

FRiDGE

Survey - Challenges in the food industry

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1. Background

This study is part of the **Interreg project “FRIDGE** (“Development of food industry SME competitiveness for better potentials in growth”, 2019-2023), in which 6 partners from the different regions of Europe are involved.

The interregional cooperation focuses on the competitiveness of SMEs and aims to improve the implementation of regional development programs and policies through interregional policy learning, promotion of good practices and the utilization of interregional exchange. The final aim is to work out an action plan to strengthen the food sector in each of the six participating regions.

Therefore, **in the initial phase of the project, regional challenges of food companies are identified**. This report, which builds on a cross-regional survey, provides a summary of this identification process.

2. Aim

The aim of this study is to identify key challenges for food SMEs across the six partner regions of the FRIDGE project. Thereby, the focus lies on challenges related to productivity and market innovation (new markets). Insights into the drivers and bottlenecks of productivity as well as into barriers market innovation will be gathered. Within the frame of this interregional cooperation project between academic and governmental agencies, special attention is also devoted to the importance of support actions of the regional government for stimulating innovation.

Although this study is based on a small cross-regional sample, by which representativeness cannot be ensured, its outcomes are intended to **better understand interregional needs for capacity building and governmental support**. Therefore, a SWOT analytical approach will be used to structure the challenges and put them into perspective (internal versus external environment; positive or negative).

3. Methods

3.1. Data collection

An online survey was developed using the survey platform Qualtrics. First, **a preliminary topic list** was made in close consultation with the project consortium to allow for the identification of the challenges of food SMEs regarding productivity, as well as market innovation (new markets). Second, **a first version was developed** based on scientific research on (inter) regional innovation and performance (competitiveness) in the food sector, and SMEs in particular. Therefore, a brief literature review was conducted in order to operationalize all relevant questions (items, constructs, measuring instruments) and determine an appropriate methodology of data collection and analysis. Third, **the draft survey was refined** after a test phase with a number of regional companies. This is crucial to ensure that all questions are correctly interpreted and that they are complete and sufficiently relevant. Fourth, **the final survey was approved** by all members of the project consortium. To ensure comparability between regions, one survey will be made regardless of the region in which it is surveyed. The final survey is quantitative in nature, and consists of mainly closed questions to ensure that only a limited amount of time is needed for completion. Fifth, **for each region an online survey was developed** in English on the user-friendly Qualtrics software platform. The project consortium partners were responsible for the translation into local languages, which could be done directly through the platform. Sixth, **the distribution of the survey** was organized by the regional partners. The data collection itself was organized during the first semester of 2020. The scope of the study is limited to 6 EU regions (BE, DE, FI, GR, HU, RO) with a total number of 20 surveys per participating EU region. As a consequence, the final dataset consists of 120 SMEs, equally balanced over the regions (Table 1).

Table 1. Distribution of the survey sample, per EU participating region

Region	Freq.	Percent
East-Flanders	20	16,67
Finland	20	16,67
Germany	20	16,67
Greece	20	16,67
Hungary	20	16,67
Romania	20	16,67
Total	120	100,00

3.2. Survey development

The survey design is presented in Annex, and consisted of four sections. Each of the sections, its questions and measures will be discussed. Reference will be also made to the literature that is used to underpin key survey constructs and questions.

The **first** section dealt with company profiling questions, measuring the following aspects:

- Region (6 EU regions)
- Type of company (family, non-family, cooperative)(De Steur et al., 2020)
- Years of operation (De Steur et al., 2020)
- Main business activity (based on the NACE code)(Kühne & Gellynck, 2010)
- Main customer (local agent/distributor, foreign agent/distributor, wholesaler, retailer, end-user)(Cano et al., 2004)
- Education level of the managing director (CEO) (primary school, secondary school, professional training, university degree)(Madrid-Guijarro, et al., 2009)

- Employment
 - o Number of employees (including/excluding seasonal employees)
 - o Changes (increase/decrease/similar) in the past 3 years

- Performance indicators
 - o Turnover
 - Annual turnover
 - Changes in the past 3 years (increase/decrease/similar)

- Business strategy
 - o Main strategy (Allen & Helms, 2006; Kumar, et al, 1998; Porter, 1980)
 - cost-leadership versus differentiation
 - narrow versus broad

- Profitability (past 3 years)(5-point Likert scale)(Kühne & Gellynck, 2010)
- Growth (past 3 years)(5-point Likert scale)(Kühne & Gellynck, 2010)

The **second** section provided a list of productivity drivers (Marchese et al, 2019), which had to be evaluated in terms of their importance as drivers (5-point importance scale), and their presence as bottlenecks (5-point yes-no scale). The following 9 drivers were included:

1. Managerial skills and management practices
2. Strategic planning
3. Workforce skills
4. Pricing & payment conditions
5. ICT and digitalization
6. Business networks (incl. clusters, global supply chains, ...)
7. Innovation (incl. R&D investments)
8. Access to financial resources
9. Scale of production

The **third** section was oriented towards governmental support for innovation. The perceived importance of support of the regional government in fostering innovation, was measured by a 5-point importance scale, using the following support actions (Varis & Littunen, 2010):

1. Providing subsidies (for R&D, investments, training, ...)
2. Organizing training activities
3. Providing marketing support (e.g. promotion activities for the local food sector) ... towards the retail/distribution sector
4. Providing marketing support (e.g. promotion activities for the local food sector) ... towards consumers/customers
5. Stimulating networking ... between food companies
6. Stimulating networking ... between knowledge institutions & food companies
7. Stimulating export, through ... facilitating participation in fairs
8. Stimulating export, through ... organizing market studies

The **fourth** section looked at market innovation (Varis & Littunen, 2010; Gunday et al., 2011). Here, market innovation refers to geographic changes (i.e. new markets) in the first place, with or without the implementation of a new marketing method involving significant changes in products. First, the export experience was assessed (yes-no) with a follow-up question on the share of turnover in domestic, intra-EU, extra-EU production for exporting SMEs (in %, with a total of 100% for all three categories)(Yan, et al., 2017). Second, SMEs were asked whether they entered new geographical markets with existing products (market development) or new products (diversification), based on a dummy variable (yes/no)(Bianchi & Mathews, 2016; Kühne & Gellynck, 2010; Oke et al, 2007). For those who said yes, a follow-up question was included to evaluate the contribution of these two types of innovation (5-point Likert

scale)(Kühne & Gellynck, 2010; Oke et al, 2007). A similar approach was taken for future market innovations, by which respondents' intention to adopt market development (new geographical markets, existing products) or diversification (new geographical markets, new products) was first evaluated, after which those who said yes, were also asked whether both types would contribute to the success of the company. Third, market innovation barriers were divided into six subthemes (financial, technical, psychological, marketing, institutional, industry), and had to be evaluated in terms of importance (5-point scale) and (potential) impact (5-point scale from very low to very high). The list of barriers, which was compiled based on various sources (Bianchi & Mathews, 2016; Hadjimanolis, 1999; Hakan Altıntaş, et al., 2007; Madeira et al., 2017; Madrid-Guijarro, et al., 2009; Rutihinda, 2008; Ussman, et al., 2001), is presented in Table 2.

Finally, a **last section** allowed the respondents to provide comments and suggestions.

Table 2. Overview of examined market innovation barriers

FINANCIAL	TECHNICAL
High costs	Lack of time to deal with exports
Excessive transportation costs	Lack of knowledge on exports
Lack of own resources	Lack of qualified personnel for market innovation
Difficult access to external resources	Difficulty to meet export product quality standards
Pay-off period is too long	Lack of excess production capacity
INDUSTRY	INSTITUTIONAL
Lack of responsiveness of new customers to your products	Insufficient government support
Complexity of foreign distribution channels	Governmental bureaucracy
Transportation problems	Unfavorable policies & regulations in new markets
Competition	Foreign trade policy (import tariffs)
Innovation too easy to copy	Economic turbulence in new markets
Lack of opportunities for collaboration with other companies	Currency risks in new markets
MARKETING	PSYCHOLOGICAL
Lack of a clear export strategy	Excessive risk
Limited information about customers in new markets	Manager resistance to change
Limited information about competitors in new markets	Lack of motivation (e.g. high profitability with current business)
Limited information about suppliers in new markets	
Limited access to research institutions	
Difficulty to adjust promotional activities to new market	
Access to foreign distribution channels	
Difficulty in matching competitor's prices	

3.3. Data analysis

Data was analyzed using STATA 14 and SPSS 26. Standard descriptive analysis was performed to provide descriptives for the key variables. Chi² test was run in order to identify associations between two categorical variables. Besides using tabulations, results are graphically displayed using bar charts.

