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• • • **STATISTICS**  
• • • **ESTONIA**

**COMMUNITY INNOVATION SURVEY. YEARS 2018–2020**

## MANUAL

### General information

The questionnaire is used to collect data for the statistical activity “Innovation in enterprises”, the purpose of which is to obtain information on the strategies of enterprises, knowledge flows and innovation during the period 2018–2020. For enterprises, innovation is the introduction to the market of a new or significantly improved or further developed product (good or service) or the adoption of a new or significantly improved process, organisational or marketing innovation. In the case of innovativeness, it is important that the innovation that the enterprise implemented is new to the enterprise itself, although it could have been developed or adopted previously by other enterprises.

The Community Innovation Survey (CIS) is organised simultaneously in all European Union member states and candidate countries. Innovation is one of the main factors of competitiveness of enterprises, regions and countries. Your participation in the survey allows to measure the innovativeness of Estonian enterprises, analyse development trends and understand problems that hamper innovation or are a cause for the lack of innovation in enterprises. It is possible to compare the level of innovativeness of Estonian enterprises with other countries, incl. by economic activity. The survey results are important input for planners of innovation policy, beneficial for enterprises, both in Estonia as well as in the European Union.

All enterprises with 50 or more persons employed are included in the survey sample. Stratified random sampling by economic activity is used for enterprises with 10–49 persons employed.

**The questionnaire is primarily meant to be filled by the executive manager of the enterprise or a member of the management board** who is active in the enterprise’s development.

The questionnaire mainly consists of simple yes/no questions or questions requiring evaluation, which facilitates answering.

However, the questionnaire also includes financial indicators, to which a bookkeeper might rather respond. If exact sums are not known, provide an approximate value.

If your enterprise was established in 2018 or later, then the activities of your enterprise should be innovative, unless the enterprise was established on the basis of a pre-existing enterprise and the products or processes were not updated.

If your enterprise is part of an enterprise group, please submit data only about your enterprise. If this is not possible, please add a note – aggregate data submitted on enterprises.

The questionnaire together with the instructions is located on the website of Statistics Estonia at [www.stat.ee](http://www.stat.ee), section Submit data / Questionnaires / 12932021 – “Community Innovation Survey”. The code of the questionnaire is 1293. To submit data, please use the e-environment e-STAT at <https://estat.stat.ee/>. For more information about filling in and submitting the questionnaire, call 625 9100 or send an email to [klienditugi@stat.ee](mailto:klienditugi@stat.ee).

Instructions on how to use eSTAT can be found by clicking on “Help” on the screen. To view the questionnaire manual, click the button “Show more” in the header of the questionnaire periods page, then click “View the instructions”. The instructions view opens, where clicking on the relevant button allows you to choose the necessary instructions. The instructions are opened in PDF format. “View the instructions” opens also from the questionnaire header before you start filling in the questionnaire. To close the header, click “Show less”.

To submit the questionnaire, click “**Check**” to activate the check functions. If errors appear, you can make corrections. The indicators with possible errors are marked with the symbol “?”. The checked value and the description of the error can be found under the question mark. After you have filled in the data and corrected the errors, click “**Confirm**” at the end of the questionnaire.

It is recommended to save each table after filling it in, and then select “**Validate table**” in the table header. It allows to check immediately whether the table was filled in correctly.

To remove an unnecessary answer, click on the empty space between “Search” and the first option in the drop-down menu:

The image shows a search dropdown menu with a search bar containing the text "Search...". Below the search bar, there are three options listed: "Yes, from other enterprises in Estonia", "Yes, from other enterprises abroad", and "No". The search bar is highlighted with a blue border, and there is a small upward-pointing arrow icon to the right of the search bar.

The table can be cancelled by clicking on “Cancel” under the gear sign in the table heading.

The questionnaire is divided by topic into smaller sections (visible in the upper menu), which are in turn divided into pages. We recommend completing the questionnaire section by section according to the structure of the questionnaire, in order to avoid a situation that some questions remain unanswered. The questionnaire also includes routing, which means that it is not necessary to answer some questions based on the answer to a previous question. When finishing each page, **click “Save”** and move forward with **“Forward”**. To move back use the button **“Back”**.

For many questions, there is additional information available, which can be seen by moving the mouse over the question.

The data will be published in the statistical database <https://andmed.stat.ee/et/stat> in section Economy / Science. Technology. Innovation. The publication dates of statistics can be found in the release calendar, which is available on the website of Statistics Estonia.

**Legal basis for data collection.** Statistics Estonia collects data on the basis of the [list of statistical activities](#) approved by the Government of the Republic. The data submission obligation is provided for in the [Official Statistics Act](#). The data trusted with Statistics Estonia are protected – they are used only for the production of statistics.

For more information about filling in and submitting the questionnaire, call 625 9100 or send an email to [klienditugi@stat.ee](mailto:klienditugi@stat.ee).

By submitting valid data you ensure that statistical information is truthful.

### Definitions and explanations used in the questionnaire

Definition	Explanation
<b>Innovation</b>	<p>In the survey, innovation refers to a new or significantly improved product (good or service) introduced to the market, also to the adoption of a new or significantly improved production process in the enterprise. Product and process innovation is based on the implementation of new technological solutions, a new combination of existing technologies or applying other knowledge acquired by the enterprise. Innovation activities do not always have to result in the introduction of a new product or service to the market or in an improvement of a completed production process. Innovation activities may be abandoned or suspended for several reasons before reaching the final result.</p> <p>The main activities in enterprises that may lead to innovation are the following:</p> <ul style="list-style-type: none"> <li>• research and development (R&amp;D) activities</li> <li>• engineering, design and other creative work activities</li> <li>• marketing and brand equity activities</li> <li>• intellectual property related activities</li> <li>• employee training activities</li> <li>• software development and database activities</li> <li>• investments in property, plant and equipment</li> <li>• innovation management activities</li> </ul>

