NISRA
Northern Ireland Statistics and Research Agency
Gníomhaireacht Thuaisceart Éireann um Staitisticí agus Taighde

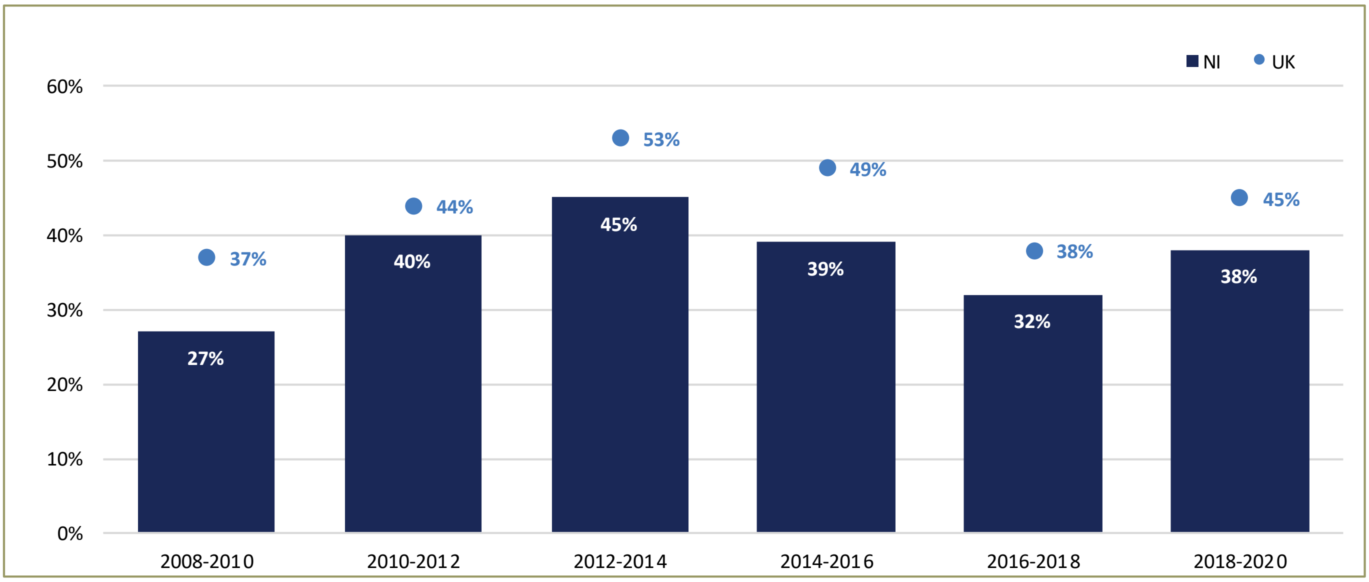
Statistical bulletin

Business Innovation Activity in Northern Ireland

NI statistics from the UK Innovation Survey (2021), covering the period 2018-2020

Innovation activity in NI has increased; just under two-fifths of businesses engaged in innovation during 2018-2020.

Chart 1: Percentage of businesses engaging in innovation activity, 2008-2010 – 2018-2020



% of innovation active businesses	% of innovation active large businesses (250+ employees)	% of innovation active SME businesses (10-249 employees)	% of wider innovation active businesses
38%	**46%**	**38%**	**28%**
UK 45%	UK 58%	UK 44%	UK 34%
2018-2020	2018-2020	2018-2020	2018-2020

This statistical bulletin reports on innovation activity in NI businesses (with 10 or more employees) in 2018-2020 using results from the UK Innovation Survey. The results show that the percentage of innovation active businesses in NI has increased during the period 2018-2020 compared to the period 2016-2018, with just under two-fifths of businesses (38%) engaging in innovation in 2018-2020 compared to just under one third (32%) of businesses in the previous period. The rate of innovation activity was lower in NI than in the UK overall, where 45% of UK businesses were innovation active in 2018-2020.

Across the UK, the percentage of innovation active businesses ranged from 38% in NI to 51% in the East of England. There has been a reported increase in innovation activity across all regions of the UK between 2016-2018 and 2018-2020.

As is the case across the UK, a higher proportion of large businesses (with more than 250 employees) in NI were innovation active (46%) than small and medium businesses (10-249 employees, 38%).

In 2018-2020, 28% of NI businesses reported engaging in wider innovation activities (see definition on page 3), compared with 34% in the UK overall.

Published 27th July 2022

Department of Finance
An Roinn Airgeadais
www.finance-ni.gov.uk

Contents

Introduction

Defining Innovation

The UK definition of innovation is based on an Organisation for Economic Co-operation and Development (OECD) definition adopted by Eurostat. This definition includes any of the four activities below, if they occurred during the survey period:

1. Introduction of a new or significantly improved product (good or service) or process.
2. Engagement in innovation projects not yet complete, scaled back, or abandoned.
3. New and significantly improved forms of organisation, business structures or practices and marketing concepts or strategies. '***Wider Innovator***'
4. Investment activities in areas such as internal research and development, training, acquisition of external knowledge or machinery and equipment linked to innovation activities.

'Innovation Active'

'Broader Innovator'

For the purpose of the UK innovation survey and in line with the European-wide Community innovation survey, a business that had engaged in ***any*** of the activities described in points 1 to 3 is defined as 'innovation active'. A business that had engaged in ***any*** of the activities described in points 1 to 4 above is defined as a 'broader innovator'.

