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Business Model Innovation in European SMEs - Descriptive analysis of quantitative survey and case survey data

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Abstract In this paper we analyse Business Model Innovation (BMI) in European micro, small and medium sized enterprises (SME). We present descriptive findings from our quantitative survey and qualitative case survey on how SMEs are innovating their Business Models. Our survey indicates that 37% of European SMEs innovate their Business Model. We found some differences in BMI depending on the age and industry sectors. We also describe the changes the SMEs make in differing Business Model components when they are improving their Business Model.

Keywords: • Business Model Innovation • SME • industry sector • age • BM components •

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1 Introduction

Research on Business Models (BMs) really made a breakthrough with the emergence of Information Technology and the broad acceptance of the Internet. Since then different academic disciplines like strategic management, innovation management and Information Systems have adopted the BM concept as an important object to study (Bouwman et al., 2012). The early days of BM research is characterized by studies searching for a clear, broadly accepted common definition of BM; by development of typologies and ontologies, all with their own BM components; and design projects with a focus on how to design a BM. Until today there are still debates on the demarcation of BM versus strategy, on the relation of a BM with a business architecture or enterprise architecture, or on what a BM design implies (DaSilva & Trkman, 2014). One issue nowadays agreed upon is the definition of a BM: *BM is defined as the logic to creation, capturing and delivering value for customers and business*.

By mid 2010, BMs were already seen by the academics as an approach to the abstract representation of a company's business (Al-Debei et al., 2008). Wirtz et al. (2016) analysis of BM literature from the period of 1965-2013 shows that the previous heterogeneous understanding of authors from various scientific disciplines was gradually uniting into a converging BM understanding - the BM concept was comprehensively defined in the literature, as well as the components of a BM were identified. Wirtz et al. (2016) concluded that the main future research areas are design, innovation and change of BMs.

Research on BM Innovation (BMI) has emerged and quickly evolved during the last years. BMI is described as an activity or process in which core elements of a firm and its business logic are deliberately altered (Bonakdar, 2015; Bucherer et al., 2012; Hartmann et al., 2013; Lindgardt et al., 2009; Pohle and Chapman; 2006). Empirical research mainly focused on cases, and then mainly discussing large corporations or well-known start-ups. The number of studies based on samples of companies are limited. The latter studies are often focused on theory testing and basic descriptive understanding on BM Innovation, especially in SMEs, is often lacking.

The research question in this paper is to study the extent to which BM Innovation is actually an issue for micro, small and medium -sized companies (SMEs), in which industries and what kind of SMEs BM Innovation is a relevant phenomenon (size, ownership, etc.). Therefore, we provide basic descriptive data on quantitative and qualitative research as executed over the last three years among SMEs within Europe.

The paper is structured as follows: section 2 is a literature review, section 3 is about our Research Methodology for collecting the data. This is followed with result section where we provide descriptive results based on data. Finally discussion and conclusions ends the paper.

2 Literature review

Even though SMEs are the driving force behind the economy and de facto employ the most people (EASME, 2015), few studies have thus far focused specifically on innovation of BM at SMEs. Scopus search for SME and "Business Model Innovation" results in only 16 articles: Guo et al. (2017) survey on Chinese SMEs shows that BMI serves as a key construct through which SMEs can take advantage from the business opportunities they have recognized and improve their performance. Still, it is still relatively unclear how SMEs actually innovate their BMs (Barjak et al., 2014; Foss and Saebi, 2017). In general, BMI is seen to be derived from the strategic activities of a SME (Cortimiglia et al., 2016), and managers are expected to maintain consistency between their strategic goals and the core components of the BM (Demil and Lecocq, 2010). Arbussa et al. (2017) show that strategic sensitivity is less natural and therefore more critical to SMEs, while resourcefulness enables SMEs to overcome limitations of size. An empirical study by Cortimiglia et al. (2016) involving small, medium-sized and large firms found that when BMI is used alongside a formal strategic approach, most companies tend to focus first on the design or improvement of their key activities and resources (i.e. the value creation dimension of BM), after which they innovate the other BM components. However, previous studies indicate that most SMEs do not have a formal strategy process, do not implement a structured process when engaged in a BMI process (Lindgren, 2012), and typically experience BMI as a highly emergent and often unintended process (Laudien and Daxböck, 2017). A multicase study involving SMEs innovating their BMs (Heikkilä et al., 2018) evidence that strategic goals (start new business, seek growth or seek profitability) lead SMEs to alternative innovation path in terms of BM components affected: Growth seekers start from the right-hand side of a BM Canvas, while profitability seekers start from the back end, the left side of a Canvas; and new businesses adopt a cyclical approach considering BM components in turn, while at the same time redesigning and testing the BM.

