9 Budget and workforce

This chapter looks at the resources devoted to tax administrations and provides information on their workforce. It sets out how administrations are responding to the post-pandemic workplace and how they maintain their capability while managing a workforce that in general terms is reducing in size and on average is getting older. It also explores how technology is helping tax administrations empower their workforce to deliver better solutions for taxpayers as well as provide more flexibility for the administration and its employees.

Introduction

Central to a tax administration meeting its role in collecting revenue and providing services to citizens and businesses, is sufficient financial resources and a skilled workforce that can deliver quality outputs efficiently and effectively. The first part examines the financial resources available to tax administrations, and how they are spent. The second part provides information on tax administrations' workforce, and how the COVID-19 pandemic has reshaped working practices.

Budget and information and communication technology

Operating expenditures

The overall level of resources devoted to tax administration is an important and topical issue for most governments, external stakeholders, and of course tax administrations themselves. While the budgetary approaches differ, in most jurisdictions the budget allocated is tied to the delivery of performance outputs which are outlined in an annual business plan.

When looking at the budget figures, slightly more than two-thirds of tax administrations report an increase in their operational expenditure between the years 2019 and 2020. This is fewer administrations than over the period 2018 to 2019, where three-quarters reported an increase (see Table 9.1).

However, this data should be treated with caution. While on paper a significant number of administrations saw increases in their budget, this does not take into the account the increases in responsibilities that many administrations are reporting, especially as a result of additional pandemic responsibilities, as well as any inflationary pressures.

Table 9.1. Changes in operating expenditures

Percent of administrations

Change	Between 2018 and 2019 (based on data for 54 administrations)	Between 2019 and 2020 (based on data for 55 administrations)
Increase in operating expenditure	75.9	69.1
Decrease in operating expenditure	24.1	30.9

Source: Secretariat calculations based on Table A.7.

This issue is compounded as a significant part of the budgets is needed for salary costs, accounting for on average 73% of operating budgets annually (see Figure 9.1). Any increases in budgets can be rapidly consumed by salary increases, which may be a contractual obligation. This mix of greater responsibility, and pressured budgets, is driving tax administrations to find innovative approaches, often using technology, so they can meet budgetary constraints, continue to deliver efficient services to taxpayers, and focus on the relevant compliance risks.

As tax administrations reflect on the working practices established as part of the pandemic response, the impact of longer term hybrid or remote working is also being considered. This was explored in more detail in the OECD report *Tax Administration: Towards sustainable remote working in a post COVID-19 environment* (OECD, 2021[1]), and the examples in Box 9.1 set out some of the new working practices being adopted after the pandemic.

Box 9.1. Examples - New working practices

Canada – Transitioning to a hybrid workplace

Before the COVID-19 pandemic, over 90% of Canada Revenue Agency (CRA) employees worked in the office full-time. Since the pandemic, these figures have been reversed and the majority of employees are working from home. While keeping employees safe and healthy during the public health crisis was the catalyst for this radical shift, employees have also expressed a desire for more flexible working arrangements to continue.

To establish a consistent approach to implementing a hybrid model of working at the national level, business requirements were examined, balancing efficient programme delivery with providing employees flexibility. The approach was based on five guiding principles (well-being, stewardship, service to Canadians, productivity, and security), and was discussed in-depth across the organisation. As a result of these discussions, mandatory and discretionary in-office drivers were established to determine where work should be performed, based on the tasks being completed.

A multi-disciplinary team is guiding the CRA transition to a hybrid model of work, which is defined as working remotely, working on-site or a combination of both depending on business and operational needs. By centralising and implementing flexible management, planning and coordination mechanisms, the CRA has initiated this large-scale transformation affecting its workforce, worksites, workflows, and overall approach to conducting work. This approach is at the forefront of government-wide discussions and is being promoted as a model for other government departments.

Chile - Mobility Plan

At the beginning of the COVID-19 pandemic, *Servicio de Impuestos Internos* (SII) implemented a teleworking protocol to facilitate the work of their employees from their homes. It is now being piloted how this can continue after the pandemic, on a voluntary basis for certain staff.

Two directorates are in the pilot, the Administrative Directorate and the Directorate for Human Resources Development, to explore the impact of staff 50% teleworking and 50% in the office. SII anticipates that this could bring cost savings in reduced office space as well as savings in office supplies and furniture, maintenance, electricity; air conditioning and printing. SII also recognises that teleworking will also have additional expenses, e.g. supply of home office furniture and IT equipment, associated costs of electricity and internet as well as training and education in the use and management of remote information.

SII is already seeing benefits from this pilot around flexibility, productivity and efficiency, improved services to taxpayers and better work life balance for staff.

See Annex 9.A for supporting material.

Portugal - Innovations in working practices

Investment in IT infrastructures has been a priority in *Autoridade Tributária e Aduaneira* (AT) not only in terms of provision of digital tools but also to ensure that levels of performance and well-being of the workforce are maintained.

In order to realise a fully supported workforce and digital workplace strategy, AT invested in remote access for employees, laptops and different communication technology options. In addition, there was development and training in new communication skills, and improvement in document management software in order to replace paper with digital alternatives.

> This digitisation has led AT to focus particularly on issues related to information security and cybersecurity, and reinforcing mechanisms like Multifactor Authentication. In addition, processes have been enhanced to detect, respond and recover from information security incidents.
>
> Sources: Canada (2022), Chile (2022) and Portugal (2022).

Components of tax administration operating expenditure

As stated above, the largest reported component of tax administration operating budgets is staff costs, with salary alone accounting for on average 73% of operating budgets annually (see Figure 9.1). Another important component is the operating cost for information and communication technology (ICT). On average this accounts for 10% of operating expenditure, with a few jurisdictions reporting ICT expenditure above 20% of their total operating expenditure (see Table D.3). The averages for both items (salary and ICT) have remained stable over the past years.

Capital expenditure

Capital expenditure makes-up about 4% of total expenditure on average but varies significantly between administrations. A few administrations report figures below 1% while others report figures above 10% (see Table A.7).

Cost of collection

It has become a fairly common practice for tax administrations to compute and publish (e.g. in their annual reports) a "cost of collection" ratio as a surrogate measure of their efficiency / effectiveness. The ratio is computed by comparing the annual expenditure of a tax administration, with the net revenue collected over the course of a fiscal year. Given the many similarities in the taxes administered by tax administrations, there has been a natural tendency by observers to make comparisons of "cost of collection" ratios across jurisdictions. Such comparison have to be treated with a high degree of caution, for reasons explained in Box 9.2.

In practice there are a number of factors that may influence the cost/revenue relationship, but which have nothing to do with relative efficiency or effectiveness. Examples of such factors and variables include macroeconomic changes as well as differences in revenue types administered. These factors are further elaborated in Box 9.2.

Despite those factors, the "cost of collection" ratio is included in this report for two reasons:

1. The "cost of collection" ratio is useful for administrations to track as a domestic measure as it allows them to see the trend over time of their work to collect revenue and, as pointed out in Box 9.2, they may be able to account for the main factors that can influence the ratio; and

2. The inclusion of the "cost of collection" ratio and the accompanying comments set out in Box 9.2. can serve as a prominent reminder to stakeholders of the difficulties and challenges in using the easily calculated "cost of collection" ratio for international comparison.

