Statistics Finland

Suomen virallinen tilasto
Finlands officiella statistik
Official Statistics of Finland

Obligation to provide data based on the Statistics Act (280/2004).
All data collected are secret and confidential.

Enterprises' innovation activity 2016-2018

1 Responding enterprise and contact person’s information

Name of enterprise	
Address	
Business ID	
Main activity / industry	

This survey concerns your enterprise’s activities in Finland.

If your enterprise is part of an enterprise group

- please answer all further questions about your enterprise only for its own activities in Finland
- exclude the activities of all subsidiaries or parent enterprises

Name of contact person	
Position in the enterprise	
Email	
Telephone	

More information

2 Strategies and Knowledge Flows

2.1 During the three years 2016 to 2018, did your enterprise:

	Yes	No
Apply for a patent	☐	☐
Apply for a utility model	☐	☐
Register an industrial design right	☐	☐
Register a trademark	☐	☐
Claim a copyright	☐	☐
Use trade secrets	☐	☐

2.2 During the three years 2016 to 2018, did your enterprise:

	Yes	No
License out its own intellectual property rights (IPRs) to others	☐	☐
Sell its own IPRs (or assign IP rights) to others	☐	☐
Exchange IPRs (pooling, cross-licensing, etc.)	☐	☐

2.3 During the three years 2016 to 2018, did your enterprise purchase or license-in patents or other IPRs?

				Tick all that apply
Yes	☐	if yes:	from private business enterprises or individuals	☐
			from public research organisations, universities or other higher education institutions	☐
No	☐			

2.4 During the three years 2016 to 2018, did your enterprise purchase technical services?

Technical service' includes any consulting activity that involves any kind of technical, scientific or engineering information, e.g. engineering services, measurement and testing services, industrial design services, R&D services, certification services, installation, refitting and retrofitting services.

				Tick all that apply
Yes	☐	if yes:	from private business enterprises	☐
			from public research organisation, universities or other higher education institutions	☐
No	☐			

2.5 During the three years 2016 to 2018, did your enterprise purchase machinery, equipment or software based on

	Yes	No
The same or improved technology used in your enterprise before	☐	☐
New technology that was not used in your enterprise before	☐	☐

2.6 During the three years 2016 to 2018, did your enterprise use any of the following channels to acquire knowledge?

	Yes	No
Conferences, trade fairs or exhibitions	☐	☐
Scientific/technical journals or trade publications	☐	☐
Information from professional or industry associations	☐	☐
Information from published patents	☐	☐
Information from standardisation documents or committees	☐	☐
Social web-based networks or crowd-sourcing	☐	☐
Open business-to-business platforms or open-source software	☐	☐
Extracting knowledge or design information from goods or services (reverse engineering)	☐	☐

2.7 During the three years 2016 to 2018, how important to the management of your business were the following methods of organising work?

	Degree of importance			
	High	Medium	Low	Not important
Planned job rotation of staff across different functional areas	☐	☐	☐	☐
Regular brainstorming sessions for staff to think about improvements that could be made within the business	☐	☐	☐	☐
Cross-functional work groups or teams (combined across different working areas or functions)	☐	☐	☐	☐

3A Innovation

A **product innovation** is a new or improved good or service that differs significantly from the firm's previous goods or services and which has been implemented on the market.

Exclude

- the simple re-sale of new goods
- changes of a solely aesthetic nature

3.1 During the three years 2016 to 2018, did your enterprise introduce any:

	Yes	No
New or improved goods	☐	☐
New or improved services	☐	☐

If 'no' to all options go to question 3.6.