There are some studies on SMEs in specific geographical or industry sectors: Survey results by Anwar (2018) on manufacturing SMEs operating in Pakistan indicates that BMI has a significant positive impact on competitive advantage and performance. A multi-case study in the Dutch food and beverage industry shows that SMEs wishing to develop a BM for sustainability must make sustainability the key principle upon which the SME is founded (Long et al., 2018). A sample of 68 German SMEs from three industries (automotive suppliers, mechanical and plant engineering, as well as electrical engineering and ICT) show that internal motivation and external pressure towards implementation has an impact on which BM elements are innovated (Müller et al., 2018). An in-depth qualitative study on four plastic-producing SMEs analyses application of social media in B-to-B (Brink, 2017), study on four Slovenian SMEs, coming from different sectors, show very limited usage of ICT for BMI, except in SME from ICT industry. In addition, observations have confirmed that there is little or no awareness in SMEs on how to systematically approach BMI (Marolt et al, 2016; Pucihar et al., 2016). Lastly, a survey on European food industry shows that medium sized firms engaged in collaboration with

competitors and suppliers are more likely to innovate their BM compared to micro and small firms (Minarelli et al., 2014).

From the above literature analysis, we can conclude that at least some SMEs are engaged in BMI. But we are still missing the big picture – therefore in this paper we want to find out how common is BMI within SMEs? are there any differences between e.g. industry sectors? And which BM components do SMEs change?

3 Research Methodology

We used a mixed method approach, by focusing on large scale survey data as well as multiple case studies. Although both approaches have different epistemological roots, i.e. theory development and theory testing, in this paper we take a pragmatic and descriptive approach. We first discuss the quantitative data collection, and then the qualitative case study survey. All data was collected in 2015-2018.

3.1 Quantitative research

To collect statistically representative data we made use of a longitudinal research design to collect data on European SMEs. We will discuss the questionnaire, the sample approach, and the way we selected the companies which we considered being engaged in BM Innovation.

The questionnaire contains several concepts related to BM and BMI. The questionnaire starts with a generic selection question, asking if the SME under study has changed its BM in the last 24 months. Next, four specific selection questions were posed giving examples of BMI related to (a) value proposition and market; (b) ecosystem; (c) information technology, that is related to BMI, such as use of social media and/or big data; and (d) pricing and related financial issues. These questions were included to make sure SMEs were actually involved in BMI (Langerak et al., 2004; Lee and O'Connor, 2003). Next, the key respondent from each SME had to prove that he/she was knowledgeable about BMI practices in their company (Atuahene-Gima, 2005).

The questionnaire was iterated and pretested. The questionnaire was developed in English and then translated into 11 languages. In order to detect potential problems (e.g., ambiguous expressions) and cultural issues, back-translation of the questionnaire into English was done to prevent any bias. Minor changes were made between the years in which data was collected, in 2016, 2017 and 2018. A final check on translations and consistency was done by the research agency that collected the data using native speakers and computer-assisted telephone inquiry. The countries included in this research are spread over Europe and contain, for all European regions (North, West, Central, South, and East), a large country with a large number of SMEs and a small country were selected. Quota for micro, small, and medium enterprises was established as 33%, −33%, and −33%, respectively. There is no quota defined for industry sectors. Agriculture, public administration, and nonmarket activities in households are excluded. Companies were

randomly selected from the Dun and Bradstreet database and key respondents (owner or BMI manager) were interviewed. Normal non-response rates were achieved.