Given the interregional nature of the project, the focus of the analysis is on identifying shared challenges. No in-depth analysis will be performed for each of the regions.

Due to the strategic nature of this study, SWOT (Strength, Weakness, Opportunity, Threat) analysis as a strategic marketing tool will be integrated into the analysis to summarize strategic challenges, partly based on interregional needs and barriers (e.g. weaknesses, threats), but also on potential positive aspects (i.e. strengths, opportunities) that may be further exploited.

4. Results

4.1. Company profiles

As Table 3 shows, the majority of participating SMEs (respondents) are family businesses (73%) with an average age of 26 years, mostly led by highly educated managers (45%), and mainly target local distributors (22%), wholesalers (24%), and foremost end users (33%). Key production activities (>10% of sample) are well distributed along the spectrum of NACE codes: meat, fruits and vegetables, dairy, bakery, non-distilled fermented beverages and “other” (e.g. bee products).

Table 3. Key characteristics of participating SMEs

	#	%
Company type		
Family	88	73,33
Non-Family	23	19,17
Cooperative	9	7,50
Education level (managing director)		
Primary School	1	0,97
Secondary School	27	26,21
Professional Training	29	28,16
University Degree	46	44,66
Main customer		
Local agent/distributor	26	21,67
Foreign agent/distributor	5	4,17
Wholesaler	29	24,17
Retailer	13	10,83
End user	40	33,33
Main business activity (NACE code)		
Meat	12	10,00
Fruit and vegetables	20	16,67
Oils and fats	3	2,50
Dairy	13	10,83
Flour and grain mill products	6	5,00
Bakery and farinaceous products	15	12,50
Cocoa, chocolate and sugar confectionery	6	5,00
Tea and coffee	8	6,70
Condiments and seasonings	2	1,70
Prepared meals and dishes	1	0,80
Other food products	6	5,00
Spirits, wine, cider & other non-distilled fermented beverages	15	12,50
Beer	3	2,50
Soft drinks and bottled waters	1	0,80
Other	18	15,00
	Mean	Std.Dev
Years of operation	25,69	16,22

By using Porter's typology of business strategies, SMEs can be assigned to one of the four cells/strategies of the matrix, with a distinction between cost-leadership (pursuit of reductions in costs, e.g. costs of products, services, ...) and differentiation (e.g. introducing new products,

differentiating or extending your product range compared to competitors) on the one hand, and a broad versus narrow scope on the other (Table 4).

Most SMEs focus on differentiation (64%), rather than cost-leadership (36%), with a small preference for a narrow scope (58%) as compared to a broader scope (14%). The importance of differentiation in a niche market as a strategy underlines the importance of innovation as a means to become/remain a competitive advantage.

Table 4. Company strategies, in % SMEs

	Broad scope	Narrow scope	Total
Cost-leadership	17	26	43
	14,17%	21,67%	35,83%
Differentiation	33	44	77
	27,50%	36,67%	64,17%
Total	50	70	120
	41,67%	58,33%	100,00%

Note: non-significant Chi²-test

Current employment figures point to rather small SMEs, with 12 (17 incl. seasonal) respondents on average (Table 5). With respect to turnover, most companies stay below € 500,000 (58%) with only few companies exceeding € 2.5 million.

While the employment generally remained the same or increased since the past 3 years, the opposite is true for turnover, with most companies reporting a decrease or similar figure as compared to 3 years ago. Nevertheless, the majority of SMEs experienced profits (71%) and business growth (70%) the past 3 years.

Table 5. Employment and turnover, current status and trends

Employment	Mean		Std. Dev.	
Excl seasonal	12.30		22.45	
Total (incl seasonal)	16.92		25.72	
Turnover	#		%	
< € 500,000	70		58,33	
€ 500,000 - 1 million	13		10,83	
€ 1 million - 2,5 million	19		15,83	
€ 2,5 million - 5 million	11		9,17	
€ 5 million -10 million	5		4,17	
€ 10 million - 25 million	2		1,67	
	Employment		Turnover	
	(cf. 3 years ago)		(cf. 3 years ago)	
	#	%	#	%
Decreased	13	11,02	44	36,67
Remained the same	57	48,31	41	34,17
Increased	48	40,68	19	15,83
	Profitable		Business growth	
	(past 3 years)		(past 3 years)	
	#	%	#	%
Strongly agree	46	38,33	44	36,67
Somewhat agree	40	33,33	41	34,17
Neither agree nor disagree	21	17,50	19	15,83
Somewhat disagree	8	6,67	12	10,00
Strongly disagree	5	4,17	4	3,33

Note: SMEs can be distinguished into micro (<10 FTE; ≤ € 2 mi. turnover), small (<50 FTE, ≤ € 10 mi. turnover) and medium-sized companies (<250; ≤ € 50 mi. turnover)

4.2. Drivers and bottlenecks of productivity

According to the SMEs, productivity appears to be mainly driven by workforce skills, strategic planning, and managerial skills and management practices (Table 6). Nevertheless, all examined drivers are considered important to some extent (i.e. average score of the agreement scale above the neutral midpoint). When it comes to their business, however, four aspects are considered a bottleneck, as the average agreement score exceeded the neutral midpoint (above 3). Access to financial resources is currently the most important bottleneck, followed by pricing & payment conditions, scale of production and workforce skills. It is important to note that the latter is considered an important driver, but currently also an important bottleneck.

Table 6. Drivers and bottlenecks of productivity, ranking, and descriptives (mean and standard deviation)

	Drivers of productivity			Bottleneck of productivity		
	Rank	Mean	Std. Dev.	Rank	Mean	Std. Dev.
Managerial skills and management practices	3	3,85	0,96	6	2,86	1,10
Strategic planning	2	3,88	0,86	7	2,82	1,05
Workforce skills	1	4,13	0,93	4	3,05	1,17
Pricing & payment conditions	4	3,82	0,91	2	3,20	1,07
ICT and digitalization	8	3,20	1,13	8	2,74	1,02
Business networks (incl. clusters global supply chains, ...)	9	3,08	1,07	9	2,74	1,02
Innovation (incl. R&D investments)	7	3,42	1,19	5	2,96	1,09
Access to financial resources	6	3,72	1,03	1	3,36	1,19
Scale of production	5	3,75	0,90	3	3,11	1,14

Note: Based on a 5-point importance scale and a 5-point yes-no scale

Figure 1 and Figure 2 show a more detailed picture of the agreement scales of the drivers and bottlenecks of productivity. Here, the share of respondents is shown for three categories (probably) yes, maybe, (probably) not. The red bars in Figure 1 illustrate that ICT and digitalization as well as business networks and, somewhat surprising, innovation obtain the largest share of respondents that do not consider these aspects to be important for improving productivity. The green bars in Figure 2 indicate that ICT and digitalization as well as business networks were the two aspects that were least considered a bottleneck by a substantial share of respondents.

Figure 1. Drivers of Productivity, share of respondents (agreement scale)