3.2 In the three years 2016 to 2018, did your enterprise introduce any new or improved products (goods or services) that were:

	Yes	No
Not previously offered by any of your competitors (and which thus were new to your market)	☐	☐
Identical or very similar to products already offered by your competitors (but were new to your enterprise)	☐	☐

3.3 Please estimate the percentage of your enterprise's total turnover in 2018 from products (goods or services) that were, in the three years 2016 to 2018:

<u>New or improved products</u> not previously offered by any of your competitors	_____	%
<u>New or improved products</u> identical or very similar to products already offered by your competitors	_____	%
<u>Unchanged products (or with only minor changes)</u> (Includes the resale of new products purchased from other enterprises.)	_____	%
Total turnover in 2018	**=100**	**%**

3.4 Who developed these product innovations?

	Tick all that apply
Your enterprise by itself	☐
Your enterprise together with other enterprises or organisations*	☐
Your enterprise by adapting or modifying products originally developed by other enterprises or organisations*	☐
Other enterprises or organisations*	☐

** Include independent enterprises plus other parts of your enterprise group (subsidiaries, sister enterprises, head office, etc.). Organisations include universities, research institutes, non-profits, etc.*

3.5 How did the new or improved product(s), introduced during 2016 to 2018, meet your enterprise's expectations by the end of 2018:

	Tick only one
Expectations were exceeded	☐
Expectations were adequately met	☐
Expectations were met only to some extent	☐
Expectations were not met at all	☐
Too early to assess	☐

A **business process innovation** is a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and which has been implemented within the firm.

3.6 During the three years 2016 to 2018, did your enterprise introduce any of the following types of new or improved processes that differ significantly from your previous processes?

	Yes	No
Methods for producing goods or providing services (including methods for developing goods or services)	☐	☐
Logistics, delivery or distribution methods	☐	☐
Methods for information processing or communication	☐	☐
Methods for accounting or other administrative operations	☐	☐
Business practices for organising procedures or external relations	☐	☐
Methods of organising work responsibility, decision making or human resource management	☐	☐
Marketing methods for promotion, packaging, pricing, product placement or after sales services	☐	☐

If 'no' to all options go to question 3.9.

3.7 Who developed these process innovations?

	Tick all that apply
Your enterprise by itself	☐
Your enterprise together with other enterprises or organisations*	☐
Your enterprise by adapting or modifying processes originally developed by other enterprises or organisations*	☐
Other enterprises or organisations*	☐

** Include independent enterprises plus other parts of your enterprise group (subsidiaries, sister enterprises, head office, etc.). Organisations include universities, research institutes, non-profits, etc.*

3.8 How did the new or improved processes introduced during 2016 to 2018 meet your enterprise's expectations by the end of 2018:

	Tick only one
Expectations were exceeded	☐
Expectations were adequately met	☐
Expectations were met only to some extent	☐
Expectations were not met at all	☐
Too early to assess	☐

Innovation activity includes all developmental, financial and commercial activities, undertaken by an enterprise, which are intended to or result in an innovation.
Research and Development (R&D) comprises creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge.

3.9 During the three years 2016 to 2018, did your enterprise have any of the following types of innovation activities? (Activities leading to expenditures)

		Yes	No
Completed activities on product or process innovation		☐	☐
Ongoing innovation activities at the end of 2018		☐	☐
Abandoned innovation activities		☐	☐
In-house research and development (R&D) activities		☐	☐
if 'yes': did your enterprise perform in-house R&D during the three years 2016 to 2018:			
Continuously	☐		
Occasionally	☐		
Contract-out R&D to other enterprises (include enterprises in your own group) or to public or private research organisations)		☐	☐

If 'no' to all options go to question 3.11.

3.10 How much did your enterprise spend on innovation and research and development (R&D) in 2018?

- Please note that question 3.10 refers, exceptionally, only to the year 2018, not the three year period 2016 to 2018.
- Please tick 'none' for all categories if you enterprise did not have any expenditure on innovation and/or R&D in 2018.