The research agency also took into account the incidence rate that provides the hit rate, that is, the number companies that responded to the four selection questions discussed above, before continuing the survey with those SME that were classified as doing BMI. Results obtained showed similarity patterns between countries. As a further test, respondents' suitability (Atuahene-Gima, 2005) to answer the questionnaire and their degree of knowledge (1 = *very limited knowledge*, 7 = *very substantial knowledge*) regarding the product/service on offer, business process, and new product/service development was assessed, which indicates adequate knowledge levels.

3.2 Qualitative research

We also conducted 123 qualitative SME case studies. To study BMI in SMEs, we defined the following case selection criteria:

- SME which is/has been innovating its BM. Sometimes this innovation is very explicit, sometimes there are minor changes in the BM.
- SIZE: Micro enterprise, Small or Medium-Sized Enterprise (using definition by EU, 2003/361/EC).
- LOCATION: Representation of geographical regions, i.e. North, East, West, South and Central Europe.
- FAMILY: family businesses from each region and firm size.
- FEMALE: some SMEs with females in crucial managerial positions fom each region and firm size.

For qualitative study we first wrote a case study protocol, which was used by all researchers of the project. The protocol contains instructions for interviews, a fixed case report format and guidelines for the use of triangulation techniques, both in data collection and data analyses. In qualitative research the data informants were primarily the owners, core managers or people responsible for BM Innovation or business development. The interviews lasted on average lasted about an hour. Following standard procedures in case study research, we further triangulated our primary data source with secondary documents and website information to cross -validate factual information about the cases. The reliability of our data analysis was improved by involving all the original researchers in reviewing our analysis and by researchers who had not been engaged in the specific case. The case reports were also send to the case organizations for validation and for informed consent. The data, around 600 documents (interview recordings, transcripts, the case reports, etc.), are stored in a structured and secure database.

In this report, we analyse the qualitative case data using Case survey approach. Case survey provides a quantitative overview of the set of cases based on simple quantifications (Larsson, 1993). Case surveys combine advantages of survey research and qualitative case studies, as they enable quantitative analyses, while at the same time capitalizing on the richness of case material (Larsson 1993). Yin and Heald (1975) argue that case

surveys are particularly suited when there is a heterogeneous collection of case studies and researchers are interested in their common characteristics. It should be noted that, in a case survey, the aim is not to generalize in a statistical sense, but to show the width of the phenomenon as illustrated by the diversity of the cases.

4 Results

First, we discuss some generic findings for the quantitative research and next we present some data on the case survey, before we discuss some generic findings based on both.

4.1 Quantitative data

The most important insight we gained is related to the salience of BM Innovation for SMEs. Based on spontaneous responses of the respondents 38% (2016), 36 % (2017) and 37% (2018) of SMEs are innovating their BM. If we use the selection questions we see that the respondents answer as follows.

Table 1: Selection questions and number of companies that indicate that they are actively involved in BMI

	2016	2017	2018
S2. A company no longer wants to sell products but earn money by renting them out, or make money by bundling the product with services. Did your company make this type of change during the last 24 months?	24%	20%	16%
S2b. A company enters a new market or starts working with new type of partners. Did your company make this change during the last 24 months?	69%		
2b1. Or a company offers a new product or service, or focuses on a new group of customers. Did your company make this change during the last 24 months?		65%	62%
2b2. Or a company starts working with new type of partners, suppliers or advisors. Did your company make this change during the last 24 months?		67%	67%
S2c. Changing the pricing strategy, that goes beyond the regular price adaptations. Did your company make this change during the last 24 months?	50%	42%	39%
S2d. Incorporation of IT for business purposes for example using social media or big data IN SALES CHANNELS or IN MARKETING. Did your company make this change during the last 24 months?	58%	58%	65%
N	1604	1686	1402

Based on this set of indicators we decided if the SME was going to be included in the dataset. For the three years we included the following numbers of SMEs in our final dataset that was analysed in more detail; in 2016 N = 586; in 2017 N = 560; and in 2018 N =451. The lower number of observations for 2018 can be explained by the fact that we didn't include Sweden for 2018, seen serious problems with response rate in Sweden (see figure 2), the huge effort needed to collect the data, specifically in finding sufficient mid-sized companies.

