.2.2. Secondary data sorting

The three datasets were merged into one containing information on all companies in Latvia for the period of 2006 – 2017 and their performance, registrar information, location, and whether (and when) they received the funding by the programs included in this analysis. Similar to the Ernst & Young evaluation (2018) and the economic policy forthcoming paper by Benkovskis et al. (2019), if a company had several EU funded projects, only the first project was taken into the account. This was done to avoid effects of previous projects because their effect on next projects was not estimated. Additionally, to enable more observations in control groups, the 2-digit NACE codes of companies were combined into 21 groups used by Lursoft (Lursoft, n.d.). Since the funding programs mainly targeted SIA (limited liability company) and AS (joint stock company) types of companies, like in the Ernst & Young evaluation, all companies except those of the mentioned types were dropped

from the dataset (Ernst & Young Baltic Ltd., 2018). Then, the observations in years before a company was registered and after it was (if it was) terminated (including the year of registration or termination) were dropped. Besides, many companies operated with zero or negative turnover several years after registration or before termination, while some companies – even in the middle of observation period. All these observations for those companies were dropped since this analysis required to observe continuous operations. If a company had only one year of observation left, it was also dropped since the analysis requires at least two full sequential years of observations. The next step was to assign the treated companies the correct first reference year.

If a project was started in the first three quarters, then the first reference year is the year before starting the project. However, if the project was started in the fourth quarter, then the first reference year is the same year of the project's start. The second, third, and fourth reference years are respectively next, the second following, and the third following year of the first reference year. This approach allowed to analyse short term (one and two years) and medium term (three years) effects, and it was adopted from the forthcoming economic policy paper by Benkovskis et al. (2019). However, in the economic policy paper the first reference year was always the year before starting a project, while here it is the year of the project's start if the project was started in the fourth quarter. Such change was adopted to always compare the change in performance in exactly same period of time (two consecutive years), and it did not worsen the analysis since the second reference year always contains longer period of treatment than the first reference year. Additionally, a rule was set that a treated company must have observations in at least the first and second reference years; otherwise, it was dropped from the dataset.

Using the postal code, each company was assigned into a planning region, statistical region, district, and county (Latvijas Pasts, n.d.). Additionally, using the data from Eurostat, each company was assigned into an area under DEGURBA typology and into a coastal or non-coastal area under Coastal areas typology (Eurostat RAMON, n.d.). Finally, using the data from OECD, each company was assigned into an area under Functional areas typology as well (OECD [b], n.d.).

It is important to note that out of the 106,241 companies left, 26,681 (including 62 treated companies) had missing NACE observation. It was already missing in the dataset provided by SRS, and the authors were not able to find missing information in other data sources. Since NACE is crucial for matching treated companies with control group, the companies without NACE code were later dropped. The comparison of companies with

NACE code and without it, as well as companies with zero turnover in the middle of observation period, is summarised in Table 3.

	Companies with NACE code	Companies without NACE code	Difference	Companies without interrupted operations	Companies with interrupted operations	Difference
Column	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Age	8.59	6.93	-1.66***	8.63	8.24	-0.39***
Turnover (EUR '000)	827.0	486.7	-340.4**	894.4	166.3	-728.1***
Equity (EUR '000)	309.4	41.4	-267.9	335.5	53.6	-281.9*
Profit (EUR '000)	29.5	-22.1	-51.6	32.1	3.3	-28.8
Companies treated	1.35%	0.23%	-1.12pp***	1.47%	0.32%	-1.15pp***

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level. Companies represented in column 5, unlike those in column 2, are not later dropped from the dataset.

***Table 3**. Comparison of companies with and without NACE code. Created by the authors using data from SRS, MoF, UR, and own calculations.*

Companies with missing NACE code were usually younger, smaller, and less likely to be treated. Additionally, such companies were mostly present in the beginning of the dataset. For example, in 2007, 34% of companies did not have NACE code, while in 2017 it was less than 1%. Since these companies were less likely to be treated and thus less likely to be suitable for control group either way, they were dropped. As a result, 79,560 companies were left in the dataset, of which 1,072 were treated. Finally, following the approach of Benkovskis et al (2019) and Lopez-Garcia et al. (2015), the outliers with turnover growth of 1st and 99th percentiles, as well as lower or larger than 10 interquartile ranges from the mean, were dropped. The final dataset suitable for performance analysis at least for one year contained 77,756 companies, of whom 1,046 were treated. The characteristics of companies across different territories are summarised in Appendix B.

3.3. Difference-in-difference analysis

The main concept of methodology regarding the effect of EU-supported project implementation is counterfactual impact evaluation. It is a method that compares outcomes of "treated group" (in this case - companies who implemented EU-supported projects) and "control group" (in this case - companies who did not receive support yet are similar to companies in the treated group). Therefore, such method shows what would have happened if there was no "intervention" (support) and what is the effect of it (The European Commission's science and knowledge service, n.d.). Counterfactual impact evaluation is a

methodology widely used in research on the EU funds. One of the most practical approaches of counterfactual analysis is "difference-in-difference" estimation - the difference in a result before and after treatment in the control group is subtracted from the difference observed in the treated group during same time period; consequently, an estimate of the intervention impact is obtained. This impact is usually derived within a regression framework using panel data (European Commission Directorate-General for Employment, Social Affairs and Inclusion, 2012). The approach is visually explained in Figure 2.

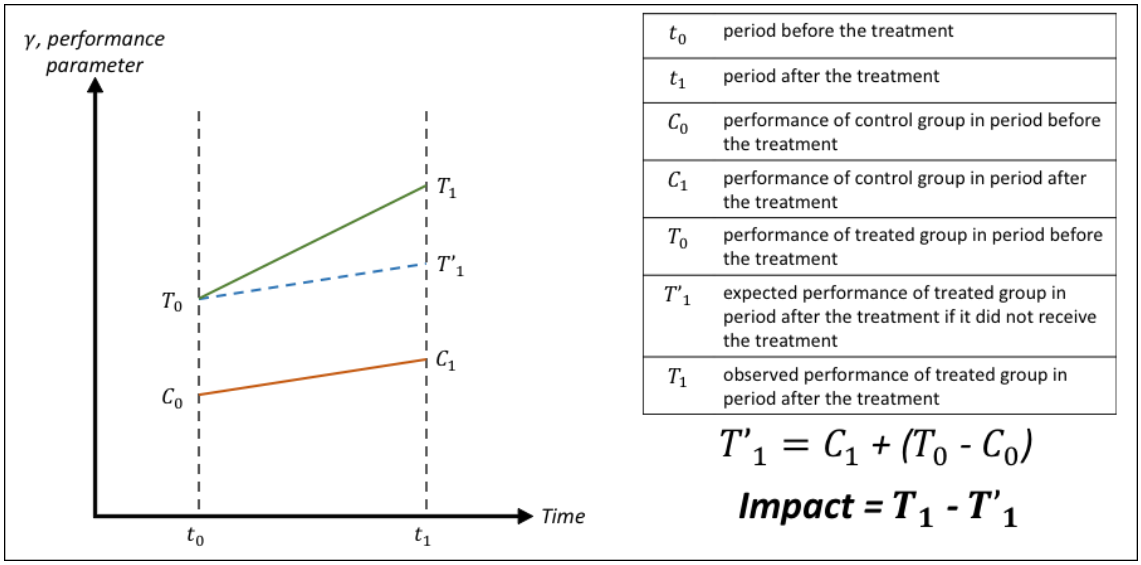

***Figure 2**. A graphical explanation of difference-in-difference approach. Created by the authors.*

Difference-in-difference approach was used by Ernst & Young in their 2018 evaluation and the forthcoming economic policy paper by Benkovskis et al. (2019), from which the design for analysis was adopted.

First, the treated companies had to be matched with similar control companies. Like in the forthcoming economic policy paper, the propensity score matching (PSM) approach was used. That is – the companies were matched based on a calculated propensity score, which represents the probability of a company to participate in an EU-supported project based on its characteristics in a particular year. In this thesis, these characteristics are age, turnover, profit, and equity. Although they are by far not the only determinants of real probability to get treated, they were the only characteristics available to the authors. Additionally, these characteristics either way ensure that similar companies will be matched since they will have to be similar in size and age. Since the turnover differs a lot among companies, the logarithm of turnover was used instead. Moreover, to avoid inappropriate constraints, the square of age, the square of logarithm of turnover, and the interaction of logarithm of turnover and the age was added as well.

To calculate the propensity score (probability), a probit model was estimated:

$$Pr[treat_i = 1] = \Phi[X_{i,t}, Sec_i, Year_t] \quad (1)$$

where $treat_i$ is a dummy variable taking value of 1 if company *i* initiated a project; $X_{i,t}$ denotes a set of variables that describe characteristics of company *i* in year *t* (described in the previous paragraph); Sec_i is a set of dummies to control for the sector (according to NACE code grouping by Lursoft); $Year_t$ is a set of dummies to control for the year of observation.

Then, the treated companies were matched with control companies that operate in the same sector (same NACE group) and whose propensity score in the year which is the first reference year of this treated company was similar. When performing territorial analysis, an additional rule was set to match companies only in the same territory. Three matching methods were used: one nearest neighbour (1 NN), two nearest neighbours (2 NN), and five nearest neighbours (5 NN). The number of neighbours indicates how many closest control companies (judging by their propensity score) are matched to a treated company. Then, the common support condition was ensured (treated companies with propensity score lower than the smallest one of control group and control companies with propensity score higher than the largest one of treated group were dropped). In case there were not as many suitable control companies as neighbours needed, all suitable control companies were assigned. If there was no suitable control company at all, the treated observation was excluded.