	Expenditures on innovation and R&D in 2018	
R&D performed in-house (Include current expenditures including labour costs and capital expenditures (buildings, machinery, equipment, software etc.) specifically for R&D)	_____000 €	☐ none
R&D contracted out to others (including enterprises in own enterprise group)	_____000 €	☐ none
All other innovation expenditures* (i.e. excluding R&D)	_____000 €	☐ none
Of which:		
Own personnel working on innovation	_____000 €	☐ none
Services, materials, supplies purchased from others for innovation	_____000 €	☐ none
Capital goods for innovation (acquisition of machinery, equipment, software, IPRs, buildings etc.)	_____000 €	☐ none

** Include:*
- Acquisition of machinery equipment, software, IPRs or buildings for innovation activities other than R&D
- Acquisition of external knowledge for innovation activities other than R&D (e.g. patents, licenses, trademarks)
- Product design of goods, service design, preparation of production/distribution for innovation activities other than R&D
- Training and professional development for innovation activities other than R&D (e.g. employee training or continued education)
- Marketing of innovations (marketing activities directly related to innovations, including market research)

3.11 During the three years from 2016 to 2018, did your enterprise try to obtain the following types of funding? If funding was obtained successfully, was this funding used for R&D or other innovation activities?

	Try to obtain funding			If your enterprise obtained funding, was this partly or fully used for R&D or other innovation activities?	
	Yes, successfully obtained some funding of this type	Tried, but not success-fully	No	Yes	No
Equity finance (finance provided in exchange for a share in the ownership of the enterprise)	☐	☐	☐	☐	☐
Debt finance (finance that the enterprise must repay)	☐	☐	☐	☐	☐

3.12 During the three years from 2016 to 2018, did your enterprise receive any public financial support from the following levels of government?
Include financial support via grants, subsidised loans, and loan guarantees.
Exclude revenues from public sector* procurement contracts.

	Yes	No	If your enterprise received financial support, was part of this used for R&D or other innovation activities? Yes	No
Local or regional authorities*	☐	☐	☐	☐
National government (for example Business Finland)	☐	☐	☐	☐
EU Horizon 2020 Programme for Research and Innovation	☐	☐	☐	☐
Other financial support from a European Union institution	☐	☐	☐	☐

**' The public sector includes government owned organisations such as local, regional and national administrations and agencies, schools, hospitals, and government providers of services such as security, transport, housing, energy, etc.*

3.13 During the three years 2016 to 2018, did your enterprise co-operate* with other enterprises or organisations?

	Yes	No
a) On R&D	☐	☐
b) On other innovation activities (excluding R&D)	☐	☐
c) On any other business activities	☐	☐

Co-operation is active participation with other enterprises or organisations. Partners do not need to commercially benefit. Exclude pure contracting out of work with no active co-operation.

If 'yes' to either option a) or b), go to question 3.14

3.14 Please indicate the type of innovation co-operation partner by location

Tick all that apply

Type of co-operation partner	Finland	Other EU* or EFTA**	All other countries
Private business enterprises outside your enterprise group	☐	☐	☐
Consultants, commercial labs, or private research institutes	☐	☐	☐
Suppliers of equipment, materials, components or software	☐	☐	☐
Enterprises that are your clients or customers	☐	☐	☐
Enterprises that are your competitors	☐	☐	☐
Other enterprises	☐	☐	☐
Enterprises within your enterprise group	☐	☐	☐
Universities	☐	☐	☐
Universities of applied sciences	☐	☐	☐
Government or public research institutes	☐	☐	☐
Clients or customers from the public sector***	☐	☐	☐
Non-profit organisations	☐	☐	☐
Clients or customers from the private sector	☐	☐	☐

* *The Member States of the European Union (EU) are: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, and the United Kingdom*

** *Iceland, Liechtenstein, Norway, Switzerland*

*** *The public sector includes government owned organisations such as local, regional and national administrations and agencies, schools, hospitals, and government providers of services such as security, transport, housing, energy, etc.*

3.15 During the three years 2016 to 2018, has legislation or regulation affected your enterprises' innovation activities in any of the ways?

Type of legislation or regulation	Initiated or facilitated innovation activities	Prevented, hampered or increased costs of innovation activities	Had no effect / not relevant
	Tick all that apply		
Product safety, consumer protection	☐	☐	☐
Environmental	☐	☐	☐
Intellectual property	☐	☐	☐
Tax	☐	☐	☐
Employment, worker safety or social affairs	☐	☐	☐
Data protection (such as GDPR)	☐	☐	☐
Health	☐	☐	☐
Traffic	☐	☐	☐

3.16 During the three years 2016 to 2018, how important were the following factors in hampering your enterprises' decision to start innovation activities, or its execution of innovation activities?