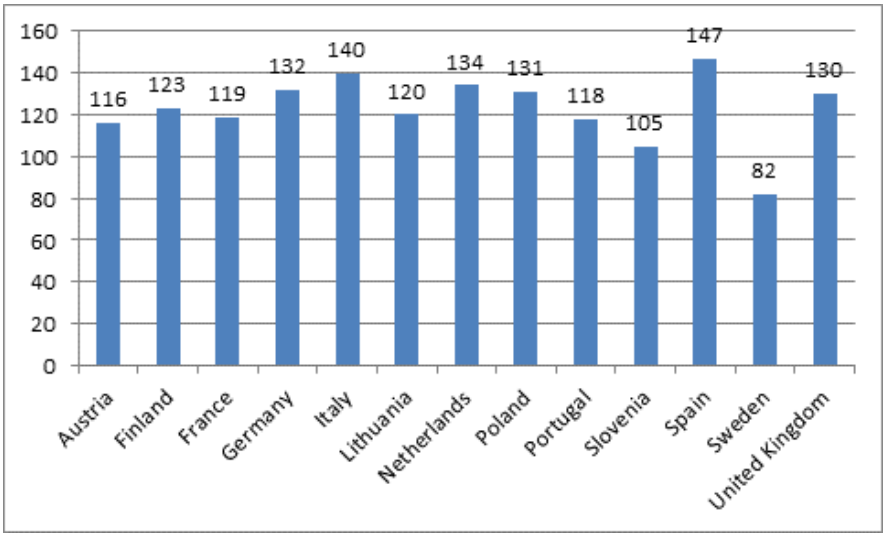

Figure 2: Number of companies per country of the three years

The oldest SME in our sample is established in 1700. On average the SME are established in 1984, the median score is 1993, while the most companies (modus) are established in 2003. Of the companies 15% are established in the last ten years, potential qualifying as a start-up as defined by the EU. Age distribution for survey data is provided in table 2.

Table 2: Age distribution survey data

	Frequency	Percent
Before 1950	186	12
1951 - 1990	484	31
1991 - 2000	371	24
2001 - 2010	390	25
>2010	141	9
Total		**100**

Next to confirm the distribution per year per size as strived for, we see some deviations. Micro companies are a bit overrepresented, while mid-sized companies are slightly less than we wanted. Of the SMEs engaged in BMI 57% is a family business, 45% is manged by a family member, 51% of the SME is (co-)owned by females, however only 17% of the SME have a female CEO or core manager.

Table 3: SMEs that are involved in BMI per year

Size	**2016**	**2017**	**2018**	**N**
Micro: 0-10	210 (36%)	203 (36%)	160 (36%)	573 (36%)
Small: 11-50	194 (33%)	182 (33%)	155 (34%)	531 (33%)
Mid-size: 51-249	182 (31%)	175 (31%)	136 (30%)	493 (31%)
	586 (100%)	**560 (100%)**	**451 (100%)**	**1597 (100%)**

With regard to distribution over industry sector we see that BM Innovation can be found in Other service activities, manufacturing, wholesale and retail and construction (see table 4).

Table 4: BMI as found per industry sector

Industry	Frequency	%
Manufacturing	249	15,6
Electricity, gas, steam and air conditioning supply	36	2,3
Water supply; sewerage, waste & recycling	17	1,1
Construction	169	10,6
Distributive trades	231	14,5
Transportation and storage	49	3,1
Accommodation and food services	116	7,3
Information and communication	67	4,2
Financial and insurance activities	54	3,4
Real estate activities	33	2,1
Professional, scientific and technical activities	45	2,8
Administrative and support service activities	36	2,3
Education	65	4,1
Human health and social work activities	81	5,1
Arts, entertainment and recreation	38	2,4
Other service activities	308	19,3
Total	**1594**	**100%**

Typical is that BM innovation is taking place in the service industries, followed by distributive trades (whole sale and retail). Strikingly most of the SMEs don't make use of a formal method. Only 19% use a formal method, 7% use Canvas, 3% use Lean CANVAS, and 9% another method. SWOT is the most mentioned alternative method. Other BM specific tools, like roadmaps (De Reuver et al, 2013), stress- testing (Haaker et al, 2017) or other ontologies than CANVAS, like STOF, VISOR or others, are not mentioned.