A business that had engaged in the activity described in point 3 were classed as a 'wider innovator'. It should be noted that the questionnaire used in the current and previous survey contained 3 additional activities (to the existing 4 activities) to determine whether a respondent engaged in 'wider innovation'. Further information on this change is available on page 10 of this bulletin.

About the UK Innovation Survey (UKIS)

The survey (UKIS 2021) is the UK contribution to the twelfth Europe-wide Community Innovation Survey (CIS). The survey focusses on business adoption of innovation through new and improved products and services, investments in different types of innovation, and changes in business structures, management, design, and marketing innovations. The survey also asks businesses about the drivers which motivate innovation and barriers to innovation.

The sample selection was conducted by the Office for National Statistics (ONS) and followed very similar sampling methodology to the previous surveys. A sample boost of 1,000 businesses was made for NI to bring the NI sample to 2,379 enterprises in NI. Further details of the methodology are available on page 11.

UKIS 2021 (covering innovation activity in the three-year period from 2018 to 2020) sampled 31,928 UK businesses with **ten or more employees**. The survey was voluntary and was conducted primarily through an electronic questionnaire. Businesses that did not complete an electronic response were contacted for a telephone interview. A response was received from 13,598 businesses across the UK, 1,022 of which were NI businesses (which equated to a response rate of 43% in NI).

About this bulletin

This bulletin focusses on the Northern Ireland responses to UKIS 2021. The period covering 2008-10 was the first survey data collected using a sample based on the Standard Industrial Classification 2007 (SIC 2007). This created a break in the time series, so comparisons to surveys prior to this are not included in this bulletin.

This bulletin presents weighted data, in order to be representative of the business population. The responses were weighted to the total business population, using information from the Inter-Departmental Business Register (IDBR).

The main UK report (and accompanying statistical annex), which includes some regional analysis, is produced by the Department for Business, Energy and Industrial Strategy (BEIS) and was published on 12th May 2022. Data are made available to NISRA following the publication of the BEIS report to enable the production of this NI bulletin.

The statistics in this bulletin are used by a broad range of users with an interest in assessing and reporting on business activity within the NI economy, such as economists in the public and private sector, academics, media and the general public. The bulletin contains statistics used to measure the progress of a number of Government strategies in Northern Ireland, including the Draft Industrial Strategy and the Innovation Strategy for Northern Ireland.

We welcome feedback to help us improve and add value to these statistics.

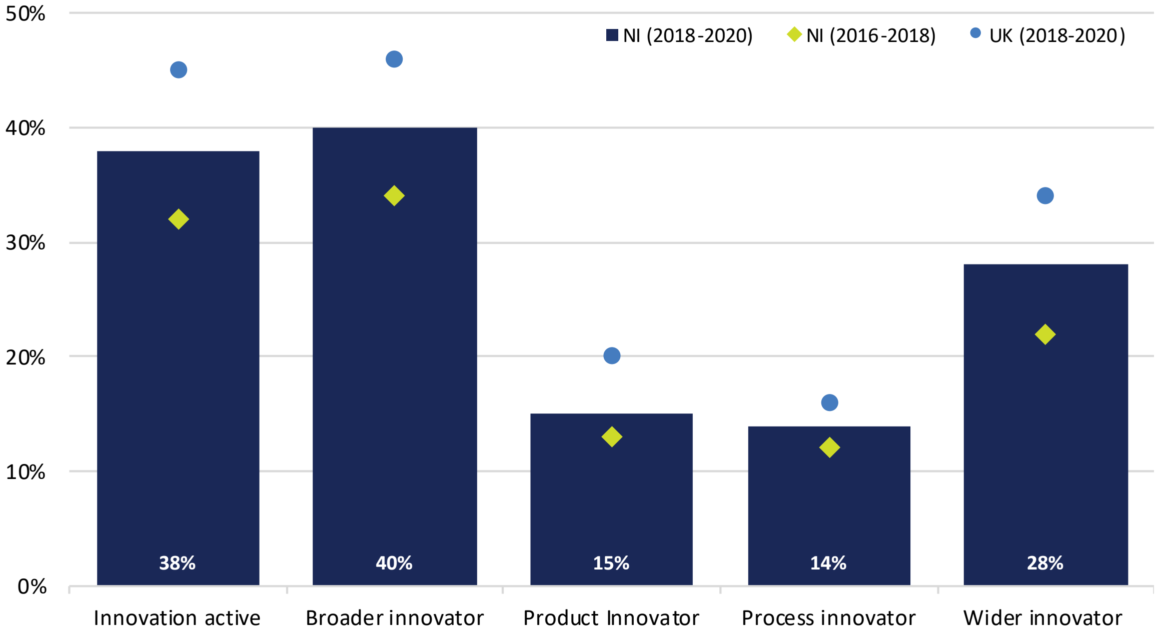
Contact: Aaron.Maguire@nisra.gov.uk.

Summary of Innovation Activity

Type of Innovation Activity

Just under two-fifths of NI businesses (38%) were innovation active in 2018-2020. This is higher than was the case in 2016-2018 (32%) but remains lower than in the UK overall during 2018-2020 (45%). In 2018-2020, 40% of NI businesses were broader innovators and 28% were wider innovators. Please refer to page 3 for the various definitions of innovation.