	Degree of importance			
	High	Medium	Low	Not a constraint
Lack of internal finance for innovation	☐	☐	☐	☐
Lack of credit or private equity	☐	☐	☐	☐
Difficulties in obtaining public grants or subsidies	☐	☐	☐	☐
Costs too high	☐	☐	☐	☐
Lack of skilled employees within your enterprise	☐	☐	☐	☐
Lack of collaboration partners	☐	☐	☐	☐
Lack of access to external knowledge	☐	☐	☐	☐
Uncertain market demand for your ideas	☐	☐	☐	☐
Too much competition in your market	☐	☐	☐	☐
Different priorities within your enterprise	☐	☐	☐	☐

4 Utilisation of data and digitalisation in enterprises business activities

Here, data refers to both big data, as well as data from the business's own activity, and to public sector open data.

4.1 How important were the following issues related to data usage for your enterprise during 2016 to 2018?

	Importance			
	High	**Medium**	**Low**	**Not relevant**
Use of data in **developing new** goods and/or services	❒	❒	❒	❒
Use of data in **improving** goods and/or services	❒	❒	❒	❒
Use of data in other innovation activity, i.e. in the development of production process or other business processes	❒	❒	❒	❒
Use of data in research and development activities	❒	❒	❒	❒
Use of data in managing the production process	❒	❒	❒	❒
Use of data in marketing	❒	❒	❒	❒
Selling data (e.g. customer data) to other enterprises	❒	❒	❒	❒
Buying data (e.g. customer data) from other enterprises	❒	❒	❒	❒

Digitalisation refers to transferring goods, services and their production or distribution to electronic format.

4.2 How important were the following issues related to digitalisation for your enterprise's business activity during 2016 to 2018?

	Importance			
	High	**Medium**	**Low**	**Not relevant**
Digital goods and/or services	❒	❒	❒	❒
Cloud services	❒	❒	❒	❒
Social media (e.g. Facebook, Twitter, LinkedIn)	❒	❒	❒	❒
Internet of Things IoT (devices connected to an information network)	❒	❒	❒	❒
Robotics in production processes	❒	❒	❒	❒
Digitalisation in producing goods and/or services	❒	❒	❒	❒
Digitalisation in designing goods and/or services	❒	❒	❒	❒
Digitalisation in marketing goods and/or services	❒	❒	❒	❒
Digitalisation in distributing goods and/or services	❒	❒	❒	❒

5 Collaboration and connections between enterprises and universities, universities of applied sciences or research institutes

Here, data refers to both big data, as well as data from the business's own activity, and to public sector open data.
Collaboration between enterprises and research organisations refers to organised, active cooperation, as well as other transfer of know-how, collaboration and goal-oriented interaction or communication.

Research organisations refer to both domestic and foreign **universities, universities of applied sciences and research institutes**.

5.1 Did your enterprise cooperate with the following research organisations during 2016 to 2018?

	Universities	Universities of applied sciences	Research institutes	No co-operation
Innovation cooperation (Active participation of R&D and other innovation projects, exclude pure contracting out of work)	❒	❒	❒	❒
Other cooperation than innovation cooperation	❒	❒	❒	❒

If no to both options, go to 5.4.

5.2 What results have your enterprise's cooperation with research organisations led to during 2016 to 2018 or is expected to lead to by the end of 2020?

(Tick all that apply)

	Universities	Universities of applied sciences	Research institutes	Not relevant
Strengthening the knowledge base and competence including patents and other IPR	❒	❒	❒	❒
An overview of future trends and markets	❒	❒	❒	❒
Introduction of a new technology, method or device	❒	❒	❒	❒
New or improved products (goods or services)	❒	❒	❒	❒
Access to, or progress on, international markets	❒	❒	❒	❒
Widening of cooperation with research organisation	❒	❒	❒	❒
Participation in international research and innovation programmes	❒	❒	❒	❒
Other results, what _____ _____	❒	❒	❒	❒

5.3 How have the forms and meaning of research organisation cooperation developed from the point of view of your enterprise during the years 2016 to 2018 compared to before?