Figure 9.2 illustrates the movement in the "cost of collection" ratios between 2019 and 2020 for the administrations included in this report. It shows that eighty percent of the administrations had increasing ratios, incontrast to the close to sixty percent of the administrations which had decreasing ratios over the period 2018 to 2019. However, as mentioned in Box 9.2, the chart and the underlying figures have to be interpreted with great care.
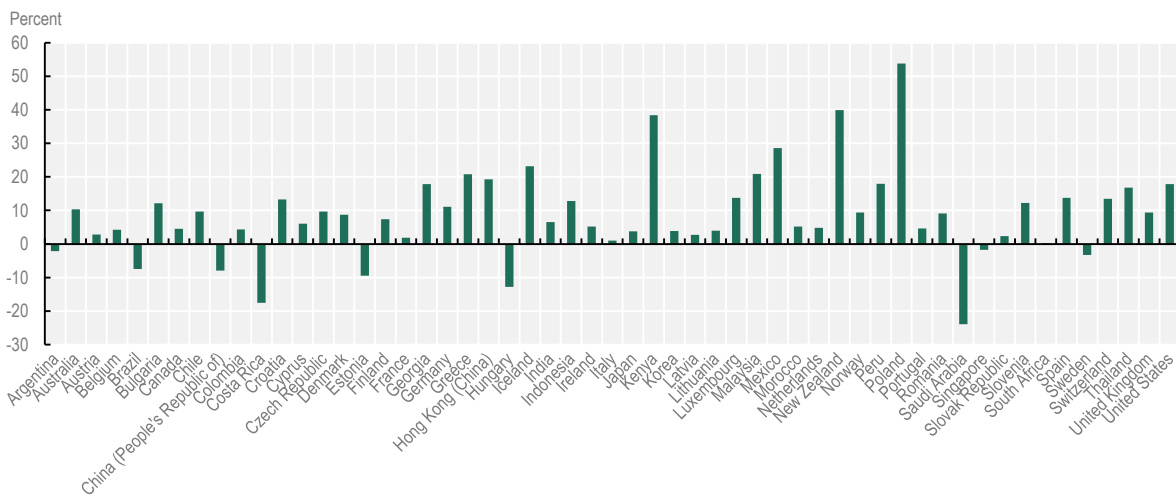
Figure 9.1. Salary cost as a percent of operating expenditure, 2020
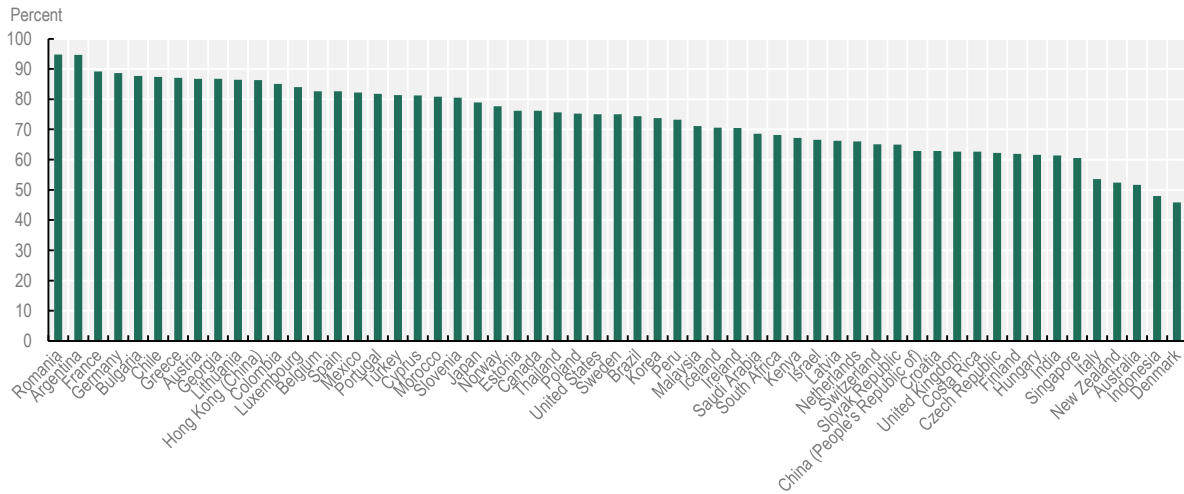
Figure 9.2. Movement in "cost of collection" ratios between 2019 and 2020

Note: When interpreting this chart the factors mentioned in Box 9.2 should be taken into account. Data for Israel and Turkey has been excluded, see notes in Table A.7.

Box 9.2. Difficulties and challenges in using the "cost of collection" ratio as an indicator of efficiency and/or effectiveness

Observed over time, a downward trend in the "cost of collection" ratio can appear to constitute evidence of a reduction in relative costs (i.e. improved efficiency) and/or improved tax compliance (i.e. improved effectiveness). However, experience has also shown that there are many factors that can influence the ratio which are **not** related to changes in a tax administrations' efficiency and/or effectiveness and which render this statistic highly unreliable in the international context:

- **Changes in tax policy**: Tax policy changes are an important factor in determining the cost/revenue relationship. In theory, a policy decision to increase the overall tax burden should, all other things being equal, improve the ratio by a corresponding amount, but this has nothing to do with improved operational efficiency or effectiveness.

- **Macroeconomic changes**: Significant changes in rates of economic growth etc. or inflation over time are likely to impact on the overall revenue collected by the tax administration and the cost/revenue relationship.

- **Abnormal expenditure of the tax administration**: From time to time, a tax administration may be required to undertake an abnormal level of investment (e.g. the building of a new information technology infrastructure or the acquisition of more expensive new accommodation). Such investments are likely to increase overall operating costs over the medium term, and short of offsetting efficiencies which may take longer to realise, will impact on the cost/ revenue relationship.

- **Changes in the scope of revenues collected**: From time to time, governments decide to shift responsibility for the collection of particular revenues from one agency to another which may impact the cost/revenue relationship.

From a fully domestic perspective, an administration may be able to account for those factors by making corresponding adjustments to its cost or collected revenue. This can make tracking the "cost of collection" ratio a helpful measure to see the trend over time of the administration's work to collect revenue. If it were gathered by tax type, it may also help inform policy choices around how particular taxes may be administered and collected.

However, its usefulness with respect to international comparison is very limited. While administrations may be able to account for the above factors from a domestic perspective, it will be difficult to do this at an international level as such analysis would have to consider:

- **Differences in tax rates and structure**: Rates of tax and the actual structure of taxes will all have a bearing on aggregate revenue and, to a lesser extent, cost considerations. For example, comparisons of the ratio involving high-tax jurisdictions and low-tax jurisdictions are hardly realistic given their widely varying tax burdens.

- **Differences in the range and nature of revenues administered**: There are a number of differences that can arise here. In some jurisdictions, more than one major tax authority may operate at the national level, or taxes at the federal level may be predominantly of a direct tax nature, while indirect taxes may be administered largely by separate regional/state authorities. In other jurisdictions, one national authority will collect taxes for all levels of government, i.e. federal, regional and local governments. Similar issues arise in relation to the collection of social insurance contributions.

- **Differences in the range of functions undertaken**: The range of functions undertaken by tax administrations can vary from jurisdiction to jurisdiction. For example, in some jurisdictions the tax administration is also responsible for carrying out activities not directly related to tax

administration (e.g. the administration of certain welfare benefits or national population registers), while in others some tax-related functions are not carried out by the tax administration (e.g. the enforcement of debt collections). Further, differences in societal views may influence what an administration does, how it can operate and what services is has to offer. The latter may have a particularly significant impact on the cost/revenue relationship.

Finally, it should be pointed out that the "cost of collection" ratio ignores the revenue potential of a tax system, i.e. the difference between the amount of tax actually collected and the maximum potential revenue. This is particularly relevant in the context of international comparisons – administrations with similar cost/revenue ratios can be some distance apart in terms of their relative effectiveness.
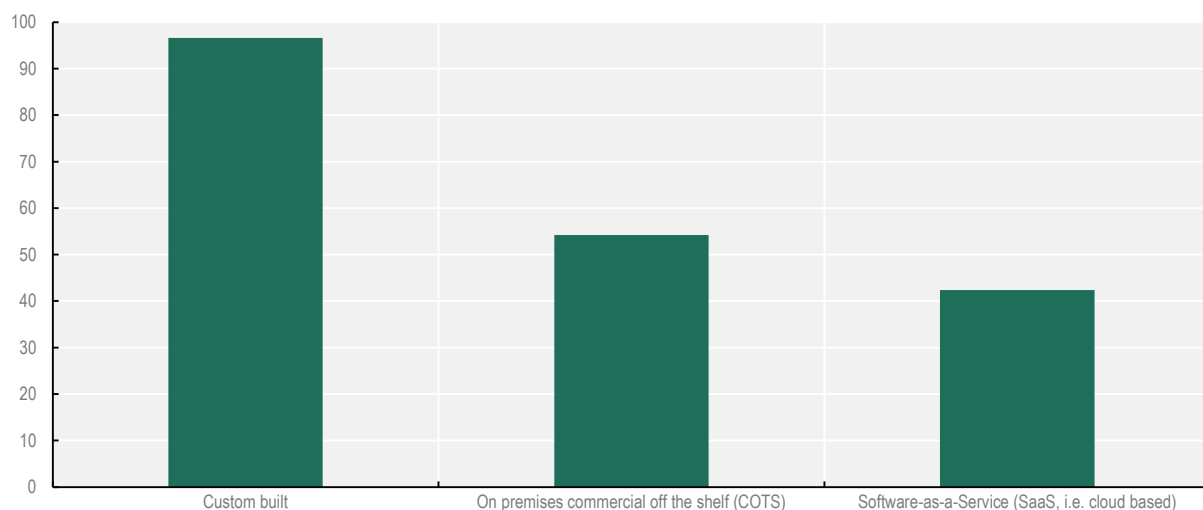
Information and communication technology

On average ICT expenditure accounts for about 10% of operating expenditure. However, reported levels of ICT expenditure vary enormously between administrations. For those administrations able to provide ICT-related cost, around 40% reported an annual operating ICT expenditure exceeding 10% of the administration's total operating expenditure in 2020 and another 30% reported figures between 5% and 10% (see Table D.3). While some of this variation can be explained by the different sourcing and business approaches, some cannot and point, at least on the surface, to expenditure levels that maybe somewhat below the support needed to provide the rapidly changing electronic and digital services administrations are increasingly being called upon to deliver.

