Digital Readiness Assessment Report

Trinidad and Tobago 

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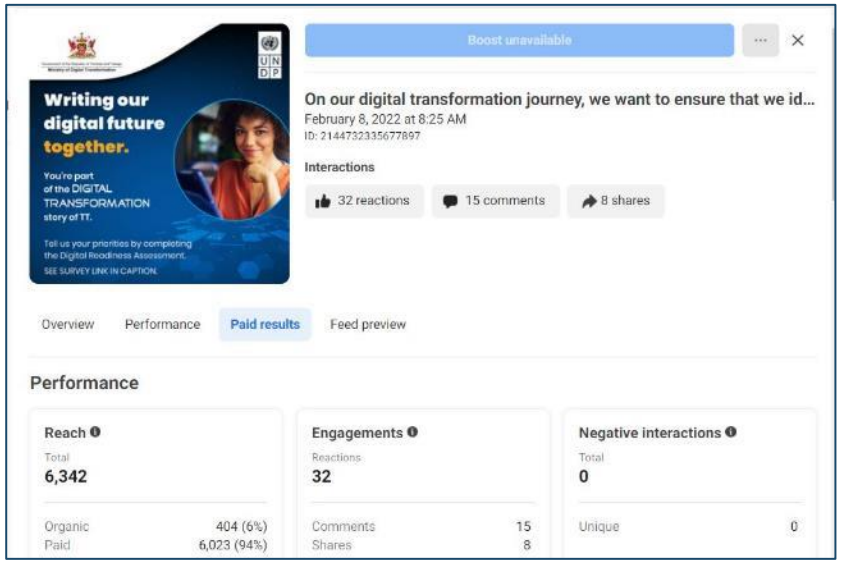
- **Executive Summary:** this section provides a high-level overview of key findings from the Digital Readiness Assessment, alongside recommendations and broader considerations. It is useful in providing a quick insight into priority digital challenges and opportunities.

- **About the Digital Readiness Assessment:** this section provides an introduction to the UNDP Digital Readiness Assessment, and the UNDP Digital Transformation Framework – founded on a whole-of-government and whole-of-society approach to digital. The first step of implementing the framework is the UNDP Digital Readiness Assessment.

- **Key insights:** this section features insights and a high-level overview of recommendations for each of the five digital readiness pillars. It provides more expansive detail than the Executive Summary, and aims to drive initial discussion – before diving into the detailed findings.

- **Detailed findings:** this section of the report unpacks the findings from the desk research and survey responses in greater detail – against the five pillars: infrastructure, government, regulation, business, and people. A set of recommended actions are also included for each of the five pillars. There is also a separate section on foundational digital catalysts: data exchange, digital legal identity, and digital payments.

- **Next steps:** setting out key and priority actions for the Government of Trinidad and Tobago, and opportunities for UNDP collaboration, advice, and support.



Executive summary

- **Trinidad and Tobago has made strong progress on its digital transformation journey** - including building good foundations in the context of digital infrastructure, government policy and leadership, enabling regulation, and improving the uptake of digital products and services across businesses and wider society. However, there remain important gaps in key areas - including challenges with internet affordability (particularly in more rural locations), and slower progress with driving open data.

- The creation of a new and dedicated Ministry for Digital Transformation is a very promising step, and reaffirms the interest across the country in leveraging digital for development and broader objectives. **A priority for the new Ministry should be to shape a more coordinated approach to digital in Trinidad and Tobago.** Survey respondents, and broader analysis as part of the Digital Readiness Assessment, highlighted a positive impact of digital in the country - but gaps, siloes, and coordination challenges may be constraining these benefits. Similarly, increased and dedicated financial and human resources could be important catalysts for the country's digital transformation journey. Investment and other opportunities also extend beyond government, with a need to encourage local digital content, product, and service development – and to shape life-long engagement of citizens with the digital economy.

- **Efforts to digitalise the private sector have made good progress - with the ease of doing business improved by the digitisation of business registration and other processes.** However, further private sector progress will likely need to be accompanied by improvement and investment in key digital economy foundations. In particular, delivering reliable and high quality connectivity, accessible and useful forms of credit, and improving the digital literacy of business owners will all be essential elements in this continued progress. Survey respondents also noted important gaps in key regulations to drive priorities such as e-commerce, and in shaping a broader enabling environment for private sector entities of all sizes. Demonstrating the benefits of digital and digital transformation for SMEs, particularly in the context of increasing and achieving key business outcomes, will be important.

- **Trinidad and Tobago is at an exciting moment on its digital transformation journey.** The initiatives and investments of previous years have established good digital foundations for the country – including in comparison to other countries of a similar income profile, as well as within the broader Small Island Developing States community. The recommendations set out in this assessment recognise this progress, and highlight opportunities to strengthen these foundations - but also to broaden and accelerate the benefits and potential that digital transformation can afford. **There is a real opportunity to position Trinidad and Tobago as a leader in whole-of-government and whole-of-society digital transformation.**

About the Digital Readiness Assessment

What is the Digital Readiness Assessment?

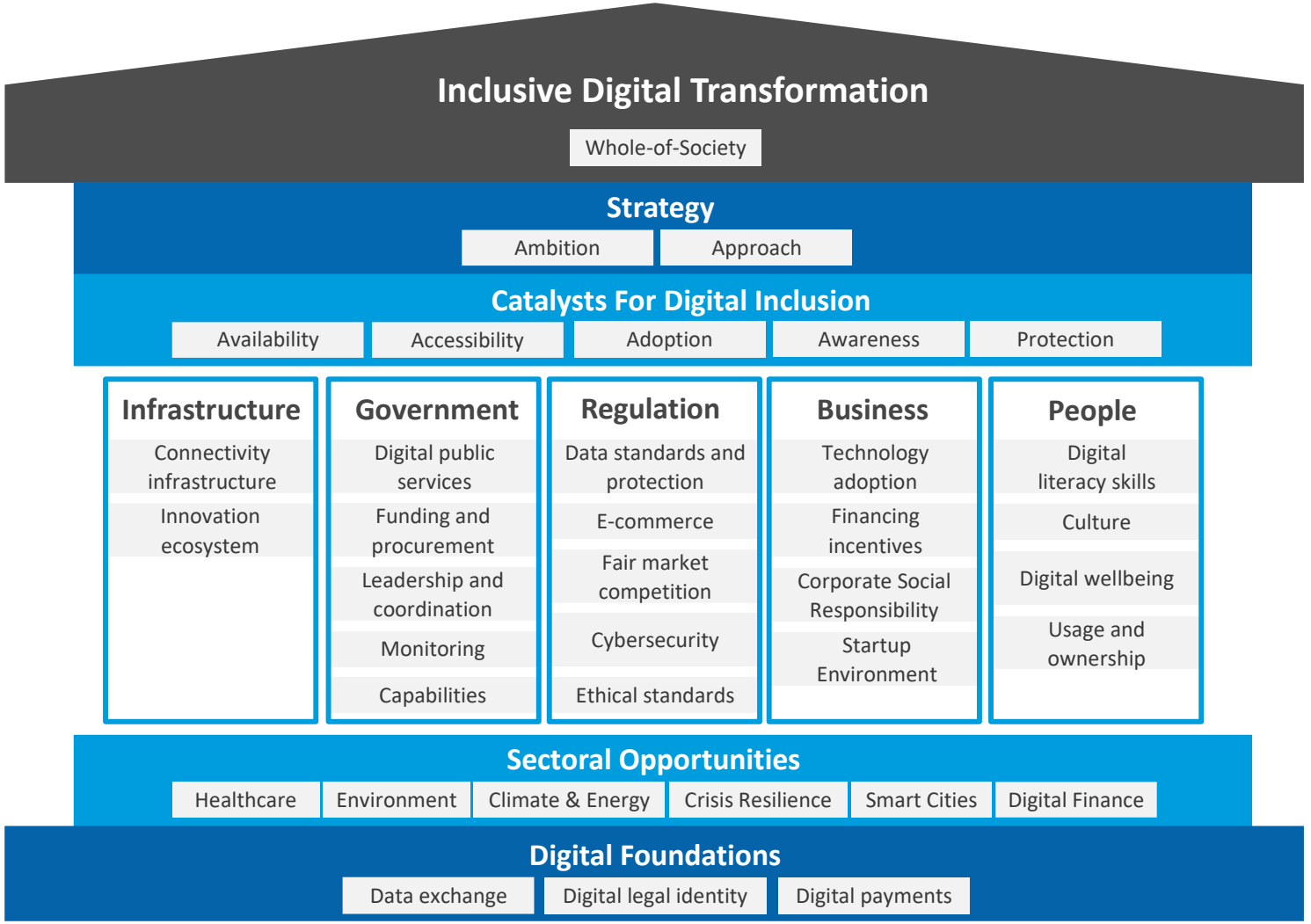
- The UNDP Digital Readiness Assessment is a **survey-based tool to provide rapid, high-level insights** into a country's digital strengths and opportunities. It is intended to serve as an "entry point" for increased engagement between governments, UNDP Country Offices, a broad range of UNDP experts, and other international development partners.

- The assessment has been **designed to be used in conjunction with other tools and existing research. It is founded on a number of key principles**: easy to complete, drawing on a mixed-method approach; providing real-time insights related to the 2030 Agenda, recognising that technology is a foundation and an enabler; providing iterative, tailored, and actionable results; and founded on inclusivity. Although brief references to digital initiatives in other nations may be made, these are only examples for governments to consider – the assessment is not a comparative index between countries.

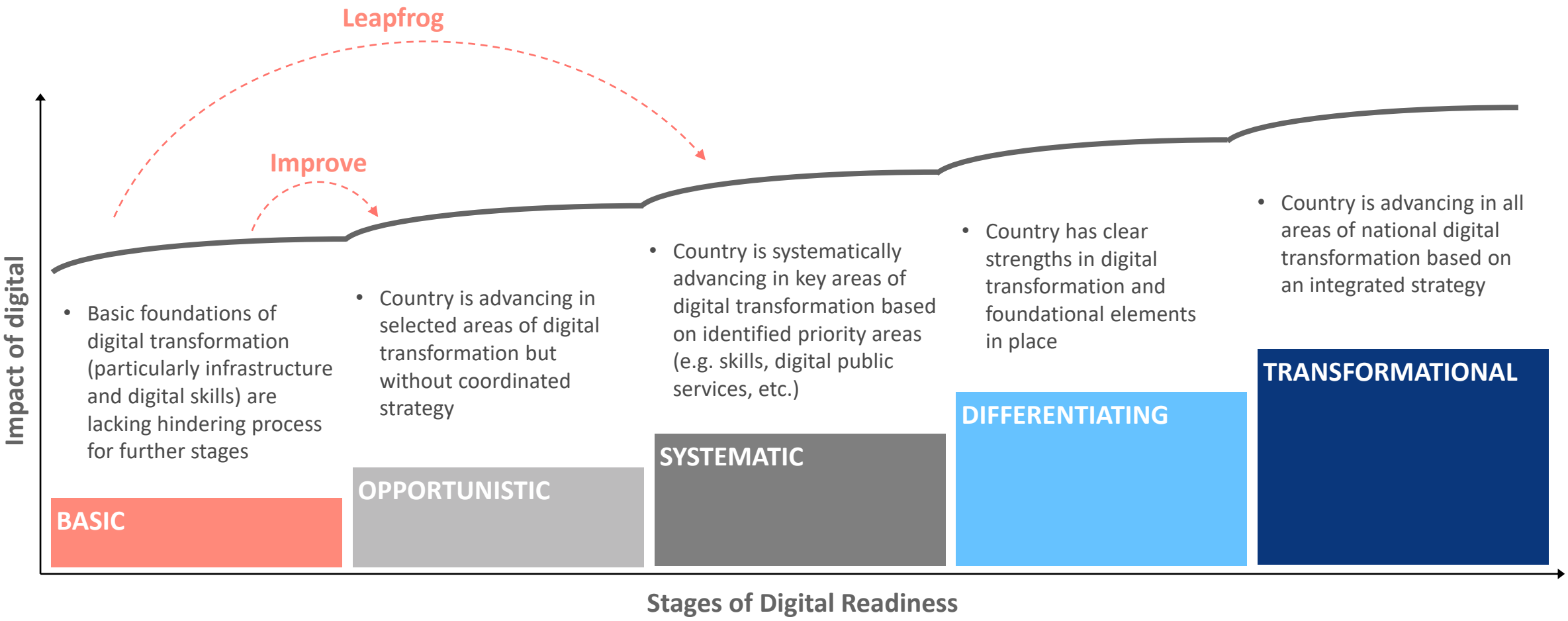
- The Digital Readiness Assessment also aims to improve coordination and clarity **to drive a whole-of-government and whole-of-society approach to digital transformation.** This is crucial in achieving digital inclusion, ensuring that no one is left behind from the potential of digital, and enabling countries to leverage **digital to achieve the Sustainable Development Goals.**

Founded on the UNDP framework for whole-of-society digital transformation

- The **UNDP Digital Transformation Framework helps stakeholders align on the key elements of inclusive digital transformation.** The framework allows these actors to identify, structure, and prioritise national digital transformation efforts and agendas.
- In each part of the framework **there are a broad range of components that can be addressed for a successful national digital transformation.**
- The framework is also **a basis to discuss possible UNDP support** – and a top-level framing that could encompass other frameworks. People and digital inclusion need to be put at the centre of this identification and prioritisation.
- **The first step of implementing the framework is the UNDP Digital Readiness Assessment.**



The relevant digital interventions for each country depend on the stage of “digital readiness“ – identified by the assessment



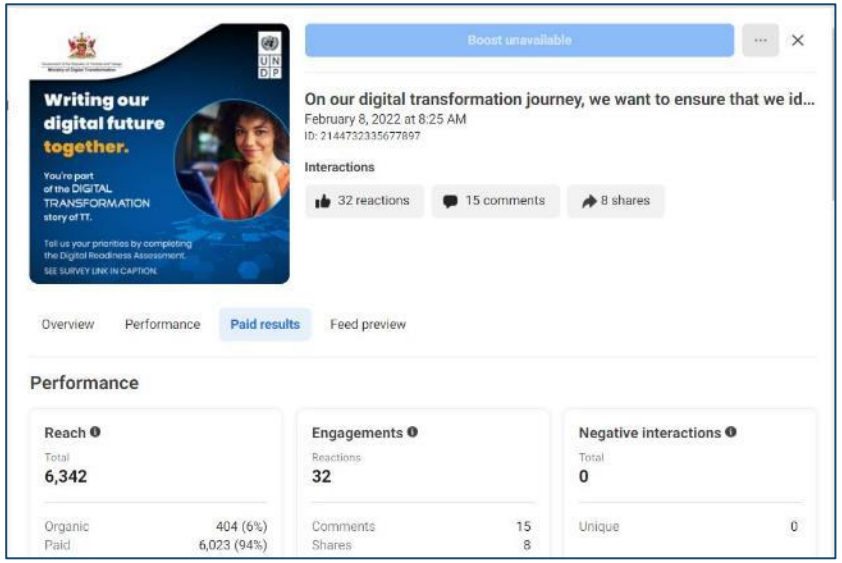
The Digital Readiness Assessment methodology

- The Digital Readiness Assessment is a non-representative digital survey-based tool to provide rapid, high-level insights into a country's digital strengths and opportunities, as perceived and experienced by its citizens. It features more than 140 single-choice, multiple-choice, and free-text responses. The Digital Readiness Assessment was developed by the UNDP Chief Digital Office.

- The survey is split into seven sections: perspectives on strategy, infrastructure, government, regulation, business, people, and socio-demographic questions. The survey is targeted at stakeholders in government (both national and local government), the private sector (including business associations), civil society organisations, and members of the public. Several questions are only asked of those from particular sectors. In this analysis, insights from the stakeholder survey are charted in blue, while insights from public respondents are charted in red.

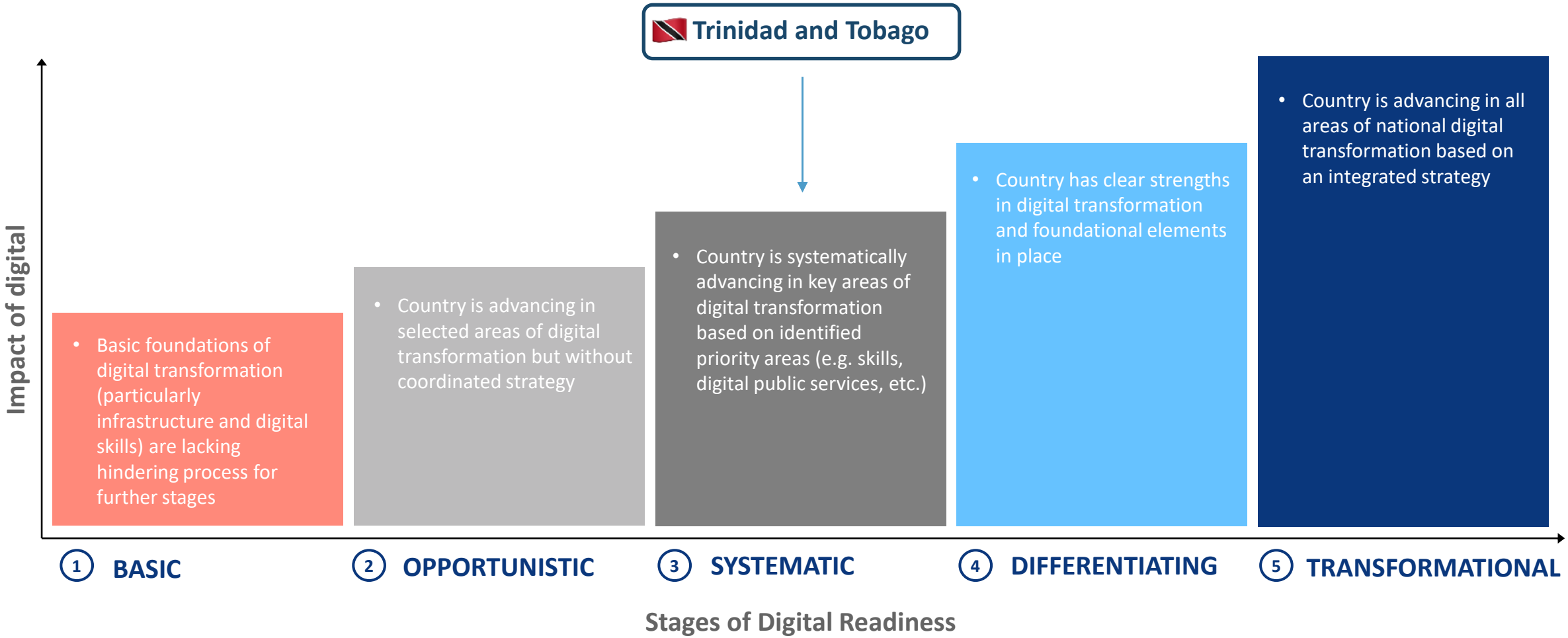
- In Trinidad and Tobago the Digital Readiness Assessment was launched in January 2022, during a government and private sector virtual workshop, with participants completing the survey (using the Kobo Collect platform) during this meeting. The public survey was launched following the workshop, and promoted via social media (see right) and a separate call centre-delivered survey was also run to broaden inclusion. Both surveys were available in English. Although not aiming to be representative, the public survey was comparable to the 2021 census data on age group and gender dimensions. At the same time, as the majority of responses were received online, it should be noted that the survey insights referenced in the analysis may naturally overrepresent the perspectives of citizens with some existing familiarity with digital.

- Members of the UNDP Global Centre for Technology, Innovation, and Sustainable Development; UNDP Small Island Developing States, and UNDP Chief Digital Office teams led on survey analysis and reporting. Analysis was conducted in January and February 2022.



Key insights

The Digital Readiness Assessment positions Trinidad and Tobago as a country systematically applying digital tools and approaches



This includes good progress in building digital literacy, and driving digital and technology engagement across the population

	BASIC	OPPORTUNISTIC	SYSTEMATIC	DIFFERENTIATING	TRANSFORMATIONAL
1 INFRASTRUCTURE	Low-quality connectivity, largely concentrated in capital	High-quality coverage available in capital city, but lacking elsewhere	High-quality coverage available in all cities, exploring rural areas	High-quality coverage across country, with ultra-rural not-spots	100% high-quality coverage of landmass and/or population
2 GOVERNMENT	Limited capacity	First digital initiatives in siloes. Limited political support.	Shared vision and strategy. Vocally encouraged.	Embedded in decision-making. Codified in administrative acts.	Culture of innovation. Codified in legislation.
3 REGULATION	Limited legal capacity	Regulations support foundations.	Initial policies and laws established.	Regulations enable innovation	Digital catalysts enabled. Regulations integrated.
4 BUSINESS	Limited digital integration across sectors	Growing technology penetration in key sectors	Cross-sector collaboration	Digital coordinated across sectors with financing incentives.	Key sectors enact digital responsibility standards
5 PEOPLE	Limited literacy. Cultural aversion to technology.	Limited digital literacy. Deep digital divide.	Growing digital literacy. Technology embraced.	High levels of digital literacy and penetration.	Limited digital divide.

Stage Of Digital Readiness

Trinidad and Tobago: rapid diagnostic

- The digital readiness of Trinidad and Tobago is **strong** and is considered '**systematic'** – meaning the country **is systematically advancing in key areas of digital transformation based on identified priority areas.**

- This score is also disaggregated across the five core pillars of digital transformation. These are:

  - Infrastructure
  - Government
  - Regulation
  - Business
  - People

- In addition, the Digital Readiness Assessment also **explores the status of foundational digital catalysts**: data exchange, digital legal identity, and a digital payments ecosystem, and the **overall strategic direction.**

- The assessment for each of the above areas is explored in more detail in the '**Detailed findings**' section of this report.

Key insights

	Infrastructure	Government	Regulation	Business	People
Summary of insights	Core connectivity infrastructure is strong. Sophisticated facilities including data centre and Internet Exchange Points are promising steps towards driving more advanced connectivity, e.g. 5G and cloud. Mobile and fixed broadband affordable; but last-mile availability, access, and reliability need to be enhanced. Foundational entrepreneurial culture and support is strong, but lacks a focus on digital; graduates struggle to remain globally competitive.	Digital transformation is endorsed by senior leadership in the form of a new dedicated Ministry, but there is an opportunity for stronger cross-agency coordination and whole-of-government capacity building. Data-driven decision making culture could be strengthened. More financial and human resources are needed to achieve ambitious digital transformation goals. Opportunity to improve Open Data, as well as procurement to catalyse ICT sector via government-as-customer strategy.	Systematic explorations in regulations that could futureproof digital economy developments – including reforms in data protection, e-signature, and e-payments legislation. Opportunity for sector-specific regulators to better align with digital economy priorities, and work with private sector stakeholders to create an enabling environment for SMEs to adopt e-commerce. Advisable to expedite Cyber Security Governance programme.	Businesses' engagement with digital is sometimes constrained by unreliable connectivity, lack of credit, and skills gap. Greater efforts required to demonstrate the role of digital in value creation for SMEs, as well as sustaining access to credit after COVID-19 relief schemes cease. Ease of doing business improved by digitisation of business registration and lending schemes; opportunity to engage digital diaspora, and leverage high mobile use to catalyse fintech.	Strong digital literacy foundations and appetite for digital products, reflected in high mobile penetration and social media use. Opportunity to encourage local digital content. Opportunity to accelerate a coordinated approach towards building digital expertise in youth, as well as facilitating lifelong digital upskilling. Universal Service Funds, ICT Access Centres, Digital Inclusion Survey, and ICT labour skills assessment are promising steps towards digital inclusion.