Definition	Explanation
<b>Product innovation</b>	<p>Product innovation refers to a product (good or service) that differs significantly from the enterprise's previous products in terms of characteristics or usage. Excluded are the re-sale of unchanged products of other enterprises or changes of a solely aesthetic nature. Small but significant changes made in existing products (goods or services) are also taken into account. Improvement is also when an enterprise creates an improved version of a product or improves an existing product (good or service) gradually in a specific direction, improves its characteristics of use, functionality, quality, technical description, performance, economic efficiency during use, affordability, convenience, usability and user-friendliness. Product innovation does not mean that all functions would have to be improved. However, adding or improving a new function might co-occur with the disappearance of other functions or lessening some requirements. Product innovations may apply new knowledge or technologies or be based on combinations of new applications or existing knowledge or technologies.</p> <p><b>Product innovation does not include:</b></p> <ul style="list-style-type: none"> <li>• insignificant changes or improvements</li> <li>• routine category upgrades</li> <li>• seasonal changes (e.g. clothing fashion)</li> <li>• customising a product to an individual user when it does not involve significant improvements compared to what is offered to other users</li> <li>• changes in design that do not involve changes in technical requirements or functionality</li> <li>• renaming or repackaging goods for a new market</li> <li>• resale of new goods or services purchased from other enterprises, except when these are goods and services developed and produced in foreign subsidiaries of your enterprise</li> </ul> <p><b>Examples of product innovations of goods</b></p> <ul style="list-style-type: none"> <li>• completely new products</li> <li>• use of materials with better characteristics (wrinkle-resistant fabric, environmentally friendly plastic, lighter and more durable composite materials, etc.)</li> <li>• adding new or improved components to existing products (GPS system to a vehicle, camera to a mobile phone, fastener to a piece of clothing, etc.)</li> <li>• adding software to home appliances, which increases their user-friendliness or ease of use (e.g. toaster that switches off)</li> <li>• adding new functions (two-sided printing, garbage cans that notify when full, products that can be folded for storage, etc.)</li> </ul> <p><b>Examples of product innovations of services</b></p> <ul style="list-style-type: none"> <li>• adding new services</li> <li>• improving accessibility of a service (e.g. sending a rental car to a client's home or drop-off at a client's chosen location, delivering online purchases on the same day)</li> <li>• services of the sharing economy (e.g. Uber, Taxify, Lyft, AirBnB, Listia, TaskRabbit, etc.)</li> <li>• internet services, (e.g. internet banking, payments or buying tickets (transport, entertainment)</li> <li>• new types of warranty or linking warranty with other services (e.g. with customer card)</li> <li>• setting up gas burners in open air food service establishments</li> <li>• introducing modular life insurance</li> <li>• automated answering service</li> </ul>
<b>Process innovation</b>	<p>Process innovation occurs in both industry and services and involves the adoption of a new or significantly improved production process. Process innovation includes changes in technology, equipment and/or software, the purpose of which is an improvement in the quality of a product, efficiency and/or flexibility of production or supporting function, environmental sustainability or safety. Business process innovation covers the development of the core process as well as supporting functions such as distribution and logistics, marketing, sales and after-sales services; information and communication technology (ICT) services to the enterprise, administrative and management functions, engineering and related technical services to the firm, and product and business process development.</p> <p>Process innovation may result from the objective to achieve greater efficacy or resource efficiency, reliability or durability, affordability, convenience and usability either within or outside the enterprise. A business process innovation can require several steps, from initial development, pilot testing in a single business function, to implementation across all relevant business functions. Business process innovations are implemented when they are brought into use by the enterprise in its internal or outward-facing operations.</p>

Definition	Explanation
	<p>Business process innovations may concern the following business functions of an enterprise:</p> <ul style="list-style-type: none"> <li>• core business function</li> <li>• distribution and logistics (transportation, warehousing, order processing, etc.)</li> <li>• marketing and sales (marketing methods, incl. advertising, product promotion and placement, packaging of products, direct marketing (telemarketing), exhibitions and fairs, market research and other activities to develop new markets, pricing strategies and methods, sales and after-sales activities, customer support and customer relationship activities)</li> <li>• information and communication systems (hardware and software, data processing and database, maintenance and repair, web-hosting and other computer-related information activities)</li> <li>• administration and management (strategic and general business management (cross-functional decision-making), including organising work responsibilities; corporate governance (legal, planning and public relations); accounting, bookkeeping, auditing, payments and other financial or insurance activities; human resources management (training and education, staff recruitment, workplace organisation, provision of temporary personnel, payroll management, health and medical support); procurement; managing external relationships with suppliers, alliances, etc.)</li> <li>• product and business process development</li> </ul> <p><b>Examples of process innovation in the production of goods and services</b></p> <ul style="list-style-type: none"> <li>• adoption of a new or significantly improved production technology, e.g. automation or implementing real-time sensors in production process management</li> <li>• introducing new machinery or equipment for producing new or significantly improved products</li> <li>• reducing material and energy costs by increasing production process efficiency</li> <li>• computerised product development</li> <li>• digitalisation of printing process</li> <li>• significant improvement to order acceptance system</li> <li>• process management or combination software</li> <li>• new risk mitigation methods</li> </ul> <p><b>Examples of business process innovation in logistics, delivery or distribution</b></p> <ul style="list-style-type: none"> <li>• adoption of barcodes or identifying chips to monitor the flow of materials through the supply chain</li> <li>• GPS monitoring system in transportation</li> <li>• electronic automated feedback with suppliers</li> <li>• logistics based on information systems</li> <li>• system of minimising warehousing</li> </ul> <p><b>Examples of innovation in information and communication systems</b></p> <ul style="list-style-type: none"> <li>• in-house development and purchase of computer software, programme descriptions and supporting materials for both systems and applications software (including standard software packages, customised software solutions and software embedded in products or equipment)</li> <li>• acquisition, in-house development and analysis of computer databases and other computerised information, including the collection and analysis of data in proprietary computer databases and data obtained from publicly available reports or the internet</li> <li>• activities to upgrade or expand the functions of information technology systems, including computer programmes and databases. This includes statistical data analysis and data mining activities.</li> <li>• Note: Software development is an innovation activity when used to develop new or improved business processes or products, such as computer games, logistical systems, or software to integrate business processes. Database activities are innovation activities when used for innovation, such as analyses of data on the properties of materials or customer preferences.</li> </ul> <p><b>Examples of process innovation in marketing</b></p> <p>Examples of marketing innovations in design or packaging</p> <ul style="list-style-type: none"> <li>• new design of existing products</li> <li>• custom design of consumer products</li> <li>• packaging depending on the target group (different cover design on the versions of a book for children and adults)</li> </ul>