As regards the operational ICT solutions (i.e. solutions that are used to fulfil the tax administration's mandate and include systems for registration, return processing, payment processing and auditing), almost all tax administrations report using custom built ICT solutions, while 55% report also using commercial-off-the-shelf (COTS) solutions (see Figure 9.3).

Figure 9.3. Basis of ICT solutions of tax administrations, 2020

Percent of administrations that have such solutions

Source: Table A.9. Information and communication technology (ICT) solutions of the tax administration.
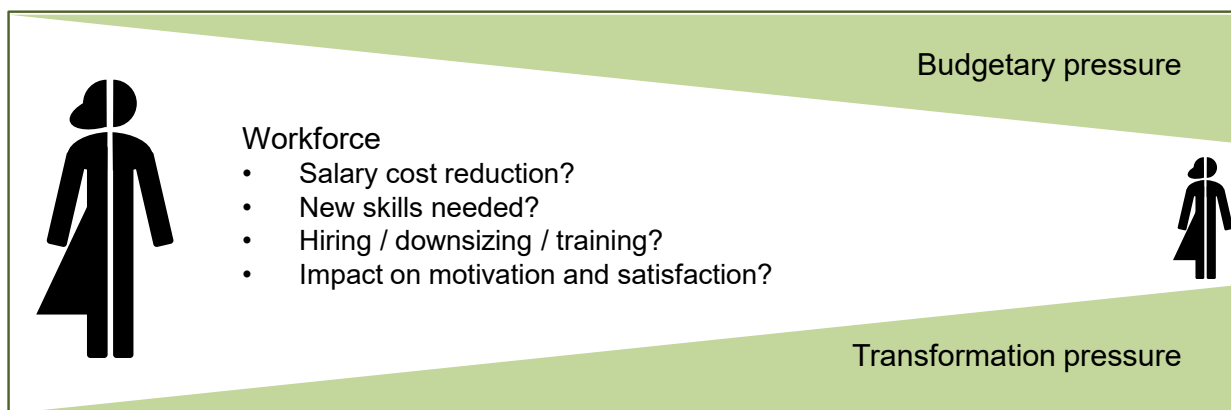
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In addition, around 40% of the administrations report using software-as-a-service (SaaS) solutions. These are software licensing models where the tax administration pays for a subscription license and the cost depends on the usage. The software is installed on third party computers, not on tax administration computers, and is accessed by users via the internet. One of the main barriers to adopting SaaS more widely, is the storage of sensitive tax data on these third party systems. As more legislative and technological solutions are identified, including regarding the encryption of data, it is possible the use of SaaS will increase.

Workforce

In 2020, the administrations included in this report employed approximately 1.7 million staff (see Table A.8) making the effective and efficient management of the workforce critical to good tax administration. Having a competent, professional, productive and adaptable workforce is at the heart of most administrations' human resource planning. With salary costs averaging more than 70% of operating expenditures, any significant budget change invariably impacts staff numbers.

The "double pressure" created from reduced budgets and technology change, mentioned in the 2017 edition (OECD, 2017[2]) (see also Figure 9.4), continues to be a significant management issue for most administrations. The challenge is compounded for some administrations which, due to contract restrictions or government mandates, may find it difficult to strategically down-size their operations other than through the non-replacement of staff who leave of their own accord.

Figure 9.4. Double pressure on the workforce

Budgetary pressure

Workforce
- Salary cost reduction?
- New skills needed?
- Hiring / downsizing / training?
- Impact on motivation and satisfaction?

Transformation pressure

Staff usage by function

Figure 9.5 provides average allocation of staff resources (expressed in full-time equivalents) across four functional groupings used to categorise tax administration operations.[1] While the detailed data for each administration in Table D.4 shows a significant spread of values and a number of outliers for each function, generally the "audit, investigation and other verification" function is the most resource intensive, employing on average thirty percent of staff, a ratio that has remained stable over recent years.

Figure 9.5. Staff usage by function, 2020
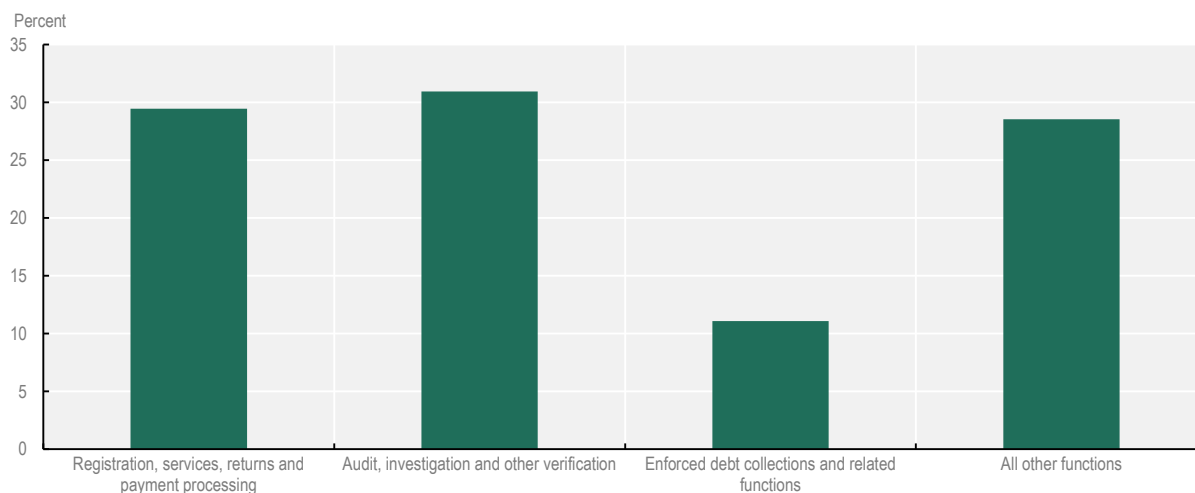
Note: Excluding administrations that were unable to provide the break-down for all functions.
Source: Table D.4. Staff allocation by function and location.

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Staff metrics

ISORA 2021 also gathered key data concerning the age profiles, length of service, gender distribution and educational qualifications of tax administration staff: see Tables D.6 to D.8 and A.11 to A.14. In interpreting this data, there are two main considerations to bear in mind:

- combined tax and customs administrations were allowed to use their total workforce for answering the underlying survey questions as it may be difficult for them to separate the characteristics of the tax and customs workforce.

- Since ISORA 2020, staff metrics information is collected for the total number of staff, whereas in previous ISORA rounds (i.e. ISORA 2016 and 2018) staff metrics information was collected for permanent staff only. Trend analysis comparing staff metrics across the different ISORA surveys should therefore be conducted with caution. In particular, for administrations that employ a significant number of non-permanent staff, this change in methodology may cause a shift in staff-metric-percentages that is not based on regular staff fluctuations but rather a result of including a different group of staff.

Age profiles

While there are significant variations between the age profiles of tax administration staff (see Table D.6), it is interesting to see that there are also differences when viewed across different regional groupings. This may be the result of a complex mix of cultural, economic, and sociological factors (e.g. economic maturity, recruitment, remuneration, and retirement policies).