Key insights

	Infrastructure	Government	Regulation	Business	People
Summary of recommend-ations	• **Updated Digital Infrastructure Strategy** to inform and coordinate upgrading • **Infrastructure mapping exercise** to identify access gaps • **Telecoms reforms** to encourage infrastructure sharing • **Assess USF and its** transparency, impact on competition, efficacy in digital inclusion • **Innovation Hub and sector-specific Centres of Excellence** to leverage key sectors to spur digitalisation	• **Ministry of Digital Transformation Strategy** to clarify priorities and shape cross-sectoral steering teams • **Identify 'exemplar' digital initiatives** as models for replication • **Open procurement** to catalyse ICT sector • **Data audit** of existing sets and **reform open data architecture** • **'Centres of Excellence'** to digitise specific public sector functions • **Coordinated digital training strategy** for civil servants • **Update KPIs** to assess digital priorities e.g. interoperability	• **Accelerate legislative reform** in critical enablers of the digital economy including Data and Consumer Protection, Electronic Transactions, and Cyber Crime prevention • **Once-only legislation** to enhance user experience and security in e-government services • **Streamline business regulations** to improve ease of doing business via digitalisation • **Cloud policy** that balances data security with data openness	• **Updated National Digital Economy Strategy** to map new key actors & opportunities in priority sectors • **Develop digital business service centres** to enhance support • **Explore innovative financing schemes** to formally connect MSMEs with financial and fintech services and support • **Accelerate development of MSME 'cooperatives'** to share ICT resources and knowledge	• **Digital skills strategy** and skills mapping exercise to identify talents and capacity-building opportunities • **Digitalise schools** as multi-purpose community digital centres • **Stimulate creative economy** and 'upload' culture through coordinated strategy • **Leverage data** to map digital inclusion needs and gaps • **Strategy for USF monitoring** to ensure their efficacy

Detailed findings

Introduction

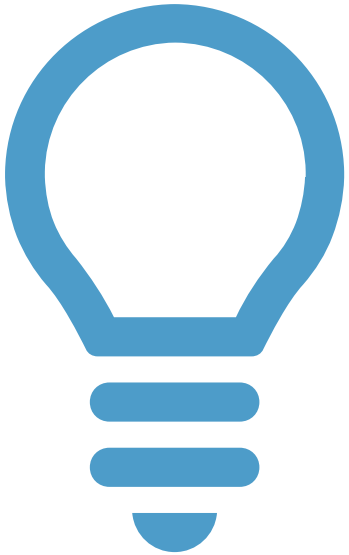
- This section of the report unpacks the findings from the desk research and survey responses in greater detail – against the five pillars:
  - **Infrastructure –** is the literal foundation of a digital economy, society, and country. This includes wired and wireless connectivity, but also a broader 'innovation ecosystem' that enables, supports, and catalyses digital efforts.
  - **Government –** must be the driver of digital transformation in a country, including in close collaboration with the private sector and civil society. This central role requires government to deliver high-quality, inclusive, and sustainable digital public services – founded on a digitally-skilled civil service
  - **Regulation –** including legislation, oversight, guidelines, and policies – is needed to underpin digital transformation. This includes ensuring fundamental protections, such as data security and privacy, whilst also being dynamic in supporting and catalysing competition and innovation**.**
  - **Business –** the private sector, from start-ups to Big Tech, is an important partner in the Digital Economy. Their products and services – including digital infrastructure and digital payments – are key foundations. They also catalyse citizen uptake of digital and drive digital inclusion.
  - **People –** digital transformation should be driven by the needs, realities, and aspirations of individuals. It should be people-centred, including founded on participation, engagement, and co-design wherever possible. Digital is a tool to improve lives and livelihoods.
- There is also a separate section on **foundational digital catalysts:** data exchange, digital legal identity, and digital payments, and **strategy**.
- Each of the five sub-sections includes an introduction to the pillar – and its importance and relevance for digital transformation – its digital readiness score, and a set of top-level and detailed findings. The latter are broken down into each of the sub-pillars of the above five categories. This is then followed by a set of bespoke recommendations, to support Trinidad and Tobago in strengthening the digital progress made within each pillar – and building on this to progress the country's digital transformation journey.

Strategy

Digital transformation is a whole-of-government and whole-of-society endeavour. In order to achieve this holistic approach, and to ensure that no one is left behind, a clear strategy and vision is needed. This should be accompanied by a strong political and broader mandate.

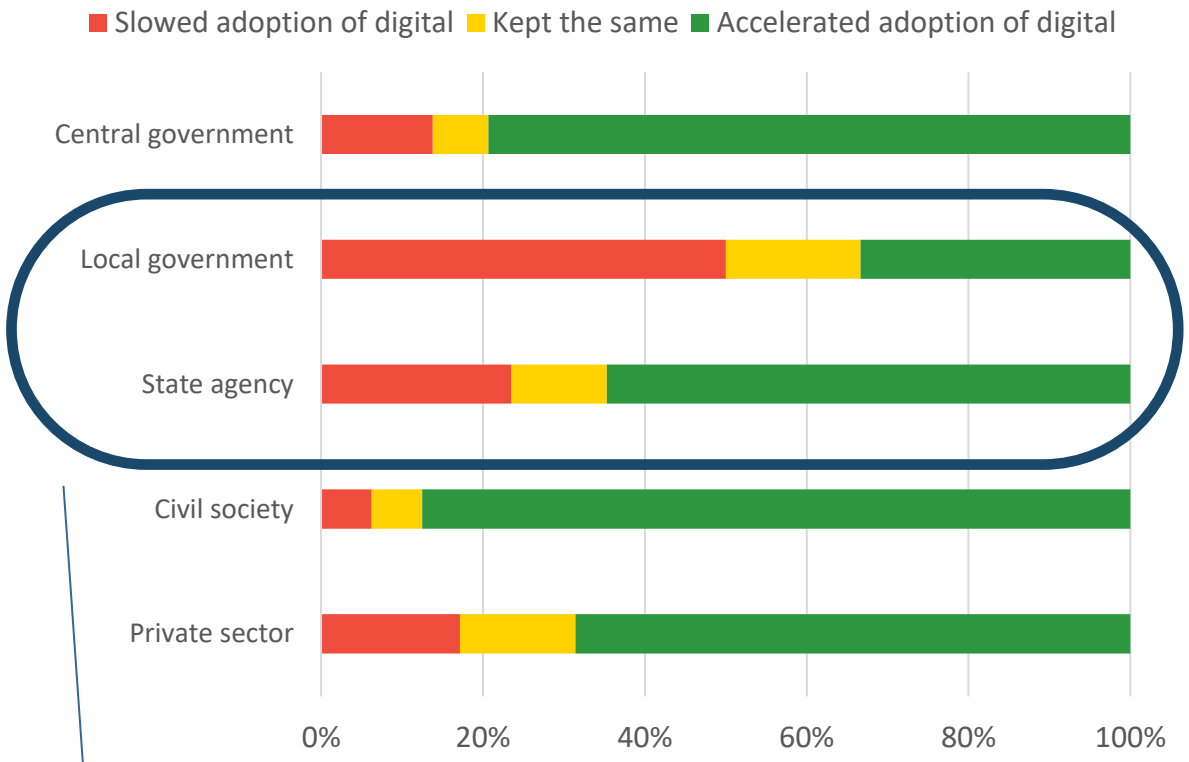
Digital transformation is a journey, and not an end-point in itself. Reflecting this, governments must have the **skills, abilities, and foundations** needed to articulate and drive digital transformation. This includes grounding these components in the national context, but also recognising the role of digital in achieving national and broader development priorities.

Similarly, the benefits of digital transformation may not be immediately apparent. This is particularly the case with regard to internal digital transformation, but also when building crucial digital foundations – such as data registries – which may take a number of years to demonstrate impact. In this context, **strong political and official leadership** is essential. These are assets to maintain direction and momentum – and to tackle the challenges that may arise on the national digital transformation journey.



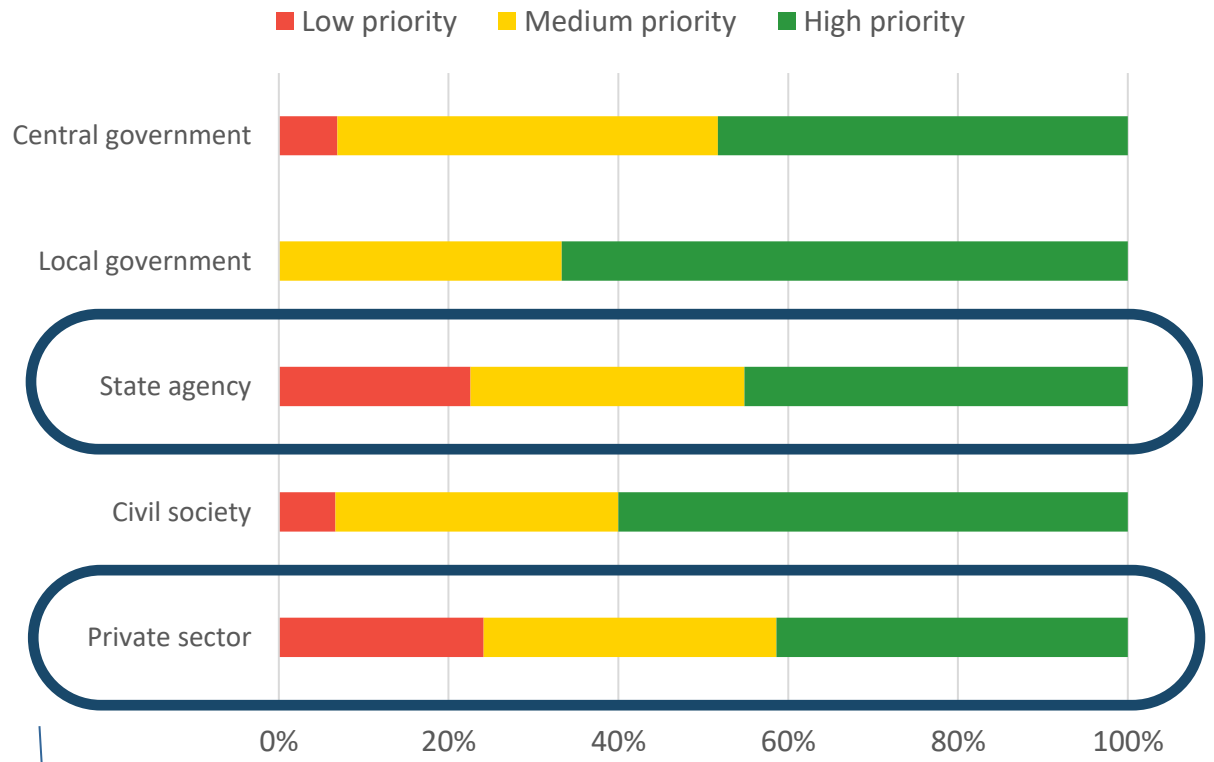
The role, potential, and importance of digital may need to be increasingly highlighted – particularly to drive further uptake outside of central government

'Has the COVID-19 pandemic impacted your organisation's adoption of digital?' (n=120, stakeholders)



While COVID-19 has accelerated the adoption of digital across the country, local governments and state agencies have had slower uptake

'Where does digital rank as a national priority given all other needs?' (n=110, stakeholders)



Digitalisation is a visible national priority for most, but more effort may be required to demonstrate to state agencies and private sector actors its potential

Respondents answering 'I don't know' not included

Strategy: overview and key insights

Rating: Differentiating

Ambition	Approach

- The government has strong **ambition** to become a 'Digital First Government' and position digital at the core of national development (Roadmap 2020). There is good support for digital transformation at the senior level, with the establishment of a dedicated Ministry of Digital Transformation in 2021. The government is also leveraging the momentum of accelerated digitalisation driven by COVID-19 to consider the potential of digital as a long-term tool and priority for the country's socioeconomic transformation. This includes building institutional capacity to deliver more responsive and inclusive digital public services, as well as restructuring business processes around digital to catalyse a broader culture of innovation and entrepreneurship.

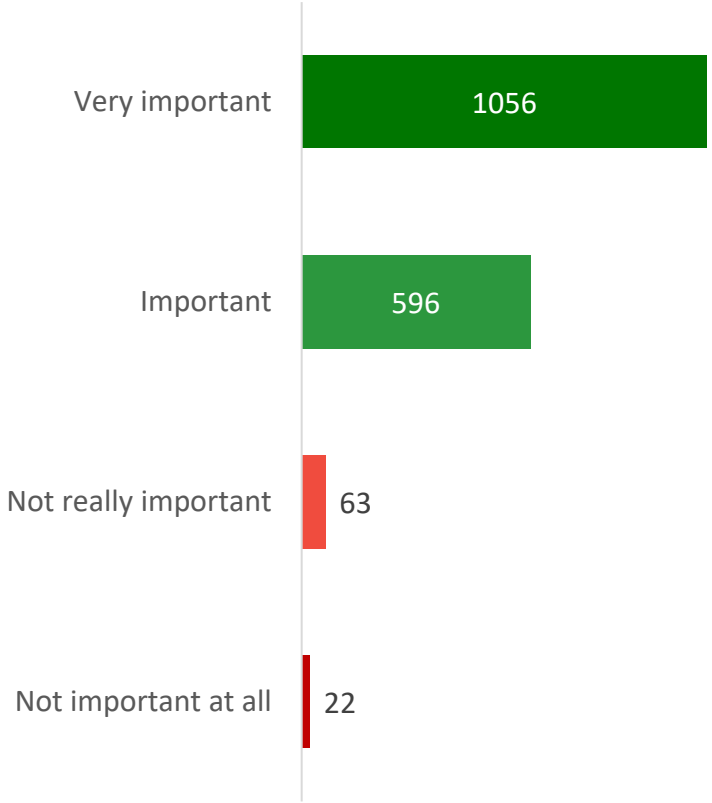
- More broadly, the National ICT Plan (2018-2022) serves as the country's national digital transformation strategy, and envisions a systematic and whole-of-government digital transformation, prioritising the development of exemplar digital public services, as well as the digitalisation of government administrative functions through strong digital architecture and skills capacity building – with aim towards harnessing 'government-wide data analytics' for a 'results oriented' culture in the public sector.

- Survey respondents, especially from the central government and from civil society organisations, perceived digital transformation to be of medium to high national priority. However, stakeholders from state agencies and the private sector disagreed, believing digital to be of low priority relative to other national needs. This could suggest that the ambition for digitalisation has yet to permeate too far beyond the central government, and could warrant a bolder approach in communicating digital transformation efforts in the country. This is a challenge encountered by many countries, particularly in setting out a coherent programme and narrative in the context of the wide-ranging and cross-cutting nature of digital transformation. In this context, leadership is particularly important. Stakeholder survey respondents from the public and private sectors noted that the country's leadership is only being *'somewhat bold'* in the context of digital transformation, whilst 60% of public respondents felt that the country was *'not bold enough' ('Do you think the country is being bold in leading digital transformation?')*. Importantly, this suggests great interest, appetite, and support from stakeholders and wider local society in driving digital transformation across Trinidad and Tobago.

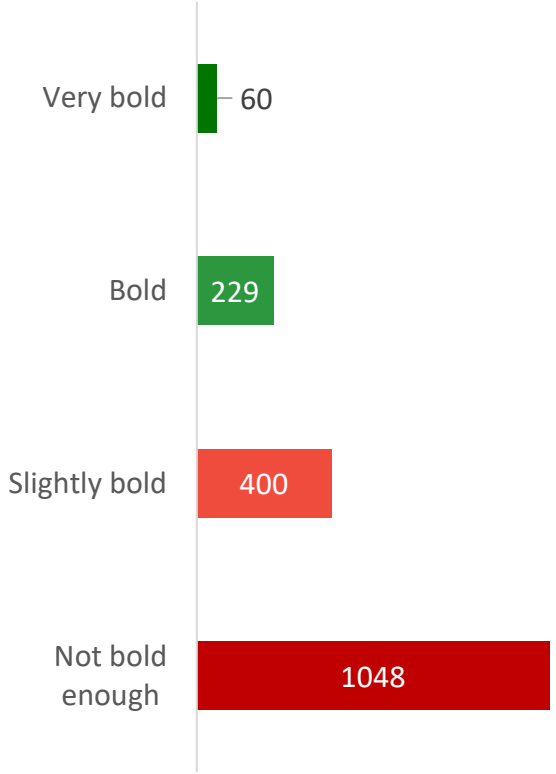
Citizens believe in the transformative power of digital – and this could support bolder digital approaches in the government

'Are digital efforts increasing efficiency in the government?' (n=62, stakeholders)

'How important are digital technologies for making Trinidad and Tobago better compared to other priorities?' (n=1,737, public)



'Do you think the country is being bold in leading digital transformation?' (n=1,373, public)



Strategy: overview and key insights (continued)

Rating: Differentiating

Ambition | **Approach**

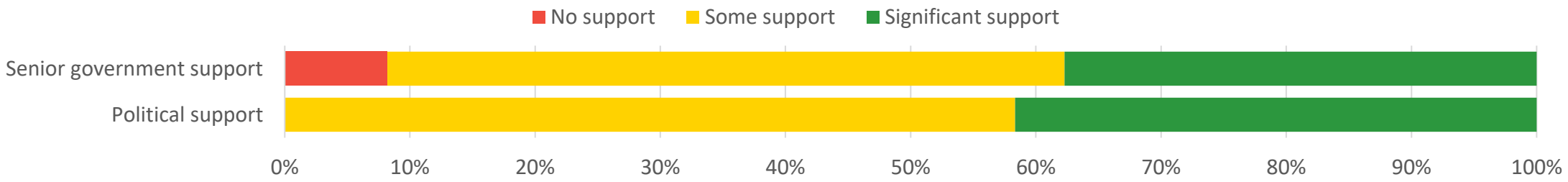
- The delivery of the ambitious ICT plan is based on a 'Centralised Policy, Distributed Delivery' model (National ICT Plan 2018-2022). This strategy details a systematic **approach** to digital transformation – with initial focus on 'foundational pillars' such as infrastructure and legislation, then subsequently the development of increasingly digital public services, and finally the integration and standardisation of such digital services across government. In this regard, the government has demonstrated strength in delivering whole-of-government and sector-specific plans (for example, the National e-Commerce Strategy 2017, and the e-Democracy programme 2018-2022) for digital government and digital economy transformation.

- However, challenges in coordination across government, especially with regard to clarity in mandates and project ownership, may lead to difficulties in operationalising high-level strategies at an implementation level (National ICT Plan 2018-2022). Perhaps reflecting this, stakeholder survey respondents suggested that there were shortcomings in coordination, change management, funding, infrastructure, and digital literacy when delivering on digital efforts (*What are the main obstacles for implementation and acceleration of digital transformation?*). To address some of these challenges, they identified the need for more institutional support particularly in the form of technical assistance, policy advice, mobilising resources, and networking between government bodies.

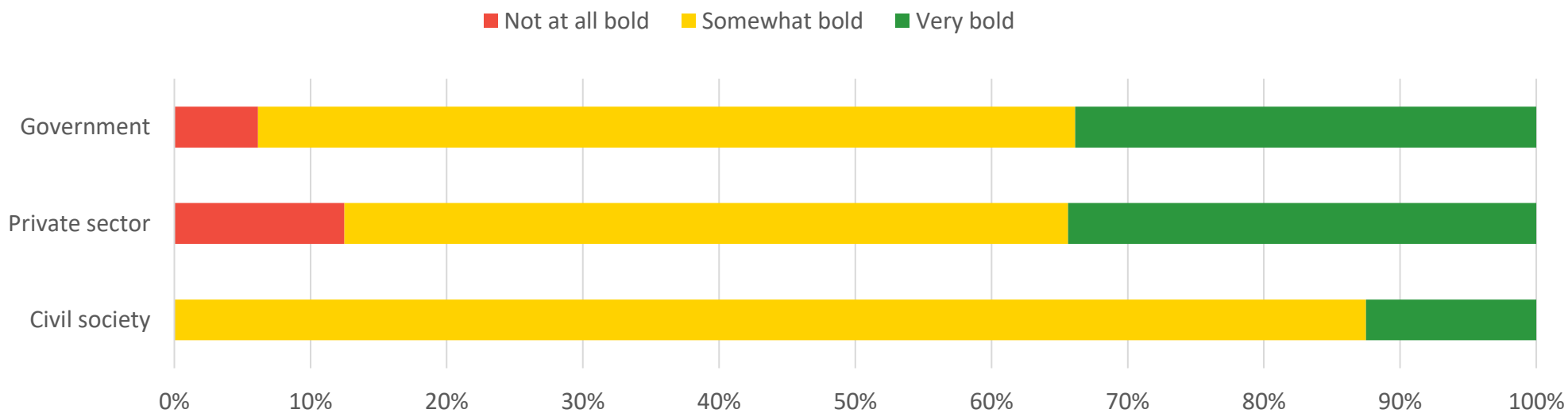
Key types of support believed to be required to deliver on current policy strategies (n=70, stakeholders; multiple choices per respondent)

Increased and sustained senior sponsorship will be crucial in leveraging digital – and for building on and accelerating digital transformation efforts

'Is there support in senior levels of government/political support in pursuing digital transformation?' (n=61, stakeholders)



'How bold is the country leadership willing to be in digital transformation?' (n=114, stakeholders)



Respondents answering 'I don't know' not included

Infrastructure

Infrastructure is the literal foundation of a digital economy, society, and country. This includes wired and wireless connectivity, but also a broader 'innovation ecosystem' that enables, supports, and catalyses digital efforts.

With regard to **connectivity**, a country should ensure inclusive availability and affordability of high-quality broadband internet. This should include wired and wireless (particularly mobile) technologies – but also relevant and sustainable products and services. Key components, such as access and ownership of devices and access to electricity, must also not be forgotten.

A country's **innovation ecosystem** is a central part of a sustainable digital economy. This combination human capital, core physical assets, and meaningful collaboration is the engine of digital progress. This ecosystem should be diverse – with the private sector, civil society, and academia playing a key role – and all-encompassing. This includes building a local digital workforce, and shaping innovation communities through accelerators, hubs, and other networks.

Infrastructure: rapid diagnostic

- The digital infrastructure situation in Trinidad and Tobago is good – and is considered **'Systematic'.** This means that connectivity foundations are strong. In addition, there is a good – and growing – developer, innovator and digital business ecosystem.

- The infrastructure pillar has the below components:

  - **Connectivity technology:** availability, affordability and quality of broadband internet access, mobile internet, mobile services and devices, availability and affordability of electricity and other foundations to digital economy.

  - **Innovation ecosystem:** availability of business interest groups, international business partnerships, local universities and other research institutions; local digital workforce, NGOs and CSOs focusing on digital inclusion; accelerators and tech hubs, incubation space networks and coding communities.

- Reflecting the foundational nature of digital infrastructure, this topic is also covered elsewhere in the findings.