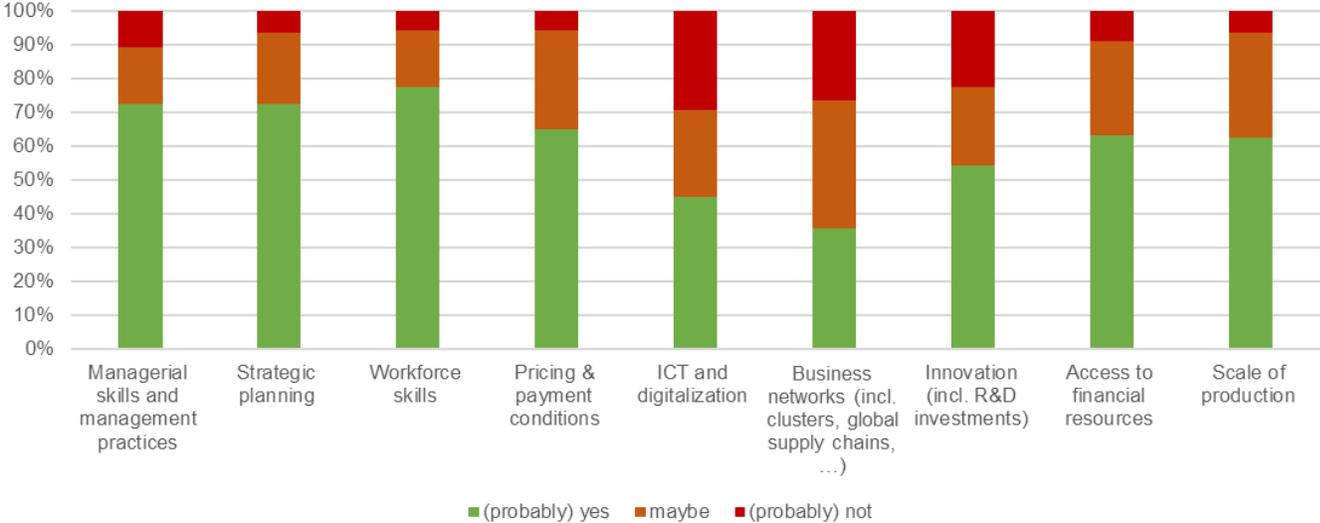
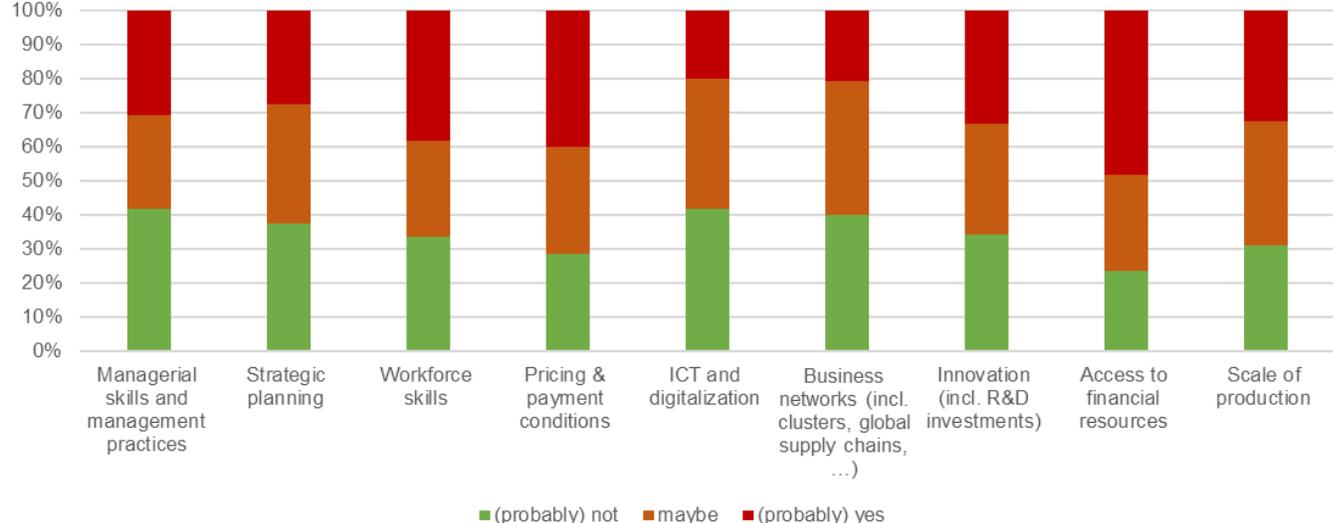


Figure 2. Bottlenecks of Productivity, share of respondents (agreement scale)



4.3. Market innovation efforts and barriers

Nearly 2 out of 3 companies did not have any experience with exporting (Table 7). As a consequence, most turnover is created in the domestic market (91% on average), with respectively small (6%) and marginal EU (3%) contributions to turnover caused by intra- and extra-EU exports. For those who have export experience (38%), the share of turnover of intra-EU and extra-EU export increases to, respectively, 17% and 7%.

Table 7. Export profile of the participating SMEs

Export experience	#	%
No	75	62.50
Yes	45	37.50
Share of turnover, in % (all)	Mean	St dev.
Domestic market	91.05	19.91
Intra-EU	6.23	14.16
Extra-EU	2.72	9.48
Share of turnover, in % (if exporting, n=45)	Mean	St dev.
Domestic market	76,13	26,62
Intra-EU	16,60	19,14
Extra-EU	7,27	14,47

Table 8 presents the marketing innovation efforts of the participating SMEs since the past 3 years, using generic marketing strategies derived from Porter's model of generic strategies. Here, a diversity of strategies is shown, with more than half of the SMEs that have targeted new geographical markets, either with existing products, known as market development, or new products, known as diversification, or both. Those who adopted a market innovation strategy with existing products are significantly more represented in the group of those who implemented a market innovation strategy with new products, and vice versa.

Table 8. Adoption of market innovation strategies in the past 3 years, % of SMEs

		New geographical markets with <u>new</u> products (past 3 years) (diversification)		Total
		No	Yes	
New geographical markets with <u>existing</u> products (past 3 years) (market development)	No	48,33% <i>none</i>	7,50% <i>diversification</i>	55,83%
	Yes	19,17% <i>market development</i>	25,00% <i>both</i>	44,17%
Total		67,50%	32,50%	100,00%

Note: significant chi²-test

While the past/current adoption of market innovation is promising, with 44% and 33% of SMEs targeting, respectively, existing and new products, an even larger share of SMEs is intended to adopt these strategies in the near future (58% for existing products, 46% for new products)(Table 9). Surprisingly, diversification appears to be more popular than market development, both in the past and the future.

With respect to the contribution of these strategies, positive perceptions were provided by more than 75% of the SMEs that adopted them in the past. When it comes to the expected contribution, the share of positively oriented SMEs decreases by 8% (existing products) to 19% (new products). This means that although more SMEs are intended to adopt market innovation strategies, compared to past adopters, less SMEs feel it will contribute significantly to the success of your company.

Table 9. Market innovation strategies, (intended) adoption and (expected) contribution to the success of the company, % of SMEs

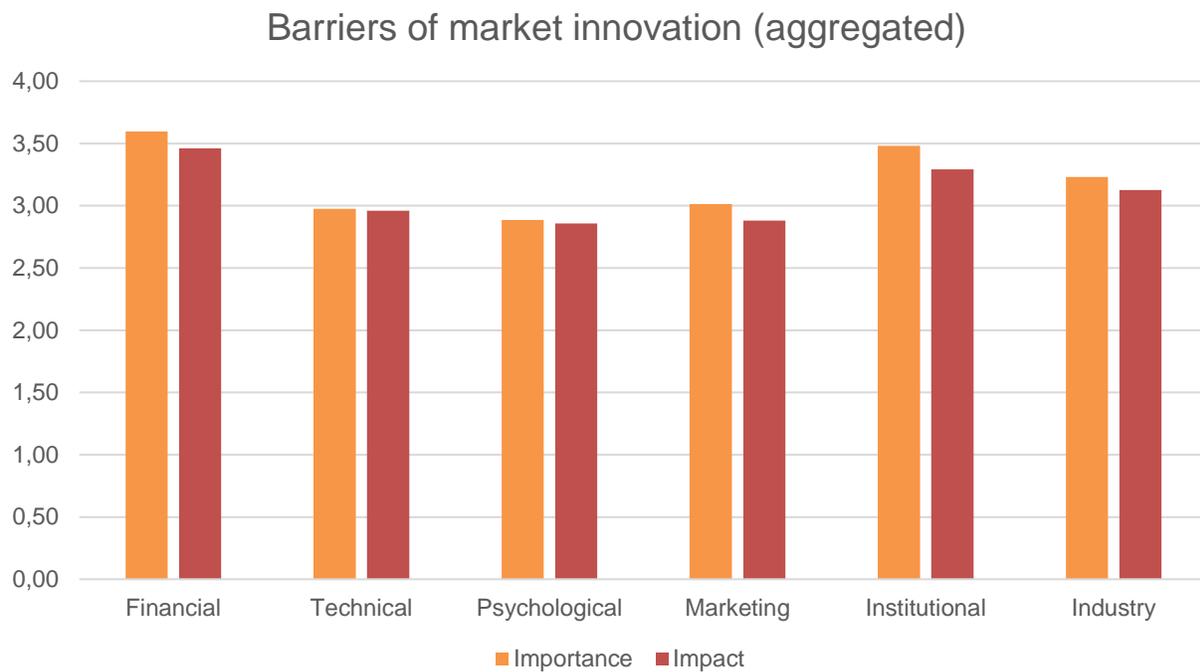
<u>PAST</u>	Adoption (past 3 years)			Contribution (past 3 years)	
	Existing products	New products		Existing products	New products
no	55,83	67,50	(strongly) disagree	6,56	7,89
yes	44,17	32,50	neutral	18,03	13,16
			(strongly) agree	75,41	78,95

<u>FUTURE</u>	Adoption (coming 3 years)			Contribution (coming 3 years)	
	Existing products	New products		Existing products	New products
(extremely) unlikely	24,16	30,83	(strongly) disagree	18,75	20,54
neutral	17,50	23,33	neutral	13,39	19,64
(extremely) likely	58,34	45,83	(strongly) agree	67,86	59,82

The barriers of market innovation were measured based on its perceived importance and (potential) impact, aggregated per type of barrier (Figure 3) or for each barrier (Table 10, ranking; and Figure 4, mean scores). A detailed picture on each type of barrier is provided in Annex 2.