Definition	Explanation
	<p>Examples of marketing innovations in marketing</p> <ul style="list-style-type: none"> <li>• preliminary market research and tests</li> <li>• product launch advertising and presenting product placement methods</li> <li>• media reports in different institutions on how to use a product and its characteristics (e.g. a TV channel in a hospital) to increase sales</li> <li>• warehouse sale to customers with benefits (e.g. discount card owners)</li> <li>• marketing to target groups by using personalised data (the data may be obtained when clients visit websites or from their responses to advertising campaigns)</li> <li>• introducing exclusive retail sale (luxury stores)</li> </ul> <p>Examples of marketing innovations in pricing</p> <ul style="list-style-type: none"> <li>• adoption of pricing mechanisms of product innovations, e.g. introducing variable prices (the price depends on the location and time of purchase, buyer, etc.)</li> <li>• using discounts for the first time to increase market share or promote a brand</li> <li>• introducing a system of price discounts (e.g. customer loyalty cards)</li> </ul> <p><b>Examples of process innovation in administration and management and general business management</b></p> <ul style="list-style-type: none"> <li>• implementation of principles of cost-effective production</li> <li>• redesign of business processes</li> <li>• supply chain management</li> <li>• creation of official or unofficial work groups to increase access to the knowledge of various departments (production, sales, research and development, etc.) and to use this knowledge together more efficiently</li> <li>• adoption of quality control standards for suppliers and contractors</li> <li>• implementation of a management system for stocks to optimise the distribution of resources, from inputs to outputs</li> <li>• introducing a knowledge management system</li> <li>• transitioning to paper-free administration</li> <li>• introducing individual or group motivators</li> </ul> <p>Examples in work organisation</p> <ul style="list-style-type: none"> <li>• reduction in the number of management levels</li> <li>• changing responsibilities (e.g. giving staff considerably bigger rights to control the work process along with the responsibility)</li> <li>• establishing new sub-units (e.g. separating marketing management from production management) or merging sub-units</li> <li>• teamwork</li> <li>• implementing a new study or training system</li> <li>• training staff to implement innovation, e.g. to use logistics systems with new software or new equipment</li> <li>• training related to implementation of innovations, e.g. introducing product innovation characteristics to personnel</li> </ul> <p>Example in organisation's external relations</p> <ul style="list-style-type: none"> <li>• first-time use of sub-contracting (for production or development activities), which involves a change in the internal work organisation</li> <li>• first-time close co-operation with other enterprises or organisations, which also requires exchange of employees</li> </ul>

Definition	Explanation
<p><b>Changes that are not considered innovations</b></p>	<p><b>Routine changes or updates</b> – includes software updates that only identify and remove coding errors and seasonal changes in clothing fashions.</p> <p><b>Simple capital replacement or extension</b> – includes the purchase of identical models of installed equipment or minor extensions and updates to existing equipment or software. New equipment or extensions must be new to the enterprise and involve a significant improvement in capital.</p> <p><b>Minor aesthetic changes</b> – e.g. a change in colour or a minor change in shape, do not meet the requirement for a “significant difference” and are therefore not product innovations.</p> <p><b>Custom products</b> – enterprises make single and often complex goods or services for sale on the market (e.g. computer games, films) or according to customer orders (e.g. buildings, production plants, logistics systems, machinery, consulting reports). Unless the one-off item displays significantly different attributes from products that the enterprise has previously made, it is not a product innovation. It is not a business process innovation unless developing the one-off item required the firm to develop and use significantly different or enhanced capabilities. However, the first use of customised production can be a business process innovation.</p> <p><b>An advertised concept</b>, prototype or model of a product that does not yet exist – in general not a product innovation because it does not meet the implementation requirement, even if customers can pre-order or make advance payments for the concept, such as a product concept funded by crowdsourcing. The concept can fail or take considerably longer than expected before it is available for use.</p> <p><b>Outputs of creative and professional service firms</b> (e.g. reports for clients, books, or films are not by default an innovation for the firms that develop them. For example, a report by a consulting firm that summarises the results of a design project without major novelty elements conducted under contract for a client is not a product innovation for the consulting firm. The report’s role in innovation for the buying firm depends on whether or not its results are used in the client firm’s innovation activities. However, the consulting firm could be credited with an innovation if it implemented new business processes as part of conducting the project for its client, or if the blueprints or designs that are sold on the market meet the innovation requirements of novelty and significance.</p> <p>Actions by retail, wholesale, transport and storage, and personal service firms to extend the range of products handled or offered to customers are only an innovation if the extension requires significant changes by the firm to its business processes. A fruit importer or wholesaler who adds a new variety of fruit for sale to retailers is not engaged in innovation unless the extension requires a major change to business processes such as developing a new supply chain or the purchase of novel refrigerating equipment (e.g. to permit the delivery of fresh produce that was not previously possible).</p> <p><b>The activities of newly created</b> enterprises (most of which are service firms) present a potential source of confusion with respect to the basic definition of an innovation because for a period of time a new firm will have no previous products or business processes for comparison. In this case, the comparison group is what is available in the relevant market. A product of a new firm is an innovation if it differs significantly from products available in its markets.</p> <p>In the absence of further qualification, <b>mergers or the acquisition of other enterprises are not</b> business process innovations in their own right. Mergers and acquisitions can drive business process innovations, however, if the firm develops or adopts a new business process as a result of the merger or for the purpose of improving the success of the merger or acquisition.</p> <p><b>Ceasing to use a business process, ceasing to outsource a business process, or withdrawing a product from the market</b> are not innovations. However, the first implementation of business processes to determine when an activity should cease could meet the requirements for an innovation.</p> <p>A change due to <b>externally determined factor prices</b> is unlikely to represent an innovation. For example, an innovation does not occur when the same model of a mobile phone is constructed and sold at a lower price simply because the price of a video processor chip falls.</p> <p>The formulation of a <b>new corporate or managerial strategy</b> is not an innovation if it is not implemented. Furthermore, a change in a business process is not an innovation if it is already in use in an identical form in other divisions of the firm.</p>
<p><b>Innovative enterprise</b></p>	<p><b>An innovative enterprise</b> reports one or more innovations within the observation period. Included are both enterprises that have developed an innovation by themselves and enterprises that have done it in co-operation.</p>