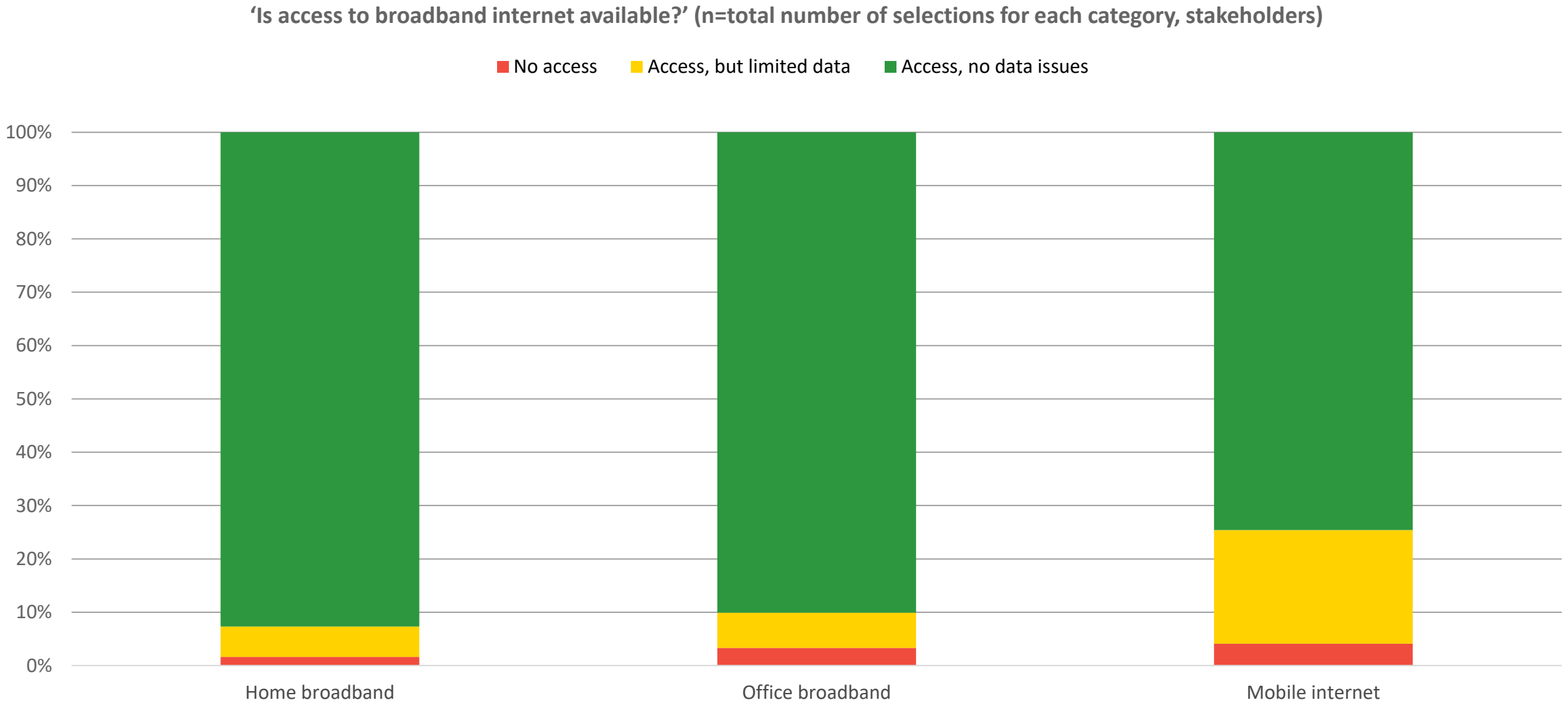
Infrastructure: overview and key insights

Rating: Systematic

- Trinidad and Tobago has strong connectivity foundations. This includes five submarine cables landing in the country, as well as a sixth cable, Deep Blue One slated for operations in 2024. The government has also invested in more sophisticated connectivity technologies, including a local Internet Exchange Point (IXP), and partnerships with private data centers. The liberalisation of the telecommunications sector in 2004-2006 saw the emergence of two mobile operators and eleven internet providers in Trinidad and Tobago, with positive effects on Internet traffic costs, network latency, performance, and coverage (TATT, 2020; also see ITU, 2008 for immediate post-liberalisation impacts). However, survey respondents identify broadband reception, affordability, and reliability as constraining factors which limit broader digital connectivity delivery in the country. The Vision 2030 details plans for a National Broadband Strategy that could address some of these challenges – and leverage regional resources enabled by the CARICOM Single ICT Space to share best practices around ICT policy making.

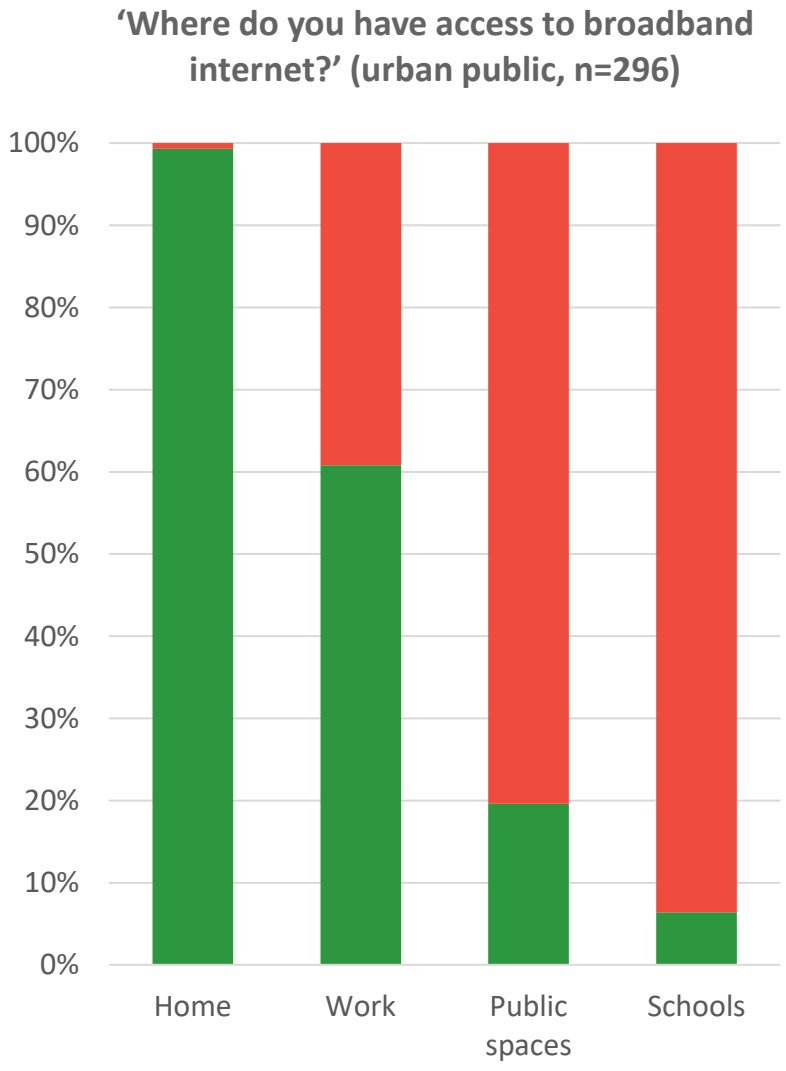
- Trinidad and Tobago hosts a strong network of entrepreneurship interest groups and early-stage innovation support, as well as financing schemes. The National Integrated Business Incubator System (IBIS) and related Research and Development (R&D) networks established by the University of Trinidad and Tobago and the University of the West Indies form strong core foundations for local innovation. The National Innovation Policy (2017) was critical in redirecting greater private investments towards R&D, addressing gaps in innovation funding over the years. However, these initiatives appear to lack the visibility they require to reach young citizens, and private sector respondents in particular do not believe local universities are shaping the digital skills that meet the digital economy's labour market needs. Desk research also reveals that STEM graduates have few opportunities in their careers to contribute to digital innovation in the country, perhaps reflecting a lack of digital foregrounding in local innovation initiatives and networks. Hence, whilst the government demonstrates strong ambition and success in developing its innovation ecosystem over the years, more can be done to ensure that local innovation matches the needs of the private sector, and that local entrepreneurs ideate products and developments that are globally relevant and competitive in an increasingly digital world.

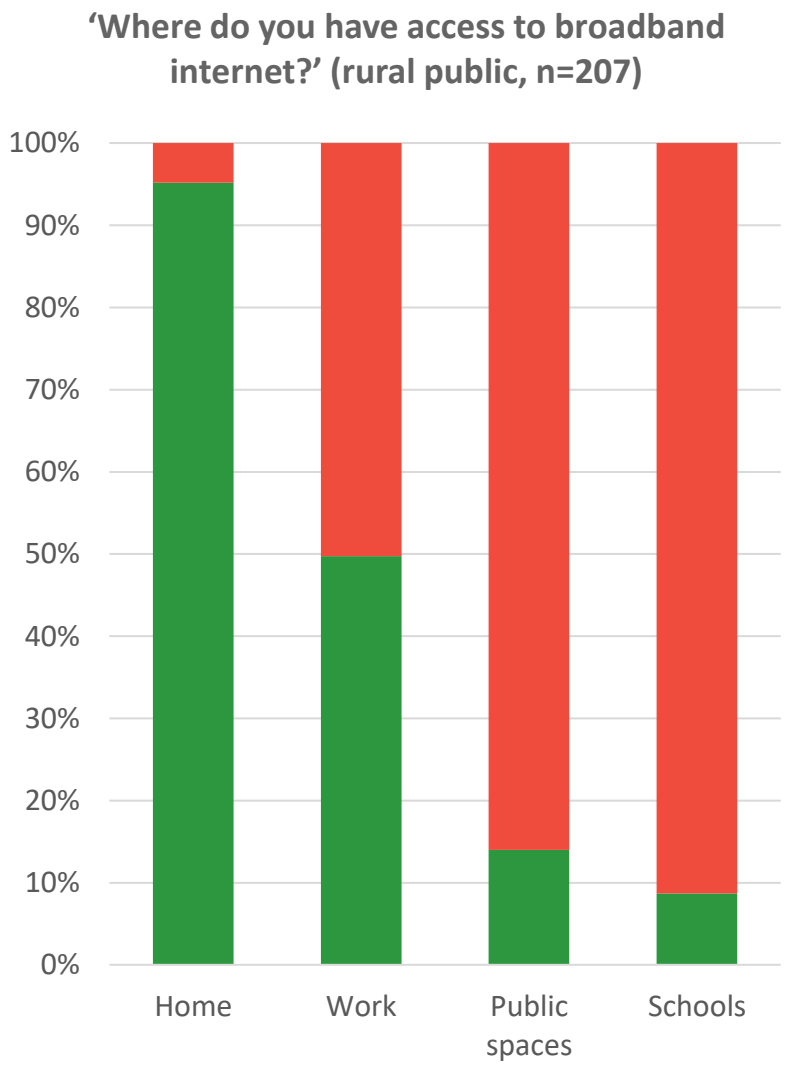
Stakeholder survey data suggests broad access to broadband internet in the home and office setting – but some have limited mobile internet data



Respondents answering 'I don't know' not included

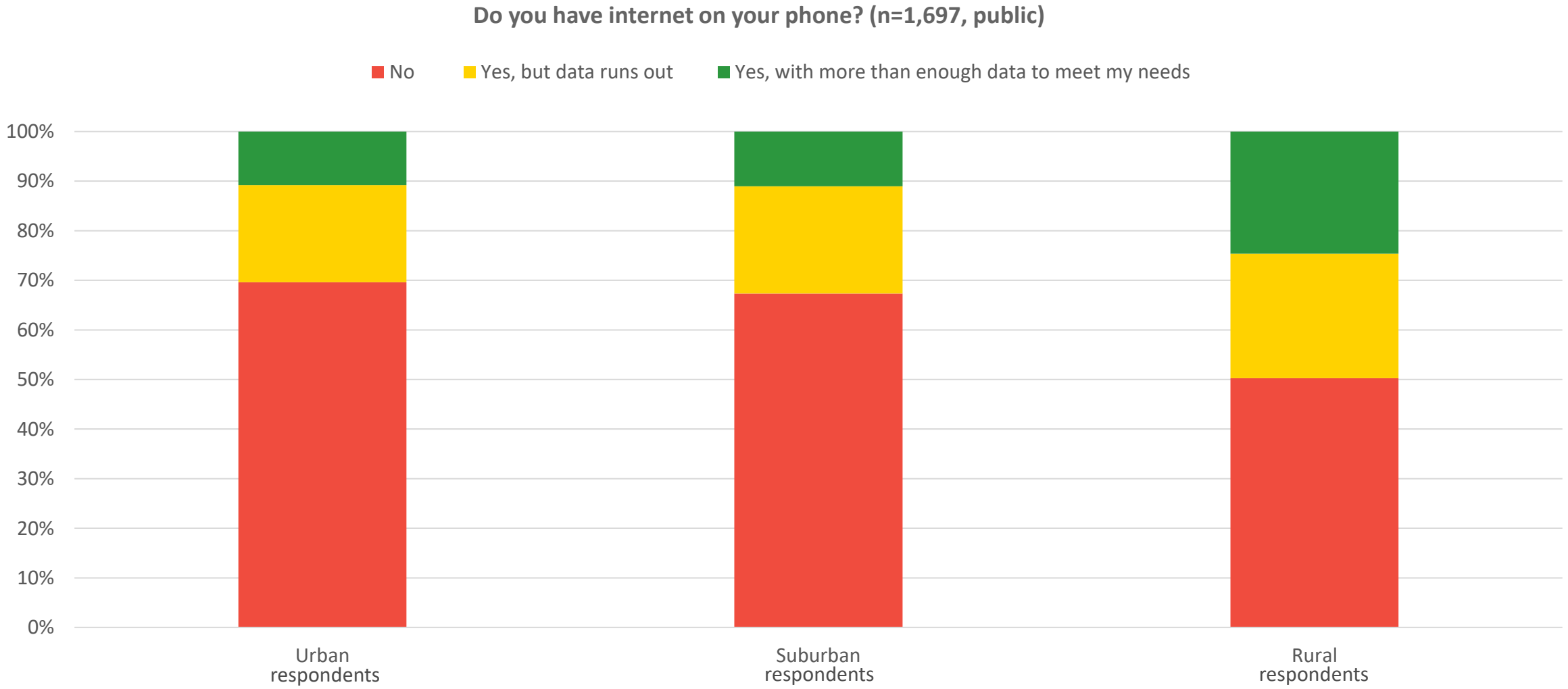
However, broadband access remains a challenge in public spaces and schools – regardless of respondents' area





Yes No

Mobile broadband usage is low across areas – with few respondents having sufficient data to meet their needs



Infrastructure: sub-pillars

Connectivity Infrastructure | Innovation Ecosystem

- The foundational **connectivity infrastructure** in Trinidad and Tobago is relatively strong compared to other Latin American and Caribbean Nations (UN E-Governance Survey, 2020; GSMA Mobile Connectivity Index, 2019; IDB, 2021), scoring an overall 67.2 in the GSMA Mobile Connectivity Index (2019), above the Latin American and Caribbean average of 60.1. TT-1 (2012), the main domestic submarine communications cable, connects Trinidad island with Tobago. Trinidad and Tobago is further connected to the wider region as part of five international cable networks: the Eastern Caribbean Fiber System (1995), Americas-2 (2000), Southern Caribbean Fiber (2006), ECLink (2007), and Suriname-Guyana Submarine Cable System (2007). The completion of a new cable, Deep Blue One (slated for service in 2024), could facilitate the development of more sophisticated connectivity technologies. In addition, there is a local Internet Exchange Point – the Trinidad and Tobago Internet Exchange (TTIX). Four data centers also facilitate the local hosting of cloud and data, and the latest center (established 2015) is carrier-neutral, with a Tier 3 certification (characterized by concurrent maintainability, following ANSI TIA-942 standards). These latter developments could be critical enablers in the planned rollout of cloud services in the public sector, and other advanced ICT infrastructures – including 5G (National ICT Plan, 2018).
- Given these strong infrastructural foundations, Trinidad and Tobago benefits from high 3G and 4G coverage at 100% and 75% respectively (ITU, 2020). The TTWiFi programme also provides citizens with free WiFi in key public areas such as libraries and hospitals, with plans to expand (Budget 2022). Yet, only 77% of residents actively use the internet (TATT, 2018), and subscriptions to fixed broadband services are low, at 27 subscriptions per 100 citizens (ITU, 2020). However, the public survey does highlight greater uptake – although this is not conclusive in itself. The GSMA Mobile Connectivity Index (2019) also notes that the country's high 3G/4G network coverage may be negated by weak spectrum allocation and network performance for mobile broadband. Network quality is also likely impaired by a weak electricity grid, as well as the region's vulnerability to natural disasters – with few infrastructural contingencies in place (IDB, 2020). Reflecting some of these challenges in internet quality, the self-reported connection speeds of survey respondents vary, ranging from a low of 1 Mbps to a high of 199 Mbps. Furthermore, additional feedback received over the course of the survey included an observation that rural communities have faced difficulties with broadband performance in the past, eventually switching to personal WiFi networks (portable mobile wi-fi devices provided by one of the national telecoms providers), which have seen success in enhancing connectivity. In addition to these issues of quality, survey respondents also reported that mobile internet data tends to run out. In this regard, delivering high-quality and low-cost connectivity is a key priority for Trinidad and Tobago to realise the full potential of its high network access.

Infrastructure: sub-pillars

Connectivity Infrastructure | Innovation Ecosystem

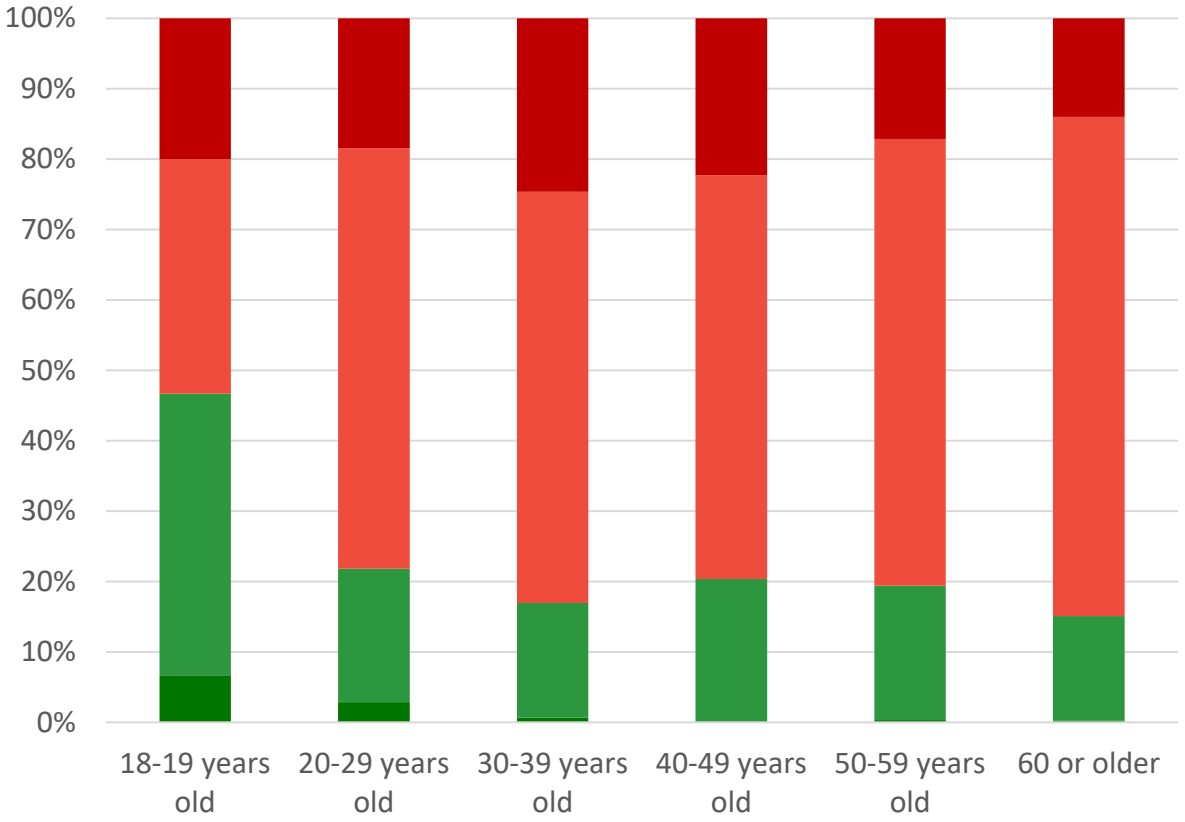
- Furthermore, last-mile connectivity remains a challenge in the country. Specifically, there is an infrastructure gap between the islands of Trinidad and Tobago – a result of devolution in ICT regulations between national and local administrators (as set out by the Tobago House of Assembly Act), which may have contributed to asymmetries in access and affordability (National ICT Plan 2018-2022). To address this, the central government is working with the Tobago House of Assembly to establish a second landing point in Tobago, as well as an IXP and data centres on the island that could support the local hosting of digital content. At the same time, the government should be careful so as to not neglect other axes of infrastructural asymmetry in the country. Numerous public survey respondents provided additional feedback with regards to the the rural-urban divide in digital connectivity even within the island of Trinidad, with rural respondents noting the lack of a reliable cell or broadband service in areas such as Moruga, Togo, Cumuto, and Biche – even for students in these areas, whose schools' have adopted digital learning approaches.

- Here, the Telecommunications Authority of Trinidad and Tobago's (TATT) Universal Service Framework/fund may be helpful, which was first established in 2015 with the intention of funding additional spectrum to service providers to increase internet coverage and speed – as well as to increase WiFi access in public spaces. Since then, to more broadly promote digital inclusion in the country, TATT has expanded the USF to provide underprivileged students with devices to aid with remote learning, as well as digital devices with assistive technologies for persons with disabilities. Amongst other SIDS with USFs, Trinidad and Tobago dedicates the highest amount to its USF (almost USD$18m; UN ECLAC, 2019); Digital Inclusion Surveys slated for the near future will a crucial step forward in mapping the abovementioned pain-points in digital service delivery to better direct future uses of the fund.

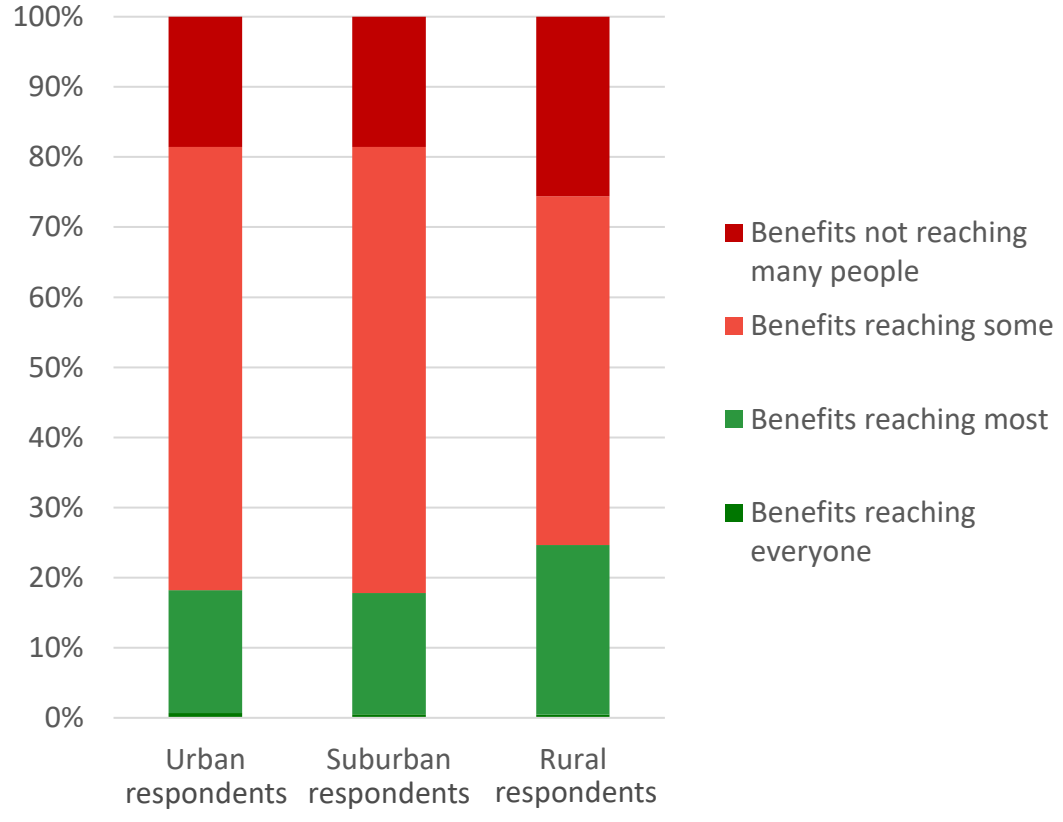
The benefits of digital may not be reaching everyone – including older residents and those outside of urban centres

Do you think the benefits of digital are reaching everyone in the country? (n=1,682, public)

…disaggregated by age



…disaggregated by area



Respondents answering 'I don't know' not included

Infrastructure: sub-pillars

Connectivity Infrastructure | **Innovation Ecosystem**

- The government has also made strong inroads in enhancing the affordability of connectivity. Both mobile and fixed broadband in Trinidad and Tobago are generally more affordable than in other Latin American and Caribbean nations (IDB, 2021). This could reflect the strength of a competitive environment for both fixed and mobile broadband, following the liberalisation of the telecommunications sector in 2004, and the establishment of the Telecommunications Authority of Trinidad and Tobago as the central regulator.