Figure 9.6 illustrates that staff are generally younger in administrations in the regional groupings of "Asia-Pacific" and "Middle East and Africa" where, on average, around one third of staff are below 35 years of age, whereas in the "Americas" and "Europe" this percentage drops to below twenty percent. At the same time, administrations in the "Americas" and "Europe" have a large percentage of staff older than 54 years.
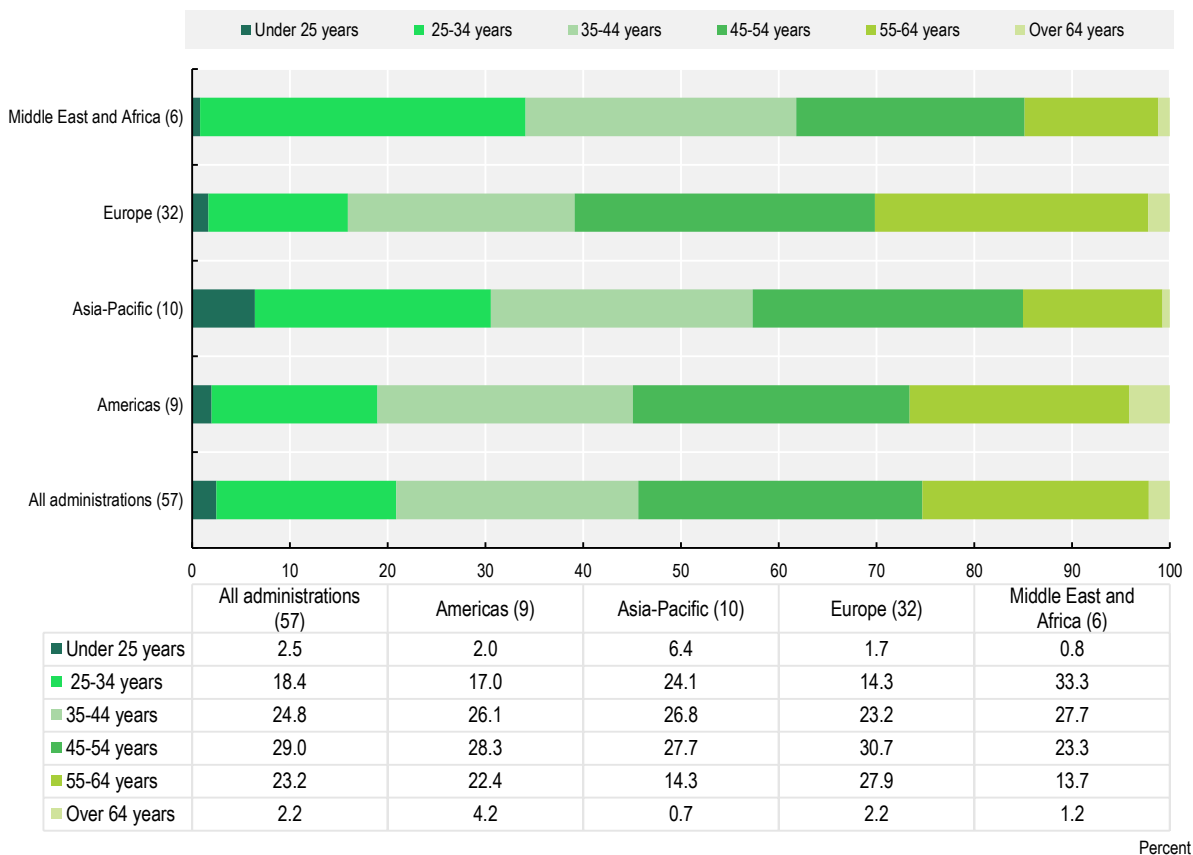
Looking at the jurisdiction specific data, the percentage of staff older than 54 years grew in 69% of administrations (see Figure 9.7).

Length of service

The difference in age profiles is also largely reflected in the length of service of tax administration staff. Figure 9.8. indicates that a significant number of administrations will not only face a large number of staff retiring over the next years, but that many of these staff will be very experienced, thus raising further issues about retention of key knowledge and experience.

### Figure 9.6. Age profiles of tax administration staff, 2020

Percentage of staff by age bands for selected regional groupings

	All administrations (57)	Americas (9)	Asia-Pacific (10)	Europe (32)	Middle East and Africa (6)
■ Under 25 years	2.5	2.0	6.4	1.7	0.8
■ 25-34 years	18.4	17.0	24.1	14.3	33.3
■ 35-44 years	24.8	26.1	26.8	23.2	27.7
■ 45-54 years	29.0	28.3	27.7	30.7	23.3
■ 55-64 years	23.2	22.4	14.3	27.9	13.7
■ Over 64 years	2.2	4.2	0.7	2.2	1.2

Percent

Note: The following administrations are included in the regional groupings: Americas (9) – Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Mexico, Peru and the United States; Asia-Pacific (10) – Australia, China (People's Republic of), Hong Kong, China, Indonesia, Japan, Korea, Malaysia, New Zealand, Singapore and Thailand; Europe (32) – Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom; Middle East and Africa (6): Israel, Kenya, Morocco, Saudi Arabia, South Africa and Turkey.
Source: Table D.6 Staff age distribution.

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Figure 9.7. Staff older than 54 years: Movement between 2018 and 2020
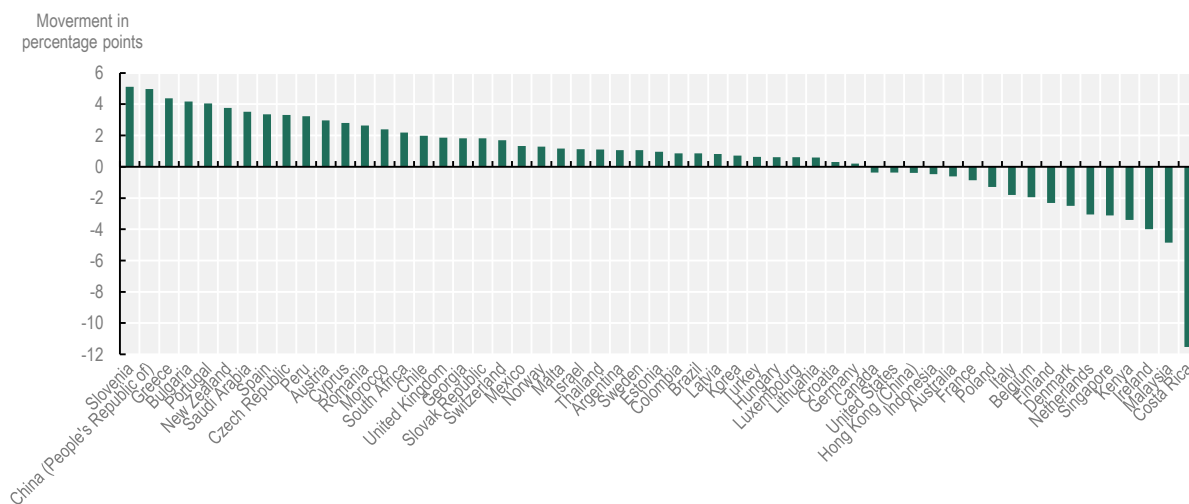
Note: Only includes jurisdictions for which data was available for both years. Data for Iceland has been excluded due to the merger of the Directorate of Internal Revenue and the Directorate of Customs on 1 January 2020.
Source: Table D.6 Staff age distribution.

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Figure 9.8. Average length of service vs. average age profile, 2020
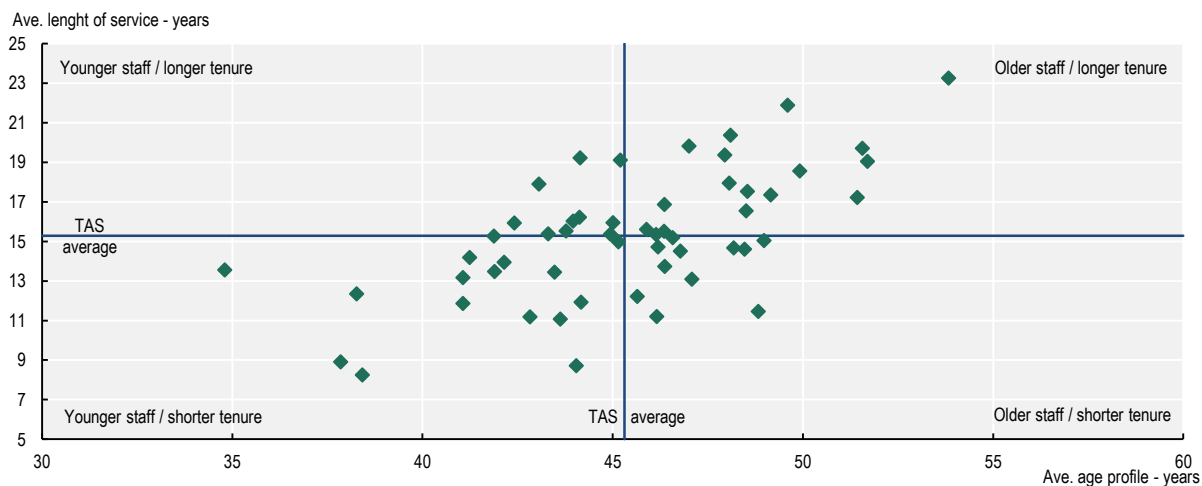
Source: OECD Secretariat calculations based on Tables D.6 Staff age distribution and D.7 Length of service.

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Gender distribution

In light of the strong public interest in gender equality, administrations were invited to report total staff and executive staff respectively by gender. As can be seen in Figure 9.9, while many administrations are close to the proportional line, typically female staff remains proportionally underrepresented in executive

positions and significantly underrepresented (red oval) in a number of administrations, something that has remained unchanged since the 2017 edition of this report (OECD, 2017[2]).