Definition	Explanation
	<p>During the observation period, any given innovation activity of the firm can:</p> <ul style="list-style-type: none"> <li>• result in an innovation. The innovation activity can consequently cease during the observation period after implementation or it could still be ongoing if it is undertaken for other innovation projects;</li> <li>• be ongoing without an innovation. Work can still be in progress and proceeding according to plan, or delayed due to various reasons (e.g. technical difficulties or a shortage of expertise or finance);</li> <li>• be aborted, discontinued or put on hold, for instance, when activities to develop an innovation are stopped before implementation.</li> </ul> <p>A non-innovative firm reports no innovations within the observation period.</p> <p>An innovation-active firm is engaged at some time during the observation period in one or more activities to develop or implement new or improved products or business processes for an intended use. Both innovative and non-innovative firms can be innovation-active during an observation period.</p>
<b>Research and development (R&amp;D)</b>	<p>Research and development is systematic activity to acquire new knowledge and use available knowledge to devise new applications. The applications may be either new or significantly improved products (goods/services) or processes (including, e.g. software development). In-house research and development activities are performed by the enterprise's own staff.</p> <p><b>Research and development as an innovation activity:</b> by definition, applied research is directed towards a specific practical aim or objective, while experimental development seeks to produce new products or processes or to improve existing products or process. Hence, there is an intention for innovation. Although basic research to enlarge a firm's knowledge stock may not be used to pursue specific innovations during the observation period, for practical reasons, all types of R&amp;D carried out or paid for by business enterprises are considered by definition as innovation activities of those firms.</p>
<b>Turnover</b>	<p>Turnover is income received or to be received from sales of all products, goods and services which have been produced or provided as part of principal or ancillary activity, or purchased for resale, excluding VAT and excises and is calculated on accrual basis accounting. Turnover is equal to income received or to be received and is calculated on accrual basis accounting. Revenue is recorded as soon as goods are transferred or services rendered.</p> <p>Turnover includes charges for packaging, as well as commissions, agency fees.</p>

## QUESTIONS AND EXPLANATIONS

Table / question code	Question	Explanation
1.1.	<b>ENTERPRISE GROUP</b>	If your enterprise is part of an enterprise group, please submit data only about your enterprise. Do not add data on subsidiaries or group head (either in Estonia or abroad).
A1	<b>Was your enterprise part of an enterprise group in 2020?</b>	<p>The data have been pre-filled on the basis of the information in the statistical profile, based on the Business Register. If you are also a respondent of the EKOMAR survey, make sure that the characteristic of being part of an enterprise group is indicated in the same way in both surveys. If necessary, you can edit the pre-filled data.</p> <p>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.</p> <p><b><i>If you answered "NO" to question A1, go to question B1.</i></b></p>

Table / question code	Question	Explanation
A2	<p><b>During 2018–2020, did your enterprise engage in any of the following activities with one or more enterprises of your enterprise group?</b></p> <p><b>Inflows from other enterprises in your group ...</b></p> <ul style="list-style-type: none"> <li>• technical knowledge</li> <li>• financial resources</li> <li>• personnel</li> <li>• in-sourcing of business activities</li> </ul> <p><b>Outflows to other enterprises in your group ...</b></p> <ul style="list-style-type: none"> <li>• technical knowledge</li> <li>• financial resources</li> <li>• personnel</li> <li>• out-sourcing of business activities</li> </ul>	<p>Indicate whether there was co-operation with enterprises in your enterprise group in Estonia or other countries. If there was no co-operation, select “No”.</p>
A3	<p><b>During 2018–2020, did your enterprise try to obtain funding or received funding in the form of intra-group loans?</b></p> <p>If your enterprise obtained funding in the form of intra-group loan, then was at least part of the funding used for R&amp;D or other innovation activities?</p>	<p>Research and Development (R&amp;D) is systematic activity to acquire new knowledge and use available knowledge to devise new applications. Often, the main component of R&amp;D is the design of prototypes.</p>
2.1.	<b>STRATEGIES AND BUSINESS ENVIRONMENT</b>	
B1	<p><b>During 2018–2020, how important were the following strategies to the economic performance of your enterprise? Focus on ...</b></p> <ul style="list-style-type: none"> <li>• 1a) improving your existing goods or services</li> <li>• 1b) introducing new goods or services</li> <li>• 2a) low-price (price leadership)</li> <li>• 2b) high-quality (quality leadership)</li> <li>• 3a) a broad range of goods or services</li> <li>• 3b) one or a small number of key goods or services</li> <li>• 4a) satisfying established customer groups</li> <li>• 4b) reaching out to new customer groups</li> <li>• 5a) standardised goods or services</li> <li>• 5b) customer-specific solutions</li> </ul>	<p><b><i>Strategic activities are listed in pairs (e.g. 1a and 1b). This helps to understand the activities better.</i></b></p> <p>Price leadership refers to a situation where the leading enterprise of an area has enough impact in its sector to determine for the market the prices of goods or services.</p> <p>Standardised products are ready-made solutions for a wider customer base.</p> <p>Customer-specific solutions are products adapted to client needs, special-order products, special solutions, tailoring of and changes to standardised solutions to meet client needs.</p>
B2	<p><b>During 2018–2020, to what extent do the following characteristics describe the conditions faced by your enterprise?</b></p> <ul style="list-style-type: none"> <li>• goods or services become outdated quickly</li> <li>• future technological developments are difficult to predict</li> <li>• competitor goods or services are easily substituted</li> <li>• with those of your enterprise</li> <li>• entry of new competitors leads to a major threat of your enterprises' market position</li> <li>• competitor's actions are difficult to predict</li> <li>• changes in demand are difficult to predict</li> <li>• strong competition from abroad</li> <li>• price increases lead to loss of clients</li> </ul>	