The BM changes are related to all elements of a BM. Although changes in product or service definition are often leading, the increasing role of ICT is important (enables 90%), as well as variable and fixed costs are affected (87%, 89%), and do lead to changes in pricing mechanisms (69%), new revenue streams (81%) and profitability (91%).

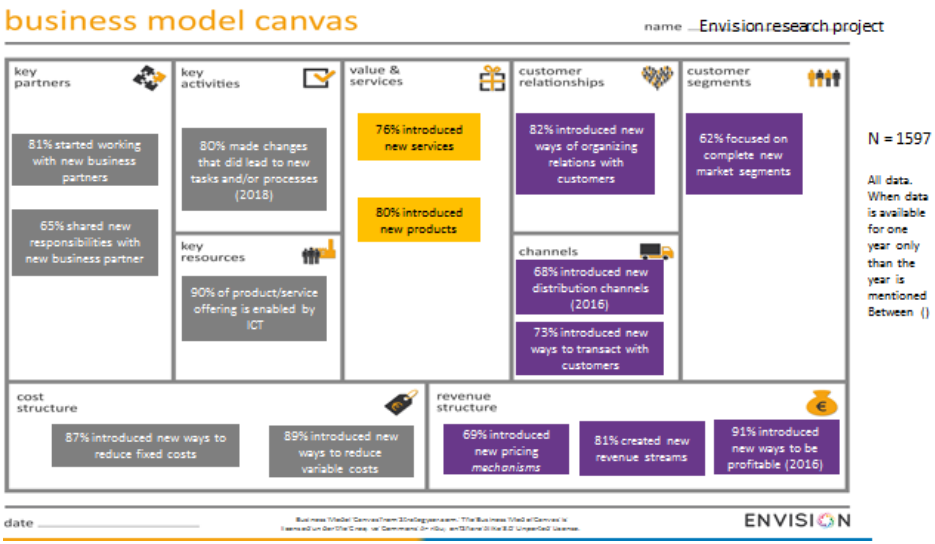

Figure 3: Components affected by BMI

In order to mirror these findings we will present the results of the case survey.

4.2 Qualitative data

In this section, we present an overview of the 123 case studies, based on a case survey approach (Larsson, 1993).

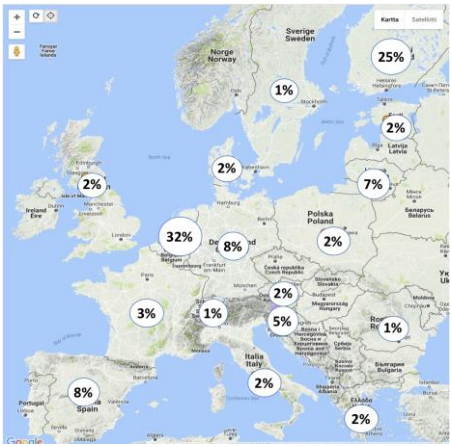

Figure 4: Geographical of spread of cases.

The case companies come from 17 European countries. From the map we see that the distribution over European regions is not even. The most cases are based in West Europe (35%), next North (26%), East (15%), South (12%) and Central Europe (12%).

On average the companies are about 20 years old, but this can be attributed to some very old companies in the case sample. One SME is established in 1696, and other in 1887. Eight are established before 1950 (Table 5). However, the most companies in our case sample are established in 2010 or 2014 (modus), while the median score is 2009. Of the SME's in the case study sample 54% are younger than ten years. Ten years is considered to make the difference between a start-up, and scale-up. Although often additional criteria are used like growth rate and entrepreneurial culture. In three cases the research was on a start-up that in the end was not established or still in a very early conception phase, therefore the N = 120.