Figure 9.9. Percentage of female staff – total female staff vs. female executives, 2020
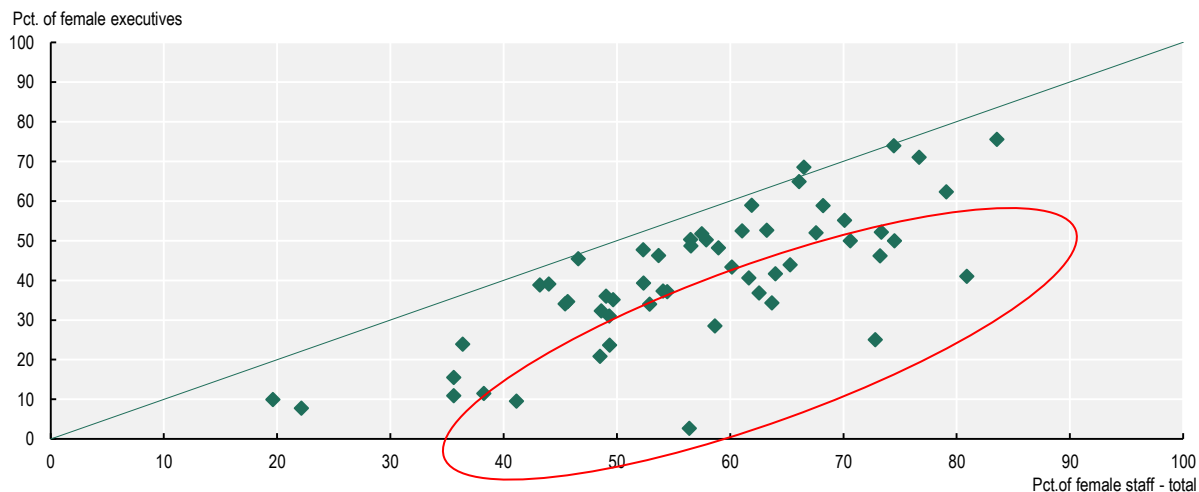
Source: Table D.8 Gender distribution and academic qualifications.

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Looking at the overall averages, whilst there are variations between jurisdictions (see Table D.8), on average the share of female employees of total staff and executive staff has remained largely unchanged since 2018, with a very small increase of 3.4 percent of female executives (see Table 9.2).

Table 9.2. Evolution of share of female staff and female executives (in percent)

Staff category	2018	2019	2020	Change between 2018 and 2020 in percent
Female staff (56 jurisdictions)	57.3	57.9	57.7	+0.8
Female executives (54 jurisdictions)	39.9	41.6	41.2	+3.4

Note: The table shows the share of female employees of total staff and executive staff for those jurisdictions that were able to provide the information for the years 2018, 2019 and 2020. The number of jurisdictions for which data was available is shown in parenthesis.
Source: Table D.8 Gender distribution and academic qualifications.

The ISORA 2021 survey also asked administrations to indicate whether staff has self-identified as neither female nor male (referred to as "other" gender for the purposes of the survey). Table A.14 shows that two administrations, Australia and New Zealand, reported having staff who self-identified as "other".

Staff attrition

Staff attrition, also called staff turnover, refers to the rate at which employees leave an organisation during a defined period (normally a year). High attrition rates may result from a variety of factors, such as downsizing policies, demographics or changing staff preferences. The attrition rate should be considered together with other measures, such as the hire rate, which looks at the number of staff recruited during a defined period, when evaluating the human resource trends of an administration.

While a high attrition rate combined with a low hire rate is usually associated with a general downsizing policy – and may therefore be accepted – administrations should be concerned where both rates are high. Recruitment is costly, not only the recruitment process itself but also the cost and time for training and supporting new staff members, and the significant down time before new staff are fully operational or able to perform at the highest level. Having high attritions rates are generally to be avoided.

Having attrition rates that are too low may also not be ideal. While an organisation is growing, a low attrition rate may be accepted. However, in situations where both the attrition rate and the hire rate are low, an organisation may not have the ability to recruit new skills as all positions are filled. This could be an issue particularly for administrations that are undergoing transformation and therefore are in need of staff with skills that are different from what is currently available within the administration.

While what is considered a "healthy" attrition rate differs between industry sectors or jurisdictions, the average attrition rate for administrations participating in this publication of 6.0% in 2020 and the average hire rate of 6.1% in 2020 would seem to present a reasonable range for tax administrations of between 5% and 10%. It is worth noting that the average attrition and hire rates for 2020 are below those reported in previous years, which may be a pandemic related impact. It will be interesting to observe this trend in future editions of this series (see Table 9.3).

Table 9.3. Evolution of attrition and hire rates (in percent)

	2018	2019	2020	Change between 2018 and 2020 in percent
Attrition rates (51 jurisdictions)	6.8	7.3	6.0	-11.1
Hire rates (51 jurisdictions)	7.2	7.3	6.1	-15.7

Note: The table shows the average attrition and hire rates for those jurisdictions that were able to provide the information for the years 2018, 2019 and 2020. The number of jurisdictions for which data was available is shown in parenthesis. Data for China (People's Republic of), Iceland and Norway were excluded from the calculation as the result of extraordinary staff transfers over the period 2018 to 2020 which were recorded as recruitments, thus distorting their averages for those years (see notes in Table A.10.).
Source: Table D.5 Staff dynamics.

However, when looking at specific administration data, it becomes apparent that "attrition and hire" rates cover a very broad range. Figure 9.10 shows the relationship between tax administration attrition and hire rates. It illustrates that there are a number of administrations with attrition and hire rates well above 10% (upper-right box), while others show very low attrition and hire rates (lower-left box).

Figure 9.10. Attrition and hire rates, 2020
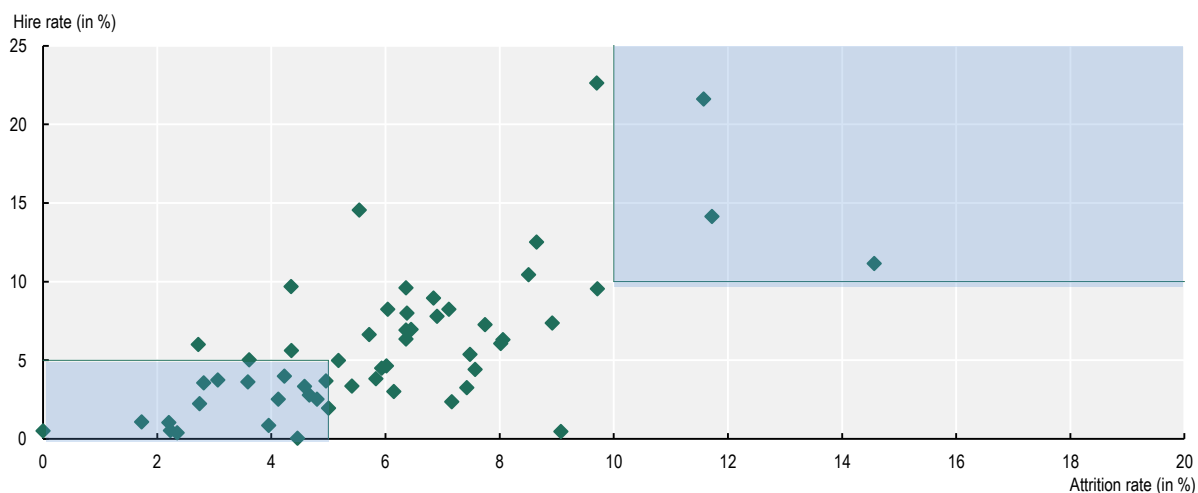
Note: Attrition rate = number of staff departures/average staffing level. Hire rate = number of staff recruitments/ average staffing level. The average staffing level equals opening staff numbers + end-of-year staff numbers/2.
Source: Table D.5 Staff dynamics.

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Whilst recruitment rates may vary by year, the challenge of training and knowledge transfer are constant. The COVID-19 pandemic brought these perennial issues into sharp focus as recruitment, and other on-boarding processes previously relied on face to face contact. As a result, new practices were developed quickly to complete these processes remotely. Tax administrations report that these practices brought benefits to the administration and candidates, and as a result they are now being adapted for the longer term.

Box 9.3. Examples – Enhancing recruitment processes

China (People's Republic of) – Digitising recruitment

The State Tax Administration (STA) has digitised civil servant recruitment processes to greatly improving efficiency. This has involved:

- STA accurately formulating recruitment planning and business requirements using data analysis.

- An online system to facilitate recruitment and registration. Using the examination and recruitment of civil servant management system, more than 700 000 candidates completed filling of personal information such as identity, education and experience. This meant that there could be a simultaneously completed online review of application qualifications and feedback of results within a week.