Table / question code	Question	Explanation
B3	<p><b>During 2018–2020, which of the following products did your enterprise produce or deliver?</b></p> <ul style="list-style-type: none"> <li>standardised products offered to different users in the same way. This includes mass customisation.</li> <li>goods or services designed and developed specifically to meet the needs of particular users (customisation)</li> <li>goods or services co-created with users; i.e. the user had an active role in the creation of the idea, design and development of the product (co-creation)</li> </ul>	<p><b>Product = good or service</b></p> <p><i>A user is not necessarily an end user but can also be an intermediary, e.g. the entity placing the order.</i></p> <p><b>Standardised products</b> are ready-made solutions for a wider customer base.</p> <p><b>Customer-specific solutions</b> are products adapted to client needs, special-order products, special solutions, tailoring of and changes to standardised solutions to meet client needs. Customisation differs from co-creation in that the client only informs of his or her needs and is not involved in developing new products or solutions.</p> <p><b>Co-creation</b> is a process where a product or service is designed and developed together with the users, i.e. with existing or potential clients. In co-creation, there is an active dialogue with the users of a product or service. They may give new ideas or development suggestions that the enterprise had not considered.</p>
3.1.	<b>INTELLECTUAL PROPERTY</b>	
C1	<p><b>During 2018–2020, did your enterprise ...?</b></p> <ul style="list-style-type: none"> <li>claim a copyright</li> <li>use trade secrets</li> </ul>	<p><b>Copyright</b> subsists in literary, artistic and scientific works. Works are any original results in the literary, artistic or scientific domain which are expressed in an objective form and can be perceived and reproduced. The author owns moral and economic rights.</p> <p><b>Trade secret</b> is applied to the enterprise's intellectual property that cannot be protected with patents or copyright. The protection of trade secret is, for example, the inclusion of confidentiality clauses at the start of a new business relationship; confidentiality agreements with employees, researchers or trainees; provisions on the protection of trade secret in employment contracts and internal rules. A trade secret is a formula, practice, process, commercial method, etc., which is unknown to other market participants and which gives an enterprise an economic advantage over its competitors.</p>
C2	<p><b>During 2018–2020, did your enterprise ...?</b></p> <ul style="list-style-type: none"> <li>license out its intellectual property rights to others</li> <li>sell its own intellectual property rights (or assign IP rights) to others</li> <li>exchange intellectual property rights (pooling, cross-licensing, etc.)</li> </ul>	<p><b>Licensing</b> is a transaction whereby one person (the licensor) grants another person (the licensee) the right to exercise intellectual property rights to an agreed extent and on an agreed territory, while the licensee undertakes to pay for it (licence fee).</p> <p><b>Intellectual property</b> is trademarks, patents, designs, utility models.</p> <p><b>Cross-licensing</b> means that two or more companies exchange licences for their patents.</p>
C3	<p><b>During 2018–2020, did your enterprise purchase or license-in patents or other IPRs?</b></p> <p><b>If you answered "Yes" to that question, then from whom?</b></p> <ul style="list-style-type: none"> <li>private business enterprises or individuals</li> <li>public research organisations, universities or other higher education institutions</li> </ul>	<p><b>A patent</b> is one of the forms of legal protection for inventions, which refer to technical solutions designed to solve technical problems. Discoveries, organisational solutions and business ideas are not considered as inventions and cannot be patented.</p> <p><b>Intellectual property</b> includes trademarks, patents, designs, utility models.</p> <p><i>Tick all that apply.</i></p>
C4	<p><b>During 2018–2020, did your enterprise purchase machinery, equipment or software based on ...?</b></p> <ul style="list-style-type: none"> <li>the same or improved technology used in your enterprise before</li> <li>new technology that was not used in your enterprise before</li> </ul>	

Table / question code	Question	Explanation
4.1.	<b>IMPACTS OF CLIMATE CHANGE FOR BUSINESS ACTIVITIES</b>	
D1	<p><b>During 2018–2020, how important were the following factors related to climate change for your business?</b></p> <p>Please assess the importance of each factor:</p> <ul style="list-style-type: none"> <li>• government policies or measures related to climate change</li> <li>• increasing customer demand for products that help mitigate or adapt to climate change (e.g. low-carbon products)</li> <li>• increasing costs or input prices resulting from climate change (e.g. higher insurance fees, higher prices for water, adaptation of processes or facilities)</li> <li>• impacts of extreme weather conditions (e.g. damages/disturbances)</li> </ul>	<p>Climate change may impact enterprise's business activities also outside Estonia.</p> <p>If impacts of climate change were not relevant, select the option <b>"Had no effect / was not relevant"</b>.</p>
5.1.	<b>PRODUCT INNOVATION</b>	
E1	<p><b>During 2018–2020, did your enterprise introduce any ...?</b></p> <ul style="list-style-type: none"> <li>• new goods</li> <li>• new services</li> </ul> <p><b>During 2018–2020, did your enterprise introduce any ...?</b></p> <ul style="list-style-type: none"> <li>• improved goods</li> <li>• improved services</li> </ul>	<p>Excluding the simple re-sale of new goods and changes of a solely aesthetic nature.</p> <p>A new good or service may be a completely new product that the enterprise has not offered before. Also, a product that was substantially upgraded during product innovation could be considered a new good or service.</p> <p>A good is usually a material object, such as a smart phone, furniture item or packaged software, but also software, music and films that can be downloaded. A service is as a rule immaterial, such as retail trade, insurance, study courses, travel services, consultations, etc.</p> <p><b>Improvement</b> means making small changes in existing products (goods or services). Improvement is also when an enterprise creates an improved version of a product or improves existing products (goods or services) gradually in a specific direction, improves its characteristics of use, etc.</p> <p><b>An improved product</b> is also a solution that is already widely used but is new for your enterprise. As a result of improvement, a characteristic or usage of a product should change. During improvement, new functions may be added or the existing ones may be improved, e.g. quality, durability, efficiency of use, affordability, convenience, user-friendliness, etc. An improvement of a product does not mean that all functions or usages of the product should be improved.</p> <p><i>IF YOU ANSWERED "NO" TO ALL QUESTION E1 OPTIONS, GO TO QUESTION F1.</i></p>
E2	<p><b>During 2018–2020, were any of the new or improved products ...?</b></p> <ul style="list-style-type: none"> <li>• not previously offered by any of your competitors</li> <li>• identical or very similar to products already offered by your competitors</li> </ul>	<p>Competitors are considered with regard to the enterprise's entire market, irrespective of whether the enterprise is active on the Estonian market.</p>