	Importance			
	Increa-sed	Stayed unchanged	Decreased	No co-operation
Contracted out R&D	❒	❒	❒	❒
Joint development of co-creation	❒	❒	❒	❒
Education cooperation	❒	❒	❒	❒
Use of research organisation's research infra-structure and services	❒	❒	❒	❒
Demo, piloting or product testing	❒	❒	❒	❒
Internships or graduation theses	❒	❒	❒	❒
Recruitment of new experts to your enterprise	❒	❒	❒	❒
Some else, what _____	❒	❒	❒	❒

5.4 Evaluate the meaning and the importance of the following cooperation partners to your enterprise's R&D or other innovation activities until the end of 2020:

	Importance			
	Increasing	Staying un-changed	Decrea-sing	No co-operation
Universities in Finland	❒	❒	❒	❒
Universities abroad	❒	❒	❒	❒
Universities of applied sciences in Fin-land	❒	❒	❒	❒
Universities of applied sciences abroad	❒	❒	❒	❒
Research institutes in Finland	❒	❒	❒	❒
Research institutes abroad	❒	❒	❒	❒
Enterprises in Finland	❒	❒	❒	❒
Enterprises abroad	❒	❒	❒	❒

6 Additional information about the enterprise

6.1. The average number of persons employed by your enterprise in 2018 _____

Total number of persons (headcount) who work in the enterprise (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the enterprise's premises and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It excludes manpower supplied to the enterprise by other enterprises, persons carrying out repair and maintenance work in the enterprise on behalf of other enterprises, as well as those on compulsory military service.

6.2 Your enterprise's total turnover in 2018 _____ 000 EUR

For Credit institutions: Interests receivable and similar income; for Insurance services give gross premiums written.

6.3 Approximately, what was the percentage of turnover in 2018 from

Customers located in Finland	____ %
Customers located in other EU* and EFTA** countries	____ %
Customers located in countries not included above	____ %
Total	100 %

** The Member States of the European Union (EU) are: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, and the United Kingdom.*

*** Iceland, Liechtenstein, Norway, Switzerland.*

6.4 How much did your enterprise spend in 2018 on the following items?

	Total expenditure in 2018	
(Notes and definitions in the annex)		
Acquisition of machinery, equipment, buildings and other tangible assets	_____000 €	☐ none
Marketing, brand building, advertising (include in-house costs and purchased services)	_____000 €	☐ none
Training own staff (include all in-house costs including wages and salaries of staff while being trained, and costs of purchased services from others)	_____000 €	☐ none
Product design (include in-house costs and purchased services)	_____000 €	☐ none
Software development, database work and **data analysis** (include in-house costs and purchased services)	_____000 €	☐ none
Registering, filing and monitoring **own Intellectual Property Rights (IPRs)** and **purchasing or licensing IPRs** from others	_____000 €	☐ none

Answer questions 6.5 to 6.7 only if your enterprise is part of an enterprise group

6.5 In 2018, was your enterprise part of

	Yes	No
a) an enterprise group* with the head office located in Finland	☐	☐
If yes, **are all of the enterprises of that group located in Finland**	☐	☐
b) an enterprise group* with the head office located abroad	☐	☐
If yes, **country in which head office is located** _____		

** A group consists of two or more legally defined enterprises under common ownership. Each enterprise in the group can serve different markets, as with national or regional subsidiaries, or serve different product markets. The head office is also part of an enterprise group.*

6.6 During the three years from 2016 to 2018, did your enterprise engage in any of the following activities with one or more enterprises of your enterprise group?