Table 5: Case companies' age distribution

	Frequency	Percent
Before 1950	9	8
1951 - 1990	14	12
1991 - 2000	14	12
2001 - 2010	36	30
>2010	47	39
Total	**120**	**100**

Some case organizations (eight, 6%) are active in agriculture or forestry (NACE2 A01-03), mainly with a focus on horticulture or support of the agriculture companies. 15% of case SMEs are active in manufacturing (C 10-33), 11% in retail and wholesale (G 45-47), five cases are from the transport sector, three from travel, and five from the hospitality

industry (together 11%; H 49-53, I 55-56 & N 77-82), 30% of the cases are from the ICT domain (telecom and It, J63 58-), 12% are active in the service industry (M 69-75), and 7 cases are related to education, social work or arts (5%, P 85, Q 86-88 and R 90-93).

About 38% of the companies are micro-enterprises (less than 10 employees), 35% are small and 26% are mid-sized. One firm is large, but we included this SME because it was a very fast-growing SME, also labelled as a gazelle, that received quite an impressive support from Venture Capitalist. Of the case SMEs 30% were family businesses and in 43% women were either owner or involved in management.

The distribution over Europe is presented in table 6. Most family businesses in our sample are from the Southern parts of Europe, while female led enterprises can be found in Norther, Eastern and Southern Europe in our sample. Be aware that this is no way a random or other type of sample on basis of which generalisations can be made. We only sketch the back ground of the cases based on a selective approach as used to engage SMEs.

Table 6: Case companies' geographical distribution in Europe

	Micro		Small		Mid-sized		Family		Female	
Central	9	19%	3	7%	2	6%	3	8%	5	10%
East	5	11%	10	24%	3	9%	6	17%	11	22%
North	14	30%	9	21%	9	27%	14	34%	16	31%
South	5	11%	7	17%	4	12%	10	28%	11	22%
West	14	29%	13	31%	15	46%	3	8%	8	16%
Total	47	100%	42	100%	32	100%	36	100%	51	100%

The relation between region and family business in the sample is significant (chi^2 =24, 467, df = 4, p< .001). Most family businesses as studied are from Southern Europe: 2 out of 3 is a family business. In Northern parts this is almost in balance (17 non-family versus 14 family businesses) while in other parts of Europe Family businesses are less prominent. Specifically, in the Western and central parts of Europe Family business are less present in our case selection.

Also, the relation between presence of women in management or as owner and region is significant for our sample (chi^2 =17,186, df = 4, p< .01). In East and South, the ratio is 2 out of 3 SMEs a woman is involved in ownership or management. In the North, the ratio is in balance, while in Central Europe the balance is 1 out of 2, and in West Europe it is 1 out of 3. So be aware that this a select sample and no way representative for real data.
The companies make use of BM ontologies to describe their BM (79%), however a considerable share of SMEs discuss BM but don't have their BM formally described (to our knowledge). If an ontology is used then BM Canvas is by far the most popular (56%), followed by the STOF approach (28%), VISOR (10%) and CSOFT (6%). The intervention of the researchers may play a role. Based on our experience we have the

impression that if a BM was already analysed by SMEs themselves then this is the case for start-ups and SMEs where stakeholders are higher educated. In almost all cases this was done by making use of BM Canvas. In five cases, multiple ontologies were used for instance combining BM Canvas with STOF, or VISOR with STOF.

The objective of the SMEs is to become profitable, create growth, or to start a new business. Every case SME has its almost unique formulation what they want to achieve. Seldom, this is formulated in short direct statements. Examples are for instance

- "Design BM for my new invention"
- "Create metrics for my BM" and
- "Enter to the UK market"

But there are also very detailed descriptions, like

- "I want to shift from free service to paid services (commission from each sale is charged). The strategic objective is to become a world leader (be the first of the world) and to be a leading company in each country. The company has chosen the principle of "divide and rule" and has been developing its activities in Europe and the USA first. The further development of the principle will depend on marketing research that is performed in a given area before entering a new market. The company's target is to grow continentally". Or
- "To diversify customer portfolio in order to mitigate risk of losing one or a few key customers (government entities). Improve operations through real and meaningful integration of units and operations (culture, procedure, flow of subject matter experts between projects, i.e. improved project and program management)."