Chart 2: Percentage of businesses engaging in innovation by activity, NI (2016-2018, 2018-2020) and UK (2018-2020)

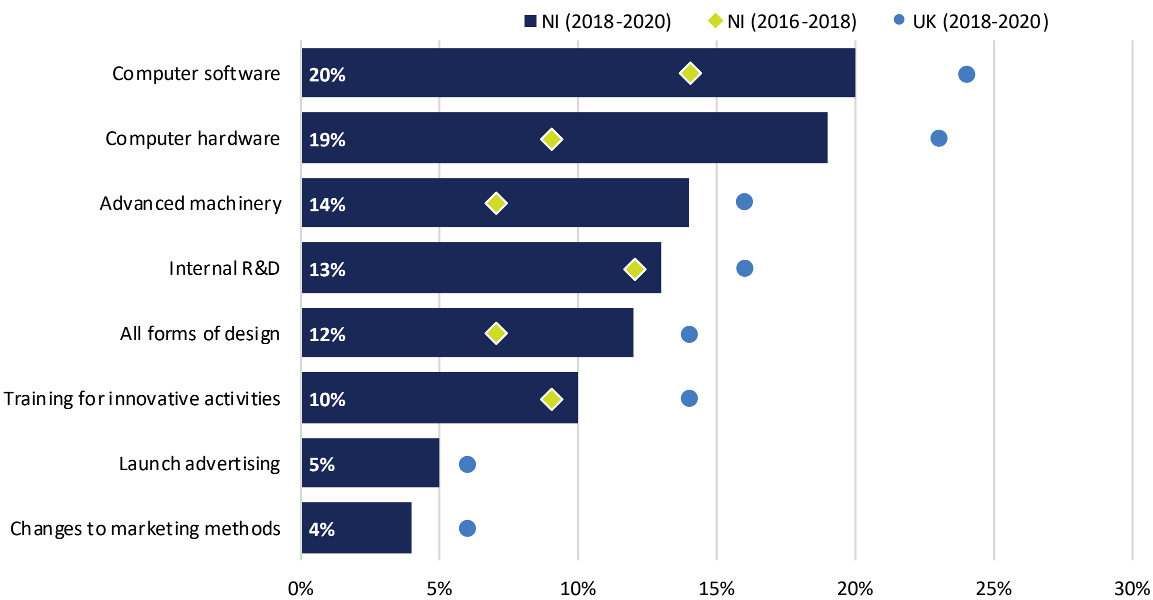


Further breakdowns of NI and UK business innovation activities are available in the Statistical Annex.

Type of Investment

Chart 3 shows that the most commonly reported innovation investment was the acquisitions of computer software (which was also the most common type of investment during 2016-2018), closely followed by computer hardware.

Chart 3: Percentage of all businesses engaging in innovation by type of investment, NI (2016-2018, 2018-2020) and UK (2018-2020)

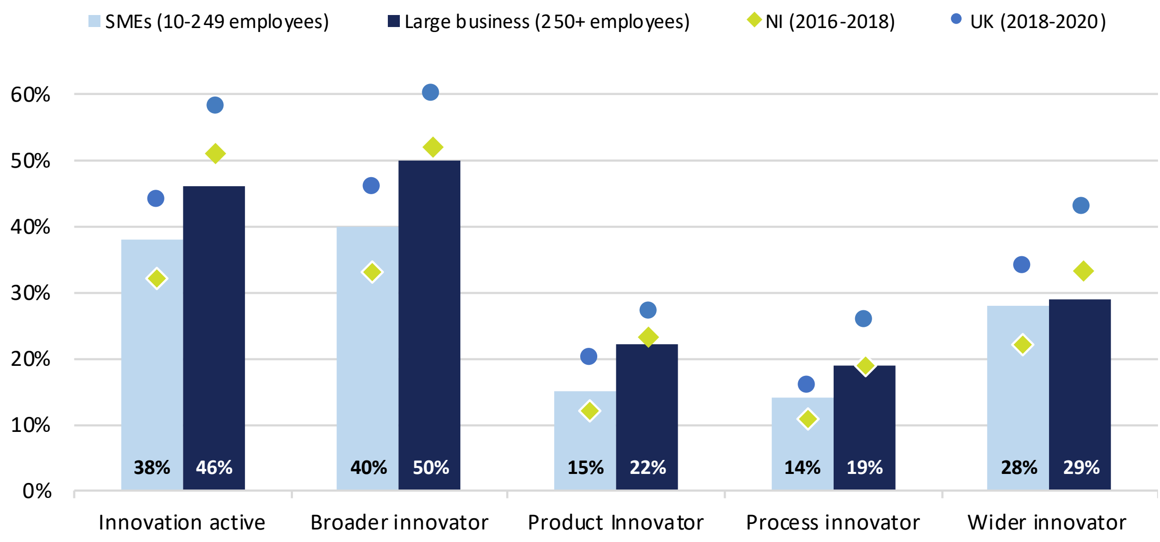


Innovation Activity by Size of Business

Large businesses were more innovation active (46%) than small and medium sized enterprises (SMEs; 38%) and Chart 4 shows that this was the case for every type of innovation activity. In the UK overall, 58% of large businesses were innovation active, compared with 44% of SMEs.

Across all activities, the level of innovation among both SMEs and large businesses tended to be lower in NI than was the case among SMEs and large businesses in the UK.