- Interestingly, fixed broadband is more affordable than mobile broadband in the country; specifically, a 5GB fixed broadband plan and 1GB mobile broadband plan cost 1.48% and 2.33% of GNI per capita respectively (A4AI, 2020). The former is well below the affordability target of 2% of GNI per capita set by the Alliance for Affordable Internet. Electricity is also generally more affordable than in other Caribbean islands, and the government has plans to further subsidise approximately 61% of electricity costs for consumers (Martinez and Hosein, 2018). Furthermore, consumers do not face additional sector-specific taxes or fees for using or activating mobile plans, as well as purchasing handsets.

- The **innovation ecosystem** in Trinidad and Tobago is growing. Research shows evidence of various institutions and mechanisms supporting entrepreneurship, financing, and exchange knowledge and technology within the economy. For instance, the National Integrated Business Incubator System (IBIS), was originally established in 2011 by the Ministry of Labour and Small and Micro Enterprise Development (MLSMED) and the National Entrepreneurship Company (NEDCO); the network offered MSMEs business development and operational assistance, financial assistance, networking, and mentorship opportunities, and infrastructural support. This initiative has since evolved into a general support programme for MSMEs in underserved communities. These incubator initiatives are supplemented by the 2017 National Innovation Policy, which plugs gaps in funding and financing strategy; the Policy guides the nation's private investments towards innovation, and is operationalised through the Shaping The Future of Innovation Programme (2021), which facilitates financial incentives and international industry partnerships to foster R&D in sectoral gaps.

Infrastructure: sub-pillars

Connectivity Infrastructure | **Innovation Ecosystem**

- More recently, numerous MSME services and support programmes have emerged as collaborative efforts between the government, private firms, and civil society actors. This includes the Unit Trust Corporation's 'Urpreneur' initiative – a series of workshops and resources for local entrepreneurs – and ScaleUp TT, a business accelerator programme by the Ministry of Trade and Industry, Unit Trust Corporation, and Entrepreneurship Policy Advisors (EPA) group. Tech Beach Retreat, a global network of tech entrepreneurs and investors with a strong presence in the Caribbean, has also established a local StartUp Accelerator, and a Venture platform that curates partnerships to offer new enterprise opportunities to young innovators. The UNDP Accelerator Labs' Innovation Challenges also offer entrepreneurs opportunities for dedicated innovation in priority areas, such as in the Green Economy.

- Furthermore, two national universities – the University of Trinidad and Tobago (UTT), and the University of the West Indies (UWI) – are on track to becoming leading 'Entrepreneurial Universities' in the region, characterised by a growing research culture and reputation, financial resources, publications, patents filed, and venture outputs (Allahar and Sookram, 2019). The UTT uSTART physical incubator and the UWI BizBooster virtual incubators promote social development and facilitate both financial and mentorship networks; the UWI is also home to a Research Innovation and Entrepreneurship Ecosystem, which nurtures research and advances entrepreneurship through a network of faculties, special units, funders, industry experts, and entrepreneurship training programmes.

- Despite these efforts, Trinidad and Tobago ranks 91/129 on the Cornell-INSEAD Global Innovation Index – lower than expected for its income level. This may be due to a weak local digital workforce; the Vision 2030 report notes a steady rise in local STEM graduates, but a dearth of later-stage research institutions and opportunities for graduates to remain in STEM. This also translates into an absence of an ICT culture in the education system, perhaps requiring continuing 'catch-up' to new emerging global technologies (Vision 2030). The success of the country's Innovation Ecosystem may rest on reforms to the local curricula and teacher training programmes – such that they better reflect the rising digital needs of the digital economy (IDB, 2021) – as well as the success of the National Innovation Policy in increasing the local capacity for tech research and development for local STEM professionals.

Infrastructure: recommendations

There are a number of priority recommendations within this pillar:

- **Develop a new Digital Infrastructure Strategy:** As the last National ICT Strategy (2018-2022) reaches its expiry, the Ministry of Digital Transformation should begin looking into an updated ICT and infrastructural needs assessment, with focus on not-spots and last-mile connectivity challenges, especially between Trinidad and Tobago. The strategy should look into the provision of key foundational (particularly fibre-optic) connectivity for the government and private sector, spectrum management, and enhanced universal service implementation (National ICT Plan 2018-2022). Other considerations could include net neutrality (TATT, 2020), infrastructural resilience amidst the region's propensity for disaster risk (UN ECLAC, 2019) and better management of Trinidad and Tobago's country code/domain (ccTLD).

- Furthermore, given the relative affordability of connectivity in Trinidad and Tobago, **the government should identify potential factors impeding broader internet penetration in the country.** This could include challenges in digital skills and culture, poor customer experience or service inefficiencies in provision of connectivity, or a focus on more innovative connectivity technologies at the expense of core 3G and 4G coverage in rural areas. An infrastructure needs mapping exercise, as conducted in Guyana, or a technical and organisational capacity assessment of the telecom sector, as conducted in Suriname, could provide insight into these challenges, and inform more directed intervention strategies.

- **Reform telecoms regulations to encourage cross-sector collaboration: t**he government should consider 'dig once' policy and infrastructure sharing in the ICT sector. The National ICT Plan (2018-2022) mentions plans to develop 'ICT clusters' such as utility corridors, which integrate fibre deployment with other utility distribution grids. These efforts could accelerate the rollout of the above foundational – and broader – connectivity, and reduce disruption to citizens and businesses. In addition, these plans could also explore more directed policy mechanisms to address infrastructural asymmetries, which arise from the decentralisation of regulatory powers between Trinidad & Tobago (Roadmap 2020). They should also be accompanied by a framework for anti-siphoning and anti-hoarding (TATT, 2020).

Infrastructure: recommendations (continued)

- **Assess the commercial and social impacts of the Universal Service Fund framework (USF):** given that Trinidad and Tobago contributes a significant amount to Universal Service Funding (almost USD$20 million between the establishment of the fund and February 2019; ECLAC, 2019) TATT should undertake an in-depth assessment of the impacts of the USF – in consultation with telecom operators as well as civil society beneficiaries. The yearly USF Accounting Report is brief, and provides only a high-level breakdown of expenses for each Universal Service Initiative. It is unclear how USF levies are determined, and if they take into account existing market conditions or service quality. This review should also explore complementary and/or alternative approaches – including public-private partnerships and infrastructure sharing models. For example, Vanuatu, adopts a more flexible 'play or pay' approach that encourages operators to take ownership in designing and implementing universal coverage projects in underserved areas where they are operating.

- **Develop a coordinated approach for innovation, or a national innovation hub**: in the 2020/21 Roadmap, building an 'Innovation and Entrepreneurship ecosystem' through a 'clustering' strategy is seen as vital towards job retention and creation in Trinidad and Tobago. The government could consider the development of ‘Centres of Excellence' in specific priority sectors, accelerating digitalization and commercial R&D in agriculture and biotechnology – potentially key drivers of the Trinidad and Tobago economy. The government has plans to increase the availability of business incubators and accelerator hubs through the National Entrepreneurship Development Company (NEDCO), Caribbean Industry Institute Research (CARIRI), and Youth Business (YBTT), with emphasis on programmes supporting seed capital and investor networks, innovation support and mentorship, R&D, and industry certification for quality assurance (Roadmap 2021). At the same time, the government could consider investing in a comprehensive communication strategy to ensure that young entrepreneurs and STEM graduates are well-acquainted with the robust network of entrepreneurship support initiatives and actors across Trinidad and Tobago.

Government

Government must be the driver of digital transformation in a country, including in close collaboration with the private sector and civil society. This central role requires government to deliver high-quality, inclusive, and sustainable digital public services – founded on a digitally-skilled civil service

COVID-19 has reaffirmed the importance of digital public service delivery, including ensuring that crucial public services are made available to the entire population – with no one left behind. These must be driven by standards for service design and delivery. This includes ensuring sustainable funding for digital priorities, fair and open procurement to deliver the products and services that citizens deserve, and ensuring that civil servants have the digital skills and tools needed for successful delivery.

Digital transformation also requires political will, including senior political and civil service sponsorship, a strong mandate for change, and clear responsibilities for national digital transformation. All digital efforts must also be founded on robust monitoring and evaluation principles and processes - including strategies and frameworks to track implementation and to measure what is and is not working.

Government: rapid diagnostic

- The digital transformation efforts by the government of Trinidad and Tobago are gaining traction – and is considered **'Systematic'.** This means that there is a shared vision and strategy.

- The government pillar has the below components:

  - **Digital public services:** strategy and programmes for digitalisation of most important public services including in e-participation, standards for service design and delivery, overarching data governance framework, open government data strategy, data centre strategies.

  - **Funding and procurement:** system-based approach to ICT procurement and provision of funding strategy/budget for digital transformation.

  - **Leadership and coordination:** high-level political mandate, clear responsibilities.

  - **Monitoring:** including clear KPIs to identify and measure digital transformation progress and success.

  - **Capabilities:** tech talent, technology adoption, ways of working.

Government: overview and key insights

Rating: Systematic

- Since the establishment of iGovTT and the Ministry of Public Administration and Digital Transformation - now a standalone Ministry dedicated to digitalisation - the government of Trinidad and Tobago has demonstrated strong political will in digitalisation efforts, and a clear organisational structure to operationalise ICT strategies.

- Key e-government initiatives include TTConnect, a one-stop-shop government portal, the TTBizLink one-stop-shop government-to-business portal, the GovPayTT e-payments system for government transactions, the TT TravelPass, and proposals for a new National Health Information System, Social Services Management Information System, and a digital ID. Accordingly, Trinidad and Tobago receives a high score of 0.6785 in E-Government Development in the 2020 UN DESA E-Government Index, one of the highest amongst SIDS. Numerous survey respondents favourably mentioned agla.gov.tt, the website of the Ministry of the Attorney General and Legal Affairs, as well as that of the Ministry of Works and Transport, and TTConnect *('Paste the link to the best government website.')* However, others pointed out issues with these same sites as well, and there is a broad consensus amongst survey respondents that government websites are in urgent need of user-centric design improvements to remain relevant and responsive to citizen needs. More broadly, 71% of public survey respondents believe digital technologies make government services better.

- However, digital endeavors tend to be stymied by the 'lack of synchronisation and co-operation between Ministries', as highlighted by current Minister of Public Administration Allyson West (May 2020) – and echoed in stakeholder consultations for the National ICT Plan (2018-2022). This also leads to greater room for improvement in digitalising back-end administrative operations and functions – desk research demonstrates that, despite the presence of comprehensive M&E mechanisms and units in almost all government agencies, there is an urgent opportunity to establish and nurture a data-driven decision-making culture in the government. Altogether, given that the National ICT Plan rests on a 'Centralised Policy, Distributed Delivery' model, relatively low mutual understanding and cooperative efforts between agencies may hamper the overall operationalisation of the Plan.

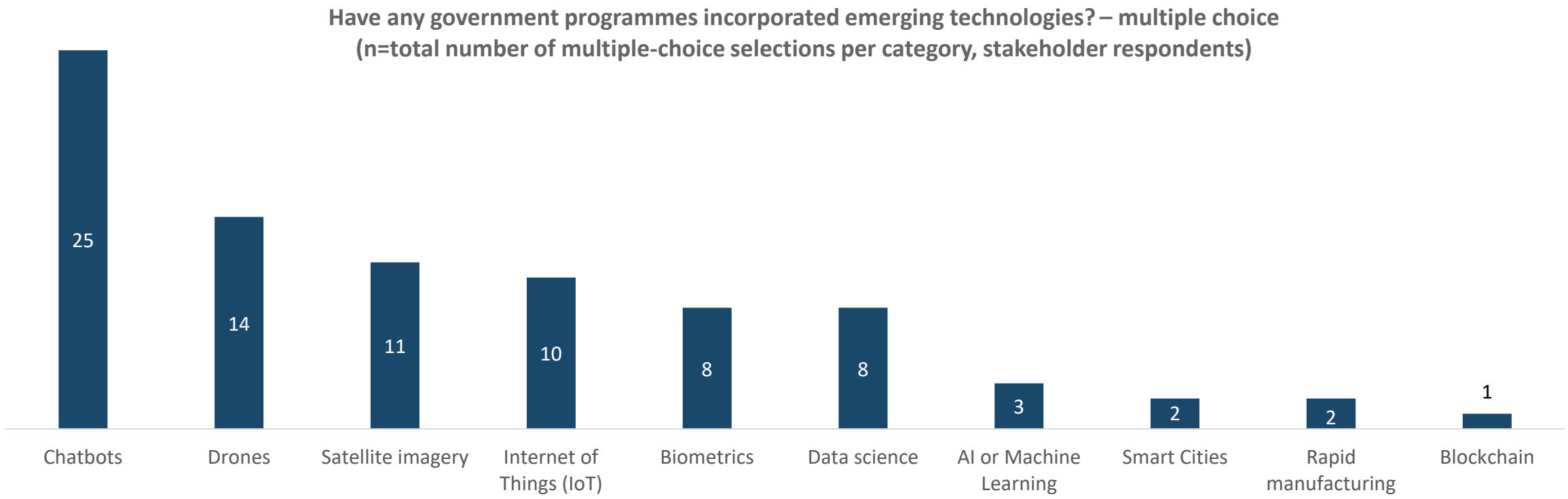
Government: sub-pillars

Digital public services	Funding and procurement	Leadership and coordination	Monitoring	Capabilities

- The government has made strong progress in delivering **digital public services,** as well as digitalising back-end public administration functions. All government entities have a digital presence on the government portal, ttConnect, through which citizens benefit from interactive public services and government e-payments via a secure gateway, GovPayTT (National ICT Plan 2018-2022; UN ECLAC 2019). TTBizLink, a single electronic window for business and trade services, also provides electronic approvals for over 25 Government-to-Citizen and Government-to-Business services, including import and export permits, company registration, and work permits. Sector-specific digital initiatives include the 'TATT Goes Digital' project, which saw the Telecommunications Authority migrate its services online following the COVID-19 pandemic; and the e-Democracy programme (part of the National ICT Plan). The latter has been successful in fostering e-participation, with Trinidad and Tobago receiving a 'High' e-Participation score of 0.62 in the UN DESA E-Government Index 2020 – and being the only Caribbean SIDS to receive a score in the 'High' range.

- These common and shared platforms demonstrate the government's integrative model of delivering digital public services – and could provide strong foundations for the development of more sophisticated digital public services for whole-of-government digital transformation. There is also a systematic plan to identify and develop a cohort of 'exemplar' digital public services, which could be replicated in various government sectors (National ICT Plan 2018-2022). These include the nation's e-payments initiatives, as well as the digital dialogue and consultation channels which promote citizen e-participation. At the same time, survey respondents appear especially keen to see the digitalisation of bill payments in particular, which may reaffirm a need to strengthen existing digital initiatives – such that they wholly meet citizen needs – before they are taken to be a model for future whole-of-government digital efforts. Nevertheless, the government shows a promising understanding of digital priorities, with future plans for improvements to GovPayTT and the TT TravelPass e-Visa – and further other plans for a new National Health Information System for the Ministry of Health, and a new Social Services Management Information System for the Ministry of Family and Social Services.

Government: sub-pillars



- There is interest in emerging technologies. However, delivering on these digital applications and databases will require core digital and data infrastructures within government. In this regard, the government benefits from strong infrastructural foundations. GovNeTT, the government's secure Wide Area Network, connects all government agencies, healthcare institutions, and schools in Trinidad, with further plans to integrate public institutions in Tobago (National ICT Plan 2018-2022). The government is also forward looking in exploring cloud services to maximise government ICT investments and enhance public service delivery (Cloud Computing Consideration Policy 2020). This could facilitate the end-to-end digitalisation of government services, including enterprise-wide applications to enhance government administrative functions (National ICT Plan 2018-2022).

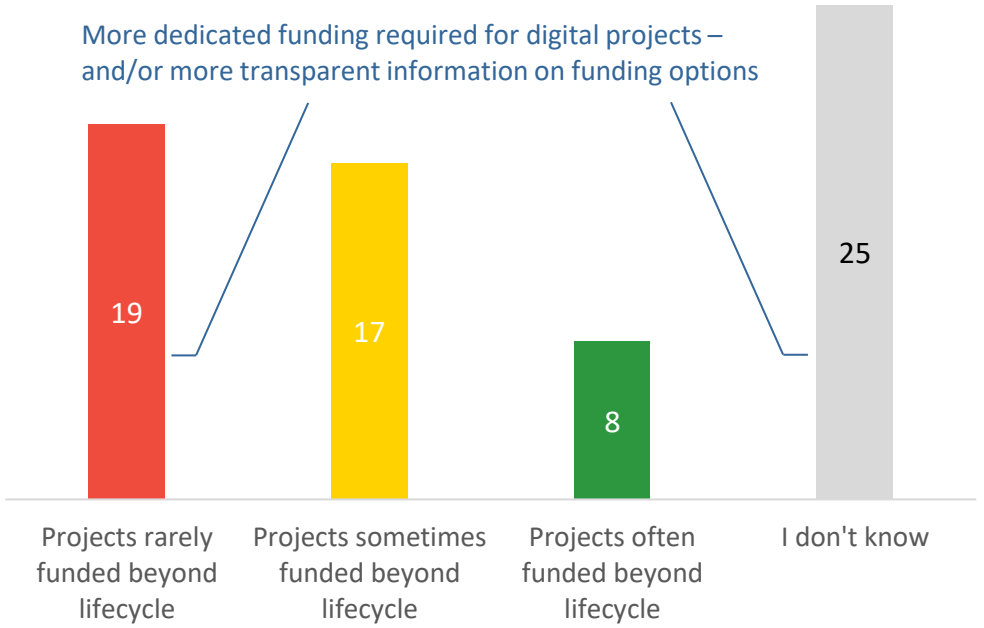
Government: sub-pillars

- With regard to **funding and procurement**, survey respondents perceived that digital projects in Trinidad and Tobago are not presently guided by a dedicated budget, nor set procurement standards. Instead, it appears that the Public Sector Investment Programme directs the government's capital expenditure investments, including in digital.

- ICT officials in Trinidad and Tobago believe that the availability of finance is a major impediment to advancing e-government projects (UN ECLAC, 2019), and this is further echoed by public sector survey respondents. Furthermore, funding is generally decentralised, which may have contributed to the ICT investment gap between Trinidad and Tobago.

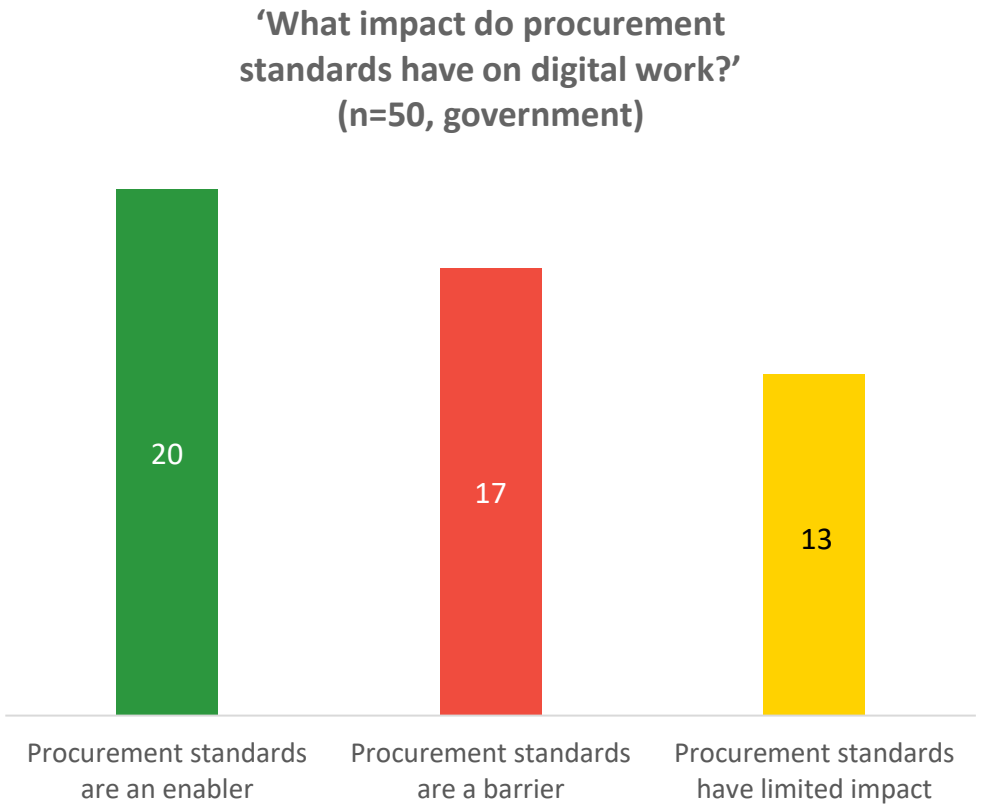
- Recognising the above, the government is looking to establish a central, dedicated fund for digital transformation specifically for use in Ministry-led projects, as well as to co-finance public-private partnerships for digital transformation (National ICT Plan 2018-2022). This could improve the efficiency of funding national digital projects, and the positive outcomes resulting from these projects.

'Do digital programmes get ongoing funding beyond the programme's initial life cycle?' (n=69, government)



Government: sub-pillars

- While the Public Procurement Act was first enacted in 2015, the Chamber of Industry and Commerce notes (as of 2020) that the substantive provisions of the Act have yet to have been operationalised, despite recommendations to do so from the Office of the Procurement Regulator. As the government intends to increase the proportion of ICT services procured from MSMEs – as part of a broader 'government-as-customer' strategy – there is an opportunity for the government to develop digital marketplaces to enhance the public sector's access to quality and specialised digital services (National ICT Plan 2018-2022). Similarly, the 2020 Roadmap details plans to develop an open-source data platform to enhance transparency in government expenditure (Roadmap, 2020). In this regard, reforms to public procurement could catalyse the local ICT sector – and ensure that digital government development is guided by transparency and accountability.
- A number of SIDS – including Barbados, Belize, Dominican Republic, and Mauritius – have e-procurement platforms, with functionalities ranging from publishing procurement opportunities, to submission of bids and invoices, and notifying contract awards. In particular, the Dominican Republic's platform makes procurement data publicly available in accordance with the Open Contracting Data Standard, and could be a model for Trinidad and Tobago.



Government: sub-pillars

Digital public services	Funding and procurement	**Leadership and coordination**	Monitoring	Capabilities

- **Leadership and coordination** are crucial aspects of digital transformation – and Trinidad and Tobago benefits from strong political commitment in this regard. A dedicated Ministry of Public Administration and Digital Transformation was formed in 2021, capitalising on the momentum of digitalisation that was accelerated by the COVID-19 pandemic. The Ministry's priorities are divided between three strategic pillars: ICT for all, economic development and diversification, and shaping a more efficient government.

- iGovTT, a state enterprise, serves as the implementation arm of the Ministry of Digital Transformation. As its present focus lies primarily in ICT support and procurement for the public sector, there is an opportunity here for iGovTT to expand into offering programmatic support for whole-of-society digitalisation. Along these lines, establishing a clear organisational structure and priority for digital government will be crucial in nationwide and cross-sector digital transformation. This is especially given that desk research was unable to explore in detail the organisational structure, mandate, or priorities of the new Ministry of Digital Transformation due to the recent establishment of the Ministry. Recognising this, public communication of the Ministry – and its mandate – should be a priority, so as to minimise reputation risk, and sensitise internal and external stakeholders to the activities and capabilities of the Ministry.

- Coordination between the islands of Trinidad and Tobago could be another area of focus for digital leaders. At present, responsibility for ICT delivery in Tobago is given primarily to the IT Unit in the Office of the Chief Secretary in Tobago, as well as the enterprise, Tobago IT. Both of these entities sit under the Tobago House of Assembly, and not iGovTT or the Ministry of Digital Transformation. As a result, the e-government portal in Tobago (operated by the IT Unit) provides limited information compared to its Trinidadian counterpart, and does not appear to offer digital public services (UN ECLAC, 2019). However, the National ICT Plan 2018-2022 has demonstrated a strong recognition of the need for a holistic approach towards digital transformation across the two islands. This includes a focused approach in its strategy for Tobago to better suit the island's economic and cultural contexts; as an example, new digitisation and automation strategies in Tobago are concentrating in the tourism industry – a key sector for the island – to accelerate digital transformation in local economic priority sectors.