In the analytical cases stress-testing as a tool was used by 29 SMEs, metrics in 18 cases, VIP by 16 SMEs and roadmaps by 14. When we focus on combinations of ontologies with tools, the cases reveal that BM Canvas is combined with a broad range of tools like stress-test (12 times), roadmap (2 times), BM Canvas with metrics (10 times), and other tools like partner analysis, viability radar, roadmap, SWOT and VIP. CSOFT is almost always combined with metrics, as this is also one of the core foci of the CSOFT ontology. STOF is also quite often (8 times) combined with stress test and roadmaps.

Table 7 shows the cases categorized according to the SMEs' strategic goals (start new business, growth and profitability). of the studied SMEs, 35 (30%) aimed primarily at improving profitability, while growth was the strategic target in 46 cases (37%), and 41 SMEs (34%) considered themselves as starting up a new business. One of the case SMEs was excluded, because it did not want to change at all. The table shows that most Southern European SMEs want to improve profitability, while many Northern European SMEs are interested in starting new businesses. Family businesses and companies with females in crucial managerial positions are less interested in starting new businesses.

Businesses usually start small – in our case selection, they are either micro-sized or small companies – while the other two strategy groups, profitability and growth, consist of

micro-sized, small and medium -sized companies in equal shares. As expected, the profitability-seekers are on average the oldest group, while the youngest group consists of those who are starting a new business. This would appear to be in line with literature relating firm maturity to strategic goals.

Table 7: Strategic objectives that drive BMI of SMEs

Descriptive data		*I want to start new business*	*I want to grow*	*I want to be more profitable*	*Total*
Geographical Location in Europe	South	3	4	8	15
	West	16	18	10	44
	North	13	12	6	31
	East	3	8	7	18
	Central	6	4	4	14
SME size	Micro <10 employees	27	10	9	46
	Small <50 employees	11	18	12	41
	Medium <250 employees	3	19	14	35
Industry	Agriculture, fishing, forestry and mining	3	4	2	9
	Manufacturing	4	8	7	19
	Electricity & Construction	1	0	1	2
	Trade	2	6	5	13
	Transport	1	2	2	5
	Accommodation, food	0	2	3	5
	Information and communication	19	15	8	42
	Professional, scientific and technical activities	3	6	5	14
	Administrative and support service activities	2	0	2	4
	Education	0	1	0	1
	Human health and social work activities	5	0	0	5
	Arts, entertainment and recreation	0	2	0	2
	Other Services	1	0	0	1
Family	Family SME	5	15	16	36
Female	in mgmt. position	11	21	17	49
SME Age	Mean	4,2 years	22,4	19,6	32,3
	Std. Dev	3,5	29,3	36,6	55
Total		***41***	***46***	***35***	***122***
		34 %	***37 %***	***30 %***	***100%***

To illustrate the differences in the BMI foci of the three strategic goal groups, Figure 5 lists which BM components the SMEs want to change. In average each SME mentioned 2,3 specific focuses they wanted to concentrate in their BM innovation. The Figure shows how many percent of SMEs in each group focuses on improving the specific BM components.