Additionally, like in the forthcoming economic policy paper by Benkovskis et al. (2019), matching with caliper of 0.04 was also tested. This caliper means that a control company can be matched to a treated company only if its propensity score is in radius of 0.04 from the one of the treated. Although this method might decrease number of companies matched, it may enhance the matching quality.

Finally, when the treated and control groups were matched, the difference-in-difference analysis was performed. It was done using an ordinary least squares' regression controlling for heteroscedasticity, as well company, time, and territory characteristics:

$$Y_{i,t} = \beta_0 + \beta_1 treat_{i,t} + \alpha_1 X_{i,t} + \alpha_2 T_i + \alpha_3 Z_i + \alpha_4 U_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $Y_{i,t}$ is the growth of turnover of company *i* from the first reference year *t* to the other respective reference year (second, third, or fourth - depending on the time period chosen for the analysis); $treat_{i,t}$ is a dummy variable taking value of 1 if company *i* implemented a EU-supported project in the first reference year *t*; $X_{i,t}$ is a set of characteristics

(used in the probit regression) of company *i* in the first reference year *t*; T_i is a set of territorial dummies taking value of 1 if company *i* is located in a specific statistical region, contextual or typological area; Z_i is a set of sector (NACE) dummies taking value of 1 if company *i* is operating in this sector; and U_t is a set of year dummies taking value of 1 if the first reference year of company *i* is in this year. Consequently, while β_0 shows the constant and ε_i is a random error component, α_1, α_2 α_3, α_4 show the effect of previous company characteristics, location, year, and sector on the turnover growth (therefore controlling for these effects), and the variable of interest is β_1 – it shows the counterfactual treatment effect on treated companies.

To analyse contextual and typological effects, the regression was adjusted:

$$Y_{i,t} = \beta_0 + \beta_1 treat_{i,t} + \beta_2 treat_{i,t} * area_i + \alpha_1 X_{i,t} + \alpha_2 T_i + \alpha_3 Z_i + \alpha_4 U_{i,t} + \varepsilon_{i,t} \quad (3)$$

where $area_i$ is a dummy variable taking value of 1 if company *i* is located in a specific area. If division into more than two areas is necessary (e.g. for regions), then as many area dummies were introduced as are territories. In case of two areas, β_1 shows the counterfactual impact in the opposite of the specific area, while β_2 shows the difference of counterfactual impacts between those areas. In case of more areas, β_1 shows the counterfactual impact in one of those areas (indicated in the regression output), while the respective β shows the difference of counterfactual impacts between areas.

Turnover was chosen as the performance indicator since it is a characteristic directly linked to operations of a company, it can only be positive (making growth rates meaningful), it was mentioned as a suitable variable for funding effectiveness analysis in the Ernst & Young evaluation (2018), as well as recommended by the interviewed experts.

4. Analysis of results

4.1. Interview findings

After conducting interviews with the experts from Latvia's 5 planning regions, the authors concluded that 4 of the 5 contexts described by Muller (2013) can be considered to have a significant impact on companies in Latvia. The only excluded context was "social structures" since it did not prove to be significant or worth mentioning by the experts. Besides, the analysis of such context would require a case study, which was out of scope of this thesis.

Considering results gathered from the interviews, the statements to be rated in the survey by respondents were formulated. Each context was assigned two statements to capture different perspectives of a context suggest by both Muller (2013) and the experts. The contexts and their statements are listed in Table 4.

Context	Statement: "In the region where your company is located..."
Spatial (geographic)	…the infrastructure is in good condition and is suitable for business development.
	…the local economic capital (natural resources, location etc.) are favourable for doing business.
Formal systemic (institutional)	…the local institutions (municipality, municipal agencies, local agencies for business support etc.) are avoiding unnecessary bureaucracy and are professional, responsive, and forthcoming to entrepreneurs.
	…the local institutions develop various initiatives and create various means for fostering local entrepreneurship.
Economic	…the education and qualification of local inhabitants are suitable for what local businesses demand from employees.
	…companies have no problems getting the necessary financing for their business.
Informal systemic (institutional)	…the society has a positive attitude towards entrepreneurship (e.g. local entrepreneurs are seen as employers and tax payers rather than criminals).
	…the local inhabitants possess an "entrepreneurial spirit".

***Table 4**. Statements and contexts explored in the survey. Created by the authors.*

4.2. Survey findings

The survey was carried out by the authors from January 29 to March 20, 2019. 2,072 companies in Latvia were approached and 1,022 full responses were received – no fewer than 30 responses in each district. On the five-point Likert scale, the average result for spatial context was 3.614, for formal institutional context – 3.236, for economic context – 2.871,

while for informal institutional context – 3.502. Consequently, each of the 33 districts was assigned to a "positive" or "negative" area for each context based on whether its survey score for the context was higher or lower than the previously mentioned numbers. For summary of the survey results and for descriptive statistics of the survey, see Appendix C.

4.3. Results of the matching procedure

First, a probit regression was performed to estimate the probability of each company to get treated. The only variables having a significant effect on this probability were age, the natural logarithm of turnover, their transformations and interactions, as well as some year and industry effects. In general, younger and larger companies were more likely to realise a EU-supported project.

Then, matching of treated companies with control companies was performed using one, two, and five nearest neighbours' approaches (1 NN, 2 NN, 5 NN). Similar as in Benkovskis et al (2019), same was done using a caliper of 0.04 to see whether smaller matching radius provides better matching quality. The matching quality for the whole territory was satisfactory in all matching approaches. That is, before the matching was made, the characteristics differed between treated and not-treated companies at 0.01 significance level. However, when the matching was performed, these differences eroded and lost their significance, thus indicating that the chosen control companies indeed had similar characteristics to the ones of the treated companies.

Matching with the caliper of 0.04 did not improve the already satisfactory matching quality, yet it limited the number of suitable control companies and even dropped one treated company. Although there were more than a thousand treated companies, for smaller territories this could considerably reduce the number of observations and available control companies, thus potentially worsening the significance of results while not improving the quality of matching. Consequently, besides for the whole territory, it was decided not to use the smaller caliper. Throughout the analysis, every matching ended up with insignificant differences between treated and control groups, therefore proving that the quality of matching was always good.

The number of treated and control companies in the whole territory of Latvia, as well as the probit regression, are summarised in Appendix D.

4.4. Findings on the performance by administrative division

Using the sample of matched treated and control companies, first the regression for the whole territory of Latvia was made. The effect of treatment on turnover growth was statistically significant at 0.01 level using any matching method for any time period. Depending on the matching method, the results differed; however, this difference was comparatively small. The results obtained from the simple five nearest neighbours' matching (5 NN), which is the main matching method used for result interpretation in this thesis, show that the implementation of EU-supported projects fostered the growth of turnover by 14.59 percentage points (pp) in one year, 26.92 pp in two years, and 39.74 pp in three years after starting the project in comparison to similar, yet not treated companies. The difference-in-difference results for the whole territory, reported in percentage points, are summarised in Table 5.

	Period	1 nearest neighbour	2 nearest neighbours	5 nearest neighbours	1 nearest neighbour with caliper	2 nearest neighbours with caliper	5 nearest neighbours with caliper
Column		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Difference in turnover growth, pp	t + 1	12.73***	15.21***	14.59***	12.78***	15.22***	14.62***
	t + 2	26.72***	31.61***	32.30***	26.92***	31.66***	32.39***
	t + 3	39.54***	45.18***	43.96***	39.74***	45.18***	44.06***

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level. The caliper is set to 0.04 in columns (5) - (7).

***Table 5**. Counterfactual treatment effect using various matching methods. Created by the authors using data from MoF, SRS, UR, and own calculations.*

Next, the analysis of performance in statistical regions was made. Although always positive, in some regions not all results were statistically significant at 0.01 level. Moreover, even though the differences of outcomes between various regions are proportionally large, they are seldom statistically significant. The best performance in the medium term by 5 NN matching was observed in Vidzeme – there implementation of a project fostered turnover growth by 98.33 pp in three years in comparison to similar, yet not treated companies in the same region. However, this outcome was not statistically significant. The best statistically significant performance in the medium term was in Kurzeme at 76.15 pp, while the lowest performance was observed at Pierīga at 29.32 pp. Additionally, while the difference in such performance of 69.01 pp between Pierīga and Vidzeme was not statistically significant, the 46.83 pp difference between Pierīga and Kurzeme was significant at 0.10 level. The results of performance in statistical regions, as well as differences among them, are summarised in Appendix E.

4.4. Findings on the performance by the typological division

When divided into coastal and non-coastal areas (Coastal territory typology), both in all time periods have statistically significant positive observations at 0.01 level. As for the medium-term effect using 5 NN matching, in non-coastal area projects fostered turnover growth by 54.95 pp in comparison to similar, yet not treated companies. In Coastal area, this effect was 37.82 pp. Despite both observations being significant at 0.001 level, their difference of 17.13 pp was not. The results for this typology using 5 NN matching are summarised in Figure 3. All outcomes for the Coastal territory typology are summarised in Appendix F.

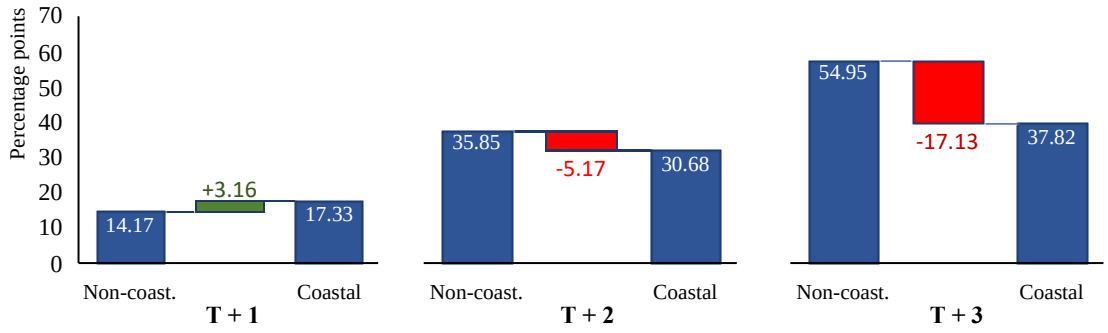

Figure 3. Performance of projects (turnover growth difference using 5 NN matching) for Coastal typology. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.