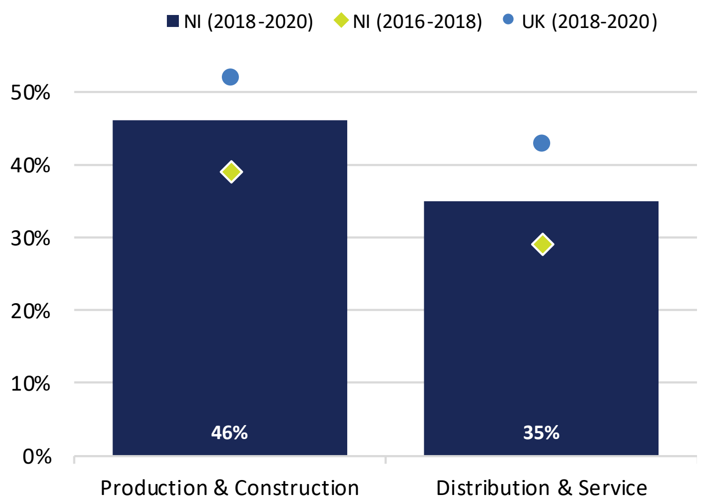
Chart 4: Percentage of NI businesses engaging in innovation by activity and company size, NI (2016-2018, 2018-2020) and UK (2018-2020)



Innovation Activity by Sector

Innovation activity was higher among businesses in Production and Construction industries than in Distribution and Service industries in NI in 2018-2020 (46% compared with 35%). In the UK overall during 2018-2020, the rate of innovation activity was 52% among businesses in Production and Construction industries and 43% among those in Distribution and Service industries.

Chart 5: Percentage of NI innovation active businesses in Production & Construction and Distribution & Service Industries, NI (2016-2018, 2018-2020) and UK (2018-2020)



Production & Construction industries include

Mining and Quarrying, Manufacture of food, clothing, wood, paper, publishing & printing, Manufacture of fuels, chemicals, plastic, metals & minerals, Manufacture of electrical and optical equipment, Manufacture of transport equipment, Manufacture not elsewhere classified, Electricity, gas & water supply, and Construction.

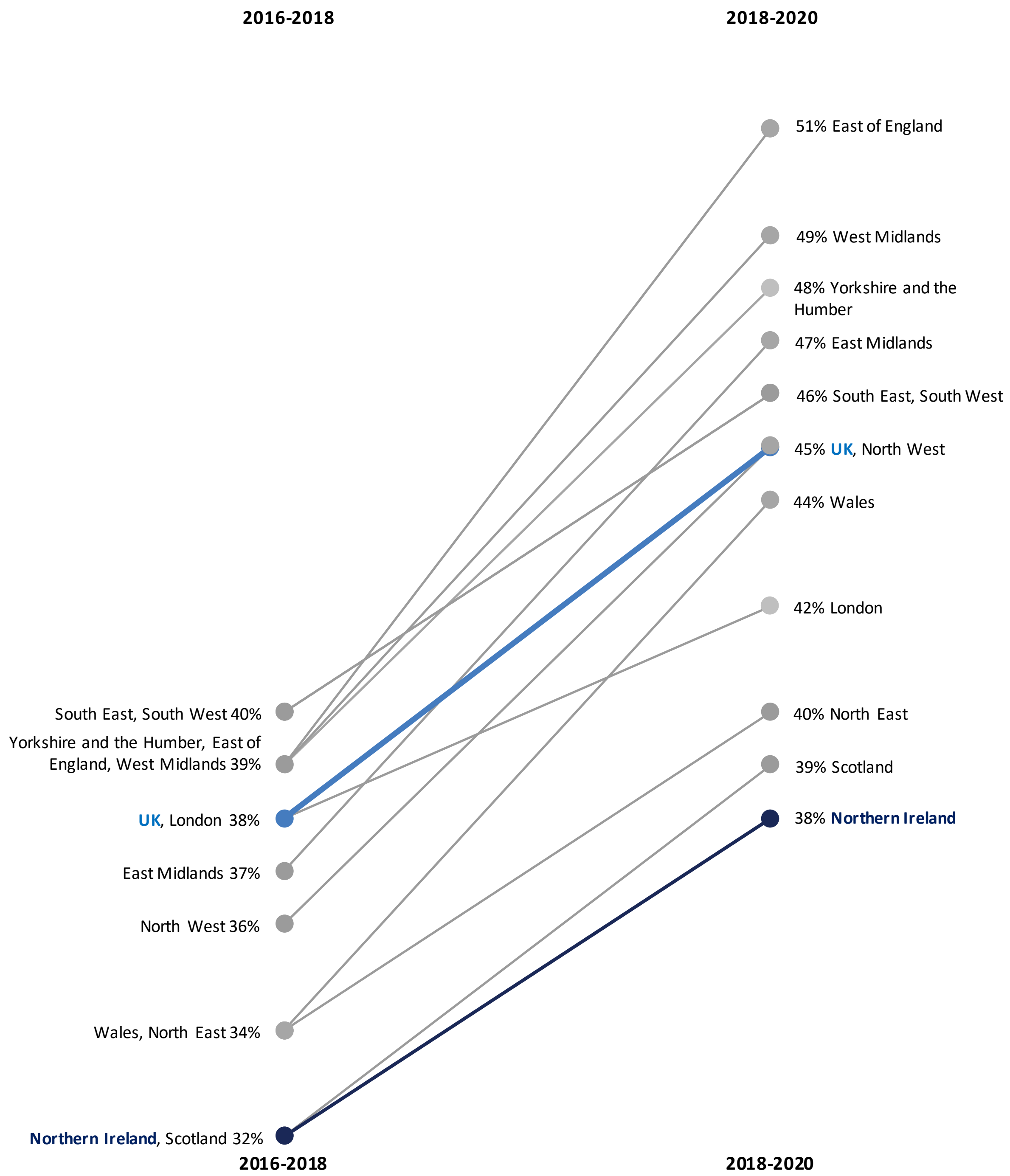
Distribution & Service industries include

Wholesale trade (including cars & bikes), Retail trade (excluding cars & bikes), Transport, storage & communication, Hotels and restaurants, Financial intermediation, Real estate, renting and business activities, and Motion Picture and Video Production.