Table / question code	Question	Explanation
E3	<p><b>Please estimate the percentage of your enterprise's total turnover in 2020 from products that were new or improved in 2018–2020? Please fill in at least items 1 and 2 (Total 100%)</b></p> <ul style="list-style-type: none"> <li>• 1. new or improved products <ul style="list-style-type: none"> <li>• a) products not previously offered by any of your competitors</li> <li>• b) products identical or very similar to products already offered by your competitors</li> </ul> </li> <li>• 2. standardised products</li> </ul>	<p><i>Please note that: row 1 + row 2 = 100% and row a + row b = 1.</i></p>
E4	<p><b>Who developed these product innovations?</b></p> <ul style="list-style-type: none"> <li>• your enterprise by itself</li> <li>• your enterprise together with other enterprises or organisations</li> <li>• your enterprise by adapting or modifying products originally developed by other enterprises or organisations</li> <li>• other enterprises or organisations</li> </ul>	<p><b>Tick all that apply.</b></p> <p>If your enterprise is part of an enterprise group, the other enterprises may be either enterprises in your group of enterprises as well as enterprises that are not in your enterprise group.</p>
6.1.	<b>BUSINESS PROCESS INNOVATION</b>	
F1	<p><b>During 2018–2020, did your enterprise introduce any of the following types of new processes or improved processes that differ significantly from your previous processes?</b></p> <ul style="list-style-type: none"> <li>• methods for producing goods or providing services (including methods for developing goods or services)</li> <li>• logistics, delivery or distribution methods</li> <li>• methods for information processing or communication (ICT)</li> <li>• methods for accounting or purchasing operations</li> <li>• business practices for organising procedures or external relations</li> <li>• methods of organising work</li> <li>• responsibility, decision making or human resource management</li> <li>• marketing methods for promotion, packaging, pricing, product placement, after sales services, etc.</li> </ul>	<p><b>A business process innovation</b> is the adoption of a new or significantly improved production process, delivery method or production support process. Innovation must be new to your enterprise but your enterprise does not necessarily have to be the first to adopt this innovation in the market area. It is not important whether the innovation was developed in your enterprise or in other enterprises or organisations.</p> <p>The result of process innovation might be a simpler, cheaper and more user-friendly (e.g. less waiting) business process. A change in the process may also be minor, but if it has a great impact on the result, it is definitely considered process innovation.</p> <p><b>Methods for accounting or purchasing operations</b> include accounting, auditing, financial and insurance activities, payments; procurements and purchasing.</p> <p><b>Methods for producing goods or providing services</b> include the enterprise's core processes, i.e. the production of goods or provision of services, which involve turning the input into goods or services. Also includes engineering activities and technical testing, analysis and certification supporting production. If the enterprise's core process is in an area about which there are separate questions (e.g. logistics, ICT, accounting, etc.), updating the core process should be reported as a rule on the row "core process", not on the row of the enterprise's activity.</p> <p><b>Methods for information processing or communication (ICT)</b> include the provision of services related to electronic equipment and systems in the area of information and communication technology (ICT), web hosting, data processing and databases, data transmission and other information activities related to computers.</p> <p><b>Organisation of business processes</b> is e.g. the implementation of supply chain management, quality management, cost-efficient production or other management systems.</p> <p><b>Methods of organising work responsibility, decision making or human resource management</b> include personnel recruitment, training, workplace organisation, payroll management.</p>

Table / question code	Question	Explanation
		<p><b>Marketing methods for promotion, packaging, pricing, product placement, after sales services, etc.</b> Also includes direct marketing (telemarketing), fairs, market research, customer support.</p> <p><b>IF YOU ANSWERED "NO" TO ALL QUESTION F1 OPTIONS, GO TO QUESTION G1.</b></p>
F2	<p><b>Who developed these process innovations?</b></p> <ul style="list-style-type: none"> <li>• your enterprise by itself</li> <li>• your enterprise together with other enterprises or organisations</li> <li>• your enterprise by adapting or modifying processes originally developed by other enterprises or organisations</li> <li>• other enterprises or organisations</li> </ul>	<p>Tick all that apply.</p> <p><b>If your enterprise is part of an enterprise group, the other enterprises may be either enterprises in your group of enterprises as well as enterprises that are not in your enterprise group.</b></p>
7.1.	<b>INNOVATION AND RESEARCH AND DEVELOPMENT (R&amp;D)</b>	
G1	<p><b>During 2018–2020, did your enterprise have ...?</b></p> <ul style="list-style-type: none"> <li>• completed activities on product or process innovation</li> <li>• ongoing innovation activities at the end of 2020</li> <li>• abandoned innovation activities</li> <li>• R&amp;D contracted out to other enterprises (include enterprises in your own group) or to public or private research organisations</li> <li>• in-house research and development (R&amp;D) activities</li> </ul> <p><b>If your company had in-house R&amp;D in 2018–2020, was R&amp;D in your enterprise occasional or continuous?</b></p> <ul style="list-style-type: none"> <li>• continuous, your enterprise had permanent R&amp;D staff</li> <li>• occasional</li> </ul>	<p><b>Innovation</b> is a new or significantly improved product (good or service) introduced to the market, also the adoption of a new or significantly improved production process in the enterprise. Innovation activities do not always have to result in the introduction of a new product or service to the market or in an improvement of a completed production process. Innovation activities may be abandoned or suspended for several reasons before reaching the final result.</p> <p><b>Completed innovation</b> activities refer to innovations that were completed by the end of 2020 but did not result in their introduction, because they concerned only a part of a new or improved product, or because the introduction is foreseen to happen after 2020.</p> <p><b>Ongoing innovation</b> activities refer to the innovation activities that were not completed by the end of the reference period.</p> <p><b>Abandoned innovation</b> activities refer to innovation activities that were stopped before completion.</p> <p><b>Research and Development (R&amp;D)</b> is systematic activity to acquire new knowledge and use available knowledge to devise new applications. Often, the main component of R&amp;D is the design of prototypes.</p> <p><b>If you answered "NO" to all options in questions E1, F1 and G1, go to question H1.</b></p>
G2	<p><b>In 2020, did your enterprise have any of the following types of expenditure on innovations and research and development (R&amp;D)?</b></p> <ul style="list-style-type: none"> <li>• R&amp;D performed in-house</li> <li>• R&amp;D contracted out (including enterprises in own enterprise group)</li> <li>• all other innovation expenditures (excluding R&amp;D)</li> </ul> <p><b>If your enterprise had all other innovation expenditures (except R&amp;D expenditure) in 2020, what were these expenditures?</b></p> <ul style="list-style-type: none"> <li>• expenditures on own personnel working on innovation</li> <li>• expenditures on services, materials, supplies purchased from others for innovation</li> <li>• expenditures on fixed assets for innovation (acquisition of machinery, equipment, software, IPRs, buildings etc.)</li> </ul>	<p>Note that question G2 concerns only <u>expenditures on innovations and research and development (R&amp;D)</u> in 2020.</p> <p><b>Research and Development (R&amp;D)</b> is systematic activity to acquire new knowledge and use available knowledge to devise new applications. Often, the main component of R&amp;D is the design of prototypes.</p> <p><b>In-house R&amp;D expenditure</b> is intellectual property licence fees, expenditure on usual research equipment used during R&amp;D activities and property, plant and equipment related to R&amp;D activities. Also includes expenditure on design and software development. Design and software development may also be a part of R&amp;D if the results achieved are used in R&amp;D projects and their results are unclear.</p> <p>Enterprises that perform R&amp;D and other innovation activities as a service to other enterprises should report the relevant expenditure under total expenditures. Consider as innovation expenditure only the costs incurred for the enterprise's own innovations.</p>