- Management software to promote recruitment interviews. Interview management software integrates candidate information, random allocation of interviewer and examination rooms, on-site lottery of examiners and candidates, automatic sorting of interview groups, real-time upload of interview scores and rapid generation of interview results. As a result approximately 50 000 candidates were interviewed within 3 to 4 days. Additionally video interviews were used during the COVID-19 epidemic to ensure a level playing field for candidates in severely affected areas.

Singapore - Digital transformation of HR processes

The Inland Revenue Authority of Singapore (IRAS) continues to harness technology and innovation to build greater organisational agility and a smarter digital workplace. For recruitment, IRAS uses artificial intelligence (AI) enabled conversational chatbots to handle and enhance applicants' experiences e.g. 24/7 access to complete the interview process and upload their resumes in one sitting. IRAS designed the conversation flow and questions harnessing AI, and the chatbots are also able to answer common queries on recruitment. IRAS customer satisfaction scores averaged 94% across job roles.

For ICT job roles, a chatbot with a technical test on programming languages provides automated AI scoring based on quality of codes, turnaround time and number of attempts for each applicant. IRAS has also incorporated verification features as the technical tests are completed off-site. At the outset, IRAS designed the chatbot work process to replace some manual processes, improving overall processing time.

There are other AI-powered tools that IRAS is developing. One tool seeks to match resumes of potential applicants with the job advertisements based on skills requirements, while another tool that is in development seeks to pilot a more competency-based assessment of job applicants. Just as importantly, IRAS has automated the traditional on-boarding process for new recruits that leverages data to initiate robotic process automation (RPA) tasks for mass auto-creation of staff accounts. There are resultant efficiencies in relation to notifying and providing relevant information to the parties involved to perform their tasks, benefitting both new recruits and the HR team.

Sources: China (People's Republic of) (2022) and Singapore (2022).

Supporting staff

The changes tax administrations are managing, whether technology, policy or budget driven, are significant. In addition, the wider digitalistion of the economy is changing the service expectations of taxpayers, and staff need the right tools and support to adapt. As a result, tax administrations are considering the best way to support staff through these changes, ensuring they have the right tools for the tasks. Changes to the workplace also mean that established practices around performance management are being adapted based on the learning gained from the rapid switch to digital channels in the COVID-19 pandemic.

As a result, tax administrations are reporting that they are investing in services that can help 'frontline' staff better understand taxpayers needs, and provide better services to them. This can cover a range of channels from call centres through to social media. These investments are allowing tax administrations to provide improved services, and their staff feel better equipped to deliver those high quality services. Tax administrations also report that sophisticated analytics are being used to match staff skills to taxpayer needs.

Box 9.4. Examples – Supporting staff

Canada - Empathy in Service

Canada Revenue Agency (CRA) research has shown that negative interactions with clients can have significant impacts on voluntary compliance. Using empathy to guide the design, delivery and support of the agency's services, reduces the negative emotions that clients can have from interactions with the CRA. The CRA has launched two national awareness campaigns to provide employees with

information, tools, and resources to help implement the CRA's vision of being trusted, fair and helpful by putting people first. The first Empathy in Service campaign was launched across the Agency in October 2020 and provided employees with tools to apply empathy in their work. An Empathy Working Group made up of employees supported the campaign. The success of this initiative led to the development of the 'Spotlight on Service' Initiative, a month long campaign to reinforce service concepts with employees, focusing on accessibility, diversity and inclusion, and putting people first both from an internal and external service perspective. As a result:

- 71% of employees agree that all CRA activities are supported by a culture of service excellence.
- 87% of employees agree that all employees, regardless of the role they play in the organization, contribute to CRA's culture of service excellence.
- 98% of employees agree that they understand the importance of using empathy at work with colleagues and clients.

China (People's Republic of) – Improving performance management

In 2021, the State Taxation Administration (STA) optimised and upgraded the "e-personnel management system", by connecting individual performance management with organizational performance management. This enabled STA to encourage tax officials to better perform their responsibilities and improve their work efficiency and capability. This included:

- Tailored evaluation. Based on each tax official's responsibilities, the organisational performance tasks, annual key tasks and individual tasks are set for each tax official in the form of individual performance indicators.
- Standardised cycles. The implementation, evaluation and feedback of performance management are deeply integrated with the processes of daily assessment of individual performance to form an integrated assessment and evaluation system.
- Applied results. The results of performance evaluation are applied to the selection, appointment, promotion, education and training of tax officials. This promotes a better work atmosphere of being willing and able to get work done well.
- Upgraded system. As the information for performance evaluations is collected in a one-stop shop the e-personnel management system has been upgraded to realise the digitalisation of the whole process of individual performance management.

United Kingdom - Analysis to identify taxpayer service needs and trends

The roll out of the United Kingdom's (UK) Her Majesty's Revenue and Customs (HMRC) digital services has led to a corresponding growth in information about customers' experiences and feedback on these services. This provides valuable data for customer insight, which HMRC can use to improve customer experience and make future innovations in services. As the range of channels and customer interactions increase, HMRC want to understand how customer experience across different 'contact points' impacts customers to make their experience as effortless as possible, whilst also ensuring tax compliance.

The growth in customer data presents several challenges. Together with the sheer volumes, the increasingly unstructured nature of customer data means that traditional tools are ill-suited for drawing timely and actionable insights. Customer feedback varies from the generic to highly specific. For example, customers often use different words to describe the same experiences and the sentiment within their responses can be difficult to decipher. HMRC therefore use a combination of proprietary software and in-house models to gain efficient and deeper understanding of the data. Based on powerful algorithms and machine learning principles, the tools help make sense of customer experience

across channels, rapidly sorting and categorising the information to generate a usable taxonomy of themes and issues.

Over the past 18 months, HMRC have analysed several million pieces of customer feedback and engagement, building a view of customer experience and emerging trends across HMRC digital services, telephony, and social media. In turn, this information has helped generate valuable insights, informing management of the impacts of existing HMRC services, such as those focused on the UK Self-Assessment filing process, as well as of potential future enhancements of customer support services.

Sources: Canada (2022), China (People's Republic of) (2022) and the United Kingdom (2022).

Anecdotal evidence, gathered through numerous Forum on Tax Administration (FTA) meetings, shows that tax administrations put considerable efforts into supporting staff during periods of transition, including through the COVID-19 crisis, considering issues such as:

- **Staff welfare**, which includes looking into staff motivation and satisfaction, health and safety related issues, work-life balance, assistance programmes, and ergonomic office equipment; and
- **Staff training**, which includes how to best support those that have been given new tasks, those that have to perform their tasks from home instead of the office, as well as those that are leading partially or wholly virtual teams for the first time.

As tax administrations consider the post pandemic workplace, these issues will continue to be of high priority. The experience gained during the pandemic will be highly useful in shaping the new ways of working.

Technology is also providing new opportunities to analyse existing processes to look for efficiencies, including throught the use of artificial intelligence and machine learning to automate some of the core tasks within a tax administration. Chapter 6 (Table 6.1) highlights the rapid growth in the use of such services with for example, more than 50% of administrations reporting that they now using or planning to use robotic process automation (see also Figure 9.11 for the up-take of RPA by tax administrations). This is helping tax administrations respond to budgetary and workforce pressures as it is freeing up resource for staff to be focussed on more complex tasks.

Figure 9.11. Evolution of the implementation and use of Robotic Process Automation, 2018 to 2020

Percent of administrations
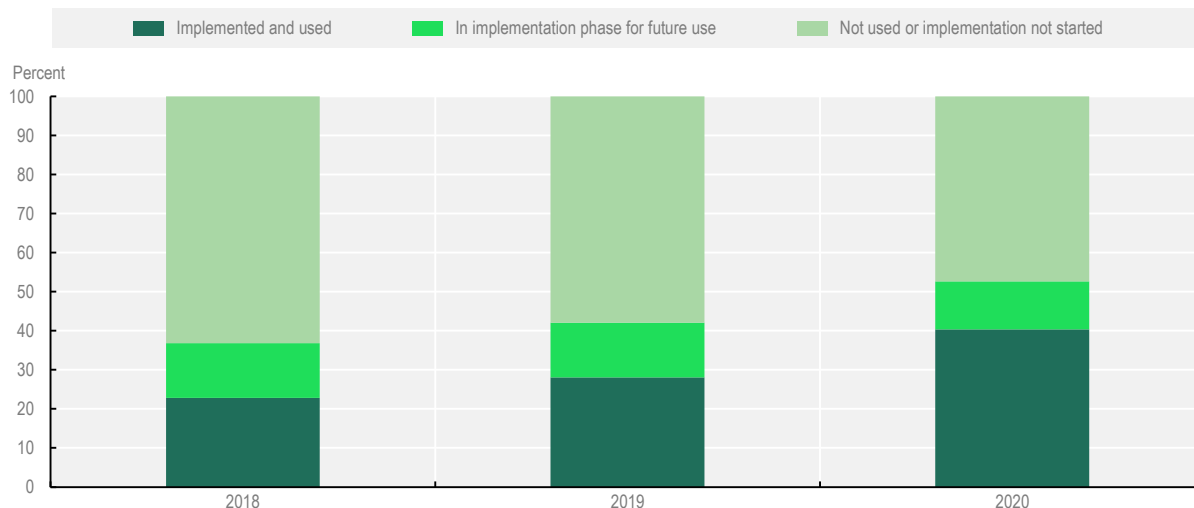
Source: Table A.52 Innovative technologies: Implementation and usage (Part 2).