Across the six broad types of barriers, three stand out, both in terms of importance and impact: financial, institutional, industry related barriers (Figure 3). The three other types of barriers (psychological, technical, marketing) have a lower score, with average scores on the agreement scale below the neutral midpoint, indicating limited importance and impact. Nevertheless, it is important to state that mean, aggregated values might mask variations among the specific barriers within each type of barrier.

Figure 3. Importance and (expected) impact of barriers of market innovation, average scores per type of barrier



Note: Importance, based on a 5-point agreement (Likert) scale, from 1= not at all important, to 5 = very important. (potential) Impact, based on a 5-point agreement (Likert) scale, from 1= very low, to 5 = very high.

The complete list of 33 barriers, and how SMEs perceive its importance and (potential) impact is shown in Table 10. Thereby, the list is sorted by mean importance score (from high to low). As such, it can be seen that the top 5 of important barriers are also the ones that are expected to have the largest impact (on average), namely: governmental bureaucracy, high costs, insufficient government support, lack of own financial resources and excessive transportation costs. Except for competition (industry barrier) and excessive risk perceptions (psychological barrier), the top 10 of most important barriers consist of institutional and financial barriers. As such it is not surprising that the aggregated picture highlights these two types of barriers. Furthermore, as importance and impact scores are positively correlated, there are only slight variations in the ranking of importance and impact.

The bottom of the ranking provides indications of barriers that are least important and generate (potentially) the lowest impact. When looking at the list of barriers that have a mean importance and impact score below 3, the following types are listed: technical (lack of excess production capacity, difficulty to meet export product quality standards), marketing (lack of a clear export

strategy, limited access to research institutions) and psychological (lack of motivation, manager resistance to change) and institutional barriers (currency risks in new markets). Although the list of psychological barriers was more limited, market innovation appears to be more hampered by institutional, financial and industry related barriers. As for the technical barriers, the two most important ones, though scores are substantially lower than the top 10, are the lack of qualified personnel for market innovation and lack of knowledge on exports. With respect to marketing barriers, only the lack of responsiveness of new customers and the limited information about customers in new markets score slightly higher than the other marketing barriers, but still at the bottom of the top 20.

Figure 3 provides a graphical representation of the data of Table 10, but listed according to type of barrier.

Table 10. Importance and (potential) impact of market innovation barriers, mean and rank per barrier, listed according to importance

Type of barrier	Barrier	Importance		(potential) Impact	
		Mean	Rank	Mean	Rank
INSTITUTIONAL	Governmental bureaucracy	4,15	1	3,83	1
FINANCIAL	High costs	3,89	2	3,69	2
INSTITUTIONAL	Insufficient government support	3,81	3	3,69	3
FINANCIAL	Lack of own financial resources	3,66	4	3,53	5
FINANCIAL	Excessive transportation costs	3,64	5	3,55	4
INSTITUTIONAL	Unfavorable policies & regulations in new markets	3,63	6	3,43	6
INDUSTRY	Competition	3,62	7	3,38	7
FINANCIAL	Difficult access to external financial resources	3,48	8	3,29	8
PSYCHOLOGICAL	Excessive risk	3,34	9	3,19	11
FINANCIAL	Pay-off period is too long	3,32	10	3,24	9
INSTITUTIONAL	Economic turbulence in new markets	3,29	11	3,09	14
TECHNICAL	Lack of qualified personnel for market innovation	3,26	12	3,24	10
INDUSTRY	Transportation problems	3,25	13	3,13	13
INDUSTRY	Innovation too easy to copy	3,19	14	3,08	15
MARKETING	Access to foreign distribution channels	3,17	15	3,04	16
INDUSTRY	Lack of responsiveness of new customers to your products	3,16	16	3,14	12
MARKETING	Limited info. about customers in new markets	3,15	17	2,98	20
TECHNICAL	Lack of knowledge on exports	3,14	18	2,98	21
INSTITUTIONAL	Foreign trade policy (import tariffs)	3,11	19	2,96	23
MARKETING	Difficulty to adjust promotional activities to new markets	3,1	20	2,94	24
INDUSTRY	Complexity of foreign distribution channels	3,09	21	3,02	18
INDUSTRY	Lack of opportunities for collaboration with other companies	3,07	22	3,01	19
MARKETING	Difficulty in matching competitor's prices	3,04	23	2,98	22
TECHNICAL	Lack of time to deal with exports	3,04	24	3,03	17
MARKETING	Limited info. about suppliers in new markets	3,03	25	2,84	27
MARKETING	Limited info. about competitors in new markets	3,02	26	2,88	26
INSTITUTIONAL	Currency risks in new markets	2,90	27	2,76	29
MARKETING	Lack of a clear export strategy	2,87	28	2,78	28
TECHNICAL	Lack of excess production capacity	2,85	29	2,89	25
MARKETING	Limited access to research institutions	2,71	30	2,60	33
PSYCHOLOGICAL	Lack of motivation (e.g. due to current profitability)	2,71	31	2,75	30
PSYCHOLOGICAL	Manager resistance to change	2,61	32	2,64	32
TECHNICAL	Difficulty to meet export product quality standards	2,59	33	2,66	31

Note: Based on a 5-point scale (importance; low-high)

Figure 4. Importance and (potential) impact of market innovation barriers, mean, per barrier



Note: Importance and (potential) impact, based on a 5-point scale (importance; low-high)

4.4. Regional government support for innovation

Table 11 lists, in order of importance of SMEs, eight regional government support actions to stimulate innovation. Most important is the provision of subsidies, which aligns with the importance of financial market innovation barriers (see previous section). While marketing is less of a concern when it comes to market innovation, SMEs consider marketing support as an important tool for regional governments to support innovation. Both marketing support towards the retail/distribution sector and towards consumers/customers are perceived as important. Below the top 3 are three support actions that refer to networking (between food companies and with knowledge institutions) and training activities. Stimulating export, either through facilitating participation in fairs or through organizing market studies, are least important, with mean scores around 3 (“moderately important”). It seems that, although all eight support actions are moderately to highly important, export oriented activities are considered least important as a tool for innovation.

Table 11. Importance of regional government support for innovation, rank and mean scores

	Importance	
	Rank	Mean
Providing subsidies (for R&D, investments, training, ...)	1	3,92
Providing marketing support (e.g. promotion activities for the local food sector)		
... towards the retail/distribution sector	2	3,80
... towards consumers/customers	3	3,79
Stimulating networking ... between food companies	4	3,56
Organizing training activities	5	3,52
Stimulating networking ... between knowledge institutions & food companies	6	3,45
Stimulating export, through ... facilitating participation in fairs	7	3,10
Stimulating export, through ... organizing market studies	8	2,82

Note: Importance, based on a 5-point importance scale

5. Conclusions: Summary of challenges

This concluding section summarizes the key findings of section 4.1 – 4.4 by using the SWOT-matrix as a framework. As such, key findings are attributed to either the internal (S, W) or external environment (O,T). While internal aspects (positive: strength; negative: weakness) can be controlled and influenced by the food industry, external aspects (positive: opportunities; negative: threats) cannot be controlled or influenced. Although this cross-regional analysis focuses on challenges, as derived from negative aspects (weaknesses or threats), also positive aspects (strengths or opportunities) will be listed. The latter provide indications of potential aspects that can be emphasized to further exploit the potential of the six participating EU-regions.

Aside from the limitations of the small sample size of SMEs, the sample is unbalanced as most participating companies are family businesses with highly education managers who mainly target consumers (and wholesalers/local distributions) and are rather small in terms of employment and turnover. As a consequence, the findings have to be interpreted with caution, especially when using them to make overall recommendations for the food SMEs in the region(s).