Government: sub-pillars

Digital public services	Funding and procurement	**Leadership and coordination**	Monitoring	Capabilities

- Challenges also remain in cross-agency and cross-sector coordination, and resource mobilisation. Resolving these issues should be a priority – especially given that digital service delivery rests on a 'Centralised Policy, Distributed Delivery' model, in which operationalisation duties are shared by numerous bodies (National ICT Plan, 2018-2022). Stakeholder consultations for the National ICT Plan revealed that ministries often see limited success in operationalising well-defined high-level plans, which could reflect challenges in coordination between government agencies, or the lack of delivery capacity. Furthermore, in May 2021, former Minister of Digital Transformation Allyson West acknowledged that the 'lack of synchronisation and co-operation between Ministries' continued to severely impair digitalisation efforts; this sentiment is echoed both in the stakeholder survey and in the 2019 ECLAC Strengthening ICT report. The latter notes that ministries in Trinidad and Tobago tend to work in silos, adopting different ICT systems which lead to duplicated efforts and resources. In this regard, policies which provide whole-of-government guidance and standards on the adoption of new technologies and ways of working – such as the Cloud Consideration Policy (2020) – are important in future proofing the government's digital investments and implementation.

- Digital transformation requires not only digital strategy, but also strong digital leadership – and a transition into new forms of work more conducive to digital (IDB, 2021). In this regard, leaders in Trinidad and Tobago publicly embrace culture shifts and new technologies, which are powerful catalysts for digital transformation projects – and for wider societal shifts in digital culture. For example, the new Minister for Digital Transformation, Senator The Honourable Hassel Bacchus, has stressed the need for a 'radical reframing' of the government's prevailing perspectives on digital, as well as a 'cultural shift' (2021) towards digital. Nevertheless, accompanying reforms in training, recruitment, nature of work in the public sector are still being explored. There may also be a general culture of resistance to change and inertia amongst civil servants (see 2019 op-ed by local NGO, Resett1962). This sentiment is echoed by public sector survey respondents, who overwhelmingly attribute programme failure to a lack of change management and a lack of 'leadership commitment to support the change' (the latter a quote from one central government respondent).

Government: sub-pillars

Digital public services	Funding and procurement	Leadership and coordination	**Monitoring**	Capabilities

- The government has a formal mechanism for **monitoring.** In 2008, the government first established Monitoring and Evaluation (M&E) units in all Ministries, and in February 2015, a National M&E Policy was approved by the Cabinet. The Ministry of Public Administration, and subsequently the Ministry of Digital Transformation, oversees the monitoring and progress evaluation of the National ICT Plan (2018-2022) through a benchmarking system developed by the ICT Programme Management Office.

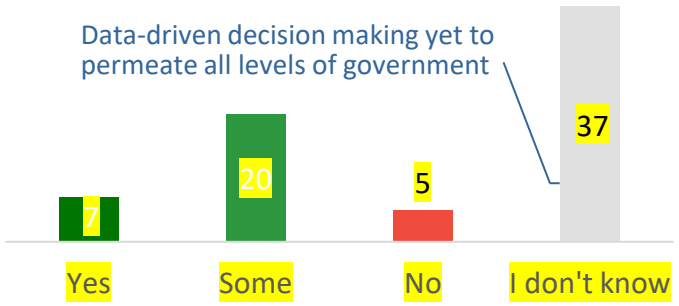
- Specific M&E policies also align with various government policies and agencies; for instance, the Policy on e-Government Interoperability Framework (2013) outlines a governance regime for the maintenance of interoperability standards within the e-Government, as well as the establishment of an Interoperability Working Group comprising both public and private sector stakeholders to monitor and operationalise regular changes to the the Interoperability framework. The Telecommunications Authority Annual Market Report (2020) also outlines future deliverables in improved enforcement and monitoring, including point-to-point and VSAT spectrum audits, as well as a new framework for the monitoring of technical standards in national ICT infrastructure.

- As part of the National ICT Plan, the government also has a strategic and systematic plan to evaluate existing ICT infrastructures, and to expand the availability and scope of e-government to include more end-to-end digital services across both islands. This has involved an initial audit of all current government operations, based on which five high-impact end-to-end public-facing digital services have been prioritised based on volume of transactions and digital delivery benefits (National ICT Plan, 2018-2022). Furthermore, the e-Government Interoperability Framework establishes set standards for service design and delivery, which ensure technical consistency and good integration across various digital public services. Consistency is critical to ensuring that digital public services are intuitive and well-received by the public, and hence readily used.

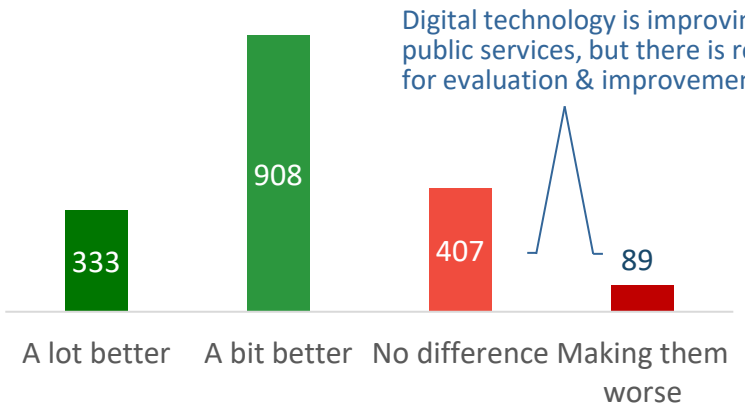
Government: sub-pillars

- Despite a host of comprehensive M&E mechanisms – and M&E units in almost all government agencies – desk research demonstrates a weak data-driven decision-making culture in the public sector. Perhaps reflecting this, an overwhelming number of survey respondents were unaware if there were data collection and analytics practices within government (see below). This overarching challenge is well-acknowledged, and the government outlines ambitions to facilitate better data-driven decision making in all arms of the government (Vision 2030). There does appear to be mechanisms in place to revise digital projects based on user feedback, and any collected data is generally utilised to improve digital projects. A 'government-wide data analytics intervention' is also expected to identify high-value projects to be prioritised, so as to increase operational efficiency and maximise development impact (Roadmap, 2020). Altogether, the government should prioritise the capacity building required for civil servants to engage in advanced data analytics – thus, ensuring that the resources it has invested into M&E translates into improved policymaking.

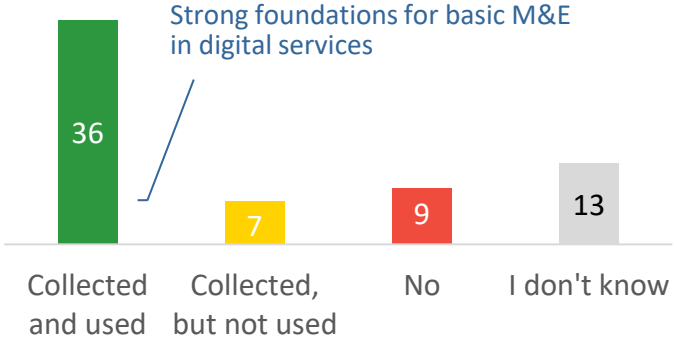
'Are government website analytics measured and used?' (n=69, government)



'Is digital technology making government services better?' (n=1,737, public)



'Do you use user feedback to improve government websites?' (n=65, government)



Government: sub-pillars

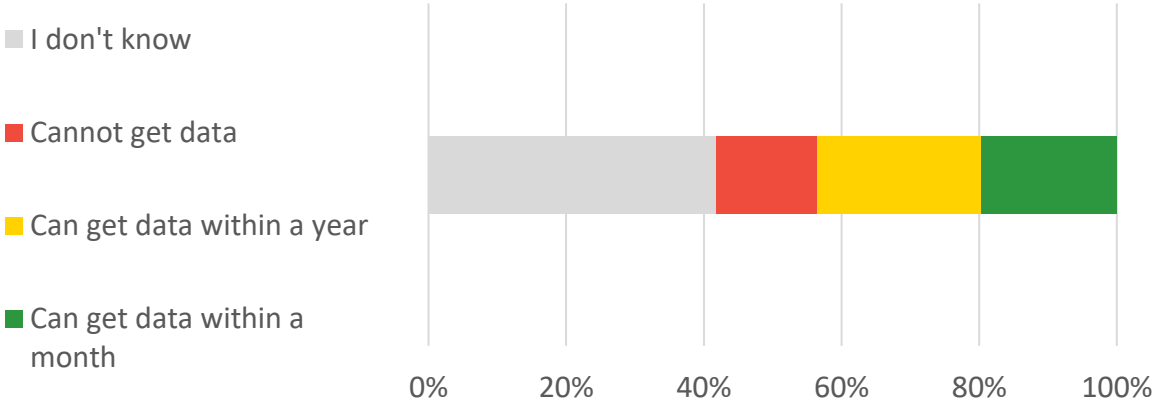
Digital public services	Funding and procurement	Leadership and coordination	**Monitoring**	Capabilities

- The National ICT Plan emphasises the use of statistics and measurements as central to the successful implementation of ICT programmes in government. Open Government is also detailed in the Plan as a key priority, and the Plan will improve public monitoring and transparency through the e-Democracy programme and timely data updates for citizens. Improved Customer-to-Government and Business-to-Government communications as part of the e-Democracy programme, as well as surveys on ICT performance, usage, and adoption in households, businesses, and government will also facilitate digital analytics, programme evaluation, and hence improved, more targeted, and more responsive public services.

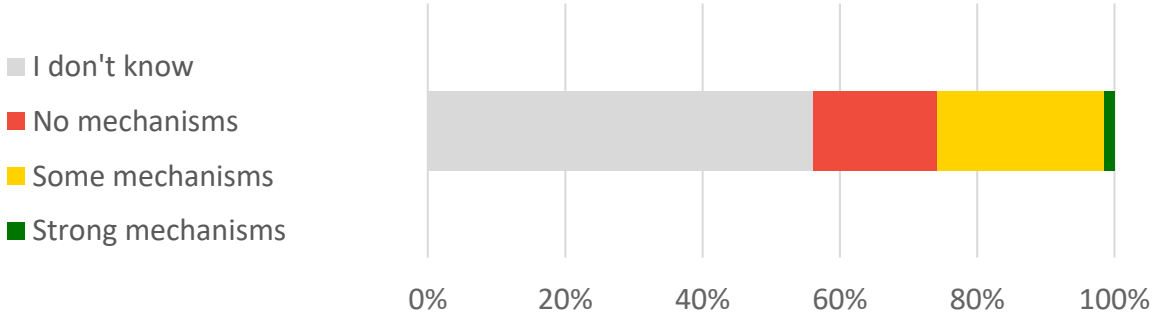
- Nevertheless, the absence of a strong Open Data dashboard – despite a National Open Data Strategy – from the government could reflect broader challenges in operationalising longstanding Open Data ambitions. The development of the National Open Data Policy – first outlined in the ICT Plan 2014-2018 as part of its open government objectives – was accelerated by the World Bank Open Data Readiness Assessment conducted in Trinidad and Tobago in 2014, as well as International Open Government Partnership (OGP) commitments and regional data practices in the Caribbean. However, the Ministry of Science and Technology was unable to see its OGP commitments through, which included collaborative efforts on a proposed Open Data Repository and Open Government Portal – leading to the withdrawal of Trinidad and Tobago from the OGP. These included commitments to publish a minimum of six data sets in an open format by end-2015 (OGP Trinidad and Tobago National Action Plan, 2014-2016). Whilst the Caribbean Technology and Innovation for Digital Economy Conference in 2015 spurred the development of a TT Government Open Data Portal (data.gov.tt) in 2015, it contains only a single demo dataset – and has yet to be updated since end-2017. The absence of open data from the Government saw the development of a civil society alternative, data.tt, operated independently by the Department of Computing and Information Technology at the UWI. This alternative is significantly more active, hosting 30 government datasets, and demonstrates a strong demand from local society to be part of the data journey of the country. Given that promoting a more open government is a key strategy outlined by the government in the National ICT Plan, the government should consider reforms to its Open Data Strategy and its data governance and transparency standards; this may guide the redevelopment of a stronger, more purposeful open data platform which leverages the power of digital to improve transparency. Building on the success of data.tt – and working closely with UWI and other partners – could be an important first step.

Open data efforts – and their visibility – should be prioritised in Trinidad and Tobago

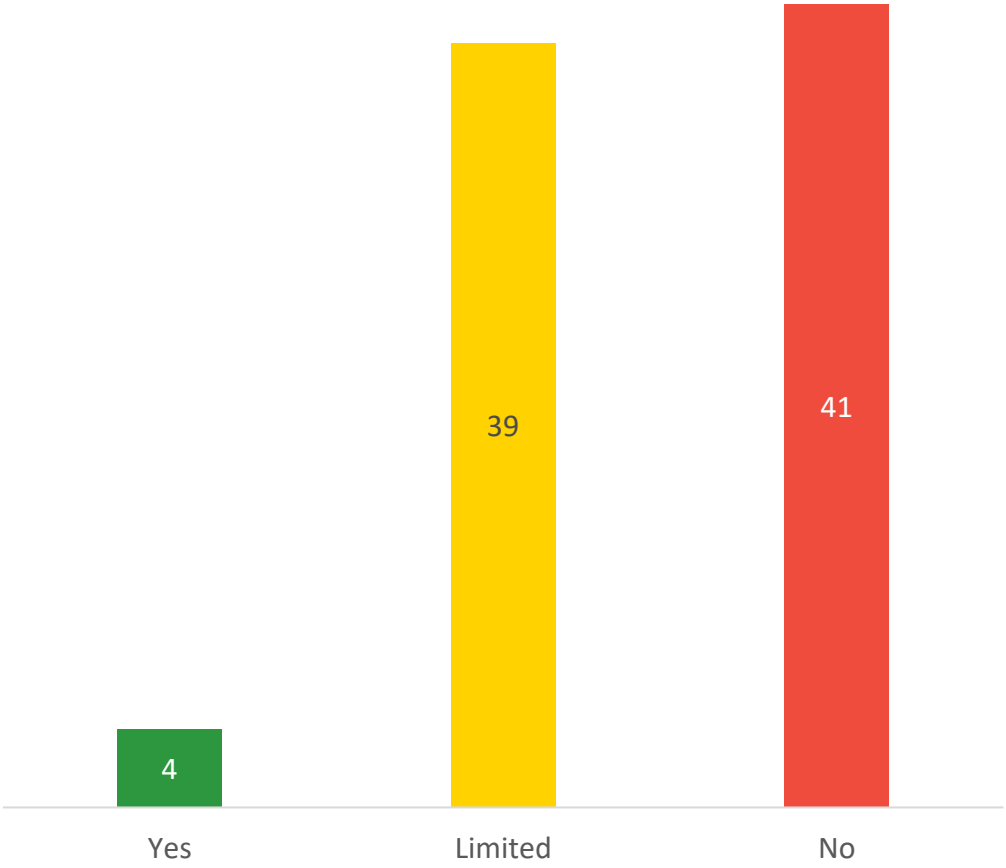
'How quickly can government data be accessed by the public?' (n=117, stakeholders)



'Does the government have fact-checking/data-sourcing governance mechanisms to ensure digital data accuracy?' (n=67, stakeholders)



Does a national data sharing system exist? (n=84, stakeholders)



Respondents answering 'I don't know' not included

Government: sub-pillars

Digital public services	Funding and procurement	Leadership and coordination	Monitoring	**Capabilities**

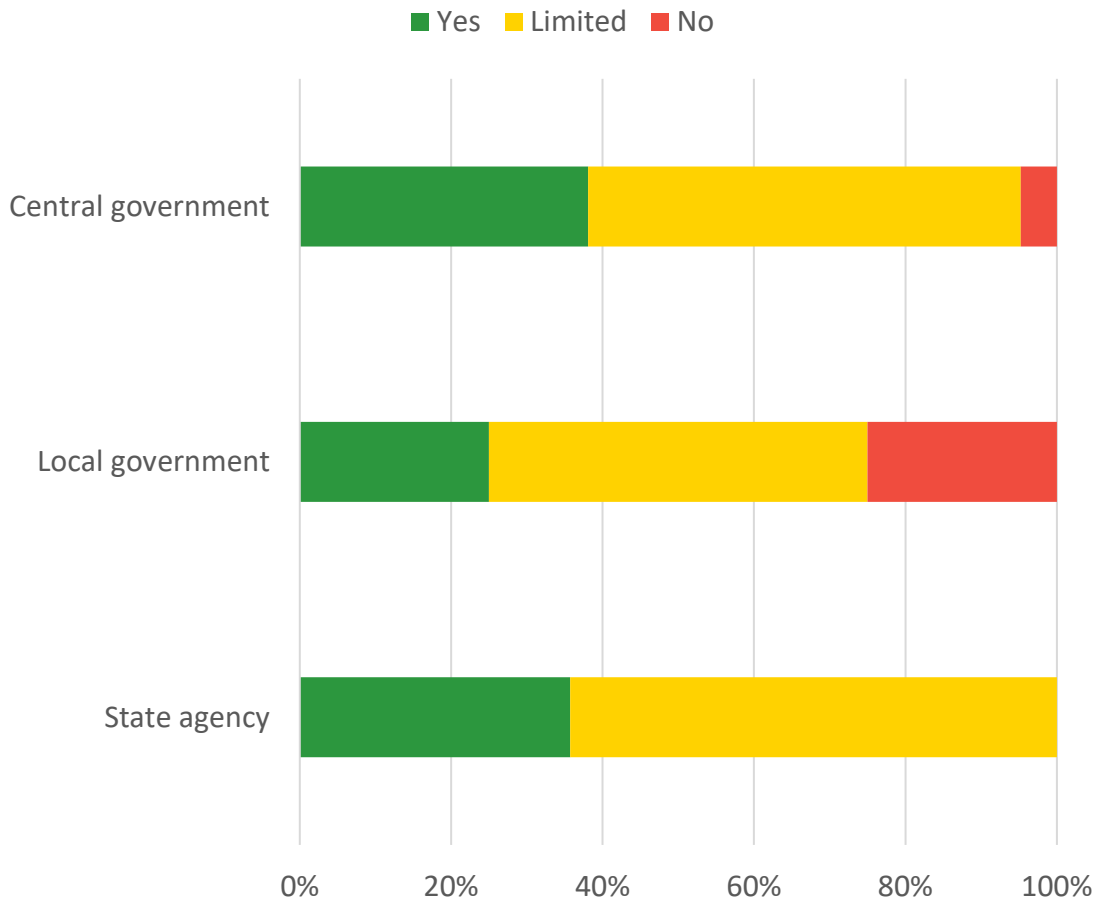
- Challenges in monitoring digital efforts in the country also extends to **capabilities.** Government survey respondents highlight a lack of adequate digital expertise in the public sector – and that projects do not receive the full range of digital capabilities required for their success. The Digital Transformation and Public Employment report by IDB (2021) is a valuable resource in this regard, exploring for instance how digital transformation requires going beyond general capacity building into specialised recruitment and training in advanced digital subjects. Given the absence of higher-level digital training programmes in the government – and the necessary digital expertise – adoption rates for ICT services by the government remain low, despite the development of a relatively strong organisational structure and policy to guide digital transformation (see earlier pillars and the WEF Global Information Technology Report 2016 in Vision 2030). The few training programmes developed by the government for its officers also appear siloed, with for example data-driven decision making training restricted to civil servants in the Consumer Affairs Division in the Ministry of Trade and Industry (National Consumer Policy, 2018-2023), while the rest of the government remains limited in its capacity for evidence-based policy (IDB Caribbean Quarterly report, 2021).

- Furthermore, the few digital experts in the civil service appear severely overstretched. IDB (2021) estimates that a team of 500-600 digital experts is typically required to operationalise the 20-30 digital projects currently commissioned by the government; yet, digital experts in the government currently number just under a hundred.

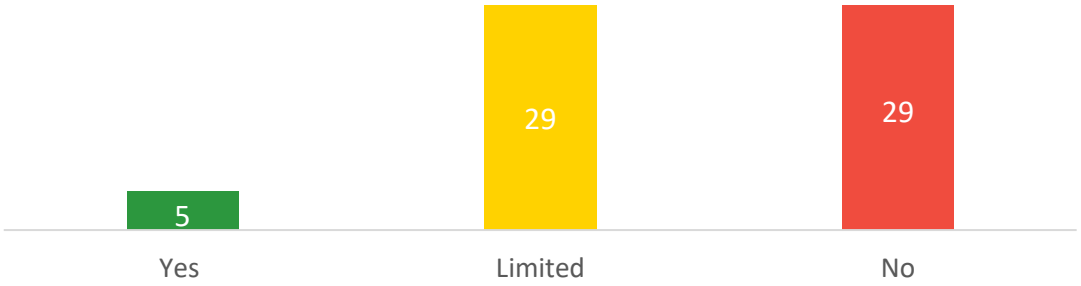
- Nevertheless, the National ICT Plan dedicates its second Strategic Thrust to increasing human capacity, which involves both building ICT human capital and improving access to ICT upskilling resources, through an overarching Infocomm Training Framework and a best practices and skills repository for ICT professionals in the government.

Efforts in advanced capacity building and specialised recruitment could accelerate digital transformation in the public sector in Trinidad and Tobago

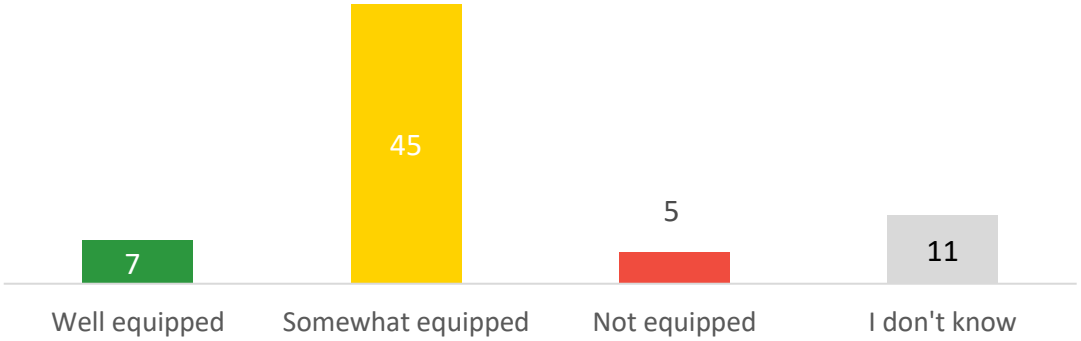
'Are digital staff being recruited in the public sector?' (n=53, government)



'Is the adoption of new technology tools fast in the public sector?' (n=63, government)



'Are teams equipped with the right skills to properly implement digital programmes?' (n=68, government)



Government: recommendations

There are a number of priority recommendations within this pillar:

- **National Digital Strategy:** A clear digital strategy could assist with better defining – and making more visible – the role of the Ministry of Digital Transformation and iGovTT, as well as in mobilizing cross-sectoral steering committees to facilitate effective whole-of-government digital transformation. The strategy should also incorporate measures towards improving the integration of Tobago in the National ICT Plan, as well as in the mandate of the Ministry for National Development.

- **Use 'exemplar' digital initiatives for standard setting**: the National ICT Plan 2018-2022 details plans to digitalise five high-volume end-to-end public facing government digital services, as well as five enterprise-wide applications to enhance government administrative functions. An audit of government services could be useful in identifying high-impact ones to prioritise – this cohort of digital public services would act as 'templates' or as 'exemplar' services (with common standards and a cohesive platform) for the digitalisation of other public services. This would also inform broader digital requirements, such as user-experience and other service standards.

- **Open procurement:** government contracting procedures could be made more accessible and inclusive, and transparent. For instance, the open-source data platform detailed in Roadmap 2020 could be expanded to include open procurement modalities; the government could also introduce digital marketplaces as the public sector commences the procurement of Cloud Services, and details plans for an online Cloud Services Provider Catalog to guide public sector procurement decisions (Cloud Computing Consideration Policy, 2020). As the government intends to increase the proportion of ICT procurement from MSMEs (which constitute 91% of businesses in Trinidad and Tobago), such efforts could bolster the government's current 'government-as-customer' strategy to catalyse the local ICT sector, improving transparency and openness in procurement.