Innovation Activity by Region

There has been a reported increase in the rate of innovation activity across all regions of the UK between 2016-2018 and 2018-2020. The largest percentage point increase (12pps) was in the East of England. Across the UK, the percentage of innovation active businesses ranged from 38% in NI to 51% in the East of England.

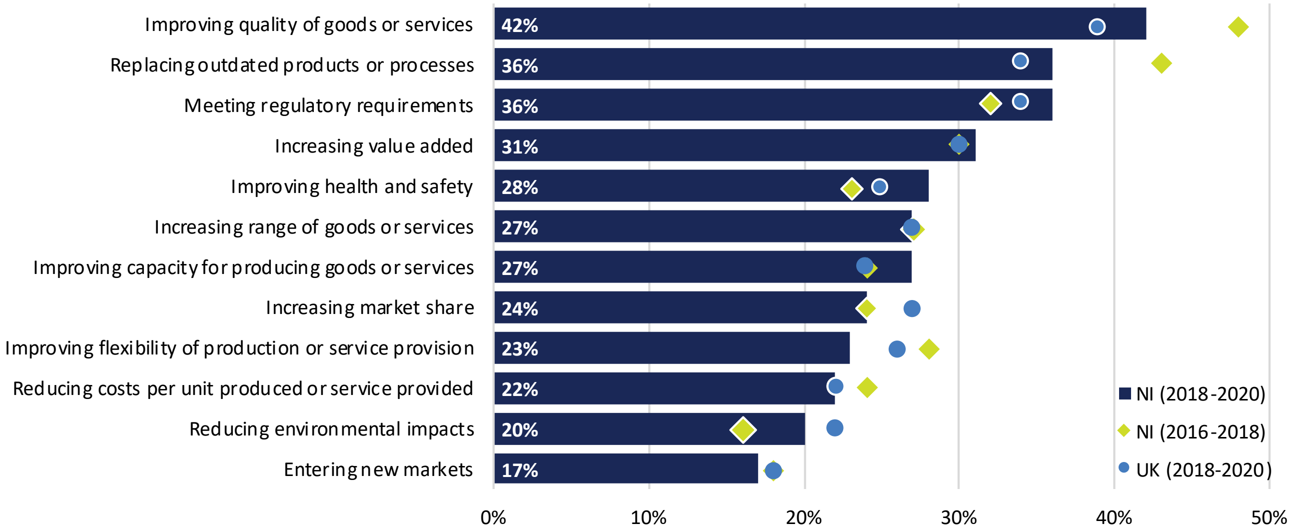
Chart 6: Percentage of innovation active businesses by UK region, 2016-2018 to 2018-2020



Factors Driving Innovation

There are a range of motivations for businesses to engage in broad forms of innovation, which may relate to firms' strategies of improving quality, reducing environmental impacts or increasing value added. In consideration of this, broader innovator businesses were asked how important each of twelve factors (presented in Chart 7) were in driving their innovation activities. The proportion of broader innovator businesses that rated each factor as 'high' in importance is presented below.

Chart 7: Innovation Factors: Percentage of NI broader innovators rating factor as of "high" importance to their decision to innovate, NI (2016-2018, 2018-2020) and UK (2018-2020)



Further breakdowns (by company size) of driving factors for innovation for both NI and the UK are available via the [Statistical Annex.](#)

'Improving quality of goods or services' remained the top-rated factor, being of 'high' importance to 42% of broader innovators in NI during 2018-2020.

In contrast, 'Reducing environmental impacts' was of 'high' importance to their decision to innovate for 20% of broader innovators, with 'entering new markets' of 'high' importance to 17%.

Similar to NI, at the overall UK level, 'improving quality of goods or services' was also the top rated factor (39% of broader innovators) and 'entering new markets' the least commonly reported driver (18%).

Non-Innovators – Reasons for not innovating

Sixty percent of NI businesses were categorised as non-innovators[1] in 2018-2020. These businesses were asked to indicate why it had not been necessary or possible to innovate. Just under one third of these businesses (30%) indicated that there was no need due to market conditions, while 13% reported that there was no need due to previous innovations. Almost half (45%) of non-innovators cited an 'other' reason (no further detail available).