Table 12. Summary of findings (SWOT-analysis framework)

Strengths:	Weaknesses:
<ul style="list-style-type: none"> • <u>Company strategy</u> <ul style="list-style-type: none"> ○ Diversity of strategies (mostly: differentiation) • <u>Employment</u>: Positive trend (often = or ↑) • <u>Profitability & business growth</u>: optimistic • <u>Export</u>: <ul style="list-style-type: none"> ○ Diversity in strategies (diversification, market development, both) ○ Expected increase (existing/new products) <ul style="list-style-type: none"> ▪ Adoption ↑ ▪ Expected contribution ↑ • <u>Productivity drivers (less important bottleneck)</u> <ul style="list-style-type: none"> ○ Managerial skills & management practices ○ Strategic planning ○ Workforce skills ○ Business networks ○ ICT and digitalization ○ (Those considered most important are often not considered a key bottleneck) • <u>Market innovation barriers</u>: less important & lower impact <ul style="list-style-type: none"> ○ Technical <ul style="list-style-type: none"> ▪ Lack of excess production capacity ▪ Difficulty to meet export product quality standards ○ Psychological <ul style="list-style-type: none"> ▪ Lack of motivation (e.g. high profitability with current business) ▪ Manager resistance to change ○ Marketing <ul style="list-style-type: none"> ▪ Lack of a clear export strategy 	<ul style="list-style-type: none"> • <u>Turnover</u>: <ul style="list-style-type: none"> ○ Negative trend (often = or ↓) • <u>Export</u>: <ul style="list-style-type: none"> ○ Nearly 2/3 of sample is not exporting ○ Exporters' share of exports is still low (av. 16% intra-EU, 7% extra-EU) • <u>Productivity bottlenecks</u>: <ul style="list-style-type: none"> ○ Scale of production ○ Pricing & payment conditions ○ Workforce skills (especially as it is perceived as an important driver) • <u>Market innovation barriers</u>: important/impact <ul style="list-style-type: none"> ○ Financial <ul style="list-style-type: none"> ▪ High costs ▪ Excessive transportation costs ▪ Lack of own financial resources ▪ Pay-off period is too long ▪ Access to financial resources ○ Technical <ul style="list-style-type: none"> ▪ Lack of qualified personnel for market innovation ○ Psychological <ul style="list-style-type: none"> ▪ Excessive risk ○ Marketing <ul style="list-style-type: none"> ▪ Access to foreign distribution channels ○ Industry <ul style="list-style-type: none"> ▪ Transportation problems ▪ Innovation too easy to copy
Opportunities:	Threats:
<ul style="list-style-type: none"> • <u>Market innovation barriers</u>: less important & lower impact <ul style="list-style-type: none"> ○ Marketing <ul style="list-style-type: none"> ▪ Limited access to research institutions ○ Institutional <ul style="list-style-type: none"> ▪ Currency risks in new markets • <u>Important regional government support efforts for innovation</u>: <ul style="list-style-type: none"> ○ Providing subsidies ○ Providing marketing support 	<ul style="list-style-type: none"> • <u>Productivity bottlenecks</u>: • <u>Market innovation barriers</u>: important/impact <ul style="list-style-type: none"> ○ Financial <ul style="list-style-type: none"> ▪ Difficult access to external financial resources ○ Institutional <ul style="list-style-type: none"> ▪ Insufficient government support ▪ Governmental bureaucracy ▪ Unfavorable policies & regulations in new markets ○ Industry <ul style="list-style-type: none"> ▪ Competition

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Annex 1. SME survey

Start of Block: Introduction

Q33



Q1 SME SURVEY - Project FRIDGE

Dear CEO,
Dear Sir,
Dear Madam,

The members of the European project FRIDGE would like to receive your opinion about your challenges regarding **productivity and market innovation in your SME**.

The study focuses on **SMEs only** and targets **6 regions in Europe**.

All answers are completely **confidential** and will only be used in the frame of FRIDGE project.
We would like to thank you in advance for your cooperation.

FOR TO START THE SURVEY PLEASE CLICK ON THE “>>” (NEXT) BUTTON BELOW

End of Block: Introduction

Start of Block: Company profile

Q4 How many years has your company been in operation ?

- Number of years _____

Q5 What type of company is yours? (Please select one or more)

- Family
- Non-family
- Cooperative
- State-owned company

Q13 What is the education level of the managing director (CEO)?

- Primary School
- Secondary School
- Professional Training
- University Degree

Q5 How many employees, excluding seasonal labor, are working in your company ?

- Number of employees (FTE), excluding seasonal labor

- Number of seasonal employees (FTE) _____

Q9 What is the annual turnover of your company ?

- < € 500,000
- € 500,000 - 1 million
- € 1 million - 2,5 million
- € 2,5 million - 5 million
- € 5 million -10 million
- € 10 million - 25 million
- € 25 million - 50 million

Q21 Compared to 3 years ago, the number of employees has ...

- decreased
- remained the same
- increased
- I don't know

Q23 Compared to 3 years ago, our turnover has ...

- decreased
- remained the same
- increased
- I don't know

Q20 Please select your main business activity from the following NACE-code list:

▼ C10.1.1 Processing and preserving of meat ... Other, please specify in the box below

Q28 Please describe your main activity here:

Q11 Who is your main customer ?

- Local agent/distributor
- Foreign agent/distributor
- Wholesaler
- Retailer
- End user

Q35 Which strategy fits best to your company ?

- Cost-leadership (pursuit of reductions in costs, e.g. costs of products, services, ...)
- Differentiation (e.g. introducing new products, differentiating or extending your product range compared to competitors)

Q16 Which strategic scope fits best to your company?

- Broad scope: targeting the broad market
 - Narrow scope: targeting a specific market segment (niche)
-

Q18 Please indicate to what extent you agree with the following statements about the past 3 years ?

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
My company was <u>profitable</u> in the last 3 years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My company achieved <u>business growth</u> in the last 3 years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Company profile

Start of Block: Productivity

Q30 Please rate the following DRIVERS of productivity in terms of their IMPORTANCE and indicate whether they are currently PERCEIVED AS A BOTTLENECK in your company

	How important is this driver to increase your company's productivity?					Is this driver currently perceived as a bottleneck in your company ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Definitely yes	Probably yes	Maybe	Probably not	Definitely not
Managerial skills and management practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workforce skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pricing & payment conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ICT and digitalization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Business networks (incl. clusters, global supply chains, ...)	<input type="radio"/>									
Innovation (incl. R&D investments)	<input type="radio"/>									
Access to financial resources	<input type="radio"/>									
Scale of production	<input type="radio"/>									

End of Block: Productivity

Start of Block: Governmental support for innovation

Q32 How **IMPORTANT** are the following support actions of the **REGIONAL GOVERNMENT** in fostering innovation in your **SME**?

	How important is each government support action for innovation?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important
Providing subsidies (for R&D, investments, training, ...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizing training activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing marketing support (e.g. promotion activities for the local food sector) ... towards the retail/distribution sector	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing marketing support (e.g. promotion activities for the local food sector) ... towards consumers/customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stimulating networking ... between food companies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stimulating networking ... between knowledge institutions & food companies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stimulating export, through ... facilitating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

participation in fairs

Stimulating export,
through ... organizing
market studies

End of Block: Governmental support for innovation

Start of Block: Market innovation

Q15 Does your company has experience with exporting to other countries ?

- Yes
- No

Q14 What share (%) of your turnover is generated at the domestic, intra-EU and extra-EU market ? (Sum of percentages should be 100%)

Domestic market : _____

Intra-EU market : _____

Extra-EU market : _____

Total : _____

Q22 Did your company introduce any of the following changes during the last 3 years?

	Yes	No
Our company entered new geographical markets with existing products during the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>
Our company entered new geographical markets with new products during the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>

Q23 Please indicate to what extent you agree that the following changes have contributed significantly to the success of your company.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Entering new geographical markets with existing products has contributed to our company's success	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entering new geographical markets with new products has contributed to our company's success	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q24 Does your company intend to introduce any of the following changes in the coming 3 years?

	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely
Our company will enter new geographical markets with existing products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company will enter new geographical markets with new products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q25 Please indicate to what extent you agree that the following changes will contribute significantly to the success of your company in the future?

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Entering new geographical markets with existing products will contribute to our company's success in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entering new geographical markets with new products will contribute to our company's success in the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Market innovation

Start of Block: Barriers of market innovation

Q24 Please rate the following FINANCIAL barriers of market innovation in terms of importance (1=not important - 5=extremely important) AND impact (= very high - 5=very high)

	How important is this barrier to your company ?					How do you rate its (potential) impact on your business ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Very High	High	Medium	Low	Very low
High costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excessive transportation costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of own financial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

resources											
Difficult access to external financial resources	<input type="radio"/>										
Pay-off period of market innovation is too long	<input type="radio"/>										

Q23 Please rate the following PSYCHOLOGICAL/TECHNICAL barriers of market innovation in terms of importance (1=not important - 5=extremely important) AND impact (= very high - 5=very high)

	How important is this barrier to your company ?					How do you rate its (potential) impact on your business ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Very High	High	Medium	Low	Very low
Excessive risk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time to deal with exports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of knowledge on exports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of qualified personnel for market innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manager resistance to change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lack of motivation (e.g. high profitability with current business)

Difficulty to meet export product quality standards

Lack of excess production capacity

Q24 Please rate the following MARKETING barriers of market innovation in terms of importance (1=not important - 5=extremely important) AND impact (= very high - 5=very high)