- **Data audit:** The government should identify the data architecture, data classification, and security protocol required for e-government, which could also guide open data modalities. This could be conducted as part of the government-wide 'Enterprise Architecture development exercise', which will systematically map gaps and priorities in infrastructure, organisational systems, and policies that could support digital government.

Government: recommendations (continued)

- **Public sector 'Centres of Excellence':** building data and digital skills will be key to delivering on the government's vision of a 'results-oriented' and 'digital analytics' driven public sector (National ICT Plan 2018-2022). This could involve the development of a strengthened 'digital cadre' of digital civil servants or 'Centres of Excellence' for specific public sector functionalities; for example, Samoa has plans to develop a dedicated centre of excellence for R&D in monitoring and evaluation.

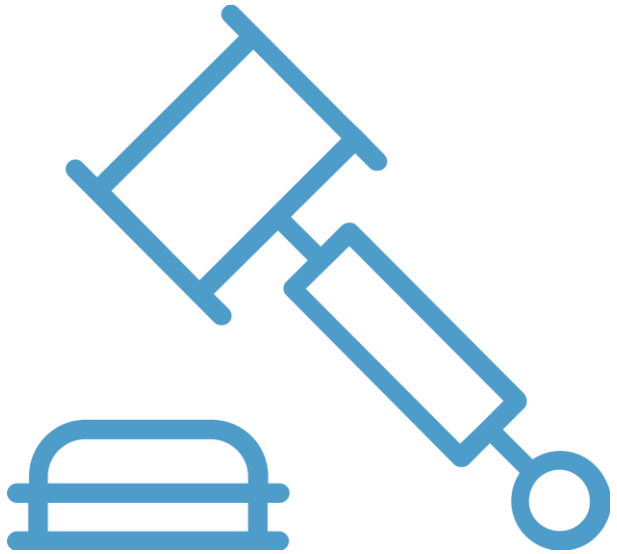
- To improve civil servants' digital **capabilities,** it is crucial that the government invests in advanced training programmes and specialized recruitment to better equip the government for a digital transformation. Given that the government seeks to increase its physical capacity for e-government through the widespread adoption of technologies such as Cloud, it is imperative that such developments are accompanied by the necessary specialised skills required in Cloud systems architecture, data security and privacy, as well as data analytics (Cloud Computing Consideration Policy, 2020).

- **Update public sector standards for service design and interoperability:** given that there are robust M&E resources and mechanisms in place, there is an opportunity for the government to build digital capacity in M&E, and consider the M&E priorities of a digital government. For example, new digital public services call for new standards frameworks; this is especially important given the government's integrated strategy for public service digitalisation. The UK government's Service Standards framework could serve as a guide – it includes fourteen best practices on user experience, universal access policies, M&E processes, open source and standards (and open data), as well as technical infrastructure and procurement considerations. A number of other Service Standards are also publicly available from governments around the world.

Regulation

Regulation – including legislation, oversight, guidelines, and policies – is needed to underpin digital transformation. This includes ensuring fundamental protections, such as data security and privacy, whilst also being dynamic in supporting and catalysing competition and innovation.

Striking the above balance can be difficult, and the fast pace of technological development can risk regulation becoming quickly outdated or left behind. Particular regulatory priorities often focus on data standards and protection (from open data through to data privacy legislation), and those that drive the development of a broader digital economy. This latter category includes regulation to enable fair market competition – such as Intellectual Property, competition, and 'common carrier' legislation.



However, regulation should not focus just on the market. Governments and legislative bodies must protect and support citizens. This includes in the context of e-commerce (such as digital payment protection), cybersecurity (from upstream work on security standards, through to tackling cybercrime), and ensuring that current and emerging technologies adhere to the highest ethical standards.

Regulation: rapid diagnostic

- The digital regulation situation in Trinidad and Tobago has established foundations. It can therefore be considered as '**Systematic'**. This means that there is progress in selected areas of regulation, and efforts and direction should continue.

- The regulation pillar has the below components:

  - **Data standards and protection:** government open data, data access, international data storage, data privacy and data protection.

  - **E-commerce:** digital consumer protection, digital transactions and payments, e-signatures.

  - **Fair market competition:** IP law, competition and taxation, common carrier or network neutrality, fair access to communication and data channels for digital infrastructure providers.

  - **Cybersecurity:** security standards and risk management, cybercrime, content filtering, breach notifications.

  - **Ethical standards:** standards and guidelines for emerging technology and specifically the use of artificial intelligence**.**

Regulation: overview and key insights

Rating: Systematic

- The government prioritises regulations as a 'foundational pillar' of digital transformation (National ICT Plan 2018-2022) – which is an important differentiator to some other country governments. This prioritisation is favourably perceived by survey respondents, of whom a third recognized the successful role of regulations on digital development in the country – although another third believed there was room for greater impact. Good progress has been made overall in this direction, including the country's early enactment of forward-looking legislation. This includes the Computer Misuse Act (2000), Electronics Transaction Act (2011), which recognises the legal equivalence of digital and analogue signatures, the Data Protection Act (2011), and the Consumer Protection and Safety Act (2016).

- Reflecting the above commitment, these regulations are currently under review in order to enhance their responsiveness to the needs of an emerging digital economy. They are important catalysts of e-commerce, and could be complemented with regulatory explorations in more specific areas such as electronic payments, digital trade, and intellectual property – all of which are key priorities of the Ministry of Trade and Industry.

- More broadly, a strong digital economy requires fair market competition. Trinidad and Tobago has an independent national competition authority, the Free Trade Commission, and has enacted a Fair Trading Act (2006) to prevent anti-competitive practices. However, it is unclear as to the extent the Commission is positioned to develop regulations that could address competitive challenges in the digital economy. Efforts in this area should be prioritised, especially in the context of the national importance of supporting SMEs' digitalisation and participation in crucial export markets (Roadmap 2021). Related to this, the country has made commendable progress in future-proofing the competitiveness of local companies in the global value chain, notably through the enactment of a National Quality Policy (2018-2030) to set standards in industrial development, innovation, and export in priority economic sectors.

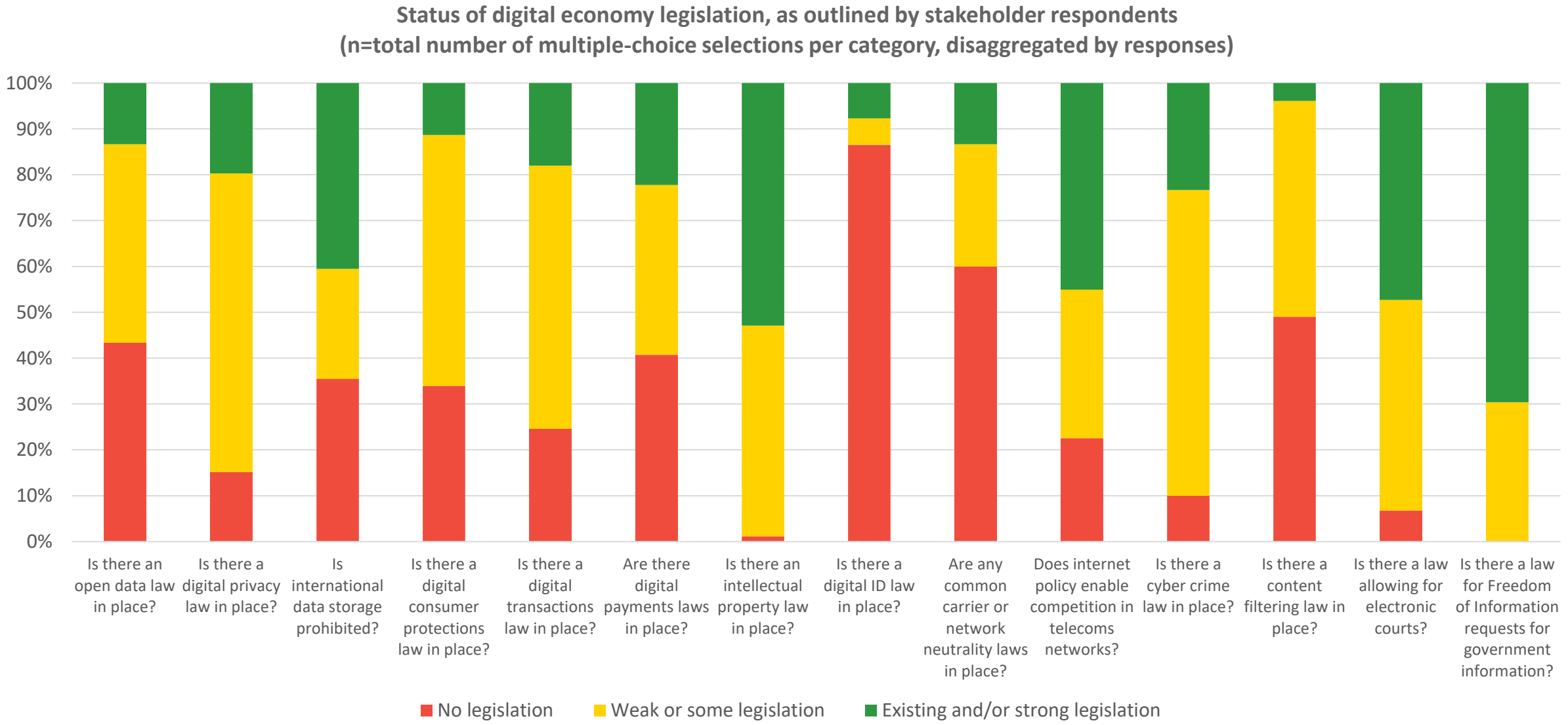
Regulation: sub-pillars

Data standards and protection	E-commerce	Fair market competition	Cybersecurity	Ethical standards

- Trinidad and Tobago has a comprehensive set of regulations relating to **data standards and protection**, albeit lacking specificity to the digital economy. This includes the Freedom of Information Act (2000), which guarantees citizens the right to access unclassified public documents and datasets, the Public Procurement and Disposal Act (2015), which specifies the government's obligation in the use of citizen's data along the data lifecycle, and the Data Protection Act (2011). The government is reforming the latter to anticipate the needs of digital government, and the digital economy. This is a strong step towards developing regulatory foundations that could build consumer trust in public digital services, and improve collaboration with the private sector – with the potential to catalyse broader uptake of e-commerce and digital payments in the economy. Learning from international experiences is important here to future-proof regulations. Specifically, Suriname's forthcoming Privacy and Personal Data Protection Act could be a helpful reference point. It sets standards around automated data processing and the ethical use of data, as well as enabling the establishment of a dedicated data authority for monitoring and compliance oversight.

- The regulatory environment around **e-commerce** is still emerging in Trinidad and Tobago, guided by the Ministry of Trade and Industry's National e-Commerce Strategy (2017-2021). Key regulations shaping this sector include the Electronic Transactions Act (2011), which gives legal recognition to electronic signatures, transactions, and documents for businesses operating in Trinidad and Tobago. More recently, amendments have been proposed to the Act to address its slower uptake in the public sector (Draft E-Signatures Bill, 2021) – often attributed to lack of specificity in the original Act in delineating acceptable e-signature types for varying levels of risk. The amendments in question adopt a promising framework informed by international standards, assigning different e-signature formats with varying risk profiles for transactions in the public service. A forthcoming Electronic Transfer of Funds Framework could also support the public sector's implementation of digital payments for government payments and welfare transfers; this is an important development that could systematically guide the mainstreaming of digital transactions and payments in the country – and potentially serve as an initial framework for the development of a foundational digital payments legislation. Several SIDS are advancing efforts in this area; the Solomon Islands and Vanuatu have developed national payment systems bills which lay out the technical infrastructure and legal basis for electronic payments, whilst Suriname has set out licensing and operational guidelines for the central bank's supervision of electronic services providers.

Survey respondents highlighted broad progress in building core digital economy legislation, but perceive further progress is needed to strengthen laws



Respondents answering 'I don't know' not included

Regulation: sub-pillars

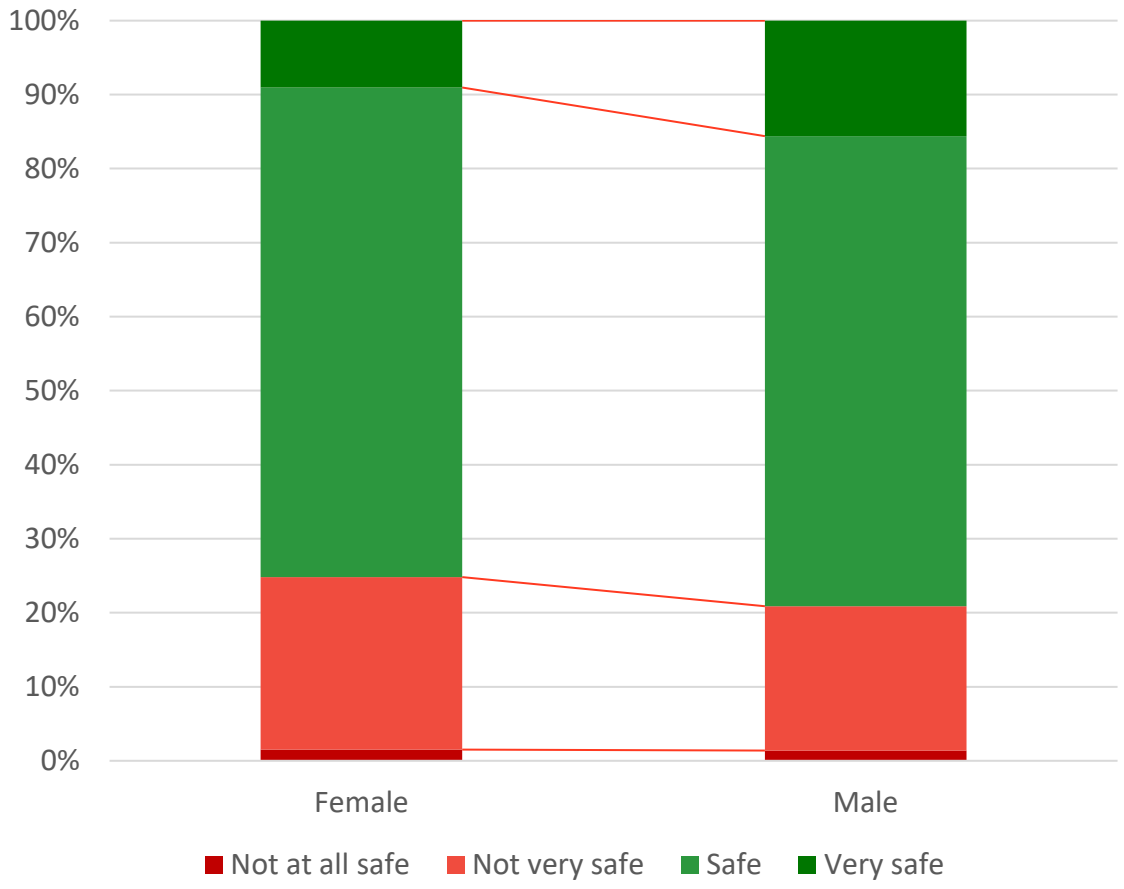
Data standards and protection	E-commerce	Fair market competition	Cybersecurity	Ethical standards

- The government has made good progress in shaping institutional mechanisms for **fairer market competition**. Trinidad and Tobago has a dedicated competition authority (Free Trade Commission), standards agency (Bureau of Standards), and consumer protection commission (Consumers Affair Division of MTI) to address competitive challenges with relation to anti-trust, quality control, as well as consumer protection. The National Consumer Policy (2018-2023) also establishes mandatory and enforceable industry-specific 'codes of practices' as well as redress mechanisms around misinformation and disinformation, business and trade practices, and contract terms. At present, these lack specificity to the digital economy. In this regard, cross-sector coordination between these agencies – in consultation with private sector stakeholders - could be valuable in considering new competitive challenges companies face in their digitalisation journey. More broadly, key sector-specific regulators in the country include the Telecommunications Authority (TATT), the Chemistry, Food, and Drug Division, as well as the Regulated Industries Commission (RIC) for utilities. The Bureau of Standards, which sits within MTI, plays a cross-sector coordinating role in aligning these regulatory institutions towards the competitive policy priorities of the country, with specificity to product and services standards and quality control.

- Current efforts in developing **cybersecurity** frameworks could also be strengthened. In the absence of a national or sector-specific cybersecurity framework, the Computer Misuse Act (2000) serves as the primary cybersecurity legislation enforcing unauthorised access or modification of ICT material. This act is under review and will be replaced by a forthcoming Cybercrime Bill (Cloud Computing Consideration Policy, 2020). This eventual legislation be especially crucial as the government introduces cloud services to facilitate interoperable and safe information sharing across the public sector. Progress in this area is well underway, with plans to introduce a Cyber Security Governance and Infrastructure programme, which will establish the national framework for cybersecurity governance in the country, as well as a Disaster Recovery Planning and Business Continuity Management programme to strengthen the resilience of ICT services in crisis situation (Roadmap 2021). In a number of SIDS (Solomon Islands, Curaçao, and Samoa), a cybersecurity audit – with a focus on the public sector's technical and skills capacity – has been helpful in guiding the development of a national cybersecurity strategy. More broadly, the government should also enhance awareness of cyberthreats amongst the populace.

Most feel safe when accessing the internet, but there is a slight gender divide. Data security is seen as a broadly cross-sectoral responsibility.

How safe do you feel accessing the internet?
(n=1,697, public)



Who should be responsible for my data security?
(n=1,737, public)

Regulation: sub-pillars

Data standards and protection	E-commerce	Fair market competition	Cybersecurity	**Ethical standards**

- Trinidad and Tobago has yet to consider the **ethical implications** of emerging technologies, perhaps due to the nascency of the ICT sector. However, the government has been forward-looking in integrating sustainability practices into government procurement. This includes a forthcoming e-waste policy, as well as construction-related legislations that could support the development of energy-efficient and green built environment in the country.

- Recognising the forward-looking efforts of the country in enacting and reforming legislations, the government could consider the regulatory requirements and enablers of key digital economy and emerging technology initiatives such as Big Data, AI, and blockchain – and explore ethical standards to consider what these innovations could mean for the country. In this regard, regulations can be important catalysts of innovation, especially in emerging technologies. Several lower- and middle- income countries are exploring digital opportunities through data-driven regulations. For example, in Columbia, while piloting a data marketplace project in collaboration with the private sector, the government explored regulatory imperatives in parallel – and formed a working group comprising of stakeholders from various government entities and the private sector to co-design guidelines on data sharing, Big Data, and AI. Another SIDS, Suriname is exploring regulatory boxes to drive and support fintech innovation. This is a promising area for Trinidad and Tobago to explore, especially as it seeks to mainstream digital payments for financial inclusion, as well as promote fintech innovations in the banking sector (National e-Commerce Strategy 2017-2021). A number of SIDS are exploring emerging technologies – such as Fiji's use of radio-frequency identification tags and QR codes to monitor its tuna supply chain, Vanuatu's use of drones and GIS technology for rapid assessment of post-disaster damage, and Tuvalu's plan to move its national register to the blockchain ledger and create a central bank digital currency. This highlights that digital transformation is not a linear pathway, and that broader digital opportunities can be explored in parallel.

- In this regard, the Bureau for Standards (SBS) could play a key role in strengthening the industrial and export capacity of local producers in using digital technologies to enhance produce and service quality, as well as lead the development of ethical standards in technology adoption, including open data practices to facilitate collaboration and reduce duplication.

Regulation: recommendations

There are a number of priority recommendations within this pillar:

- **Accelerate efforts in legislative reform, especially in consumer protection:** with the growth of the digital economy, legislation should be forward-looking, particularly in relation to balancing fintech risk management with room for innovation. In this regard, the National Consumer Policy (2018-2023) is nearing its expiry, and its next iteration could incorporate a stronger digital economy focus, for instance in the form of a financial protection framework for consumers in the digital era. The Data Protection Act, Electronic Transactions Act, and Cyber Crime Bill have also been identified as critical enablers of the digital economy (Roadmap 2021), and should be reviewed for reform (Roadmap 2021).

- **Once-only legislation:** efforts should be taken to enable single portal access to enhance the user-experience of e-government services, and ensure interoperability and common standards in the delivery of digital services – particularly to enhance open data exchange between different government departments. The government of the Dominican Republic prioritises 'once-only' and 'digital-first' principles in online services provision, in order to improve citizen experience.

- **Streamline business regulations:** as the government digitalises business and customs processes through TTBizLink, there is an opportunity to identify private sector pain-points – particularly as the government already plans to decentralise regulatory approval processes for administrative procedures to enhance the ease of doing business in Trinidad and Tobago (Roadmap 2021). New Zealand's 'Better for Business' pan-government initiative could serve as a model, founded on extensive user mapping of the business journey to identify pain-points and other challenges in interacting with government – and likely played a key role in increasing the New Zealand's Ease of Doing Business ranking to #1 in the world. This approach could also consider the role of innovation – for example, exploring regulatory sandboxes (a point echoed in the National E-Commercial Strategy 2017-2021) – to help governments be more responsive to the needs of the private sector, as they navigate the emerging digital economy.

- **Cloud policy:** as the government mainstreams the use of cloud services in the public sector, it should ensure that cloud regulations do not translate into data protectionism. A strong inflection point in the country's open data journey could emerge with a data audit that informs a data governance strategy – one that considers the value and usefulness of different data sets. This should also extend to the role of this and other policy in driving cross-border data flows and data sharing.

Business

The private sector, from start-ups to Big Tech, is an important partner in the Digital Economy. Their products and services – including digital infrastructure and digital payments – are key foundations. They also catalyse citizen uptake of digital and drive digital inclusion.

Private sector adoption of technology – whether payment infrastructure, cloud, or digital marketplaces – can also accelerate government digital transformation. These efforts also lead to better products and services available to consumers, improving lives and livelihoods. The private sector also plays a leading role in impact measurement and monitoring – from shaping digital technology norms, to adhering to transparency requirements and ESG reporting.

However, this digital progress cannot be led solely by businesses. Government, and other actors, can support these efforts through crowding-in finance – including access to venture capital, and crowdfunding – and creating an enabling environment for start-ups and companies. This includes providing strong legal rights, and making it simple to start and run a business in the country.

Business: rapid diagnostic

- The situation for the private sector in Trinidad and Tobago is good – and is considered '**Systematic'.** This means that there is digital coordination across sectors, and the availability of financing incentives.

- The business pillar has the below components:

  - **Technology adoption:** payments, enterprise resource planning (ERP) and customer relationship management software adoption, broader technology adoption, and the use of digital marketplaces.

  - **Financing incentives:** banking, non-banking, access to venture capital, crowdfunding etc.

  - **Impact commitments:** digital technology norms, transparency requirements, methods of reporting.

  - **Start-up environment:** Strength of legal rights, time to start a business, ease of doing business.

- The wide-ranging role of business in the digital economy is also covered in other 'pillars' of the framework.

Business: overview and key insights

Rating: Systematic

- Digital transformation is expected to raise the competitiveness of local businesses, encourage economic diversification, and increase productivity, especially in the context of COVID-19 recovery (Roadmap 2021). However, at present, businesses' adoption of technology is limited, and broader engagement in e-commerce by SMEs remains constrained by technical knowledge and financial resources (National e-Commerce Strategy 2018-2021). Survey respondents are divided as to the extent of which key drivers of the economy are adopting digital technologies, with 40% of respondents noting that these sectors required more help to fully leverage digital tools and processes. Recognising these challenges, the government is making concerted efforts to catalyse a digital private sector in Trinidad and Tobago. This includes plans to implement e-payments for government services and electronic systems for customs processes (Digitalisation of Payments Roadmap, 2022), as well as increasing the proportion of ICT public procurement from MSMEs (as part of a broader government-as-customer strategy to build a local ICT sector). In addition, the government plans to support local entrepreneurs through the establishment of a national Online Local Marketplace and e-commerce training programme – through which local artisans and cottage industries will be provided with an avenue to continue to earn amidst the pandemic (Budget 2022).