Table / question code	Question	Explanation
		<p>Expenditure on personnel involved in innovation is costs related to personnel training. Includes costs of outsourced courses, travel and accommodation during training, cost of study materials, labour costs related to in-house training, administrative costs of in-house training centres and other innovation costs. Personnel training costs should not include training costs of clients and other persons who do not work in the enterprise as well as vocational training costs (e.g. on training apprentices).</p> <p><b>Expenditures on fixed assets for innovation</b> activities cover costs of acquiring tangible and intangible capital goods, for example, machinery, equipment, buildings, plots of land, capitalised software and other capital goods. Does not include acquisition of fixed assets, which is reported under in-house R&amp;D expenditure. It includes, however, capitalised assets produced by the enterprise itself (e.g. capitalised software, capitalised development costs), excluding R&amp;D.</p>
8.1.	<b>FUNDING</b>	
H1	<p><b>During 2018–2020, did your enterprise try to obtain or obtained funding in exchange for shares in the ownership of the enterprise?</b></p> <ul style="list-style-type: none"> <li>• Yes, successfully</li> <li>• Tried, but not successful</li> <li>• No</li> </ul> <p><b>If your enterprise obtained funding in the form of loans or subsidies, then was at least part of the funding used for R&amp;D or other innovation activities?</b></p>	<i>Tick the most relevant.</i>
H2	<p><b>During 2018–2020, did your enterprise try to or obtained funding in the form of loans?</b></p> <ul style="list-style-type: none"> <li>• Yes, successfully</li> <li>• Tried, but not successful</li> <li>• No</li> </ul> <p><b>If your enterprise obtained funding in the form of loans, then was at least part of the funding used for R&amp;D or other innovation activities?</b></p>	<p>Also includes sale of bonds, overdraft facilities, leasing. Supplier credit is excluded.</p>
H3	<p><b>During 2018–2020, did your enterprise receive any financial support from ...?</b></p> <ul style="list-style-type: none"> <li>• a local authority</li> <li>• national government</li> <li>• EU Horizon 2020 Programme for Research and Innovation</li> <li>• financial support from other European Union institution</li> </ul> <p><b>If you answered "Yes", then was at least part of the funding used for R&amp;D or other innovation activities?</b></p>	<p><b>Financial support</b> is subsidised loans, loan guarantees and financial support through grants. This does not include sums received for research and development or other innovation activities contracted by the national government.</p> <p><b>Financial support</b> received from the national government, incl. co-financed support from the European Union structural funds, national support allocated by foundations or ministries.</p> <p><b>Financial support received from another European Union institution.</b> Co-financed support from the European Union structural funds, which is allocated by ministries or foundations, is not included.</p>
9.1.	<b>CO-OPERATION</b>	
I1	<p><b>During 2018–2020, did your enterprise co-operate with other enterprises or organisations ...?</b></p> <ul style="list-style-type: none"> <li>• a) on research and development (R&amp;D)</li> <li>• b) on other innovation activities (excluding R&amp;D)</li> <li>• c) in any business activities other than innovation and R&amp;D</li> </ul>	<p>Co-operation is active participation with other enterprises or organisations. Partners do not need to commercially benefit.</p> <p><i>If you answered 'NO' to options a) and b) in question I1, go to question J1.</i></p>