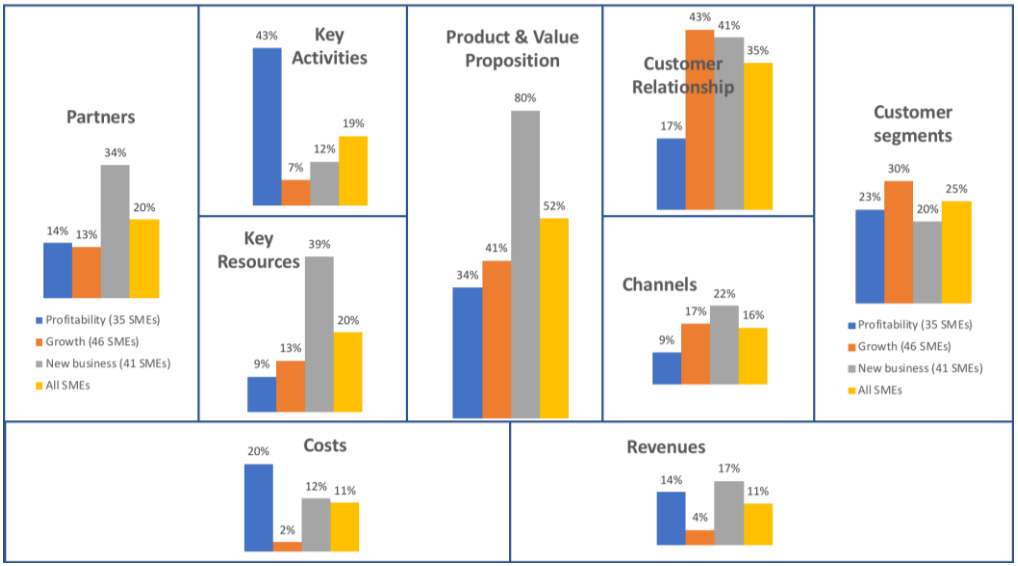

Figure 5: Centre of attention of BMI for the three SME groups

Looking at figure 5, we see that half of the SMEs want to improve their value proposition, followed by the customer relationship component. Surprisingly, the costs and revenues components come in last.

Moreover, the figure reveals clear differences between the groups. Profitability-seekers want to improve the excellence and efficiency of their key activities component. They typically also want to change their value proposition component. By contrast, Growth-oriented companies focus their main BMI effort on providing better value to their customers. They focus on both customer relationships and value proposition. And last, most Business start-ups pay great attention to the value proposition, followed by customer relationship. It is also noteworthy that they often mentioned that they 'want to develop viable Business Model', indicating that they want to improve the BM as a whole, not just individual components.

5 Discussion and Conclusions

The objective of this paper was to present descriptive findings on BM Innovation based on (1) a survey data from a longitudinal study and (2) set of 123 cases of European SMEs, which are analysed in this paper using case survey method. This paper doesn't try to

develop or test theory. We used cases for theory development in other papers (Heikkilä et al, 2018) or tested research models making use of advanced statistics (Bouwman et al, 2018). We felt that a more descriptive paper would put discussion on BM Innovation in perspective.

First, we find it important to emphasize that many SMEs engage in BM Innovation while not being aware that they do so; Our survey indicates that 37% of European SMEs are innovating their BM. Two thirds of them start working with new type of partners, suppliers or advisors. More than 60% of them offer a new product or service, or focuses on a new group of customers. We see also a rising percentage of SMEs incorporating IT for business purposes.

Second, contrary to general belief that only start-up companies and recently established SMEs engage in BMI, we found that also older SMEs are innovating their BMs. However, still 15% of SMEs involved in BMI are less than 10 years old.

Third, comparing our survey results to EU statistics on the number of SMEs in different industries (Eurostat, 2011), we find that the share of Manufacturing SMEs innovating their BM is considerable higher than expected. Further research is needed to uncover the reasons for this, but one potential explanation for this can be that the industry 4.0 and similar programmes are driving manufacturing SMEs to innovate their BM (see e.g. Müller et al., 2018). Other finding is the lack of BMI within professional and scientific services, which becomes evident from the quantitative survey. However, in our BMI case studies this industry is well represented, which suggest that also SMEs in this industry are actively innovating their BMI. Similarly, more research is needed about BMI within ICT sector. The quantitative survey indicates that ICT companies would rank rather well measured in percentage of SMEs doing BMI within the industry. In our case survey ICT companies were also over represented.

Fourth, BM Innovation affect almost all components of a BM. To what degree is not yet evident. According to the case survey, in average the SMEs are focusing in their changes on two BM components at the time. This suggests that they are changing the BM gradually, tackling the most urgent changes first. The focus differs depending on the strategic aim of the SME: Profitability seeking SMEs tend to put their BMI effort in streamlining their activities and they also pay, compared to other two SME groups, most attention to costs. Growth oriented SMEs emphasise the customer need by focusing on customer segments and relations. The new businesses mainly focus on value proposition and then designing the other BM components in a rather iterative and dynamic way.

This paper provides rather basic analysis of the research data. The collected data provides a lot of opportunities to do fine grained, more expanatory analyses combining quantitative and qualitative research.

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