- Fintech has also been identified as an area of with promising potential for the digital economy (National e-Commerce Strategy 2017-2021). In this area, the government has plans to establish a dedicated Fintech innovation hub that could facilitate the development of innovative financial instruments and digital payment services (Roadmap 2021). Leveraging the country's high mobile broadband penetration rates, innovations in mobile money are expected to support national financial inclusion objectives – and more broadly, accelerate transition towards a cashless society (National ICT Plan 2018-2022). 97% of public survey respondents mentioned having a bank account at a registered financial institution, though 61% believe that it is *'difficult/very difficult'* to open a bank account in the country. Here, there is strong potential for the government and private sector to transform the financial sector using digital.

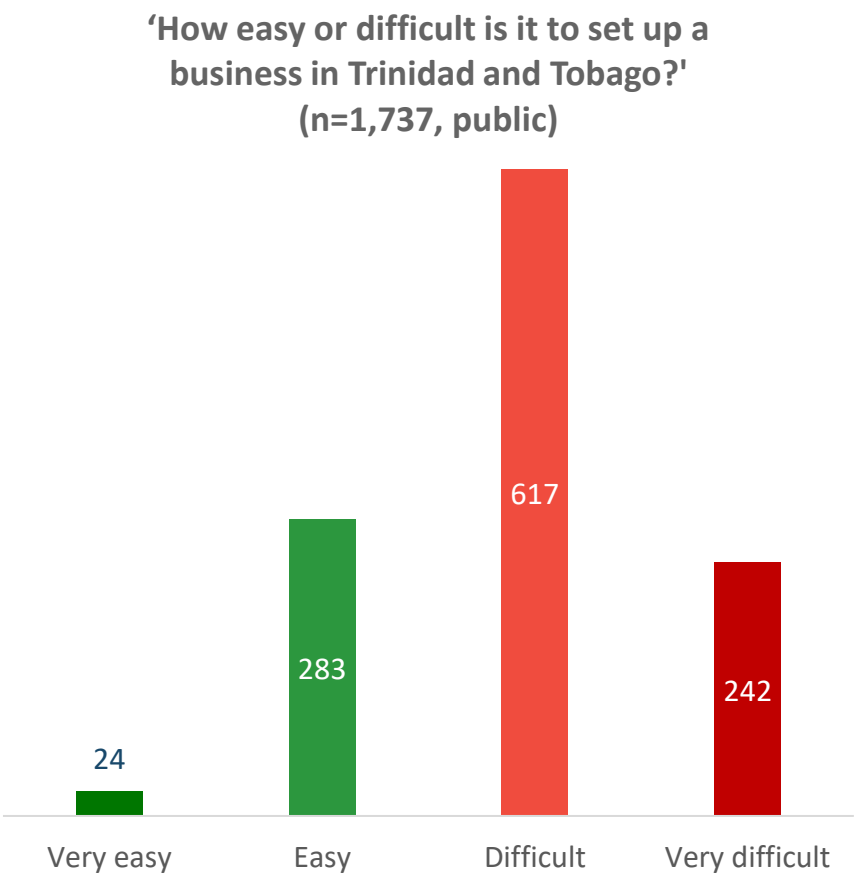
Business: overview and key insights (continued)

Rating: Systematic

BUSINESS	Limited digital integration across sectors	Growing technology penetration in key sectors	Cross-sector collaboration. Seed financing.	Digital coordinated across sectors. Venture financing.	Digital industry. Enacting digital responsibility standards

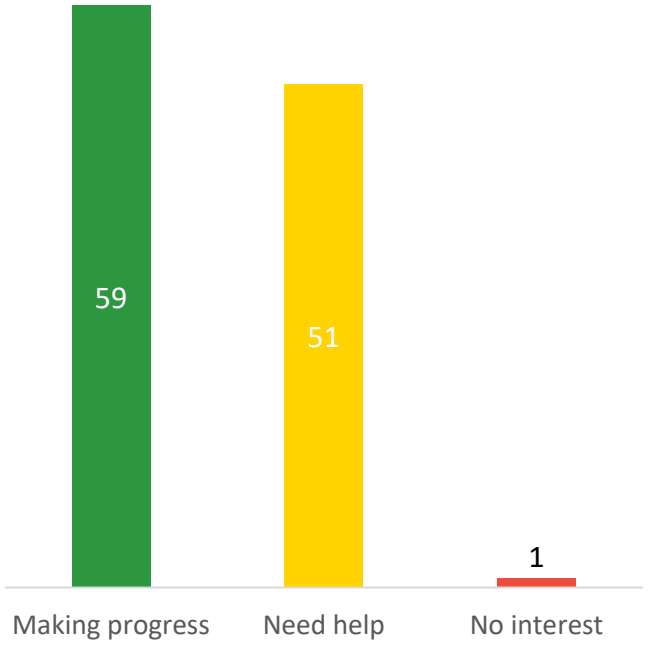
- Supporting the private sector in increasing the availability and accessibility of such digital finance solutions in the wider economy could spur MSMEs' greater engagement with the digital economy, as well as meet financial inclusion priorities. Trinidad and Tobago has relatively strong financial infrastructure and credit information sharing systems, achieving 81% adult credit bureau coverage, and scoring 6/8 in the World Bank's Ease of Doing Business Index (2020) Depth of Credit Information Index. However, last-mile access to financial services – especially financing opportunities for MSMEs, those in the informal sector, and vulnerable groups – could be improved (Roadmap 2021).

- Despite the above progress, more broadly Trinidad and Tobago ranks only 105/190 in the World Bank's Ease of Doing Business Index (2020). Furthermore, 73% of public survey respondents who were familiar with doing business found that it was *'difficult/very difficult'* to start a business in Trinidad and Tobago. Nevertheless, the government has made good progress in easing the costs and procedures associated with starting a business, most prominently through the digitalisation of business processes via the government portal, TTConnect. TTBizlink, a single electronic window for business and trade services, was introduced in 2009 and facilitates the electronic approvals of import/export permits, company registration, tax payments, and work permits. Enhancement works for TTBizLink are scheduled to be completed in December 2022, and could expect to improve tax and trading processes in the country – which are currently the lowest-scoring pillar in the Index.

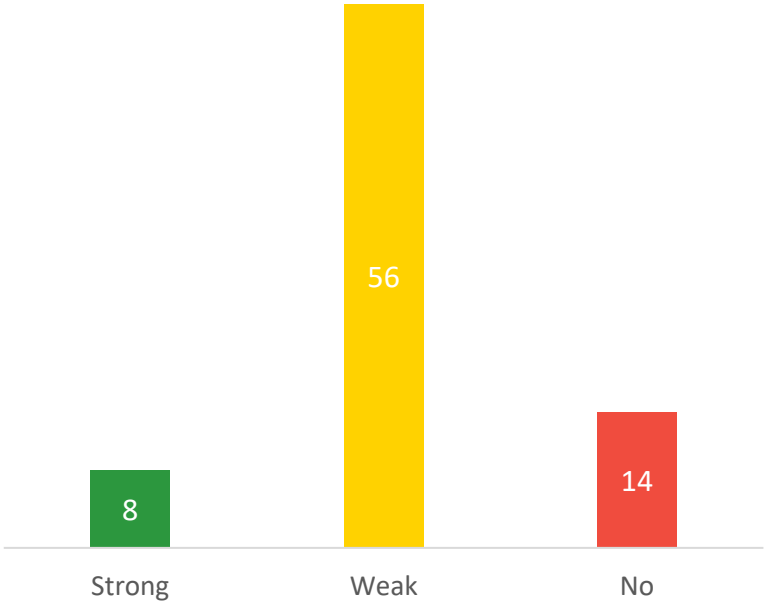


Businesses are engaging in the digital economy – but financing and skills may be key challenges to sustainable growth

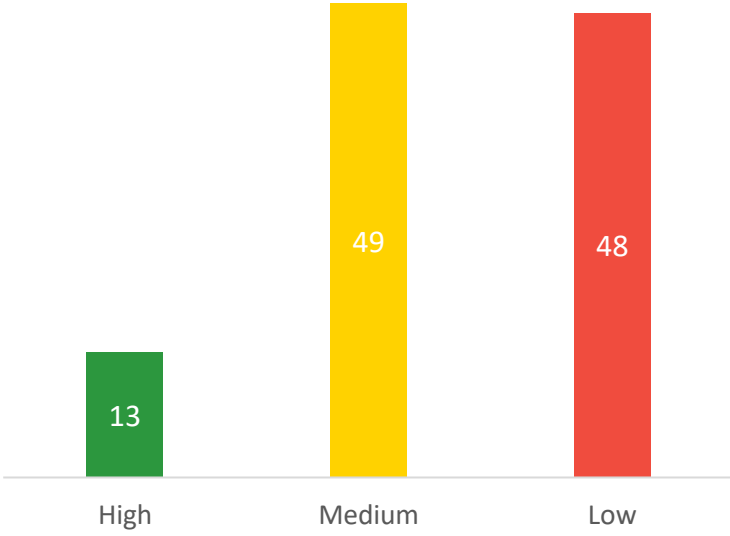
'Key drivers of the economy are adopting digital technologies.' (n=111, stakeholders)



'There are financial vehicles to encourage corporate digital transformation' (n=78, stakeholders)



'Are local universities graduating the experts on digital needed in your country? What percentage of need do you think is being met?' (n=110, stakeholders)



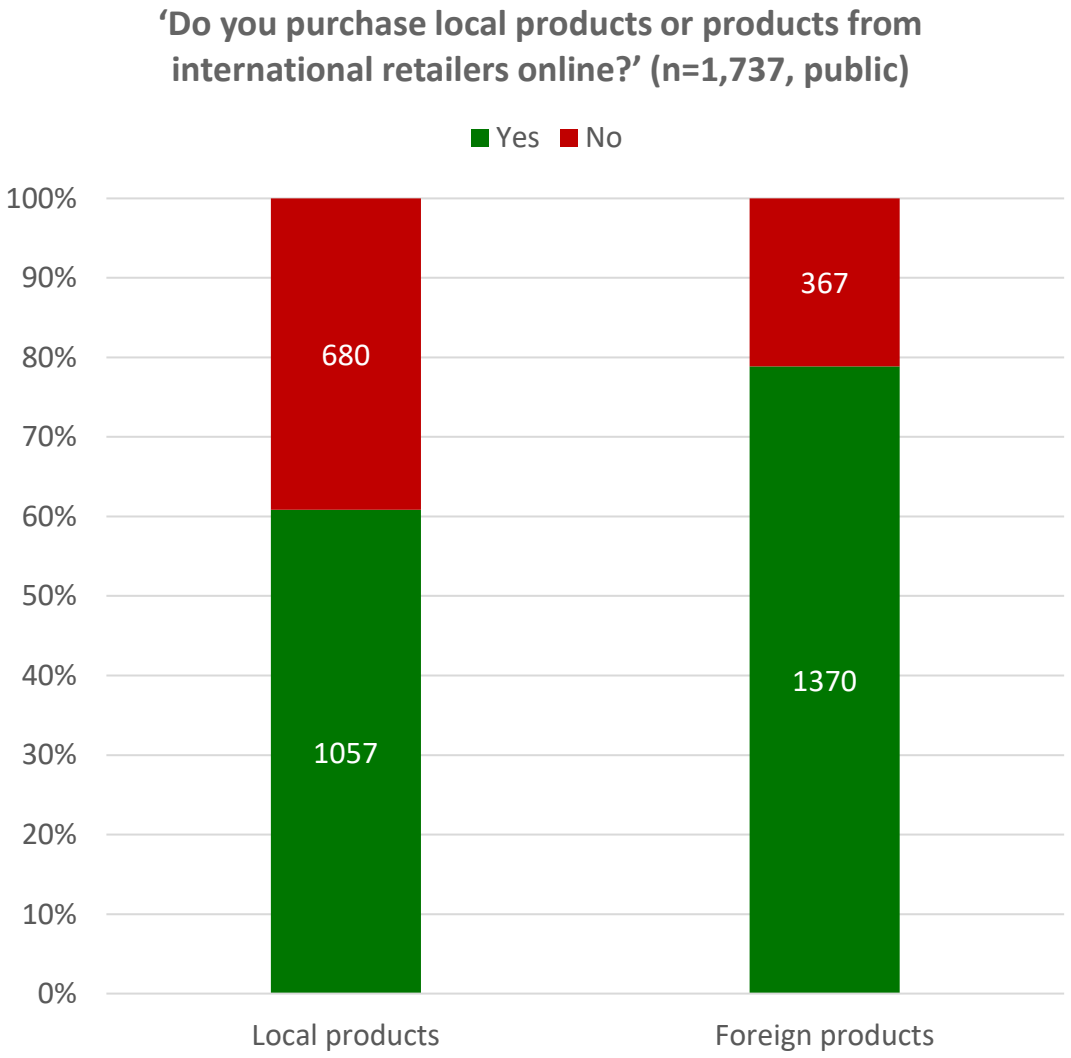
Respondents answering 'I don't know' not included

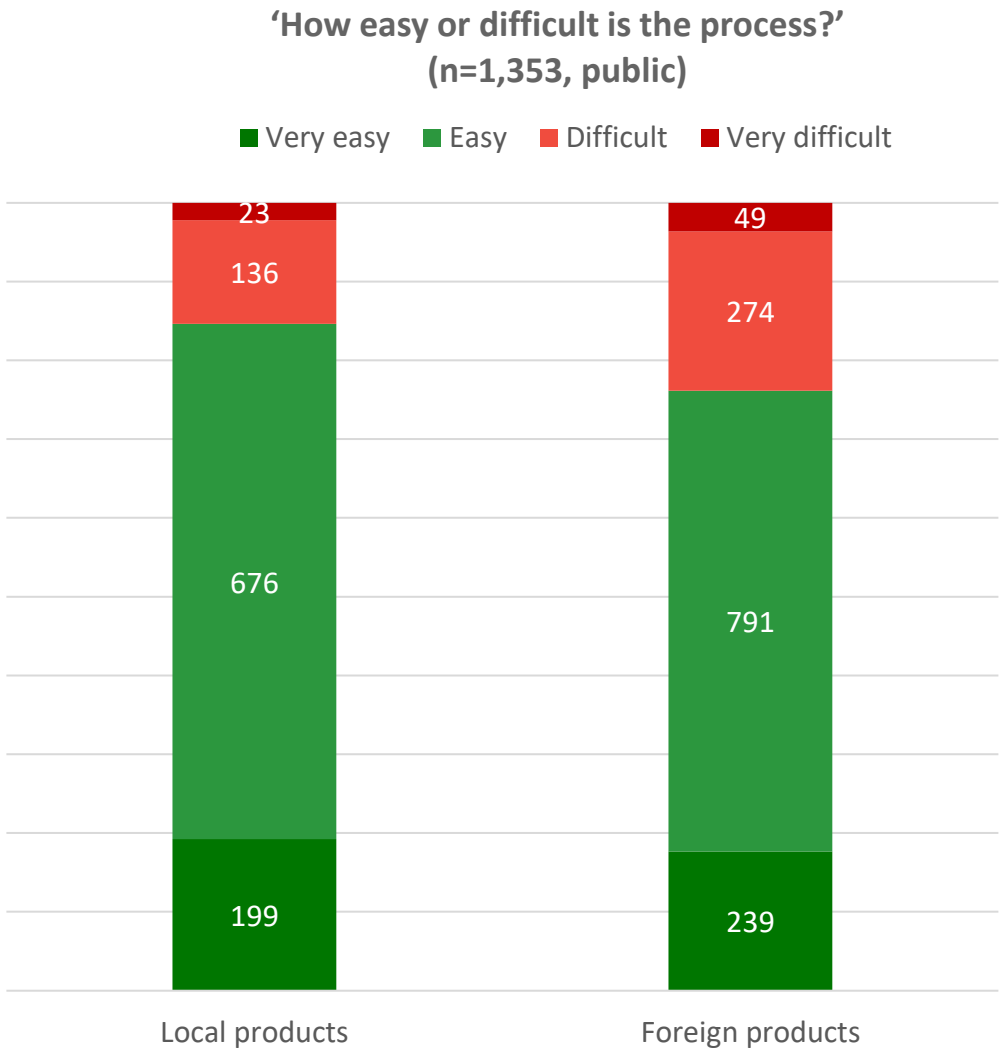
Business: sub-pillars

Technology adoption	Financing incentives	Impact commitments	Start-up environment

- Between 2008 and 2018, e-commerce activities in the country have been growing at an average annual rate of 20% (MTI, 2018). Recognising this, 60% and 79% of public survey respondents reported purchasing local and foreign goods online, though many expressed frustration that local merchants do not accept digital modes of payments, especially via debit card. Furthermore, an overwhelming number of respondents quote long waiting times at customs as a major obstacle in purchasing foreign goods online. In general, **technology adoption** is low across businesses – and local merchants are slow to digitise their business management processes or engage in digital transactions (National E-Commerce Plan 2017-2021), leading to low GDP contributions by the e-commerce sector. This is often due to difficulties in accessing finance for the digitalisation of business services, as well as an overall inadequate awareness of ICT and e-commerce; here, the plan for an Online Local Marketplace and digital training for entrepreneurs may be a fruitful intervention (Budget, 2022). However, as part of their feedback, public survey respondents also point out that limited connectivity – especially in rural areas, with a respondent noting Moruga as an example – make the prospect of e-business impossible in these areas. In particular, foundational broadband connectivity and the performance of services such as Google Maps are weak. To address some of these challenges, the government intends to create business 'cooperatives' which will allows SMEs to share ICT resources, in order to reduce the technical and costs barriers the face in digital uptake (National e-Commerce Strategy 2017-2021).
- Beyond increasing the availability and affordability of technology, more government support is needed to demonstrate and identify the role of digital in supporting SMEs' value creation in the digital economy. An IDB survey (2020) of 180 firms in Trinidad and Tobago identifies a low demand for skills training programmes on the digitalisation of operations, or provision of e-commerce services. Specifically, only 16% of firms indicated an interest in such programmes, the lowest of seven countries surveyed in the region. The highest scoring, Belize, saw 70% of firms interested in such initiatives (IDB Invest). In this regard, enhancing the visibility and accessibility of e-transactions, e-business models, and digital marketplaces is especially important to drive a digital entrepreneurial culture – but also needs to be accompanied by action, and partnership with trusted business entities. A strong step forward in this direction is the Ministry of Trade and Industry partnership with the Chambers of Commerce, IDB, and regional organisations, to enhance local businesses' presence on ConnectAmericas – a social network for SMEs in Latin America to expand their market access in the region (National e-Commerce Strategy 2017-2021).

E-commerce is transforming the economy, improving the ease of trade – although local retailers could have greater presence in the digital marketplace





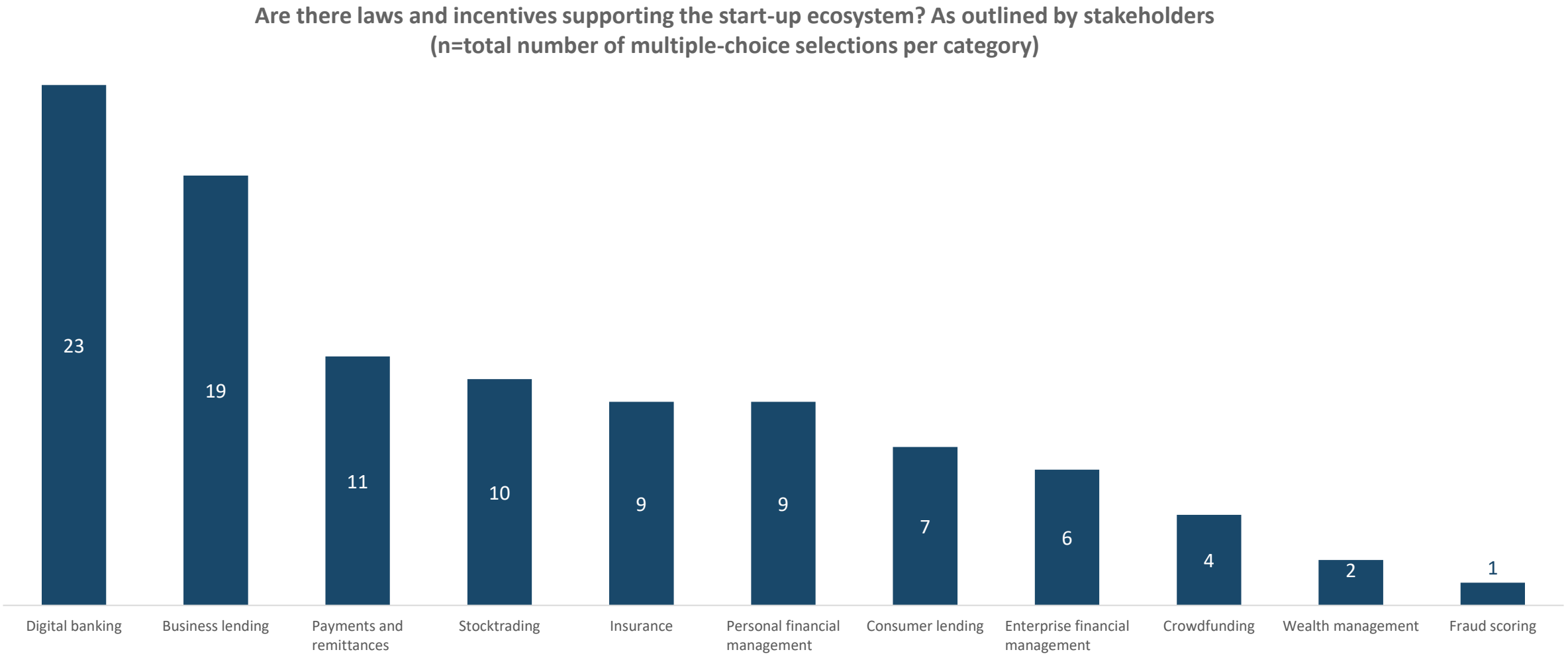
Business: sub-pillars

Technology adoption	**Financing incentives**	**Impact commitments**	Start-up environment

- Trinidad and Tobago has a large credit union sector, and strong financial infrastructure and credit information sharing systems, including a fully automated credit bureau that standardises credit reporting in the country. Despite these institutional mechanisms, **access to credit,** especially for digitalisation, is a challenge for many SMEs due to their lack of documentation, and the risk aversion of financial institutions towards lending to smaller enterprises and businesses interested in e-commerce (National E-Commerce Strategy 2017-2021). The government has been playing a proactive role in developing facilities for the credit union sector, especially in the context of COVID-19 relief. This includes a suite of grant and loan schemes, as well as government guaranteed loans at subsidised rates for MSMEs to restart their business (Roadmap 2021). While these are important initiatives, they are unsustainable in the long run without substantial reforms to the credit union sector. This includes enhancing the regulatory oversight of the sector, preferably with an independent supervisor, as well as considerations of formal and more innovative financial mechanisms to enhance MSMEs' access to loans (IMF 2019). Regarding the latter, Samoa has established an electronic collateral registry to facilitate the use of movable property as collateral for loans. Identifying the success of this initiative could be useful.

- There is no **impact commitment** framework for corporate governance or Environmental, Social, and (Corporate) Governance – or similar sustainability guidelines for corporate reporting. The government could lead developments in this area, especially in public procurement, which presents the government with an entry point to align the monitoring and evaluation of public projects undertaken by the private sector with the Sustainable Development Goals (and other indicators). The Green Government Policy (2011) is an initial step towards this direction, and sets standards in public sector sustainability practices in procurement, energy conservation, and communications. However, it is uncertain the extent to which this is implemented in practice, or whether there are indicators which measure success. Nevertheless, a promising initiative in enterprise sustainability is the government's plans to accelerate the country's green transition in the energy sector – specifically, to develop a hydrogen and green petrochemical industry. In addition, the government plans to certify accredited Energy Service Companies with the power to conduct energy audit in the energy-related sector. Here, the Bureau of Standards could play a steering role in establishing best practices for sustainability reporting.