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Box 9.5. Examples - Automation in tax administration

Australia - Robotic Process Automation

The Australian Taxation Office (ATO uses robotic process automation (RPA) in conjunction with process optimisation techniques to remove unnecessary steps from the audit process and to automate repetitive manual processing steps. This enables auditors to increase the time which they spend applying judgement to the facts of audit cases. Using automation software the ATO have been able to:

- ensure cases are created and delivered directly to a staff member – rather than have team leaders allocate work
- provide staff with a consistent and relevant profile of each client attached to each case for quick and easy reference
- close cases automatically.

This has so far reduced time spent on manual actions by 5%, and has allowed staff to understand the needs of taxpayers more easily and ensure appropriate empathy upon engagement as they can focus on what matters most in every interaction with taxpayers.

Canada - Robotic Process Automation

The Canada Revenue Agency (CRA) vision of the future of work is meaningful work that is engaging and rewarding for employees on a daily basis. RPA has a significant role in this as it can take the repetitive processes out of the work, and improve the day-to-day tasks of CRA employees by automating high volume, highly repetitive administrative tasks, that are prone to human error. To date, the CRA has automated 8 processes, saving more than 34 000 staff hours, the equivalent of approximately 25 additional full-time CRA employees. The process automations launched in CRA range

from screening suspicious accounts for fraudulent risk, to transferring unallocated payments from taxpayers, and assisting with scheduling Contact Centre employees. These activities would traditionally have been completed by employees and through automation, these employees now have the ability to focus on more value added tasks and their higher priority deliverables.

As a result of these process automations, employees have reported increased job satisfaction subsequent to the removal of monotonous tasks, as well as an improved ability to focus on more value-added work. Benefits realized also include improved data quality, increased productivity, as well as enhanced compliance and decreased operational risk. Most process automations can progress from feasibility to production within 8-16 weeks, or faster for high priority low/complexity initiatives. The CRA continues to identify additional opportunities for automation in the future.

Israel - Robotic Process Automation

RPA aims to mimic user actions, such as logging into different systems and extracting data. This innovative process is designed to replace the manual work of an employee who performs repetitive technical work, on a large number of cases without the need to exercise discretion.

For the purpose of testing and operating RPA, the Israel Tax Authority (ITA) was looking for a suitable work process and identified a unit that inspects taxpayers working in two or more workplaces who did not adjust their tax liability to account for multiple employers. When there is a tax liability according to the data, the unit's employees send a recommendation to the tax office to reach out to the taxpayer. RPA was programmed to perform the employee's work by learning the exact work process of the employees. RPA was programmed to produce the same data as the employee would have (such as: salaries, withholding tax, credits, deductions, etc.). The RPA software then enters the data generated into the tax simulator system in order to calculate the taxpayer's potential tax liability. After the programming was completed, tests were performed on the work results. A large number of cases were taken as a sample, and the comparison showed that RPA's results were similar to the employees results. The test also identified that the average time per case saved is 97% and 99.6% saving in cost. As a result of the test the ITA is investing further in RPA.

See Annex 9.A for supporting material.

Netherlands - Robotic Process Automation

The Netherlands Tax Administration (NTA) has many repetitive but essential tasks that do not make work attractive for employees. To address this, the NTA started investigating RPA, and identified invoice processing (paying suppliers) as a suitable start. The RPA-project was consciously kept small, aiming to solely robotise this first step, with the aim of eventually moving to full e-invoicing.

The aims of the project were to improve the quality of work for employees on one hand and on the other improving quality of the invoicing process by minimising errors and failures, so that legal requirements on payment terms could be met.

The outcomes surpassed expectations as employees experienced time savings of four hours per day which gave them space to deal with more productive tasks such as service quality improvements and knowledge development.

See Annex 9.A for supporting material.

Norway – Artificial Intelligence

The Norwegian Tax Administration (NTA) has a strategic initiative for scaling the capacity to develop and administer AI models, such as.

- Machine learning model for simple processing of compensation applications. The NTA is responsible for the administration of compensation schemes for businesses and self-employed persons during COVID-19, under which eligible taxpayers could apply for compensation for the loss of income. The number of applications was greater than the NTA's capacity for manual case processing, so a machine-learning model was created that recognised applications that would have been approved anyway, making manual case processing unnecessary. This saves approximately one day's work per application, which ensures an acceptable case processing time.
- Synthetic test population for the National Population Register. The National Population Register is a national common component with an overview of all persons living in or connected to Norway. The National Population Register has automated processes for collecting and distributing information. External users of the National Population Register need to test their systems in a way that ensures privacy protection. To achieve this, they need event-driven test data. The NTA has used machine learning to create dynamic and synthetic test data, as well as a test generator that simulates various events in the National Population Register that can be used by all National Population Register users.

Sweden - Use of machine translation

The Swedish Tax Agency's machine translation service was first implemented in June 2020 and was initially used by staff working with an EU directive (DAC6). In November 2021, the service was made available to all staff. Since then, it has been used to translate over 730 000 documents: an average of about 200 documents a day.

The service supports translation from 33 languages and is mainly used to translate incoming communications to Swedish. Tax administrators can gain a quick overview of what a document is about, which helps them to decide whether or not all or part of it needs to be sent to an authorised translator. All data is processed strictly within the Swedish Tax Agency's infrastructure, which means that the service can be used to translate sensitive information.

The key benefits of the service include:

- offering a better understanding of communications from individuals and businesses
- savings on translation costs
- secure personal data processing
- faster communication response times

The machine translation service is based on an open-source neural translation model that has been trained on large volumes of texts translated by humans. It learns from this input and can then translate new texts in a similar way. The model and training texts have been provided by the Department of Digital Humanities at the University of Helsinki (Tiedemann and Thottingal, 2020[3]). A large proportion of the training texts used were official EU materials in different EU languages.

United States - Robotic Process Automation

The Internal Revenue Service (IRS) is advancing the application of data and analytics to operations through the use of intelligent automation (IA). Two recent use cases are:

- Determining the ongoing suitability of third-party payroll administrators requires extensive financial compliance checks on the administrator and any related businesses and individuals. Due to time and resource constraints, the programme was only able to check 20% of the related businesses for compliance annually and was heavily burdened by repeated checks when non-compliance was found. To alleviate the resource constraint, IA was used to automate research in a mainframe application and record results in a formatted report for review by programme staff. The automation reduced the time to conduct a check from 60 minutes to roughly 10-15 minutes in preliminary performance testing and is expected to increase the capacity of the program to check 100% of related businesses quarterly. The automation also collects and summarises key data points to help inform suspension decisions for payroll administrators.

- Historically, prioritisation of non-filer cases was done using a simple method of ordering on largest assessment value. By analysing over 60 thousand historical business returns, the automation used machine learning to identify potentially productive and unproductive inventory based on the return's attributes. This research-based prioritisation approach was shown to boost desired outcomes by approx. 14% when compared to prioritising based on largest assessment value. Based on the model's demonstrated accuracy and precision rates, this prioritisation approach is estimated to yield an additional approx. USD 7.5 million per year across around 1 400 potential assessments.

Sources: Australia (2022), Canada (2022), Israel (2022), Netherlands (2022) Norway (2022), Sweden (2022) and the United States (2022).

Developing staff capability

While ISORA 2021 did not survey administrations as regards their strategy and approaches towards increasing staff capability, this remains a key topic for all administrations. This report highlights many areas of change that are taking place within administrations, and effective change relies on the capabilities of staff being developed. This is particularly important with digital transformation, as this frequently requires new skill sets. The OECD Digital Transformation Maturity Model contains a section on skills development and workforce planning, and is useful tool for administrations identifying the skills they need (OECD, 2021[4]). Figures 9.12 and 9.13 highlight how tax administrations are preparing the ground for digital transformation by mapping the skills needed for digital transformation, and investing in staff training to build capability. Also of note is the collaborative approaches highlighted in Figure 9.13, reflective of the wide impacts that digital transformation brings, and the need for shared approaches.