As for DEGURBA typology, the division into densely populated, intermediate density, and rural areas was performed. All areas always had positive and statistically significant outcomes at no worse than 0.10 level. The medium-term effect using 5 NN matching was the highest in rural area at 56.49 pp, followed by densely populated area at 40.69 pp, and the lowest in intermediate density area at 32.22 pp. Even though all three were significant at 0.05 level, the differences between them were not. The results for this typology using 5 NN matching are summarised in Figure 4, while all outcomes are summarised in Appendix F.

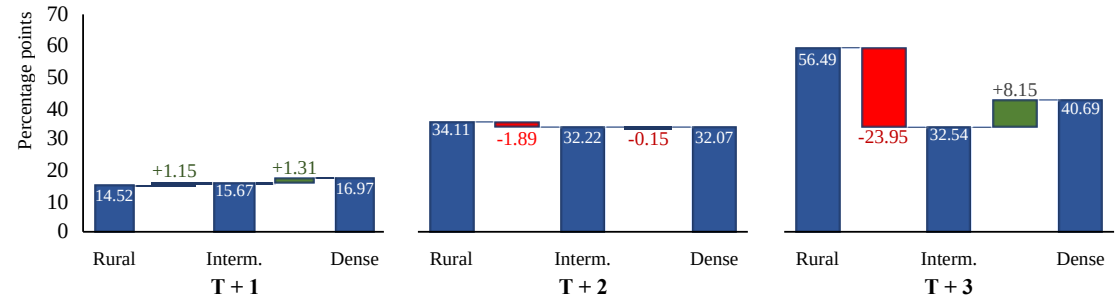

Figure 4. Performance of projects (turnover growth difference using 5 NN matching) for DEGURBA typology. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.

To analyse the FUA typology, three areas were identified: cities, commuting zone, and non-FUA (neither). Like previously, all areas always had positive and statistically significant outcomes at no worse than 0.10 level. Regarding the medium-term effect using 5 NN matching, the highest performance of 68.08 pp was observed in non-FUA area, followed by the 41.02 pp in cities, and 26.76 pp in commuting zone. Similar as before, despite those observations being significant at no worse than 0.05 level, the differences between them were not. These results, using 5 NN matching, are summarised in Figure 5, while all outcomes are summarised in Appendix F.

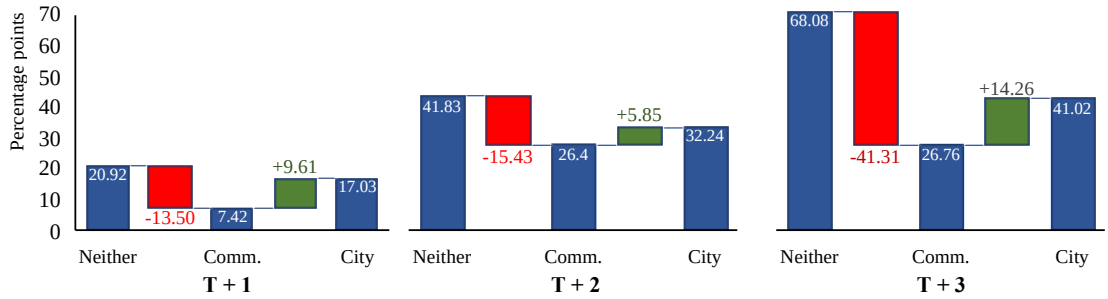

***Figure 5**. Performance of projects (turnover growth difference using 5 NN matching) for FUA typology. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

4.5. Findings on the performance by contextual division

For spatial context, Latvia was divided into two areas: "positive", consisting of districts with higher than the average evaluation of the spatial context, and "negative", consisting of districts with lower evaluation. All results in both areas were positive and all but one were significant at 0.01 level. In two years, difference in performance between those areas was minimal. However, using 5 NN matching, in three years positive area with 58.80 pp outperformed negative area's 36.97 pp, although the difference was statistically insignificant. The results for this context using 5 NN matching are summarised in Figure 6, while all outcomes for all contexts are summarised in Appendix G.

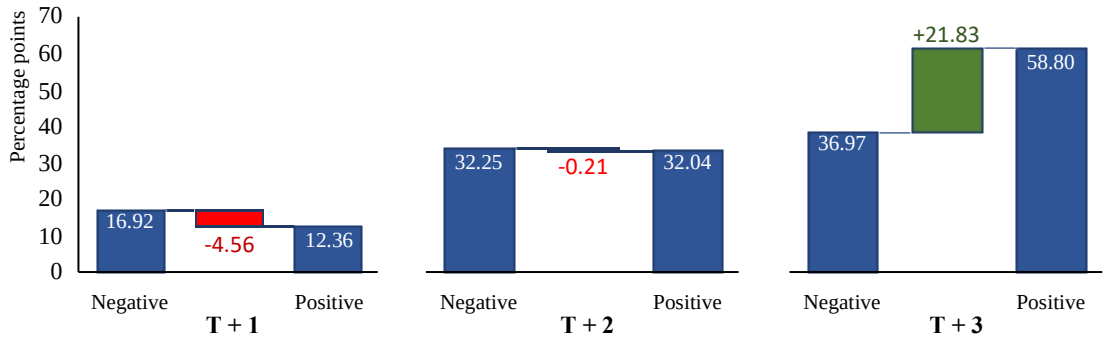

***Figure 6**. Performance of projects (turnover growth difference using 5 NN matching) for spatial context. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Regarding formal institutional context, "positive" area consists of districts with higher than the average evaluation of this context, and "negative" consists of ones with lower evaluation. All results in both were positive and all but one were significant at 0.01 level. In the first year, negative area seems to have outperformed the positive, while in the second year the difference disappeared. However, using 5 NN matching, in three years positive area with 56.60 pp outperformed negative area's 37.71 pp, although the difference was not statistically significant. The results for this context using 5 NN matching are summarised in Figure 7.

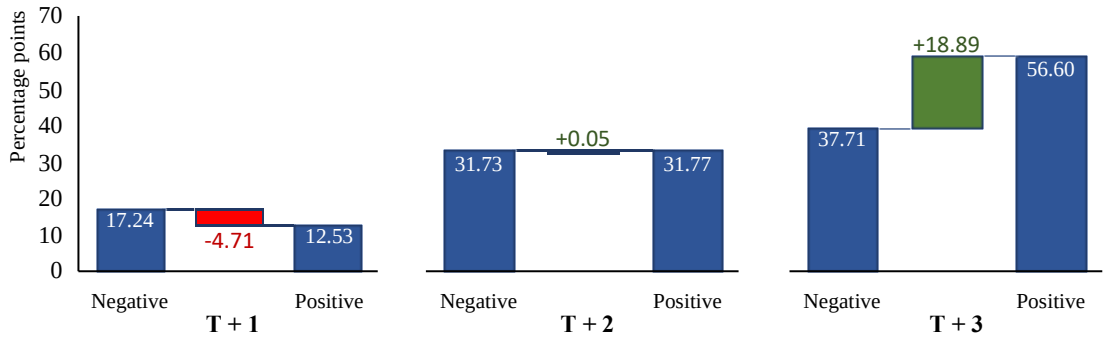

***Figure 7**. Performance (turnover growth difference using 5 NN matching) for formal institutional context. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

To analyse economic context, "positive" and "negative" areas were made of districts with respectively higher or lower perceived evaluation than the average of this context. Here, all results were always positive and statistically significant at 0.01 level. Besides, unlike in other contexts, differences in two-year period, using 1 NN and 2 NN matching, showed significance at 0.10 level. As for the 5 NN matching, differences were not significant, yet the trend remained the same. In one and three years, both territories performed similarly; however, in two years negative area (42.25 pp) noticeably outperformed positive area (28.65 pp). The results for this context using 5 NN matching are summarised in Figure 8.

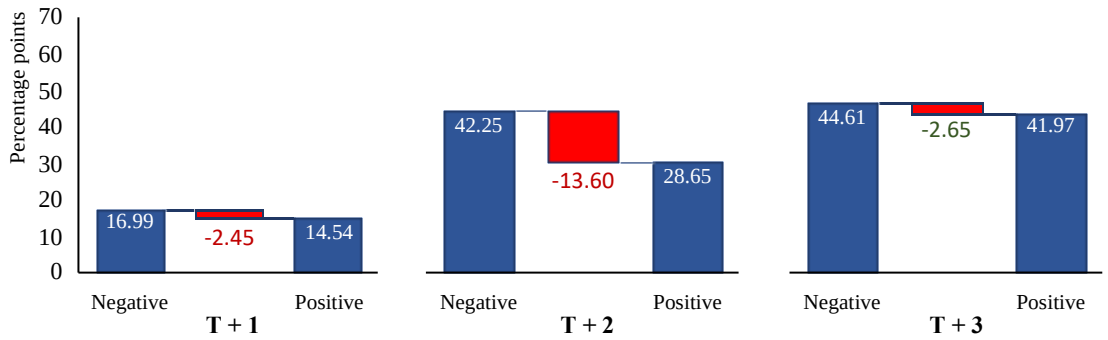

***Figure 8**. Performance of projects (turnover growth difference using 5 NN matching) for economic context. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

For informal institutional context, like previously, "positive" and "negative" areas were determined by the evaluation of this context. Results in both were positive and all but

two were significant at 0.01 level. Using 5 NN matching, in one year negative area outperformed the positive area, yet in two years the difference diminished, and in three years the 55.78 pp result of positive area was higher than the 38.96 pp of negative area, although this difference was not statistically significant. The results for this context using 5 NN matching are displayed in Figure 9.