	How important is this barrier to your company ?					How do you rate its (potential) impact on your business ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Very High	High	Medium	Low	Very low
Lack of a clear export strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limited information about customers in new markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limited information about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

competitors in new markets										
Limited information about suppliers in new markets	<input type="radio"/>									
Limited access to research institutions	<input type="radio"/>									
Difficulty to adjust promotional activities to new market	<input type="radio"/>									
Access to foreign distribution channels	<input type="radio"/>									
Difficulty in matching competitor's prices	<input type="radio"/>									

Q25 Please rate the following INSTITUTIONAL barriers of market innovation in terms of importance (1=not important - 5=extremely important) AND impact (= very high - 5=very high)

	How important is this barrier to your company ?					How do you rate its (potential) impact on your business ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Very High	High	Medium	Low	Very low
Insufficient government support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Governmental bureaucracy	<input type="radio"/>									
Unfavorable policies & regulations in new markets	<input type="radio"/>									
Foreign trade policy (import tariffs)	<input type="radio"/>									
Economic turbulence in new markets	<input type="radio"/>									
Currency risks in new markets	<input type="radio"/>									

Q26 Please rate the following INDUSTRY barriers of market innovation in terms of importance (1=not important - 5=extremely important) AND impact (= very high - 5=very high)

	How important is this barrier to your company ?					How do you rate its (potential) impact on your business ?				
	Extremely important	Very important	Moderately important	Slightly important	Not at all important	Very High	High	Medium	Low	Very low
Lack of responsiveness of new customers to your products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complexity of foreign distribution channels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Innovation too	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

easy to copy

Lack of
opportunities
for
collaboration
with other
companies

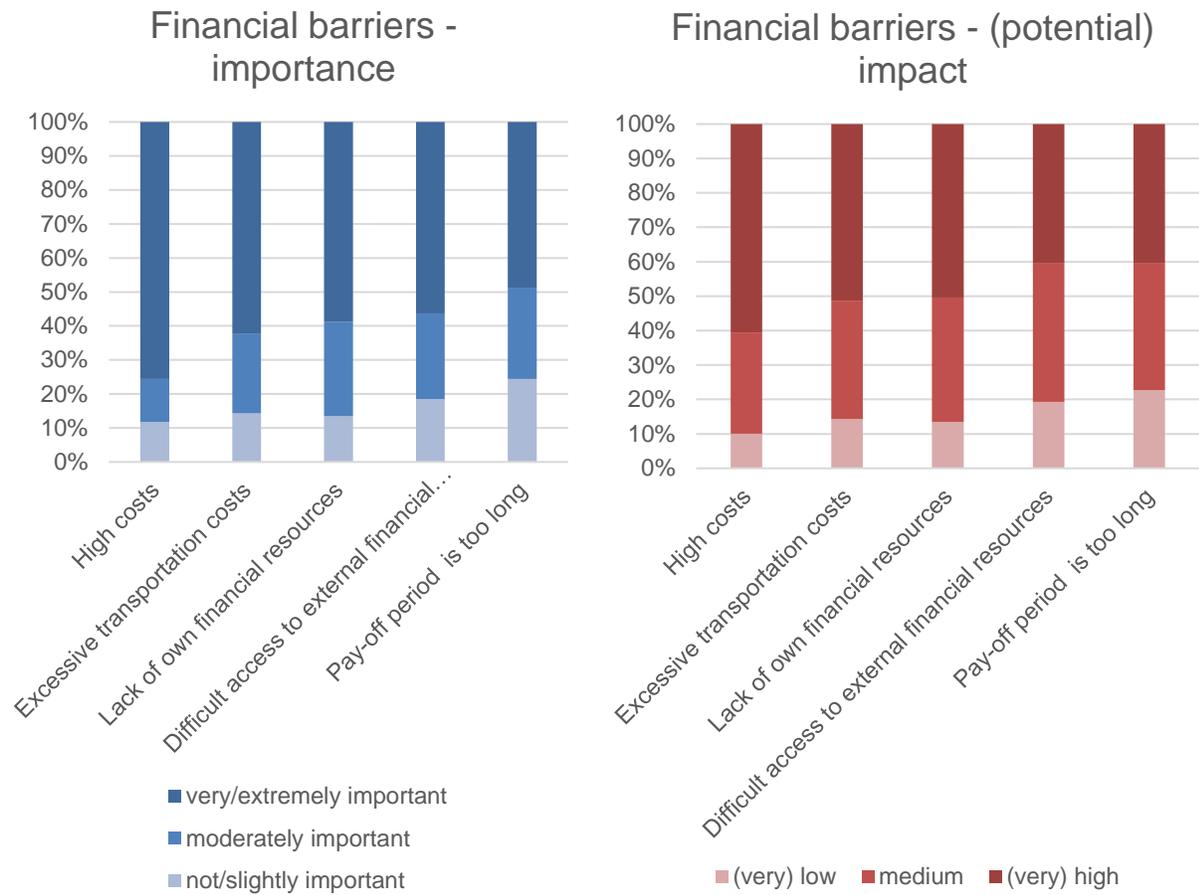


Annex 2. Barriers of market innovation, per type

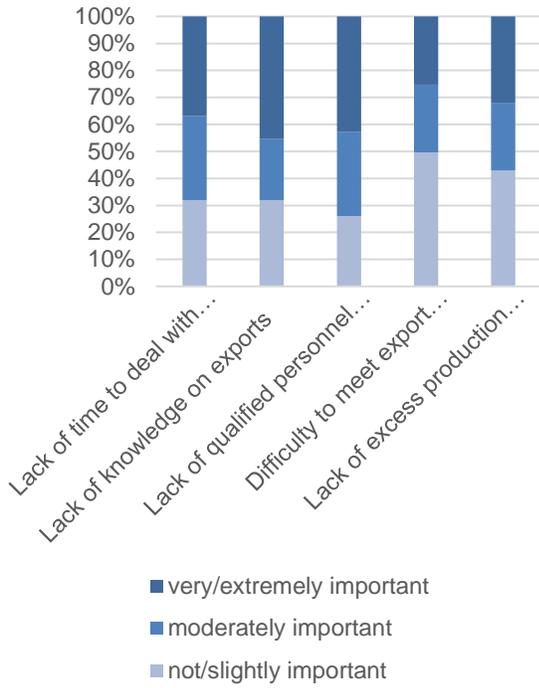
Table 13. Importance and (potential) impact of barriers of market innovation, mean scores and rank, per barrier and type

	Importance		(potential) impact	
	Mean	Rank	Mean	Rank
FINANCIAL				
High costs	3,89	2	3,69	2
Excessive transportation costs	3,64	5	3,55	4
Lack of own financial resources	3,66	4	3,53	5
Difficult access to external financial resources	3,48	8	3,29	8
Pay-off period is too long	3,32	10	3,24	9
TECHNICAL				
Lack of time to deal with exports	3,04	24	3,03	17
Lack of knowledge on exports	3,14	18	2,98	21
Lack of qualified personnel for market innovation	3,26	12	3,24	10
Difficulty to meet export product quality standards	2,59	33	2,66	31
Lack of excess production capacity	2,85	29	2,89	25
PSYCHOLOGICAL				
Excessive risk	3,34	9	3,19	11
Manager resistance to change	2,61	32	2,64	32
Lack of motivation (e.g. high profitability with current business)	2,71	31	2,75	30
MARKETING				
Lack of a clear export strategy	2,87	28	2,78	28
Limited information about customers in new markets	3,15	17	2,98	20
Limited information about competitors in new markets	3,02	26	2,88	26
Limited information about suppliers in new markets	3,03	25	2,84	27
Limited access to research institutions	2,71	30	2,60	33
Difficulty to adjust promotional activities to new market	3,10	20	2,94	24
Access to foreign distribution channels	3,17	15	3,04	16
Difficulty in matching competitor's prices	3,04	23	2,98	22
INSTITUTIONAL				
Insufficient government support	3,81	3	3,69	3
Governmental bureaucracy	4,15	1	3,83	1
Unfavorable policies & regulations in new markets	3,63	6	3,43	6
Foreign trade policy (import tariffs)	3,11	19	2,96	23
Economic turbulence in new markets	3,29	11	3,09	14
Currency risks in new markets	2,90	27	2,76	29
INDUSTRY				
Lack of responsiveness of new customers to your products	3,16	16	3,14	12
Complexity of foreign distribution channels	3,09	21	3,02	18
Transportation problems	3,25	13	3,13	13
Competition	3,62	7	3,38	7
Innovation too easy to copy	3,19	14	3,08	15
Lack of opportunities for collaboration with other companies	3,07	22	3,01	19