	Yes, Other enterprises in Finland	Yes, other enterprises abroad	No
	Tick all that apply		
Inflows from other enterprises in your group:			
Receiving technical knowledge*	☐	☐	☐
Receiving financial resources	☐	☐	☐
Receiving personnel	☐	☐	☐
In-sourcing of business activities	☐	☐	☐
Outflows to other enterprises in your group:			
Transferring technical knowledge*	☐	☐	☐
Transferring financial resources	☐	☐	☐
Transferring personnel	☐	☐	☐
Out-sourcing of business activities	☐	☐	☐

' Technical knowledge includes all knowledge needed to solve technical problems in the production process; it excludes all general knowledge not specifically needed to solve particular technical problems.*

6.7 During the three years from 2016 to 2018, did your enterprise try to obtain funding in the form of intra-group loans? If funding was obtained successfully, was this funding used for R&D or other innovation activities?

Try to obtain intra-group loans			If your enterprise obtained funding in the form of intra-group loans, was this partly or fully used for R&D or other innovation activities?	
Yes, successfully obtained some funding of this type	Yes, but not successful	No	Yes	No
☐	☐	☐	☐	☐

Notes and instructions for the expenditure questions 3.10 and 6.4

The allocation of staff for each activity can be used as reference for providing expenditures.

Question 3.10

Research and Development (R&D)

R&D comprise creative and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge.

Performed in-house: R&D undertaken by your enterprise to create new knowledge or solve scientific or technical problems. Include current expenditures including labour costs and capital expenditures on buildings and equipment specifically for R&D).

R&D contracted out: Your enterprise contracted-out R&D to other enterprises (include enterprises in your own group) or to public or private research organisations.

Other innovation expenditure

All other activities related to the development of new or significantly improved products and processes.

Question 6.4

Machinery, Equipment and Buildings

Expenditures for purchasing physical capital goods (land and buildings, machinery and instruments, transport equipment and other equipment) and current costs for lease of tangible assets.

Exclude leasing costs for other capital goods (not contributing to asset creation).

Marketing and Branding

Internal or external work intended to enhance reputation or brand values, either of the business as a whole or individual goods or service lines, as well as to support the market placement of new goods and services. For example: market research, market tests, development of marketing strategies and methods, product launches, promotional campaigns, 'rebranding' of business, development of promotional materials, etc..

Include: (a) staff costs of all staff involved (b) associated costs, including office facilities, overheads and materials but not capital items; (c) external costs of advertising and marketing campaigns to agencies, media organisations, trade fairs, suppliers of marketing databases, etc.

Staff Training

Activities to training the skills and teaching of knowledge related to the specific activities of the firm, including on-the-job training and job-related education at training and education institutions. For example, training on IT systems, new production equipment, ISO accreditation, skills development, etc..

Include: (a) staff costs of trainers, including development and delivery of training; (b) travel and subsistence payments; (c) associated costs, including providing facilities, overheads and materials but not capital items; (d) training provided by external suppliers, whether provided on-site or elsewhere; (e) levy payments for training organisations.

Product design

The design of goods or services to develop a new or modified form, appearance or function for goods or services. Design involves a series of iterative steps to create functional products. Product design activities may also include involving potential users in the design process, pilot testing, and post-implementation studies to identify or solve problems with a design.

Include: (a) staff costs of all staff involved, e.g. graphic designers, product designers, architects, design engineers, etc.; (b) associated costs, including office facilities, overheads and materials used for these design activities but not capital goods. Estimates based on proportions of staff time are acceptable.

Exclude: (a) costs of design embedded in other items of current or capital expenditure

Software and databases

Purchase of external software and development of software in-house. For example, operating systems, general purpose office applications (e.g. word processing), special purpose applications (e.g. financial accounting systems, databases, production control systems), etc.

Include: (a) staff costs of all staff involved, excluding contractors; (b) associated costs, including office facilities, overheads and materials used for but not capital items; (c) off-the-shelf software; software licenses and license renewals; generic and bespoke software.

Exclude: (a) software embedded in other items of current or capital expenditure, e.g. software pre-installed on IT hardware

Intellectual Property Rights (IPR)

Administrative and legal costs incurring to apply or register, document, manage, monitor, trade and enforce own intellectual property rights (IPRs). And expenditures made to acquire others' intellectual property (patents, industrial designs, etc.) through purchase or licensing.