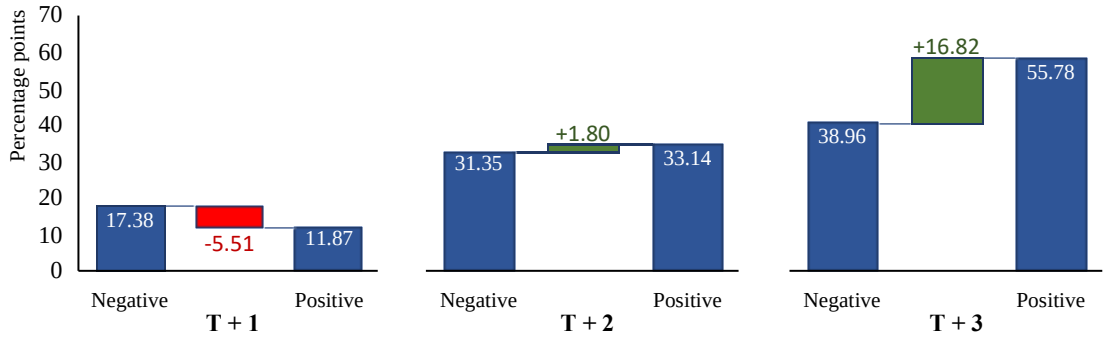

***Figure 9**. Performance (turnover growth difference using 5 NN matching) for informal institutional context. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

4.6. Interactions of typologies and contexts

To study the contextual effects in depth, within each typological territory a contextual analysis was made. In non-coastal area, all contexts had same trends as for the whole territory, except the difference in two years was more negative than in one. In coastal area, the differences between positive and negative territories were inconclusive, except for economic context, where positive territories always performed better. As for DEGURBA, in rural area contexts showed no new trends. In intermediate density area, the same is applicable for spatial and formal institutional contexts, while informal institutional context had larger negative difference in the first year, and the trend of economic context is inconclusive. All contexts, except economic, are inconclusive for densely populated area as well, since in this area the three other contexts have perfect correlation. Finally, in FUA, contextual trends in non-FUA area were similar to the ones of rural area, and densely populated area completely overlaps with city area. The results in commuting zone show that performance was moderately better in positive areas by formal institutional context, considerably better by spatial and informal institutional context, and considerably worse by economic context. However, all differences were mostly statistically insignificant, and several interactions of economic context had fewer than 30 treated companies. All results on interactions are summarised in Appendix I.

5. Discussion of results

5.1. Interpretation of results

Always positive and statistically significant counterfactual differences of turnover growth in the whole territory of Latvia clearly indicate that the EU-supported projects had a positive impact on performance of companies. Similar performance was observed in the forthcoming policy paper by Benkovskis et al. (2019). There, the effect on turnover growth was estimated at approximately 6 pp in one year, 13.2 pp in two years, and 20.7 pp in three years, whereas here the observed effect was 14.59 pp, 26.92, and 39.74 pp respectively. This variation might have occurred due to observing more treated companies, as well as not controlling for various additional characteristics of companies (number of employees, labour productivity etc.), yet controlling for external territorial characteristics (contexts and typologies). Nevertheless, the positive treatment effect on turnover is clearly visible.

Additionally, different performance results in different statistical regions highlight the regional differences and inequalities for business. Contrary to the popular belief that companies in Rīga and Pierīga most often have better performance in majority of aspects (which was also expressed in the reviewed EU funding studies), the findings of this thesis suggest the opposite. The performance of the EU-supported projects in those two regions was the lowest, while the highest was observed in Kurzeme and Vidzeme. Interestingly, the forthcoming policy paper by Benkovskis et al. (2019) tried controlling for regional effects, yet no noticeable trends were found. This can be explained by the previously mentioned differences in analysis approach – this thesis considered more external (territorial) rather than internal (firm characteristics) factors. Even though only some differences were statistically significant at 0.05 level, the trend is clear: performance of the EU-supported projects differs among Latvia's regions.

Other results that were mostly opposite to what was initially expected came from the typological analysis. When using Coastal typology, in non-coastal area performance was marginally worse in one-year period, while in two and three years this performance became considerably better than in coastal area. Despite the differences not being significant at 0.05 level, the trend is noticeable, and it is challenging to find objective reasons for it. However, it could indicate that this typology is not relevant for performance of EU-supported projects or companies at all. Areas obtained by this typology might not be homogenous. First, coastal area is geographically unusual – it is a narrow strip of counties, which themselves differ a lot

(territory includes both cities and completely rural areas). Second, it is possible that while to some companies sea shore indeed is an advantage, to others it might have a neutral effect or even be a disadvantage. In fact, majority of observations in coastal area were identified as being in negative spatial context area, suggesting that most often companies do not see the proximity to the sea as a major business advantage. Therefore, the effect of the sea might be better captured by spatial context, leaving the Coastal typology as inconclusive. Moreover, when analysing the interaction of Coastal typology and contexts, the contextual effects were strong in non-coastal area and minimal in coastal area. Consequently, the effect of overperformance in non-coastal area came purely from contextual aspects, again highlighting that effects in this geographic typology may better be captured by contexts.

Regarding DEGURBA typology, in one-year period differences among areas were minimal, yet in two-year period rural area indicated a trend of performing better than other areas. This trend continued in three-year period as, placing the rural area at the top, followed by densely populated area, and intermediate density area as the last. A very similar trend is observable in FUA typology, which is not surprising since FUA typology was originally based on DEGURBA. There, the highest performance was observed in non-FUA area (similar to rural area), followed by city area (same as densely populated area), and commuting zone (mainly overlapping with intermediate density area). However, unlike Coastal typology, this trend is explainable.

Rural (and also non-FUA) area, which is sparsely-populated and usually distant from major cities, might have better performance of EU-supported projects due to its lower level of business development (companies on average have lower turnover, equity, and profit). Consequently, it is easier for them to reach comparatively higher (to previous periods) turnover growth. Densely populated (same as city) area, on the other hand, has various favourable external business forces like transportation hubs, economic activity centres, large customer base etc. These effects of rural and urban territories are described as important by Muller (2013) and therefore might indeed positively impact the performance of projects. Intermediate density (and also commuting zone) area, however, has neither of those effects. Besides, these areas are usually the suburban living areas with little business activity: classification of commuting zone means that large part of inhabitants work in the nearby city, therefore indicating that the area does not have large-enough business activity to employ whole local workforce.

Interestingly, according to the OECD classification, areas in Pierīga are not part of the commuting zone, while the authors (inhabitants of Riga) would have expected many areas in

Pierīga to be part of it. Like commuting zone, Pierīga had the lowest performance results, even more suggesting that it has characteristics of commuting zone and might be part of it. Besides, when analysing interaction of commuting zone and contexts, the contextual effects there were quite inconclusive, therefore showing that the negative effect on performance of projects came from the pure commuting zone aspect.

Finally, when analysing the effect of contexts on performance of the EU-supported projects, it was noticed that spatial, formal institutional, and informal contexts share same trend: in short term, the performance was marginally better in negative area, yet in medium term the performance was considerably better in positive area. Since in case of all contexts positive area shows better business results (companies there on average had larger turnover, profit, and equity), it suggests that positive areas indeed, as suggested by the theory, are more favourable for business. Therefore, better performance in short term in less favourable areas for business (negative areas) indicates that the process of implementing projects, which was stimulated by the EU support, tends to reduce regional inequalities. However, already in the medium term, this effect disappears, and more favourable areas perform better. Consequently, the EU-supported projects potentially stimulated the decrease of regional inequalities in the short term, yet the effect dissipates rather quickly.

As for economic context, in all three periods performance in negative area was better than in positive area, with the largest difference observable in the period of two years. Therefore, the trend of better performance in negative area to decrease in the medium term is present here as well, yet the effect of the support seems to appear in the second, not first period – it could take more than a year for companies to reap the benefits support gives related to territorial economic context disadvantage.

On the other hand, it has to be considered that it is uncertain when exactly companies reap the largest benefits of project implementation. If assumed that the benefits appear already in the next year, then it indeed seems that the EU support helped to reduce contextual inequalities in the short term, but not in the medium term. However, it is also possible that the benefits appear later. For example, Benkovskis et al. (2019) argues that the labour productivity gains appear only in two-to-three years after starting a project. Therefore, if benefits appear only in the three-year period, then it seems that EU support did not help to reduce contextual inequalities at all, and the performance in positive areas is always better (in this case the marginally better performance of negative areas in the short term could be considered as negligible or random). The exception to that would be economic context – since its largest effect is in negative area and in the two-year period, it is possible that EU

support actually helps to reduce the economic context inequalities and do it rather quickly. Nevertheless, regardless of when benefits appear, it can be concluded that EU support helps to reduce discussed inequalities at best only in the short term.

5.2. Conclusions on hypotheses

Regarding the seven hypotheses defined in the Literature review section, the authors had to reject all of them since differences between areas were seldom statistically significant at the 0.05 level. However, when observing the trends in the medium term, authors would accept first, second, and fourth hypothesis on spatial, formal institutional, and informal institutional contexts, because these trends were in the expected direction. Nonetheless, hypotheses on typologies would remain rejected since their trends were opposite the expected ones. Conclusions on hypotheses are summarised in Table 6.