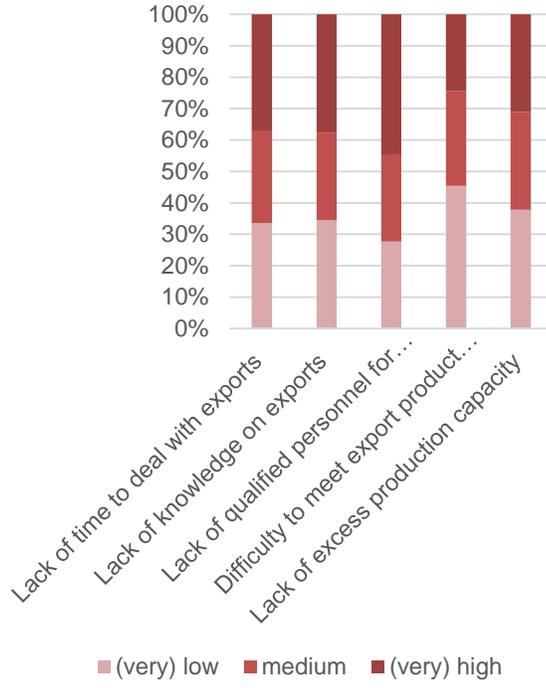
Figure 5. Importance and (potential) impact of barriers of market innovation, mean scores, per barrier and type



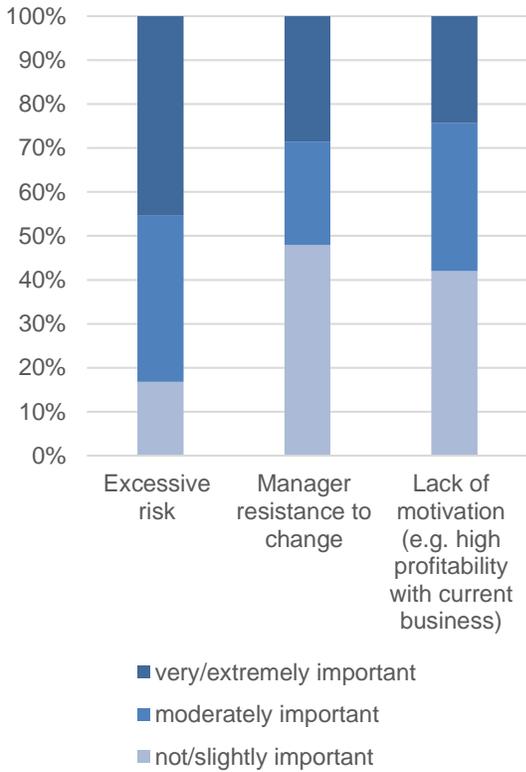
Technical barriers - importance



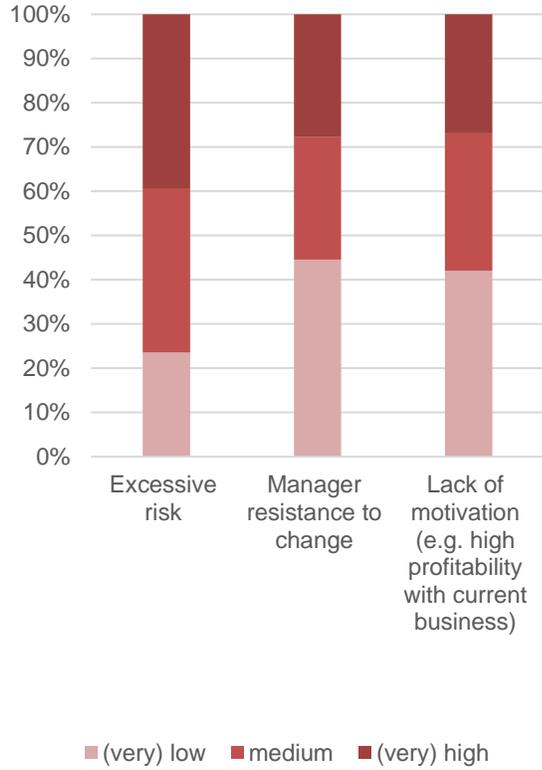
Technical barriers - (potential) impact



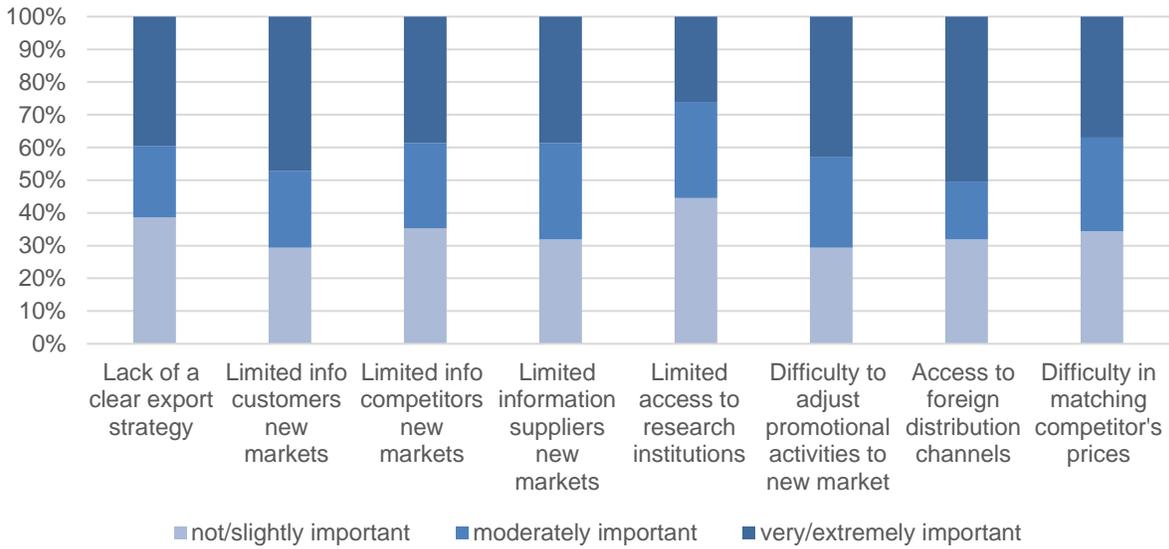
Psychological barriers - importance



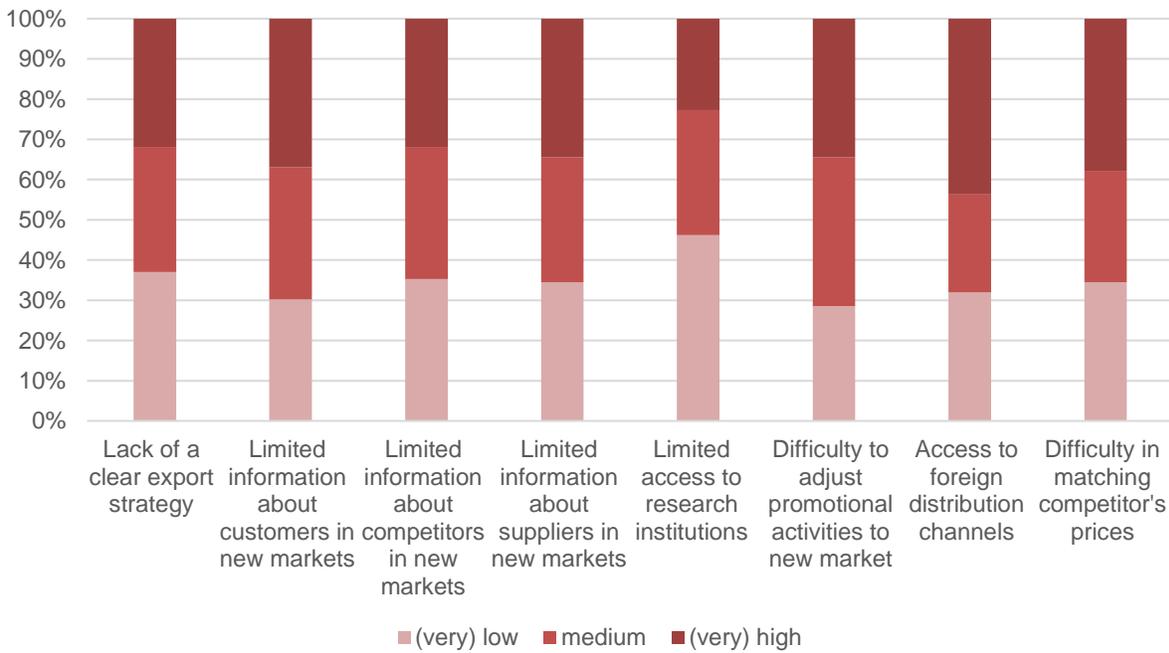
Psychological barriers - (potential) impact