Table / question code	Question	Explanation
I2	<p><b>Please indicate the innovation co-operation partners of your enterprise by location</b></p> <ul style="list-style-type: none"> <li>• non-profit organisations</li> <li>• clients or customers from the public sector</li> <li>• government or public research institutes (excluding your customers)</li> <li>• universities or other higher education institutions</li> <li>• enterprises within your enterprise group</li> <li>• Private business enterprises outside your enterprise / enterprise group:</li> <li>• consultants, commercial labs, or private research institutes</li> <li>• suppliers of equipment, materials, components or software</li> <li>• enterprises that are your clients or customers</li> <li>• enterprises that are your competitors</li> <li>• other enterprises</li> </ul>	<p><i>Tick all that apply.</i></p> <p>European Union (EU), excluding Estonia: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, and the United Kingdom.</p> <p>EFTA: Iceland, Liechtenstein, Norway, Switzerland</p>
10.1.	<b>OBSTACLES</b>	
J1	<p><b>During 2018–2020, how did the following types of legislation or regulation affect your enterprises' innovation activities?</b></p> <ul style="list-style-type: none"> <li>• product safety, consumer protection</li> <li>• environmental</li> <li>• intellectual property</li> <li>• tax</li> <li>• employment, worker safety or social affairs</li> <li>• data protection</li> </ul>	<p>Legislation in force in Estonia, the European Union as well as outside the European Union is taken into account.</p> <p>A legal act may have several effects on innovation activities. For example, if consumer protection facilitated one innovation but hampered another, both options should be selected.</p>
J2	<p><b>During 2018–2020, how important were the following factors in hampering your enterprises' innovation activities?</b></p> <ul style="list-style-type: none"> <li>• lack of internal finance for innovation</li> <li>• lack of credit or private equity</li> <li>• difficulties in obtaining public grants or subsidies</li> <li>• innovation involves high costs</li> <li>• lack of skilled employees within your enterprise</li> <li>• lack of collaboration partners</li> <li>• lack of access to external knowledge</li> <li>• uncertain market demand for your ideas</li> <li>• too much competition in your market</li> <li>• different priorities within your enterprise</li> </ul>	<p>Evaluation of hampering factor regardless of whether the innovation was completed, abandoned, or there was no innovation.</p> <p>Importance of hampering factor – high, medium, low, not a constraint</p> <p>Select one for each hampering factor.</p>
11.1.	<b>ENVIRONMENTAL INNOVATION ACTIVITIES</b>	
K1	<p><b>During 2018–2020, did your enterprise introduce innovations with any environmental benefits?</b></p> <p>If yes, was their contribution to environmental protection rather significant or insignificant?</p> <p><b>Environmental benefits obtained within your enterprise</b></p> <ul style="list-style-type: none"> <li>• reduced material or water use per unit of output</li> <li>• reduced energy use or CO<sub>2</sub> 'footprint' (i.e. reduced total CO<sub>2</sub> emission)</li> <li>• reduced soil, noise, water or air pollution</li> </ul>	<p><b><i>Environmental innovation is a new or improved product (good or service) or process with environmental benefits.</i></b></p> <p><b><i>If your enterprise have not implemented any environmental innovations, choose „No“ to every option.</i></b></p>

Table / question code	Question	Explanation
	<ul style="list-style-type: none"> <li>• replaced a share of materials with less polluting or hazardous substitutes</li> <li>• replaced a share of fossil energy with renewable energy sources</li> <li>• recycled waste, water, or materials for own use or sale</li> </ul> <p><b>Environmental benefits obtained during the consumption or use of a good or service by the end user</b></p> <ul style="list-style-type: none"> <li>• reduced energy use or CO2 ‘footprint’</li> <li>• reduced air, water, soil or noise pollution</li> <li>• facilitated recycling of product after use</li> <li>• extended product life through longer-lasting, more durable products</li> </ul>	<p><i>If you answered "No" to all options in question K1, go to question L1.</i></p>
K2	<p><b>During 2018–2020, how important were the following factors in driving your enterprise’s decisions to introduce innovations with environmental benefits?</b></p> <ul style="list-style-type: none"> <li>• existing environmental regulations</li> <li>• existing environmental taxes, charges or fees</li> <li>• environmental regulations or taxes expected in the future</li> <li>• government grants, subsidies or other financial incentives for environmental innovations</li> <li>• current or expected market demand for environmental innovations</li> <li>• improving your enterprise’s reputation</li> <li>• voluntary actions or initiatives for environmental good practice within your sector</li> <li>• high cost of energy, water or materials</li> <li>• need to meet requirements for public procurement contracts</li> </ul>	<p>Evaluation of an impact factor regardless of whether the environmental innovation was completed or abandoned.</p> <p>Impact was:</p> <ul style="list-style-type: none"> <li>• High</li> <li>• Medium</li> <li>• Low</li> <li>• Not relevant</li> </ul>
12.1.	<b>BASIC INFORMATION ON YOUR ENTERPRISE</b>	
L1	<p><b>What was the percentage of turnover in 2020 by groups of customers?</b></p> <ul style="list-style-type: none"> <li>• turnover from customers located in Estonia</li> <li>• turnover from customers located in EU and EFTA countries</li> <li>• turnover from customers located in other countries</li> </ul>	<p><i>Please note that L1_1+L1_2+L1_3 = 100%</i></p>
L2	<p><b>Did your enterprise spend on the following items in 2020?</b></p> <ul style="list-style-type: none"> <li>• purchase of machinery, equipment, buildings and other fixed assets</li> <li>• marketing, brand building, advertising (including in-house costs and purchased services)</li> <li>• training own staff</li> <li>• product design (including in-house costs and purchased services)</li> <li>• software development, database work and data analysis (including in-house costs and purchased services)</li> <li>• registering, filing and monitoring own Intellectual Property Rights (IPRs) and purchasing or licensing IPRs from others</li> </ul>	<p><i>Spending on all the activities of the enterprise are considered, not just spending on innovation activities.</i></p> <p>If exact sums are not known, provide an approximate value.</p>

Table / question code	Question	Explanation
13.	<b>Time spent on filling out the questionnaire</b>	<b>Please estimate how much time you spent on filling out the questionnaire (incl. time spent on reading the instructions, collecting and preparing data).</b>
	Time spent in hours	Number of hours spent by all employees on filling out the questionnaire. Time spent on filling out the questionnaire includes the time spent on reading instructions, collecting and preparing the data needed to fill out the questionnaire.
	Time spent in minutes	Number of minutes spent by all employees on filling out the questionnaire. Time spent on filling out the questionnaire includes the time spent on reading instructions, collecting and preparing data. Permitted value range 0–59.

## METHODOLOGY DOCUMENTS

Oslo Manual 2018 Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition

<http://www.oecd.org/sti/oslo-manual-2018-9789264304604-en.htm>

Joseph A. Schumpeter (1883–1950), an Austrian economist, contributed to economics a dynamic and change-oriented thinking, the foundation of which was innovation. The concept of innovation developed by him is still used and has been widely accepted.

According to Schumpeter's concept, innovation is the novel use of an innovation, discovery, new or existing knowledge in the economic process. The purpose of use is the creation of a competitive advantage, in an ideal situation, even a short-term monopoly.

Innovation is brought about by entrepreneurs who drive and cause economic development.

According to Schumpeter's own words, any kind of "applying differently" is innovation in the economic sphere.