No.	Hypotheses	Result
1.	Performance of the projects in area with positive formal systemic/institutional structures (context) will be better than in area with negative context.	Rejected at 0.05 level, yet the medium-term trend could suggest accepting the hypothesis.
2.	Performance of the projects in area with positive informal systemic/institutional structures (context) will be better than in area with negative context.	Rejected at 0.05 level, yet the medium-term trend could suggest accepting the hypothesis.
3.	Performance of the projects in area with positive economic structures (context) will be better than in area with negative context.	Rejected at 0.05 level, and the trend is opposite to the expected one.
4.	Performance of the projects in area with positive spatial/geographic structures (context) will be better than in area with negative context.	Rejected at 0.05 level, yet the medium-term trend could suggest accepting the hypothesis.
5.	Projects implemented in densely populated areas (according to DEGURBA) will outperform projects implemented in other DEGURBA areas.	Rejected at 0.05 level, and the trend is opposite to the expected one.
6.	Projects implemented in city areas (according to FUA) will outperform projects implemented in commuting zone and non-FUA area.	Rejected at 0.05 level, and the trend is opposite to the expected one.
7.	Projects implemented in coastal areas will outperform projects implemented in non-coastal areas.	Rejected at 0.05 level, and the trend is inconclusive, thus the effect is unclear.

Table 6*. Conclusions on hypotheses. Created by the authors.*

5.3. Answering the research question

An answer to the research question "How do typological and contextual aspects affect the performance of the EU-supported projects implemented by companies in Latvia in the 2007 – 2013 programming period?" can be stated as follows: "When considering trends, but not statistical significance at 0.05 level:

- regarding coastal typology, the effect is inconclusive;

- regarding DEGURBA typology, in short term different area types have equal effect on the performance, while in medium term the effect of rural area is the most positive, followed by dense area, and later by intermediate density area;
- regarding FUA typology, in both short and medium term, the effect of non-FUA area is most positive, followed by city area, and later by commuting zone;
- regarding more positive spatial, formal institutional, and informal institutional contexts, in short term there is a small trend of negative effect, while in medium term there is a considerable positive effect;
- regarding more positive economic context, the effect is always negative, especially in the two-year period."

5.4. Implications of results

After analysing the obtained results and answering the research question, authors see several implications of conducted research. First, the findings show that EU funding is important for continuous development because it stimulates growth of companies. Second, trends suggest that contextual factors indeed affect the performance of EU supported projects, which therefore means that in order to increase performance in the long run, investments to improve territorial aspects should be continued. This leads to the third implication of the thesis – since the 2014-2020 programming period is ending and the further distribution of funds is under discussion, the previously described findings give Latvia arguments why further EU support is beneficial and necessary. The fourth implication suggests that in evaluations of EU funding for 2014-2020 programming period, which will be started rather soon, firm level data and PSM approach should be used. It has proven to provide clear results in this thesis and the previously mentioned forthcoming policy paper of Benkovskis et al. (2019), opposite to the research carried out by Ernst & Young (2018), where they also used firm level data, yet did not apply PSM method. Fifth implication of this thesis is that the unique data gathered, especially the survey of companies, can be efficiently used for other research on business in Latvia. In fact, this data can also be used to research regional inequalities and performance of local municipalities. This is the sixth implication, and, bearing in mind that as of April 2019 the government of Latvia is considering creating and executing a territorial reform, the authors suggest the policy makers to consider regional contextual differences.

5.5. Limitations of the research

Considering limitations of this research, the authors would like to point out several shortcomings that could be minimised. First, regressions could be supplemented by more control variables, such as number of employees, labour productivity (used by Benkovskis et al. (2019)) and others, data on which was not available to the authors. Second, authors gathered the survey data about contexts from companies in 2019, which might not exactly reflect the precise situation in the period of 2007 to 2015. However, it was not possible for the authors to evade this particular issue since such data had not been gathered previously. Third, since the evaluation of contexts was defined using a survey, it might be subjective and biased. Nevertheless, the authors previously argued that perception of context is the best measurement of it and no other options at the time of research seemed suitable. Fourth, more projects and companies could be included in the analysis if the scope of the research was larger. This could present more detailed findings on different EU-supported projects and funding activities. Lastly, the authors see that for analysis of Latvia, the whole territory could be divided into even smaller areas (119 counties), which could unveil more contextual aspects. On the other hand, in such case the research might suffer from smaller areas not having strong-enough entrepreneurial activity and lack of observations.

6. Conclusions

The purpose of this research was to analyse how typological and contextual aspects affect the performance of the EU-supported projects implemented by companies in Latvia in the 2007 – 2013 programming period. First, the authors found evidence that the regional inequality indeed persists, and the performance of the projects differs among Latvia's regions. Despite the statistical insignificance of the differences, they create visible trends and these differences were practically noticed by the authors when interviewing experts in every planning region of Latvia. Next, it was concluded that contextual and typological aspects have strongly noticeable effects on the performance of the projects. While the contextual impact in medium term was generally in line with what was expected (positive contexts have a positive impact on project performance), the typological impact was the opposite to the expected one. The findings show that areas more distant from urban centres and more of a rural nature host higher project performance when compared to dense urban areas. Furthermore, even though the EU support positively and significantly affected performance of companies in Latvia, its effect on reducing territorial inequalities was short-lived at best. In medium term, the observed trend indicates that the performance was better in areas that already were more favourable for business.

This research not only adds to the existing research on contexts, as well as provides new insights into how the EU support performs and how this performance is affected by contexts and typological aspects, but also presents various practical implications. The positive effect on companies in Latvia is a great argument for the state to substantiate the need for continued support after 2020. Besides, the fact that the application of PSM methodology on firm-level data provided clear outcomes suggests that this approach could be beneficial when assessing the performance of EU support in the 2014 – 2020 programming period. Finally, the evidence that typological and contextual aspects, including quality of local institutions as a part of formal institutional context, affect entrepreneurship and performance of supported project highlights the importance for policymakers to consider regional contexts when developing regional support strategies or reforms.

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8. Appendices

Appendix A. Standard interview questions to experts.

Topic	Main question	Follow-up question
EU funds	1) How important, in your opinion, is EU funding for the development of this region?	Why?
	2) Would you consider funding from program "Human resources and employment" having a considerable effect on business?	Which type of financing - grant or loan - would you consider more efficient?
	3) Do you think the importance of EU funding for the region has changed throughout time?	Why?
	4) Is there any other context related to EU funding which in your opinion is important, but not yet touched upon?	What in your opinion is a good indicator of funding performance?
Specialisation of the region	5) Which industry in your opinion is most important for this region?	Why?
	6) How, in your opinion, does regional specialisation affect local business?	Has it always been like that?
	7) Is there any other context related to the specialisation of the region, which in your opinion is important, but not yet touched upon?	
Geography and logistics of the region	8) How in your opinion local entrepreneurship is affected by nature capital? (environment etc.)	Are there any other geographical aspects affecting the local business?
	9) How in your opinion local entrepreneurship is affected by economic capital? (infrastructure, forests, natural resources etc.)	
	10) Is there any other context related to geography of the region, which in your opinion is important, but not yet touched upon?	
Quality of local institutions	11) Which local institutions entrepreneurs approach the most?	Why?
	12) What is the impact of these institutions on local entrepreneurship?	
	13) Which characteristics of local institutions, in your opinion, are most valuable for local business?	
	14) Do local institutions create some incentives to foster local entrepreneurship?	What incentives?
	15) How do such incentives in practice affect a local company?	
	16) Is there any other context related to quality of local institutions which in your opinion is important, but not yet touched upon?	
Workforce	17) How important, in your opinion, is availability of workforce for local entrepreneurship?	Is there an industry where it is especially important?
	18) Is there any other context related to workforce of local institutions which in your opinion is important, but not yet touched upon?	Is it important that local workforce is well-qualified?
Education	19) How important, in your opinion, is level of education of local inhabitants for entrepreneurship?	Is current education level satisfactory?
	20) Is there any other context related to workforce which in your opinion is important, but not yet touched upon?	How would you measure education level?
Life quality	21) How, in your opinion, does household income level affect local entrepreneurship?	Can life quality in this region be defined by other aspects as well (rather than only monetary)?
	22) Is there any other context related to life quality which in your opinion is important, but not yet touched upon?	
Availability of services	23) Do you consider availability of services an important aspect for entrepreneurship in this region?	Why?
	24) Is there any other context related to availability of services, which in your opinion is important, but not yet touched upon?	Is geographical presence of service provider necessary?
Culture context	25) How important do you consider the lawful behaviour of local inhabitants for local entrepreneurship?	What in your opinion indicates a lawful behaviour?
	26) How important do you consider local attitude to entrepreneurship for local businesses?	
	27) Would you consider local inhabitants having an "entrepreneurial spirit"?	
	28) Is there any other context related to culture context, which in your opinion is important, but not yet touched upon?	
General	29) Is there any other context, which was not mentioned, but nevertheless is important for local entrepreneurship?	

Table A1. *Standard interview questions. Created by the authors.*

Appendix B. Characteristics of companies in different territories.