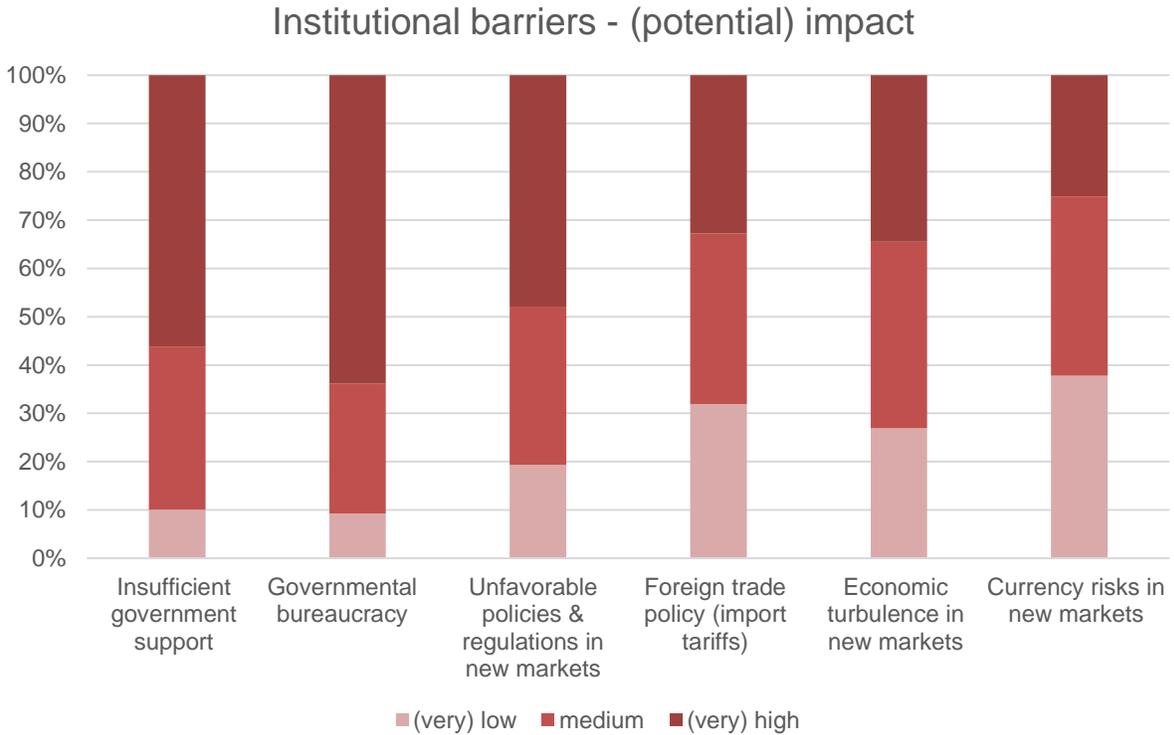
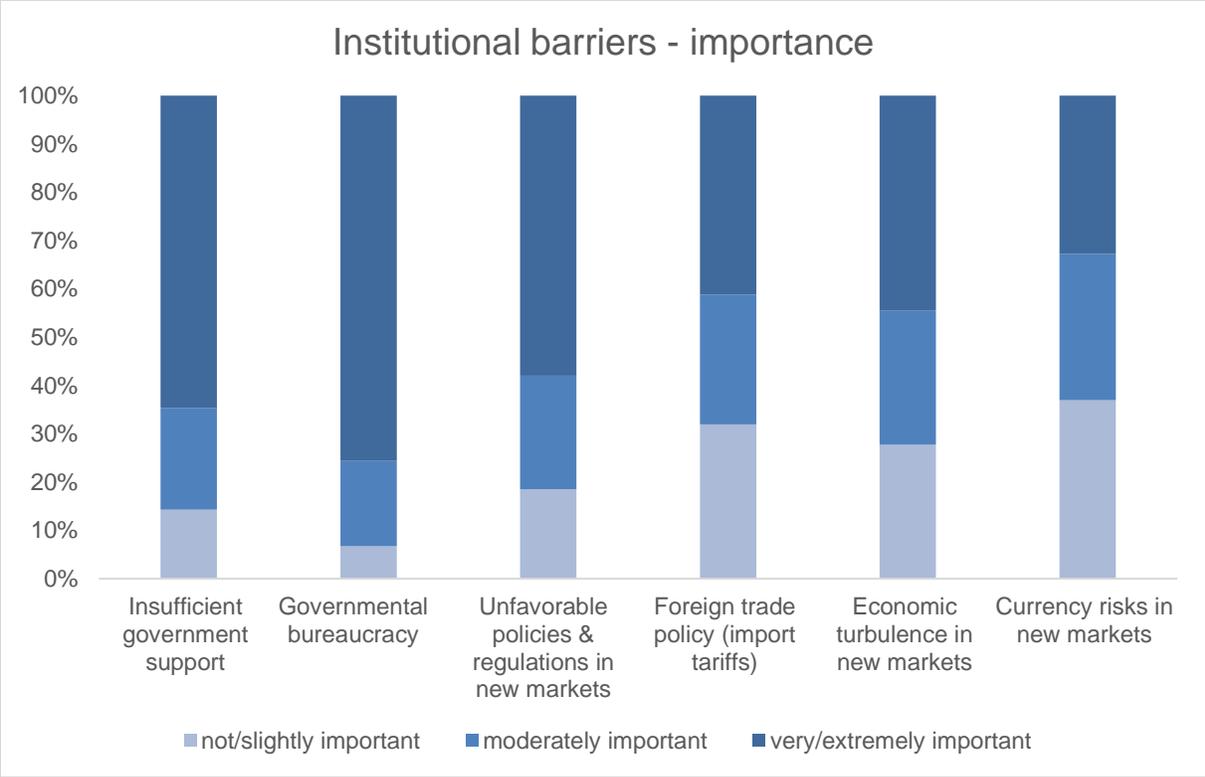


Marketing barriers - importance

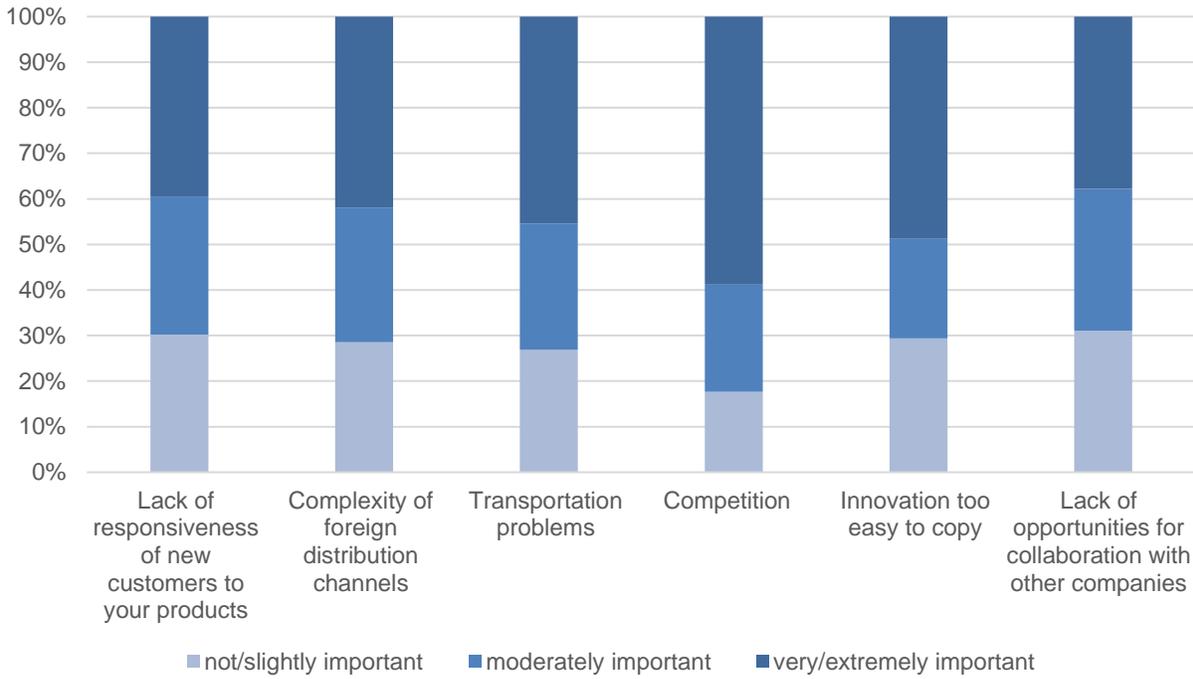


Marketing barriers - (potential impact)





Industry barriers - importance



Industry barriers - (potential) impact