Innovation Co-operation and Support

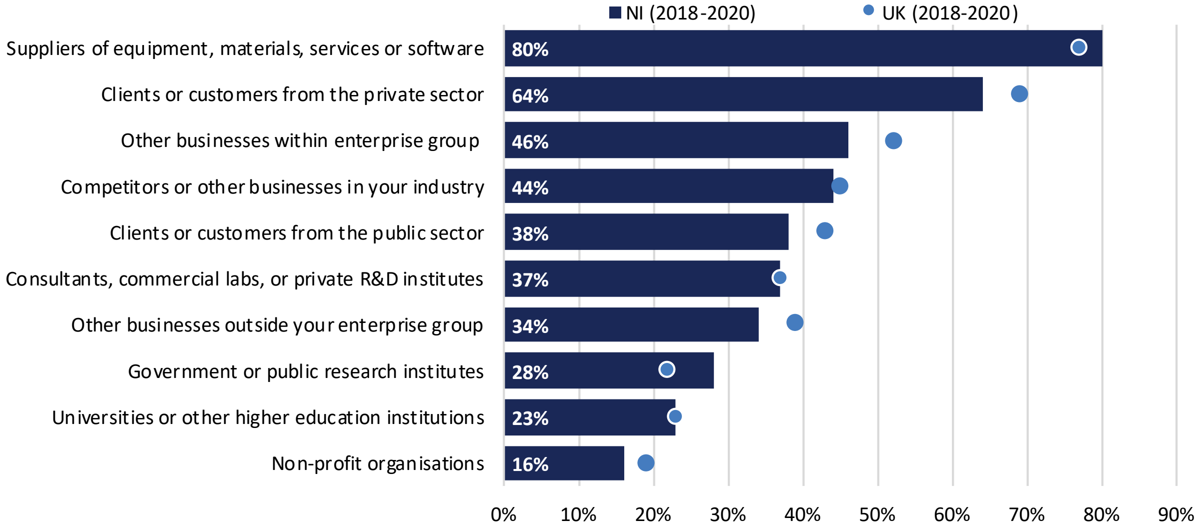
Co-operation Arrangements - Broader Innovators

Developing innovations of any kind can be a complex process and businesses may decide to work jointly with other businesses and seek access to sources of advice and information to help the creative process. Forty-six percent of broader innovative NI businesses reported having co-operation arrangements with other businesses within the enterprise group in 2018-2020 (UK, 52%).

[1] i.e. did not report conducting any of the activities which define a broader innovator (see page 3)

The most commonly reported co-operation partner in NI in 2018-2020 was with suppliers of equipment, materials, services or software (80% of broader innovators; UK, 77%). Co-operation with non-profit organisations was the least reported arrangement in NI during 2018-2020, with 16% of broader innovators reporting this (UK, 19%).

Chart 8: Percentage of NI businesses with each type of cooperation arrangement (of broader innovators with any cooperation arrangements only), NI and UK 2018-2020



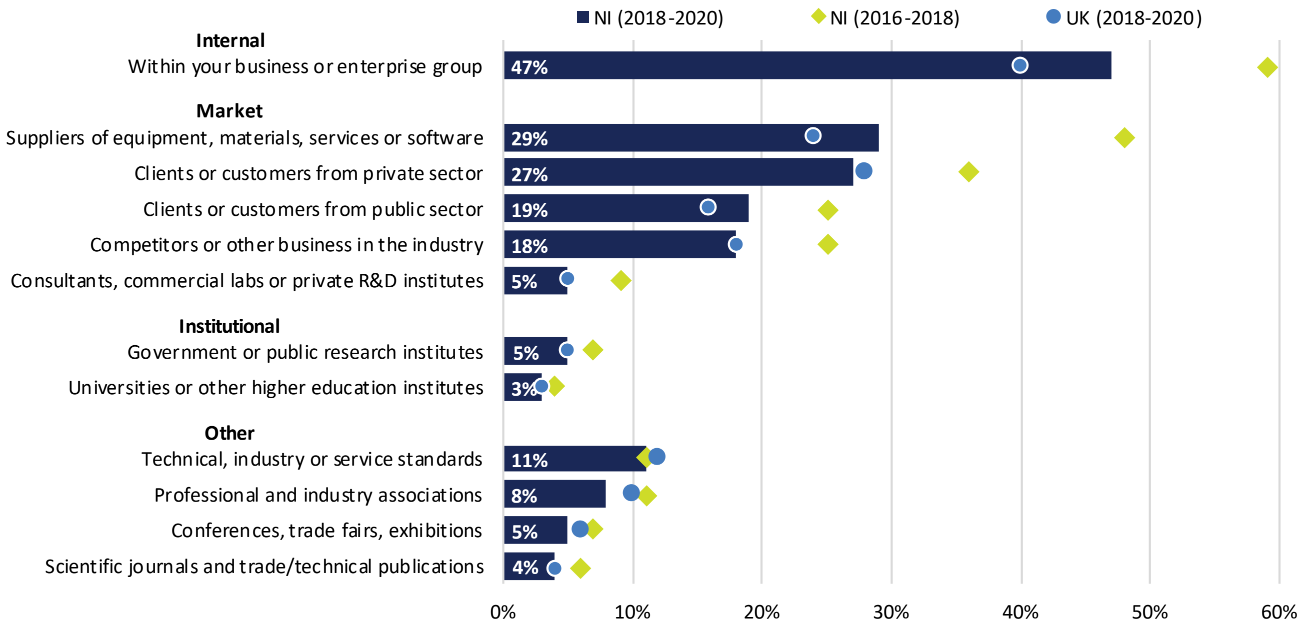
Further breakdowns (by geography of co-operation, and over time) of innovation co-operation in NI and the UK are available via the [Statistical Annex.]

Information Sources Used - Broader Innovators

Broader innovators were asked to rate the importance of a range of information sources to their innovation activities. Just under half of broader innovators in NI (47%) felt that information from within their business or enterprise group was highly important to its innovation activities during 2018-2020. This was higher than in the UK overall (40%).

Around three in ten (29%) of NI broader innovators reported that information from suppliers was highly important, which was also higher than in the UK overall (24%).