Type of division	Territory	Age	Turnover (EUR '000)	Equity (EUR '000)	Profit (EUR '000)	Treated companies	Control companies	Cofinancing intensity (%)
Latvia	Whole territory	8.43	802.5	297.5	28.0	1,046	76,710	53.83
Statistical regions	Rīga	8.25	1017.2	422.7	37.7	570	38,720	53.12
	Pierīga	7.82	646.1	139.9	16.8	195	17,901	55.16
	Kurzeme	9.28	662.2	303.5	31.5	83	5,808	52.90
	Zemgale	8.91	620.0	178.0	21.4	70	5,166	58.13
	Vidzeme	9.15	421.0	132.2	12.9	74	4,728	55.00
	Latgale	9.63	444.0	168.1	9.5	54	4,387	52.84
Coastal typology	Non-coastal area	8.63	612.5	160.4	17.8	368	29,956	54.94
	Coastal area	8.29	927.7	387.9	34.7	678	46,754	53.31
DEGURBA typology	Rural area	8.41	598.1	158.1	18.0	268	21,310	57.29
	Intermediate density area	8.84	574.4	207.9	20.5	125	10,748	51.50
	Densely populated area	8.33	958.2	387.2	34.7	653	44,652	53.05
Functional urban areas typology	Non-FUA	9.32	527.3	192.2	20.9	204	15,890	55.83
	Commuting zone	7.73	658.5	156.3	16.6	189	16,168	54.67
	City	8.33	958.2	387.2	34.7	653	44,652	53.05
Spatial context	Negative	8.47	881.5	357.0	31.9	707	49,836	53.43
	Positive	8.35	656.0	18.72	20.7	339	26,872	54.72
Formal institutional context	Negative	8.41	889.1	357.0	32.3	690	49,448	52.89
	Positive	8.45	646.7	190.3	20.2	356	27,262	55.66
Economic context	Negative	9.14	451.2	137.7	15.7	186	15,711	55.88
	Positive	8.23	899.0	341.4	31.4	860	60,999	53.41
Informal institutional context	Negative	8.46	883.5	361.4	32.2	733	51,717	53.30
	Positive	8.35	634.4	165.0	19.2	313	24,993	55.17

Table B1. *Characteristics of companies in different territories. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Appendix C. Summary and descriptive statistics of the survey.

Territory	Responses	Spatial context	Formal institutional context	Economic context	Informal institutional context
Aizkraukles rajons	32	3.578	3.234	2.688	2.984
Alūksnes rajons	30	3.433	3.167	2.800	3.400
Balvu rajons	30	3.117	2.883	2.883	3.367
Bauskas rajons	32	3.703	3.281	3.219	3.734
Cēsu rajons	31	3.613	3.516	2.806	3.855
Daugavpils	35	3.129	2.743	2.829	3.300
Daugavpils rajons	34	3.265	3.294	2.897	3.382
Dobeles rajons	30	3.817	3.017	3.050	3.767
Gulbenes rajons	30	3.000	2.733	2.683	3.483
Jēkabpils rajons	30	3.567	2.800	2.567	3.150
Jelgava	33	3.939	3.394	3.455	3.773
Jelgavas rajons	32	3.594	3.281	2.594	4.063
Jūrmala	30	3.667	3.233	2.850	3.550
Krāslavas rajons	31	3.435	3.629	2.790	3.258
Kuldīgas rajons	30	3.850	3.500	2.783	3.433
Liepāja	31	4.065	3.387	3.000	3.645
Liepājas rajons	32	3.891	3.063	2.656	3.766
Limbažu rajons	30	3.650	3.250	2.700	3.150
Ludzas rajons	31	3.177	3.097	2.677	3.371
Madonas rajons	30	3.633	3.550	2.817	3.367
Ogres rajons	31	3.323	3.097	3.129	3.435
Preiļu rajons	30	3.450	3.400	2.733	3.167
Rēzekne	32	3.391	2.953	2.859	3.656
Rēzeknes rajons	30	3.300	3.283	2.867	3.133
Rīga	33	3.576	2.303	3.136	3.500
Rīgas rajons	31	4.242	3.613	3.097	3.935
Saldus rajons	31	4.113	3.339	2.742	3.790
Talsu rajons	30	3.200	3.017	2.650	3.367
Tukuma rajons	30	3.733	3.600	2.683	3.750
Valkas rajons	30	3.683	3.450	3.017	3.417
Valmieras rajons	30	3.850	3.600	3.033	3.633
Ventspils	30	4.217	3.733	3.183	3.350
Ventspils rajons	30	4.067	3.333	2.867	3.650
Total / Average	**1022**	**3.614**	**3.236**	**2.871**	**3.502**

Notes: cells coloured in green indicate observations with value above the average.

Table C1. *Summary of the survey. Created by the authors using data from own survey.*

				Correlation							
Question	Mean	Std.dev.	Std.err.	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Q1	3.362	1.281	0.040	1.000	0.201	0.301	0.279	0.186	0.130	0.194	0.160
Q2	3.862	1.056	0.033	0.201	1.000	0.161	0.144	0.060	0.154	0.145	0.072
Q3	3.234	1.220	0.038	0.301	0.161	1.000	0.492	0.078	0.138	0.184	0.132
Q4	3.229	1.269	0.040	0.279	0.144	0.492	1.000	0.074	0.112	0.163	0.204
Q5	2.638	1.204	0.037	0.186	0.060	0.078	0.074	1.000	0.150	0.174	0.227
Q6	3.108	1.252	0.039	0.130	0.154	0.138	0.112	0.150	1.000	0.127	0.155
Q7	3.873	1.068	0.033	0.194	0.145	0.184	0.163	0.174	0.127	1.000	0.235
Q8	3.135	1.205	0.038	0.160	0.072	0.132	0.204	0.227	0.155	0.235	1.000

Table C2. *Descriptive statistics of the survey. Created by the authors using data from own survey.*

Appendix D. Number of control and treated companies, and probit regression results.

Period	Group	Un-matched	1 nearest neigh-bour	2 nearest neigh-bours	5 nearest neigh-bours	1 nearest neighbour with caliper	2 nearest neighbours with caliper	5 nearest neighbours with caliper
Column		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
t + 1	Treated	1,046	1,046	1,046	1,046	1,046	1,046	1,046
	Control	76,710	1,021	2,013	4,827	1,020	2,010	4,825
t + 2	Treated	1,025	1,025	1,025	1,025	1,025	1,025	1,025
	Control	69,380	1,001	1,971	4,720	1,000	1,968	4,718
t + 3	Treated	990	990	990	990	989	989	989
	Control	62,225	967	1,901	4,541	966	1,898	4,539

Notes: The caliper is set to 0.04 in columns (5) - (7).

Table D1. *Number of control and treated companies. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Variables	Effect on probability of treatment
Age	-0.127***
Age squared	0.000
Natural log. of turnover	0.452***
Natural log. of turnover squared	-0.012***
Interaction of natural log. of tunover and sgae squared	0.008***
Profit	0.000
Equity	0.000
Year effect	Yes
Sector effect	Yes

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

Table D2. *Results of the probit regression for the whole territory. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Appendix E. Difference-in-difference results in statistical regions.

	Period	1 nearest neighbour	2 nearest neighbours	5 nearest neighbours
Rīga	t + 1	16.82***	16.95***	16.96***
	t + 2	28.01***	29.52***	29.35***
	t + 3	36.39***	37.32***	36.54***
Pierīga	t + 1	9.20	9.03**	6.98*
	t + 2	22.21**	19.45**	23.92***
	t + 3	17.72	21.25	29.32***
Kurzeme	t + 1	31.64***	29.97***	28.25***
	t + 2	59.89***	60.71***	56.81***
	t + 3	79.44***	79.90***	76.15***
Zemgale	t + 1	13.55	11.84	10.61
	t + 2	38.26***	37.61***	32.69***
	t + 3	41.21**	46.36***	38.69***
Vidzeme	t + 1	14.72	23.37***	24.12***
	t + 2	46.43***	57.72***	46.21**
	t + 3	107.0	122.3*	98.33
Latgale	t + 1	24.59**	18.93**	20.61**
	t + 2	35.23***	23.48*	25.52**
	t + 3	46.92**	41.30**	41.90***
Difference (Rīga - Pierīga)	t + 1	7.61***	7.94	9.98**
	t + 2	5.81	10.07	5.43
	t + 3	18.67	16.07	7.22
Difference (Rīga - Kurzeme)	t + 1	-14.82	-13.00	-11.28
	t + 2	-31.87*	-31.19*	-27.45*
	t + 3	-43.06	-42.58	-39.61
Difference (Rīga - Zemgale)	t + 1	3.26	5.13	6.35
	t + 2	-10.25	-8.09	-3.34
	t + 3	-4.82	-9.04	-2.15
Difference (Rīga - Vidzeme)	t + 1	2.10	-6.39	-7.16
	t + 2	-18.41	-28.20	-16.85
	t + 3	-70.64	-84.94	-61.80
Difference (Rīga - Latgale)	t + 1	-7.77	-1.96	-3.65
	t + 2	-7.22	6.04	3.84
	t + 3	-10.54	-3.98	-5.37
Difference (Pierīga - Kurzeme)	t + 1	-22.44**	-20.94**	-21.27**
	t + 2	-37.68*	-41.26**	-32.88*
	t + 3	-61.73	-58.65*	-46.83*
Difference (Pierīga - Zemgale)	t + 1	-4.35	-2.81	-3.63
	t + 2	-16.06	-18.16	-8.77
	t + 3	-23.49	-25.11	-9.37
Difference (Pierīga - Vidzeme)	t + 1	-5.52	-14.33	-17.14*
	t + 2	-24.22	-38.28**	-22.28
	t + 3	-89.30	-101.0	-69.01
Difference (Pierīga - Latgale)	t + 1	-15.39	-9.90	-13.63
	t + 2	-13.03	-4.03	-1.59
	t + 3	-29.20	-20.05	-12.58
Difference (Kurzeme - Zemgale)	t + 1	18.08	18.13	17.63*
	t + 2	21.62	23.10	24.12
	t + 3	38.24	33.54	37.46
Difference (Kurzeme - Vidzeme)	t + 1	16.92	6.61	4.12
	t + 2	13.46	2.99	10.60
	t + 3	-27.58	-42.36	-22.19
Difference (Kurzeme - Latgale)	t + 1	7.05	11.04	7.64
	t + 2	24.66	37.23*	31.29
	t + 3	32.52	38.60	34.24
Difference (Zemgale - Vidzeme)	t + 1	-1.16	-11.52	-13.51
	t + 2	-8.16	-20.12***	-13.52
	t + 3	-65.82	-75.90	-59.64
Difference (Zemgale - Latgale)	t + 1	-11.03	-7.09	-10.00
	t + 2	3.03	14.13	7.17
	t + 3	-5.72	5.06	-3.21
Difference (Vidzeme - Latgale)	t + 1	-9.87	4.43	3.51
	t + 2	11.20	34.24	20.69
	t + 3	60.10	80.97	56.43

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

***Table E1**. Performance (turnover growth difference) by statistical regions. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Appendix F. Difference-in-difference results in typology territories.