Figure 9.12. Skills for digital transformation: Identification and mapping, 2022
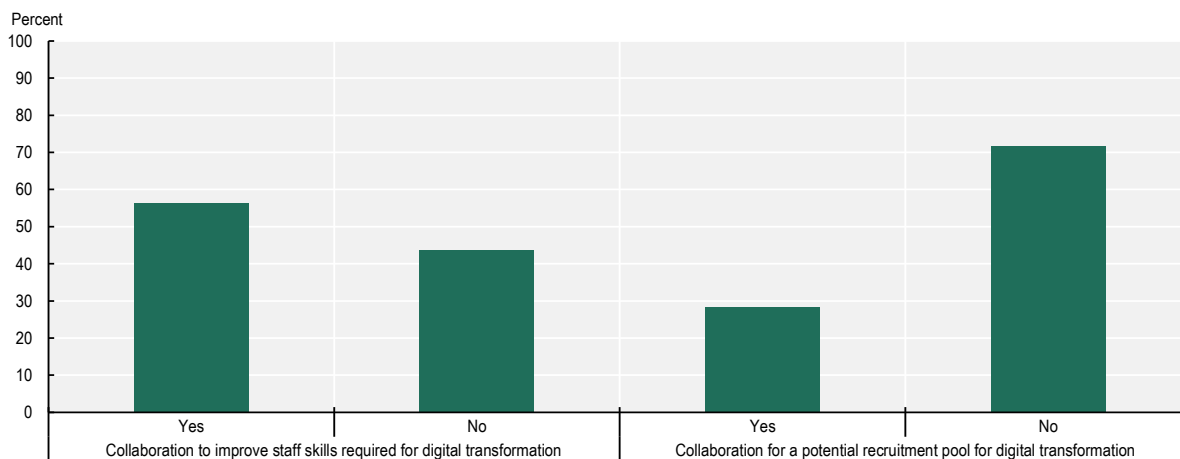
Percent of administrations
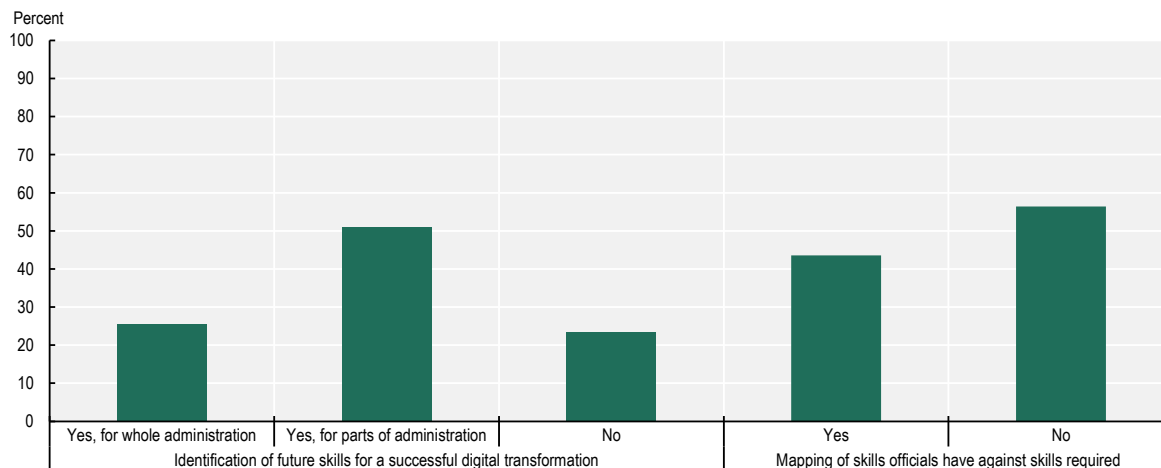
Note: The figure is based on ITTI data from 52 jurisdictions that are covered in this report and that have completed the global survey on digitalisation.
Source: OECD et al. (2022), Inventory of Tax Technology Initiatives, https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/, Table SG3 (accessed on 13 May 2022).

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Figure 9.13. Skills for digital transformation: Collaboration with government organisations or external partners, 2022

Percent of administrations

Note: The figure shows those administrations that have identified the future skills needed for a successful digital transformation either for the whole administrations or for parts of it (see Figure 9.12.). It is based on ITTI data from 52 jurisdictions that are covered in this report and that have completed the global survey on digitalisation.
Source: OECD et al. (2022), Inventory of Tax Technology Initiatives, https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/, Table SG3 (accessed on 13 May 2022).

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In parallel, one of the challenges of remote or hybrid working arrangements is maintaining staff training, and as a result administrations have been reconsidering their approaches to delivering general training. Tax administrations report moving their training programmes into a virtual environment, using live online training sessions or pre-recorded videos/webinars.

While moving to a virtual training environment may have some up-front costs, it may save costs in the longer term as once produced, pre-recorded training material can be viewed at any time, from anywhere. Remote training can reduce travel expenses and can allow staff to learn at their own pace and convenience as well as increasing the number of staff members that can follow a course. New technologies are also helping facilitate the collaborative learning aspects, increasing the quality of the training experience.

Box 9.6. Examples – Staff development

Canada - Empowering a hybrid workplace

As part of the move to hybrid working, the CRA has enabled cloud-based technologies that have transformed the use of secure virtual collaboration platforms for meetings, town halls, recruitment, and distance learning. The CRA has equipped its employees with tools to support an accessible and inclusive virtual workplace. New technologies to enable collaboration continue to be explored and deployed.

Additionally, the CRA has used advanced analytics to create a prediction model for retirements to support talent management and staffing plans; and, used AI to analyse text data from employee surveys during the pandemic, to ensure the Agency has the best possible understanding of its workforce for decision making. Going forward, the CRA will be applying these techniques and others to help understand employee movement in the organisation as well new approaches to leadership in a hybrid model of working.

Portugal - Rethinking training and learning for the future workforce demands

AT has promoted online training actions, webinars and workshops more adapted to the circumstances of remote work, addressing subjects like leadership, time management and communication skills. It has also developed training in the behavioural and social aspects of remote work, such as mindfulness or time management skills.

One of the challenges has been that not all functions can be performed remotely such as border control, tax and customs inspection (external) and procedures and processes related to tax justice in administrative and tax courts. Therefore, several strategies have been implemented to progress to a digital work place and to allow a better compatibility of remote / face-to-face work (hybrid model).

Other measures are also planned such as changing the human resources competencies model so skills needs align with the wider AT work strategy. This will help ensure that future roles will have the required skills clearly identified. AT is working on training programmes to meet such demands.

Sweden - Leadership development programme

The Swedish Tax Agency (STA) has high ambitions for increasing its capacity to respond to the demands of change and development. In a rapidly changing world, leaders need to be adaptable in terms of the way they act and collaborate, and the Human Resources Department needs to support them in more flexible and agile ways.

To support this, in 2021, the STA ran a series of leadership summits for executive management. The topics covered included collaborative approaches to developing the corporate culture and promoting positive leadership behaviours.

To bring about meaningful change, the STA plans to involve all managers – including leaders without staff responsibility – in improving abilities in several areas. These include interaction between and within different levels of the organisation; decision-making; and agility.

HR is in the process of establishing a flexible new range of courses and training opportunities that will help to strengthen leadership, improve self-awareness, and challenge behaviours. HR aims to create mixed groups, including leaders and managers from different departments with varying levels of experience. HR plans to offer this training to all the leaders, with the ambition to match leaders with similar competence needs.

Sources: Canada (2022), Portugal (2022) and Sweden (2022).

Note

[1] Previous editions reported the allocation of staff resources across seven functional groupings: (i) Registration and taxpayer services; (ii) Returns and payment processing; (iii) Audit, investigation and other verification; (iv) Debt collection; (v) Dispute and appeals; (vi) Information and communication technology; and (vii) Other functions. Starting with ISORA 2020 those seven groupings were reduced to the four groupings shown in Figure 9.5.

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Annex 9.A. Links to supporting material (accessed on 13 May 2022)

- Box 9.1. – Chile: Link to a video that provides more information on the mobility plan: https://www.youtube.com/watch?v=HM_-sHc310Q
- Box 9.5. – Israel: Link to a presentation with more detail on the results of the automation project: https://www.oecd.org/tax/forum-on-tax-administration/database/b.9.5-israel-using-rpa-technology-in-the-ita.pdf
- Box 9.5. – Netherlands: Link to a factsheet on robotic process automation at the Netherlands Tax Administration: https://www.oecd.org/tax/forum-on-tax-administration/database/b.9.5-netherlands-factsheet-rpa.pdf