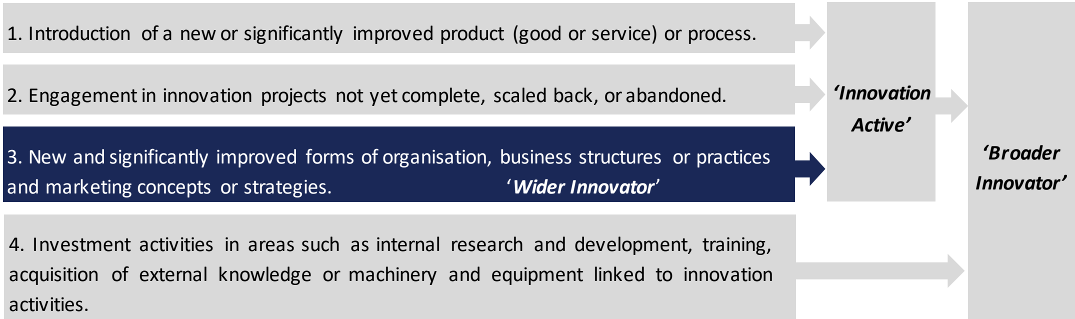
Chart 9: Percentage of broader innovator businesses rating the importance of information sources as 'high', NI (2016-2018, 2018-2020) and UK (2018-2020)



Further breakdowns (by size of business and over time) are available via the [Statistical Annex.]

Wider Forms of Innovation

Innovation is not wholly about the development or use of technology or other forms of product or process change. Enterprises can also change their behaviour or business strategies to make themselves more competitive, often in conjunction with product or process innovation, but also as an independent means of improving competitiveness.

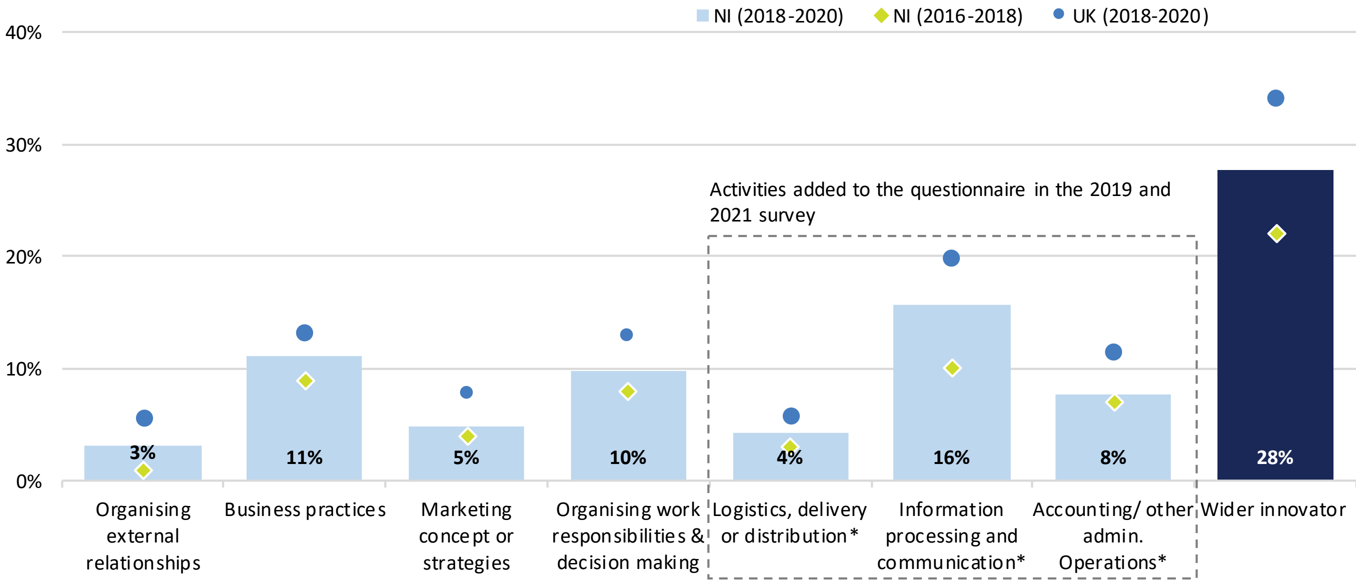


Enterprises were asked whether they had made major changes to their business structure and practices in the three-year period (2018-2020). Headline results are summarised in Chart 10. Over one-quarter of NI businesses (28%) reported any of the wider innovation activities in 2018-2020 (34% in the UK overall).

It should be noted that the questionnaire used in the 2019 and 2021 surveys (which covered the periods 2016-2018 and 2018-2020 respectively) contained 3 additional activities (to the existing 4 activities) to determine whether a respondent engaged in 'wider innovation'. These activities were added to ensure that the questionnaire was consistent with the latest framework developed by Eurostat.

Compared with 2016-2018, the increase in the proportion of NI businesses reporting wider innovation was most marked in the area of 'Information processing and communication'[2], (from 10% of businesses in 2016-2018 to 16% in 2018-2020).

Chart 10: Percentage of businesses engaging in wider innovation by activity, NI (2016-2018, 2018-2020) and UK (2018-2020)



Further breakdowns of NI and UK business innovation activities are available in the Statistical Annex.

*Full questionnaire text as follows:

"e. Logistics, delivery or distribution methods (for example transportation, service delivery, warehousing or order processing)."

"f. Methods for information processing and communication, the maintenance and provision of information and communication systems (for example hardware, software, data processing, database, maintenance, repair, web-hosting and other computer related information activities)".

"g. Methods for accounting and other administrative operations (for example accounting, book keeping, auditing, payments, financial or insurance activities and procurement)".