		Period	1 NN	2 NN	5 NN
Coastal territory typology	Non-coastal area	t + 1	11.69***	12.86***	14.17***
		t + 2	32.05***	33.57***	35.85***
		t + 3	43.55*	41.55*	54.95***
	Coastal area	t + 1	13.39***	16.28***	17.33***
		t + 2	24.32***	28.85***	30.68***
		t + 3	34.04***	37.38***	37.82***
	Difference (Coastal - Non-coastal)	t + 1	1.70	3.42	3.16
		t + 2	-7.74	-4.73	-5.17
		t + 3	-9.51	-4.17	-17.13
DEGURBA typology	Rural area	t + 1	11.98***	13.25***	14.52***
		t + 2	34.03***	30.81***	34.11***
		t + 3	64.81***	48.75*	56.49**
	Intermediate density area	t + 1	22.00***	17.07***	15.67***
		t + 2	39.41***	33.21***	32.22***
		t + 3	49.12***	37.94**	32.54**
	Densely populated area	t + 1	17.61***	16.28***	16.97***
		t + 2	31.56***	29.84***	32.07***
		t + 3	41.77***	40.31***	40.69***
	Difference (Intermediate den. - Rural)	t + 1	10.02	3.82	1.15
		t + 2	5.38	2.40	-1.89
		t + 3	-15.69	-10.81	-23.95
	Difference (Densely pop. – Intermediate den.)	t + 1	-4.39	-0.79	1.31
		t + 2	-7.85	-3.37	-0.15
		t + 3	-7.35	2.37	8.15
	Difference (Densely pop. - Rural)	t + 1	5.63	3.04	2.46
		t + 2	-2.47	-0.97	-2.04
		t + 3	-23.04	-8.44	-15.80
Functional urban area typology	Non-FUA	t + 1	16.89***	21.05***	20.92***
		t + 2	42.88***	42.61***	41.83***
		t + 3	69.19***	72.33***	68.08**
	Commuting zone	t + 1	3.64	6.31	7.42*
		t + 2	21.64**	24.27***	26.40***
		t + 3	15.33	28.53	26.76**
	City	t + 1	17.63***	16.39***	17.03***
		t + 2	31.65***	30.03***	32.24***
		t + 3	42.29***	40.41***	41.02***
	Difference (Commuting zone - Non-FUA)	t + 1	-13.25	-14.73**	-13.50**
		t + 2	-21.23	-18.34	-15.43
		t + 3	-53.86	-43.81	-41.31
	Difference (City - Commuting zone)	t + 1	13.98**	10.08*	9.61*
		t + 2	10.00	5.76	5.85
		t + 3	26.96	11.88	14.26
	Difference (City - Non-FUA area)	t + 1	0.73	-4.66	-3.89
		t + 2	-11.23	-12.58	-9.59
		t + 3	-26.90	-31.93	-27.06

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

Table F1*. Performance (turnover growth difference) by typology territories. Created by the authors using data from MoF, SRS, UR, Eurostat, and own calculations.*

Appendix G. Difference-in-difference results in different contextual territories

		Period	1 nearest neighbour	2 nearest neighbours	5 nearest neighbours
Spatial context	Negative	t + 1	18.18***	17.60***	16.92***
		t + 2	32.76***	31.35***	32.25***
		t + 3	40.75***	37.82***	36.97***
	Positive	t + 1	13.04***	12.36***	12.36***
		t + 2	34.29***	32.46***	32.04***
		t + 3	51.31**	56.39***	58.80***
	Difference (positive - negative)	t + 1	-5.15	-5.24	-4.56
		t + 2	1.53	1.11	-0.21
		t + 3	10.56	18.58	21.83
Formal institutional context	Negative	t + 1	17.07***	17.80***	17.24***
		t + 2	30.80***	30.66***	31.73***
		t + 3	40.94***	37.99***	37.71***
	Positive	t + 1	11.51***	13.12***	12.53***
		t + 2	28.45***	33.00***	31.77***
		t + 3	41.32*	54.36***	56.60***
	Difference (positive - negative)	t + 1	-5.56	-4.69	-4.71
		t + 2	-2.35	2.33	0.05
		t + 3	0.39	16.36	18.89
Economic context	Negative	t + 1	14.97***	18.01***	16.99***
		t + 2	44.32***	45.98***	42.25***
		t + 3	45.84***	51.74***	44.61***
	Positive	t + 1	13.53***	13.88***	14.54***
		t + 2	25.29***	28.95***	28.65***
		t + 3	37.66***	43.77***	41.97***
	Difference (positive - negative)	t + 1	-1.44	-4.13	-2.45
		t + 2	-19.03*	-17.03*	-13.60
		t + 3	-8.18	-7.97	-2.65
Informal institutional context	Negative	t + 1	17.30***	17.41***	17.38***
		t + 2	31.21***	31.06***	31.35***
		t + 3	39.21***	39.16***	38.96***
	Positive	t + 1	14.13***	12.14***	11.87***
		t + 2	31.44***	30.54***	33.14***
		t + 3	44.98*	50.36**	55.78***
	Difference (positive - negative)	t + 1	-3.17	-5.27	-5.51
		t + 2	0.23	-0.52	1.80
		t + 3	5.76	11.20	16.82

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

***Table G1**. Performance (turnover growth difference) by contextual areas. Created by the authors using data from MoF, SRS, UR, Eurostat, own survey, and own calculations.*

Appendix H. Difference-in-difference results in interactions (1 out of 3).

			Non-coastal area			Coastal area		
Context		Period	1 NN	2 NN	5 NN	1 NN	2 NN	5 NN
Spatial context	Negative	t + 1	19.71***	14.66**	14.31**	20.15***	19.63***	18.05***
		t + 2	46.00***	38.58***	34.23***	38.91***	34.61***	32.38***
		t + 3	39.34**	34.81**	30.77**	49.02***	39.66***	37.15**
	Positive	t + 1	17.10***	14.90***	13.92***	21.05**	16.40**	15.08***
		t + 2	40.83***	38.42***	32.04***	38.57***	34.11**	36.77***
		t + 3	81.95***	80.51***	69.22***	39.84	35.87	45.11***
	Difference (positive - negative)	t + 1	-2.61	0.24	-0.39	0.90	-3.23	-2.97
		t + 2	-5.17	-0.16	-2.19	-0.34	-0.51	4.40
		t + 3	42.61	45.70	38.45	-9.18	-3.79	7.95
Formal institutional context	Negative	t + 1	22.19***	18.71**	21.13***	18.52***	18.52***	17.39***
		t + 2	51.62***	46.03***	41.53***	38.90***	34.93***	32.90***
		t + 3	50.08***	45.71***	39.18**	47.41***	39.72***	36.94***
	Positive	t + 1	14.08***	12.51***	11.50***	19.89**	21.51**	19.07***
		t + 2	38.33***	35.45***	29.36***	33.30**	33.93**	37.81***
		t + 3	67.92***	65.41***	56.45**	35.32	35.73	44.75***
	Difference (positive - negative)	t + 1	-8.12	-6.20	-9.63	1.37	2.99	1.68
		t + 2	-13.29	-10.57	-12.17	-5.60	-1.00	4.91
		t + 3	17.84	19.70	17.28	-12.10	-3.99	7.81
Economic context	Negative	t + 1	26.04***	22.99***	22.01***	-4.07	-1.94	-4.42***
		t + 2	54.76***	50.28***	49.70***	21.56	21.11	21.14***
		t + 3	49.74**	50.88***	55.85***	5.07	-3.43	10.03**
	Positive	t + 1	13.66***	10.41**	10.70***	20.36***	20.37***	18.94***
		t + 2	34.00***	24.42***	27.08***	40.72***	34.58***	35.09***
		t + 3	67.60**	57.26**	60.81**	49.25***	39.72***	41.33**
	Difference (positive - negative)	t + 1	-12.38*	-12.58*	-11.31*	24.43**	22.31***	23.35*
		t + 2	-20.76	-25.86*	-22.63*	19.16	13.47	13.95
		t + 3	17.86	6.38	4.95	44.18**	42.15**	31.30
Informal institutional context	Negative	t + 1	14.17**	11.57*	12.66**	20.32***	19.42***	18.79**
		t + 2	34.39***	33.16***	29.96***	40.29***	34.72***	33.30***
		t + 3	33.51*	36.52**	36.84***	51.89***	40.72***	39.69*
	Positive	t + 1	14.13***	15.69***	15.46***	23.57**	16.46*	16.88***
		t + 2	36.46***	36.12***	37.66***	37.92***	34.37***	34.56***
		t + 3	6.77***	70.98***	72.93***	30.34	32.67	39.88***
	Difference (positive - negative)	t + 1	-0.04	4.12	2.80	3.25	-2.95	-1.91
		t + 2	2.07	2.96	7.70	-2.38	-3.45	1.26
		t + 3	34.22	34.46	36.09	-21.55	-8.05	0.19

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

Table H1*. Performance (turnover growth difference) by interactions of contexts and Coastal typology. Created by the authors using data from MoF, SRS, UR, Eurostat, own survey, and own calculations.*

Difference-in-difference results in interactions (2 out of 3).

			Rural area			Intermediate density area			Dense area		
Context		Period	1 NN	2 NN	5 NN	1 NN	2 NN	5 NN	1 NN	2 NN	5 NN
Spatial context	Negative	t + 1	23.49**	26.17***	17.04*	24.61**	23.64**	24.01**	16.14***	15.13***	14.72***
		t + 2	54.34***	53.92***	41.18**	42.13***	36.98***	32.68**	25.46***	25.13***	25.77***
		t + 3	24.71	31.49	20.04	37.63**	31.90**	18.86	34.86***	30.95***	34.35***
	Positive	t + 1	18.18***	16.02***	11.28***	5.73	5.88	10.92	28.51**	25.07**	25.57**
		t + 2	39.29***	37.90***	30.19***	41.30**	33.87**	35.03**	66.25***	51.43***	56.13***
		t + 3	73.95***	74.17***	63.26**	52.16	47.24*	53.09**	90.80***	72.46***	72.22***
	Difference (positive - negative)	t + 1	-5.31	-10.15	-5.76	-18.88	-17.76	-13.09	12.37	9.94	10.85
		t + 2	-15.05	-16.02	-10.99	-0.83	-3.11	2.36	40.79**	26.31	30.37*
		t + 3	49.24	42.68	43.22	14.53	15.33	34.23	55.93**	41.50*	37.87*
Formal institutional context	Negative	t + 1	14.10	20.21*	18.62*	22.85**	17.62	21.80**	16.14***	15.13***	14.72***
		t + 2	38.23*	44.43**	46.58**	41.27**	33.65**	33.48**	25.46***	25.13***	25.77***
		t + 3	14.48	28.15	31.79	28.93	14.64	15.98	34.86***	30.95***	34.35***
	Positive	t + 1	15.01***	13.02***	10.87***	7.63	5.21	10.70	28.51**	25.07**	25.57**
		t + 2	37.77***	36.40***	29.56***	38.65**	32.83**	31.42**	66.25***	51.43***	56.13***
		t + 3	75.80***	71.71***	60.52**	52.97*	56.67**	47.49**	90.79***	72.46***	72.22***
	Difference (positive - negative)	t + 1	0.91	-7.19	-7.75	-15.22	-12.41	-11.10	12.37	9.94	10.85
		t + 2	-0.46	-8.03	-17.02	-2.62	-0.82	-2.06	40.79**	26.31	30.37*
		t + 3	61.32	43.56	28.73	24.04	42.02	31.52	55.93**	41.50*	37.87*
Economic context	Negative	t + 1	17.54**	14.73**	14.21**	31.72***	28.68***	19.11*	15.49	15.58	16.60
		t + 2	53.66***	44.67***	41.45***	61.95***	54.33***	44.43***	26.89	20.26	31.19
		t + 3	59.75***	52.76***	47.39**	53.03***	51.64***	23.61	81.49**	68.11**	68.36**
	Positive	t + 1	17.13***	16.35***	10.31**	13.74	15.01*	13.67*	18.39***	17.62***	16.04***
		t + 2	34.88***	35.28***	27.58***	37.97**	34.12**	35.95**	27.88***	29.42***	28.30***
		t + 3	69.43**	73.05**	69.04**	45.46	49.07*	47.79**	36.72***	33.97***	36.11***
	Difference (positive - negative)	t + 1	-4.16	1.62	-3.90	-17.98	-13.67	-5.45*	2.89	2.03	-0.56
		t + 2	-18.78	-9.39	-13.87	-23.97	-20.22	-8.48	0.99	9.17	-2.89
		t + 3	9.68	20.28	21.65	-7.57	-2.57	24.18	-44.78	-34.14	-32.25
Informal institutional context	Negative	t + 1	15.28	12.08	14.05**	26.40*	28.41**	28.57***	16.14***	15.13***	14.72***
		t + 2	31.63**	30.00**	33.68***	44.18**	32.14*	32.74*	25.46***	25.13***	25.77***
		t + 3	28.56	30.95	36.01**	45.25	32.85	33.19	34.86***	30.95***	34.35***
	Positive	t + 1	22.98***	20.38***	16.90***	14.20*	7.83	8.45	28.51**	25.07**	25.57**
		t + 2	47.17***	44.82***	39.76***	44.64***	33.00**	34.29***	66.25***	51.43***	56.13***
		t + 3	82.24***	79.92***	78.31***	44.96***	35.11**	40.95***	90.79***	72.46***	72.22***
	Difference (positive - negative)	t + 1	7.70	8.30	2.85	-12.20	-20.58	-20.12	12.37	9.94	10.85
		t + 2	15.55	14.82	6.08	0.45	0.86	1.55	40.79**	26.31	30.37*
		t + 3	53.68	48.97	42.30	-0.30	2.26	7.76	55.93**	41.50*	37.87*

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

***Table H2**. Performance (turnover growth difference) by interactions of contexts and DEGURBA typology. Created by the authors using data from MoF, SRS, UR, Eurostat, own survey, and own calculations.*

Difference-in-difference results in interactions (3 out of 3).

			Non-FUA			Commuting zone			City		
Context		Period	1 NN	2 NN	5 NN	1 NN	2 NN	5 NN	1 NN	2 NN	5 NN
Spatial context	Negative	t + 1	30.85***	26.23***	26.86***	-14.39	-11.35	-7.83	16.14***	15.13***	14.72***
		t + 2	58.79***	52.23***	47.98***	-33.31	-9.16	4.06	25.46***	25.13***	25.77***
		t + 3	30.62	35.56*	28.10	-54.75	-15.47	-5.07	34.86***	30.95***	34.35***
	Positive	t + 1	18.52***	18.13***	18.45***	11.50	13.95**	13.58**	28.51**	25.07**	25.57**
		t + 2	34.39***	32.90***	30.28***	35.63***	36.15***	36.48***	66.25***	51.43***	56.13***
		t + 3	95.24**	95.52**	75.73	56.70***	54.00***	47.98***	90.80***	72.46***	72.22***
	Difference (positive - negative)	t + 1	-12.34	-8.10	-8.42	25.88*	25.30**	21.41**	12.37	9.94	10.85
		t + 2	-24.41	-19.34	-17.70	68.94***	45.32**	32.42*	40.79**	26.31	30.37*
		t + 3	64.62	59.95	47.63	111.4**	69.47**	53.04**	55.93**	41.50*	37.87*
Formal institutional context	Negative	t + 1	27.83**	26.50**	27.87***	1.55	2.71	-2.39	16.14***	15.13***	14.72***
		t + 2	53.96***	41.16**	37.47**	13.31	31.79	37.32*	25.46***	25.13***	25.77***
		t + 3	23.13	6.33	9.17	-14.97	15.58	35.14	34.86***	30.95***	34.35***
	Positive	t + 1	18.02***	17.33***	17.22***	16.03**	15.58***	15.55***	28.51**	25.07**	25.57**
		t + 2	32.17***	31.28***	28.93***	34.18***	31.61***	33.38***	66.25***	51.43***	56.13***
		t + 3	75.04**	70.44*	67.36*	56.15***	48.99***	46.30***	90.79***	72.46***	72.22***
	Difference (positive - negative)	t + 1	-9.81	-9.17	-10.65	14.48	12.88	17.94	12.37	9.94	10.85
		t + 2	-21.79	-9.89	-8.54	20.87	-0.18	-3.94	40.79**	26.31	30.37*
		t + 3	51.91	64.12	58.19	71.12	33.40	11.17	55.93**	41.50*	37.87*
Economic context	Negative	t + 1	24.56***	23.46***	21.81***	15.23	5.52	8.93	15.49	15.58	16.60
		t + 2	48.58***	52.00***	46.55***	51.96	59.64*	56.12*	26.89	20.26	31.19
		t + 3	46.47**	53.96***	47.54***	71.61	65.45	66.32	81.49**	68.11**	68.36**
	Positive	t + 1	23.97***	23.95***	24.50***	10.29	12.98**	13.91***	18.39***	17.62***	16.04***
		t + 2	35.90**	26.90	30.54*	20.87*	27.70***	30.16***	27.88***	29.42***	28.30***
		t + 3	131.7	137.2	129.6	34.15**	39.06***	40.23	36.72***	33.97***	36.11***
	Difference (positive - negative)	t + 1	-0.59	0.49	2.69	-4.93	7.46	4.98	2.89	2.03	-0.56
		t + 2	-12.68	-25.09	-16.01	-31.09	-31.95	-25.96	0.99	9.17	-2.89
		t + 3	85.18	83.24	82.02	-37.45	-26.40	-26.09	-44.78	-34.14	-32.25
Informal institutional context	Negative	t + 1	21.53***	24.26***	22.24***	-10.65	-6.45	-8.53	16.14***	15.13***	14.72***
		t + 2	39.01***	41.38***	37.45***	-20.70	0.23	5.23	25.46***	25.13***	25.77***
		t + 3	50.00**	51.11***	48.86***	-66.47	-23.22	-16.31	34.86***	30.95***	34.35***
	Positive	t + 1	19.67**	22.01***	19.53***	10.15	12.06**	13.03**	28.51**	25.07**	25.57**
		t + 2	29.76*	41.57***	44.34***	33.53***	31.73***	34.98***	66.25***	51.43***	56.13***
		t + 3	86.57	102.7	97.71	54.30***	51.47***	47.62***	90.79***	72.46***	72.22***
	Difference (positive - negative)	t + 1	-18.61	-2.25	-2.71	20.80	18.51	21.55*	12.37	9.94	10.85
		t + 2	-9.26	0.18	6.89	54.22*	31.50	29.74	40.79**	26.31	30.37*
		t + 3	36.57	51.58	48.85	120.8*	74.69*	63.93***	55.93**	41.50*	37.87*

Notes: *, **, and *** denote significance at 0.1, 0.05, and 0.01 level.

Table H3*. Performance (turnover growth difference) by interactions of contexts and FUA typology. Created by the authors using data from MoF, SRS, UR, Eurostat, own survey, and own calculations.*