---

[2] Questionnaire text: Methods for information processing and communication, the maintenance and provision of information and communication systems…

Background and Methodology

Methodology

This report presents findings from the Northern Ireland element of the UK Innovation Survey (UKIS), which was conducted by the UK Office for National Statistics (ONS). The survey is based on a core questionnaire developed by the European Commission (Eurostat) and Member States. This is the twelfth iteration of the survey (CIS12), which was conducted in 2021 and covers the period 2018-2020. CIS11, covering the period 2016 to 2018, was carried out in 2019 and the results form part of various EU benchmarking exercises for international comparisons (see Eurostat: Community Innovation Survey, latest results).

The survey was voluntary and conducted primarily through an electronic questionnaire and telephone interview for businesses that had not yet completed an online response.

The majority of the survey questions are concerned with innovation through new and improved products and processes (technological) and with the investments that are used to develop and implement them along with changes in business structures, management and marketing practices (non-technological innovation).

All results are grossed up to the business population, and all figures quoted relate to the UK Innovation Survey 2021 unless stated otherwise. Results presented are rounded to the nearest percentage point.

The methodology, statistical annex, sample details and UK-level findings from CIS 12 can be found on the UK Department for Business, Energy and Industrial Strategy website.

Coverage and Sampling

The UK Innovation Survey 2021 surveyed 2,379 enterprises in NI. The sample is a stratified design drawn from the Inter-Departmental Business Register (IDBR) with Neyman allocation used to determine the sample size in each stratum. Overall, approximately 15% of the target population is sampled in the UK (37% in NI).

With 1,022 of the 2,379 enterprises selected responding, the NI element of the survey had a response rate of 43% (at the UK level, a response rate of 43% was also achieved).

The 2021 survey sampled enterprises with **10 or more employees** in **sections B to N** of the Standard Industrial Classification (SIC) 2007. This is the sixth survey using a sample based on SIC 2007, which enables a more consistent comparison with the 2011, 2013, 2015, 2017 and 2019 survey data in the time series.

Stratification was based on three variables:

1. **Region** – All regions in the UK (9 Standard Regions in England plus Scotland, Wales and Northern Ireland)

2. **SIC Division** - This was the sixth time survey data was collected using a sample based on SIC 2007. The groups included are as follows:

- **SIC 05-09**: Mining and quarrying
- **SIC 10-18**: Manufacture of food, clothing, wood, paper, publishing, printing
- **SIC 19-25**: Manufacture of fuels, chemicals, plastic, metals and minerals
- **SIC 26-28**: Manufacture of electrical and optical equipment
- **SIC 29-30**: Manufacture of transport equipment
- **SIC 31-33**: Manufacture: not elsewhere classified
- **SIC 35-39**: Electricity, gas and water supply
- **SIC 41-43**: Construction
- **SIC 45-46**: Wholesale trade (including cars & bikes)
- **SIC 47**: Retail trade (excluding cars & bikes)
- **SIC 49-52**: Transport
- **SIC 53**: Post and courier activities
- **SIC 55-56**: Hotels & restaurants
- **SIC 58, 62 & 63**: Computer and related activities/ICT
- **SIC 59-60**: Motion picture, video and TV programme production/programming & broadcasting
- **SIC 61**: Telecommunications
- **SIC 64-66**: Financial intermediation
- **SIC 68**: Real estate activities
- **SIC 69, 70, 75, 76, 78-83**: Other services not elsewhere classified
- **SIC 71.1**: Architectural and engineering activities and related technical consultancy
- **SIC 71.2**: Clinical testing and analysis
- **SIC 72**: Research and experimental development on social sciences and humanities
- **SIC 73**: Advertising and market research
- **SIC 74**: Other professional, scientific and technical activities

- **SIC 77**: Renting of machinery, equipment, personal and household goods

3. **Business Size**:

   Small: 10-49 employees
   Medium: 50-249 employees
   Large: 250+ employees (to ensure representativeness, a census for all large firms was taken)

Response and Weighting

The questionnaires from the survey covered business innovation in the 3-year period, 1 January 2018 to 31 December 2020 (the population and achieved sample are summarised in Table 1 below).

The composition of the 2021 achieved sample comprises a smaller percentage of large firms (8% of returned forms) than the last survey (13%).

In order to be representative, the responses have been weighted back to the population and this is reflected in the results shown throughout the publication. The responses were weighted back to the population using the inverse sampling proportion in each stratum, that is, the weight attributed to each enterprise was the number of enterprises in the population divided by the number of responses in that stratum.

Table 1: Summary of sample frame (number of enterprises)

Entire Population			**Returned Sample**		
SMEs	Large	All	SMEs	Large	All
6,283	213	6,496	941	81	1,022

Please note that as with all sample surveys, the estimates provided in this publication are subject to an associated degree of sampling error.

Future Publications

The 2023 UK Community Innovation Survey results for the reporting period 2020-2022 (CIS 13) will be published in spring 2024. The 2023 CIS Northern Ireland results bulletin will be published as soon as possible after the main UK report is published.

For further information

Statistics Contact:
Aaron Maguire
Economic and Labour Market Statistics
Northern Ireland Statistics and Research Agency
Colby House, Stranmillis Court
Belfast, BT9 5RR
E-mail: economicstats@nisra.gov.uk
Tel: 028 9052 9436

Enquiries by the media should be directed to: Press Office, DfE Press Office,
E-mail: pressoffice@economy-ni.gov.uk,
Tel: 028 9052 9604 - Outside office hours, please contact the Duty Press Officer on 028 9037 8110.

NISRA
Northern Ireland Statistics and Research Agency
Gníomhaireacht Thuaisceart Éireann um Staitisticí agus Taighde