Startups lack access to digital banking and useful forms of credit – whilst broader payment and financial infrastructure are also perceived to be lacking



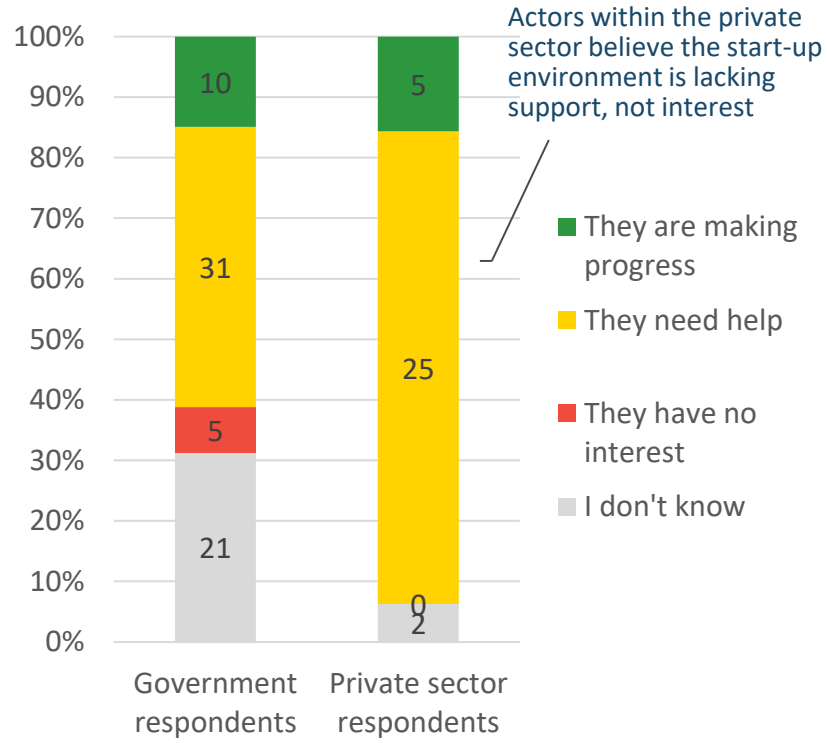
Business: sub-pillars

Technology adoption	Financing incentives	Impact commitments	**Start-up environment**

- With regards to the **start-up environment** in Trinidad and Tobago, the government has intentions to adopt a dual strategy in creating a domestic market for locally manufactured goods and services, and supporting industries with export potential. This will be achieved by improving the ease of doing business, with emphasis on the digitisation of workflow processes, and the introduction of one-stop electronic business services. Trinidad and Tobago has made good progress in easing the costs and procedures required to start a business. Its best performing pillars in the Ease of Doing Business Index (2020) are Getting Electricity (ranking 43/ 190), Getting Credit (ranking 67/190), and the costs and procedures associated with Starting a Business (79/190).

- However, there is room for improvement in Trading Across Borders (134/190), Enforcing Contracts (174/190), and Paying Taxes (160/190). More broadly, survey responses may have highlighted some disconnect between the private and public sector perspective of the start-up environment (see right). In this regard, strengthened regulations on electronic transactions, as well as the enhancement of TTBizLink – a single electronic window for business and trade services such as import/export permits, tax registration, company registration, and work permits – could be useful steps forwards. To further address regulatory pain points, the government also has plans to decentralise regulatory approval processes for business administrative procedures.

'Startup companies feel comfortable growing here.' (n=99, stakeholders)

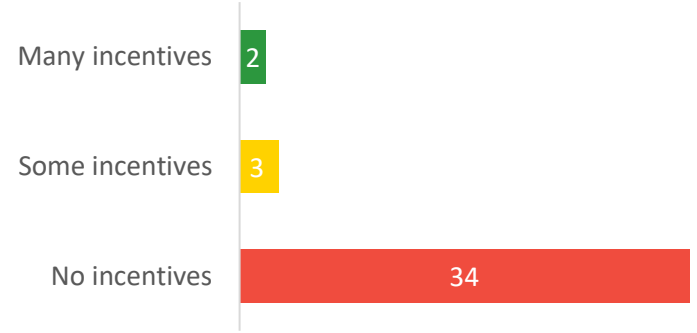


Business: sub-pillars

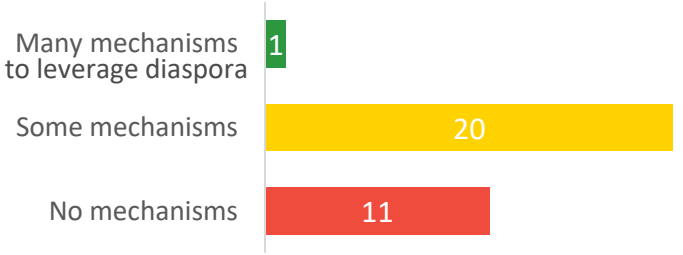
- The government should also consider opportunities to attract foreign digital workers (including entrepreneurs, start-ups, investors, and others), and to leverage the **digital diaspora** of Trinidad and Tobago. Diaspora engagement is acknowledged by the government as an economic growth strategy to develop the country's export market, attract a high-skilled workforce, and modernise public services (National Strategy Plan 2016-2030). However, at present, there is no dedicated diaspora engagement strategy. The government's plans for an e-Residency programme for entrepreneurs to start and run a business in the country from abroad, though, provides a unique opportunity to engage the diaspora in digital economy priorities.

- A number of SIDS are leveraging their diaspora to catalyse digital transformation in the public and private sectors. In Suriname, the government is registering the country's diaspora to create a database that could match skilled diaspora citizens with local partners. Sierra Leone has a dedicated Presidential Office for the Diaspora, which coordinates a national strategy for the diaspora to support the country's development priorities. The Office advertises jobs for the diaspora on its website, and launched a public sector reform programme focusing on bringing diaspora experts – especially in ICT – as resource persons to support the government capacity building. The Office also encourages the diaspora to invest in local entrepreneurship by bringing in diaspora experts as advisors to and funders of the country's innovation hubs. As Trinidad and Tobago make plans for an e-Residency programme for entrepreneurs to start – and run – a business in Trinidad and Tobago from abroad, the Office model could be one to follow.

Incentives to attract foreign digitally-skilled workers are rare… (n=39, stakeholders)



…whilst more could be done to leverage the digital diaspora (n=32, stakeholders)



Business: recommendations

There are a number of priority recommendations within this pillar:

- **National Digital Economy Strategy:** with the expiry of the National e-Commerce Strategy (2017-2021), a new National Digital Economy Strategy could be drafted – to map key actors and potential partners, identify digital opportunities in priority sectors (precision agriculture and renewable energy), and highlight new digital industries of interest (creative industry), key actors, and initiatives. The strategy could also consider incentives for international private sector actors to set up operations or regional bases in the country. The government already has plans to implement a 'Special Economic Zones (SEZ) Regime' – with a focus on businesses in information technology and other export-oriented or import substitution sectors (Roadmap 2021). Curaçao could be a model for this; the country has generous incentive packages such as R&D grants for IT centres, tax incentives on inward capital investment, investment allowances, and expatriate exemptions on income tax in their SEZ.

- **Develop digital business service centres:** building on top of TTBizlink (e-government platform delivering business and trade services), the government could consider the incorporation of further information on support schemes, business information, and tax payments for SMEs to leverage digital to optimise operations. For example, Curaçao is in the process of creating a business digital portal which will serve as a virtual 'one-stop shop', consolidating information on establishing and operating a business, government support schemes, as well as the payment of taxes and premiums from different government agencies. Samoa has also made plans to develop an integrated e-government platform for the submission of business registration, tax, and custom documents, as well as broader acceptance of electronic documents, could help to reduce the costs of doing business.

- **Alternative sources of financing for MSMEs:** the government could consider new and innovative forms of financing for investments, such as microloans, venture capital, crowdfunding (IDB 2021), as well as institutional mechanisms supporting the use of movable property as collateral (explored in Samoa). In parallel, legislation to improve the governance of the credit union sector is also necessary, especially in introducing Credit Risk Guarantees to insure MSMEs against losses in credit arising from unforeseeable risks. In this regard, Suriname's Central Bank could be a useful model to watch, having recently drafted a Credit Bureaus Act. The Act sets out processes for credit providers to enhance transparency and reduce information asymmetry, and examines considerations for more systematic (and electronic) registration procedures for credit agreements with the Central Bank.

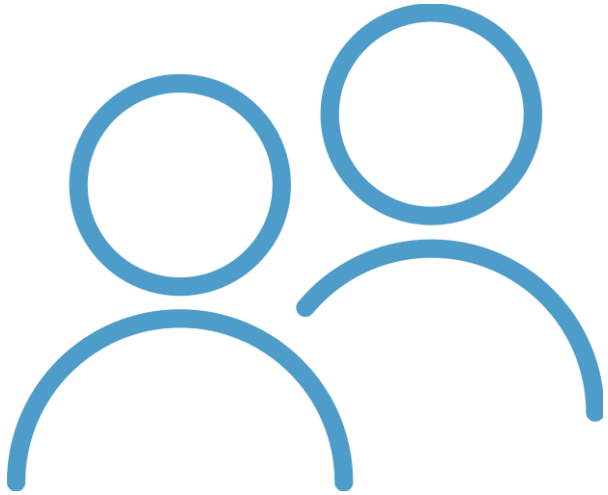
Business: recommendations (continued)

- **Cooperatives for MSMEs to consider digital:** the government identifies the creation of 'cooperatives' which allow SMEs to share ICT resources, as well as information, as a means to reduce technical and cost barriers to digital uptake. This could take the form of devolved entrepreneurship support networks. For example, Samoa plans to staff every constituency office with a SME advisory representative to ensure that government support programmes, mentorship and upskilling programmes, as well as access to finance is available throughout the country. Trinidad and Tobago could consider such an approach to coordinate SMEs' digital efforts locally. In parallel, better communication of the potential of e-commerce (as well as enhancing the visibility and accessibility of e-transactions, e-business models, and digital marketplaces) is important in creating digital merchants and consumers.

People

Digital transformation should be driven by the needs, realities, and aspirations of individuals. It should be people-centred, including founded on participation, engagement, and co-design wherever possible. Digital is a tool to improve lives and livelihoods.

In order for everyone to benefit from the potential that digital offers, digital transformation should be inclusive – with no one left behind. This includes building strong digital literacy across all of society, particularly in more marginalised groups. However, digital literacy can be wide-ranging - and it's important to look beyond access to technology. Usage and ownership is crucial in building sustainable and relevant digital skills.



However, digital is not a panacea. Government, the private sector, and civil society should build a safe and useful digital culture. This includes building trust in digital technologies, supporting entrepreneurs, and identifying and tackling harms caused or amplified by digital. This includes digital addictions, online harassment, and disinformation.

People: rapid diagnostic

- The digital inclusion situation in Trinidad and Tobago is fast evolving – and is considered '**Differentiating'.** This means that there is good digital literacy, and broad interest in technology.

- The people pillar has the below components:

  - **Digital literacy skills:** ability to use digital technology of all parts of society (all regions, age groups, genders); particularly of traditionally marginalized groups of society (refugees and migrants, women and youth, persons with disabilities and special needs, older people, indigenous people and people living in remote areas).

  - **Culture:** trust in digital technologies, attitudes towards entrepreneurial risks, social norms for use and ownership of internet and technology.

  - **Digital wellbeing:** understanding and mitigating harm inflicted by digital such as addiction, cyber bullying, disinformation, physical impacts.

  - **Usage and ownership:** use of digital technology by different level so society, financial inclusiveness, e-commerce activity, information access trends.

People: overview and key insights

Rating: Differentiating

- Digital transformation is founded on a country's greatest asset: its population. Trinidad and Tobago has good foundations here – with a high basic literacy rate of 98.7%. 60% of public survey respondents believe that they have the skills to navigate the digital economy (*Are you satisfied with your technical skills to navigate in a digital world?*), although only 18% of respondents thought the benefits of digital services have reached all or most of the population (*Do you think the benefits of digital services are reaching everyone?*). Nevertheless, the government is making concerted efforts to increase digital literacy in mandatory education. It also has plans to assess the skills gap in the digital labour market, and map a 'repository' of digital talents that could lead digitalisation efforts in the public and private sectors.

- There is also growing digital awareness across society, driven by interest in social media and the development of local online content. In particular, the government has plans to transform the local digital culture from one of 'download' to 'upload' – and focus on developing locally relevant content that promotes the country's unique culture (National ICT Plan 2018-2022). The country is building on strong foundations here, having achieved a score of 68.6 for Content and Services in the GSMA Connectivity Index (2019). However, more could be done to increase awareness of the potential afforded by digital, as well as enhance cyber awareness in the populace. This will be crucial in driving the development of a local digital entrepreneurship culture, which could shape digital products and services that add meaningful impact to lives and livelihoods.

- In this regard, the government has been proactive in bridging the digital divide and promoting broader adoption of ICT amongst its populace. This includes investments in rural connectivity through the Universal Service Fund, as well as the conduct of an important Digital Inclusion Survey in April 2021. The results of this survey will be crucial in supporting more directed and evidence-based policy decisions that could support last-mile delivery of accessible and affordable connectivity – and digital upskilling initiatives (Roadmap 2021). More broadly, the government also has high ambitions to leverage digital to inform more directed interventions in welfare delivery. This includes the digitalisation of a social welfare data management system, and also of a one-stop institutional mechanism that can identify households and vulnerable individuals, and coordinate different levels of welfare support from the government, civil society, and the private sector.

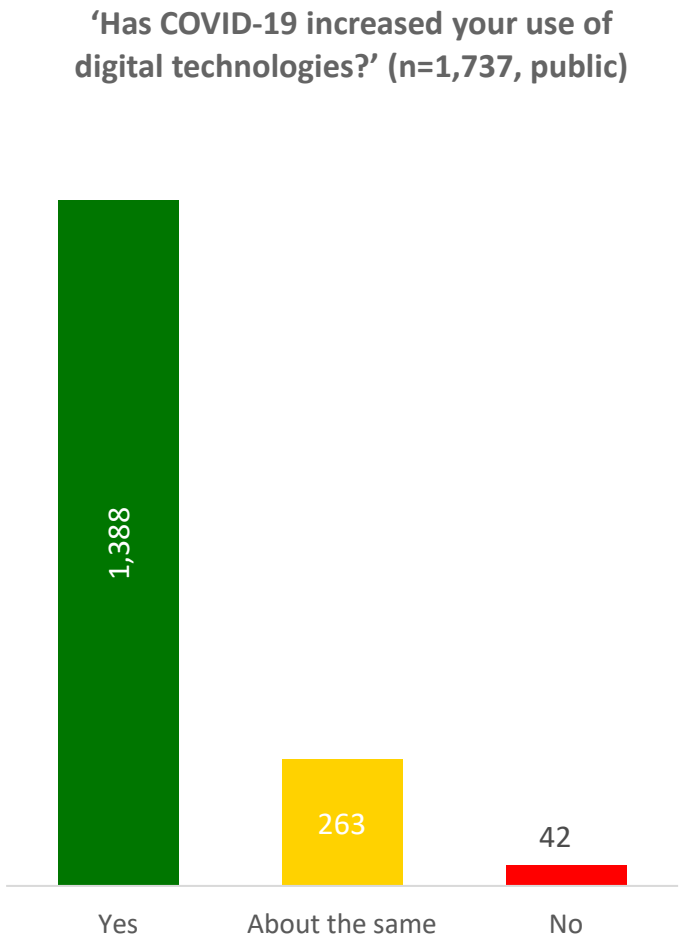
People: sub-pillars

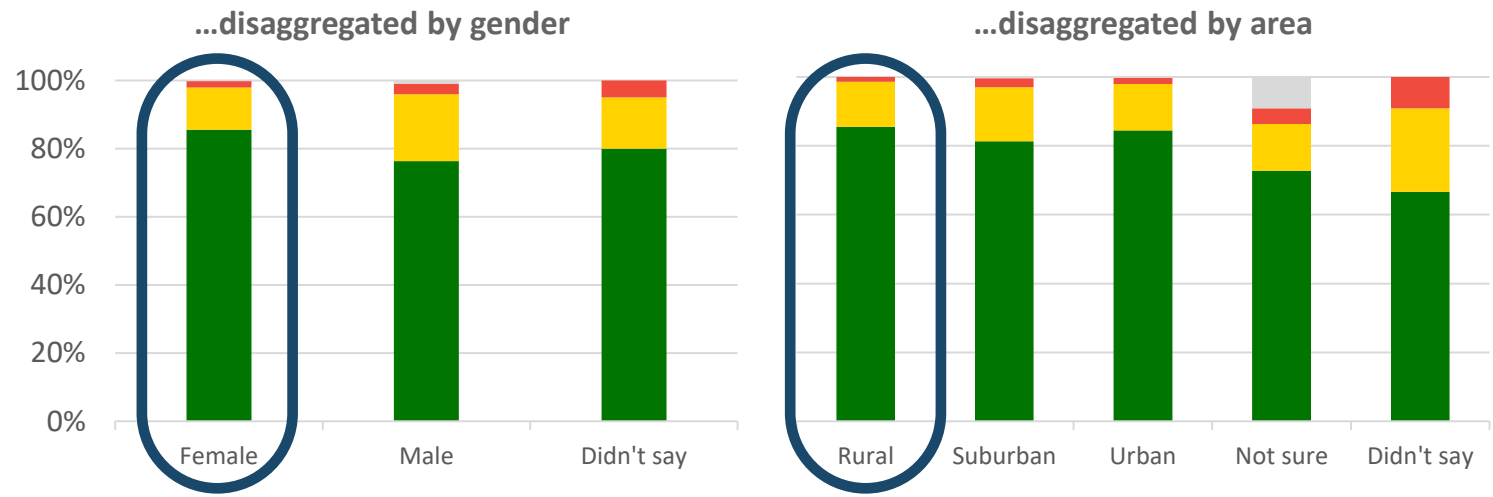
Digital literacy skills	Culture	Digital wellbeing	Usage and ownership

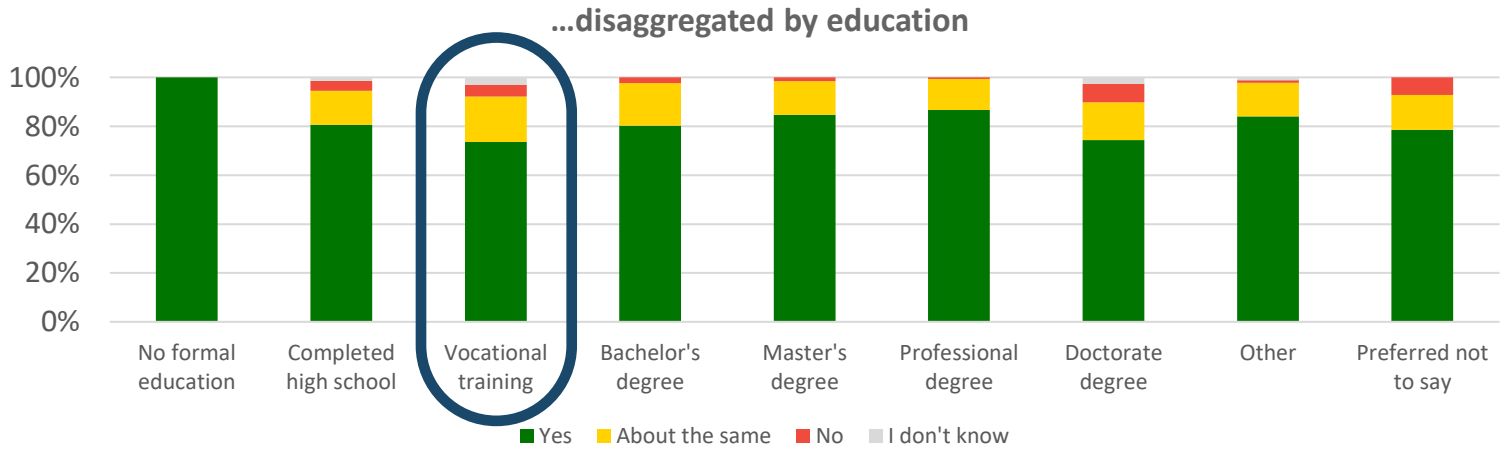
- Trinidad and Tobago has strong human capital foundations to build **digital literacy** amongst its populace. Its basic literacy rate is high at 98.7%. However, the public survey highlighted a potential digital divide – particularly between younger and older citizens (*Are you satisfied with your technical skills to navigate in a digital world?)*. There is a risk that this becomes entrenched as digital transformation efforts accelerate, with the public survey also highlighting that more privileged strata in society – notably, urban and suburban residents, men, and those with a university education – are more engaged with the potential of digital and technology *(Has COVID-19 increased your use of digital technologies?/Do you feel excited by technology?*). In this regard, ICT Access Centres in underserved areas currently offer communities with access to computers and digital services, as well as in-person digital skills training programmes in partial partnership with Microsoft – with plans to increase the number of centres to 50 in 2022 (Budget 2022). Developing and implementing a comprehensive digital inclusion strategy, which currently does not exist in Trinidad and Tobago, should be a priority, and could be informed by the findings of the Digital Inclusion Survey (2021).

- The government is taking important steps to address these systemic challenges for future generations of citizens. Specifically, a forthcoming national ICT training framework will embed ICT education and talent development into the national curricula from primary to tertiary level. It will also emphasise workforce training to create a pool of skilled IT personnel for the public and private sectors. A 10-year Workforce Development Plan will also identify talents that could support digital transformation in the broader economy (Roadmap 2021), with focus on recruiting, training, and retaining talents with core technical skills in emerging technologies such as robotics, AI, and blockchain. In addition, a Memorandum of Understanding has been signed with Estonia, and will facilitate knowledge sharing in select digital sectors recognised to be central to key digital priorities in the Government and private sector – namely, cybersecurity, blockchain, and 5G (Budget 2022). As the government drafts these strategies, it is important to embed measurements into their design, and consider the role of digital is tracking progress towards national digital skills outcome. In this regard, Suriname has created a National Education Information System to measure students' performance in schools, and has plans to develop a national qualification framework to set standards in Technical and Vocational Training with the country's largest employers and workers' organisations.

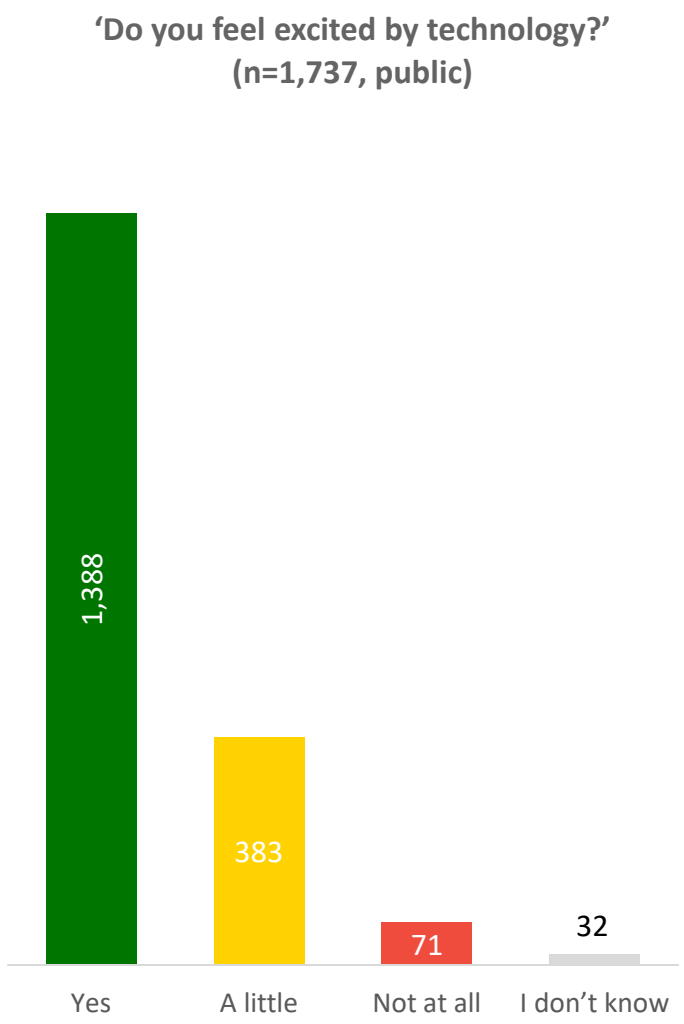
COVID-19 may have increased the use of digital for women and rural citizens – but exacerbated digital divides by education level

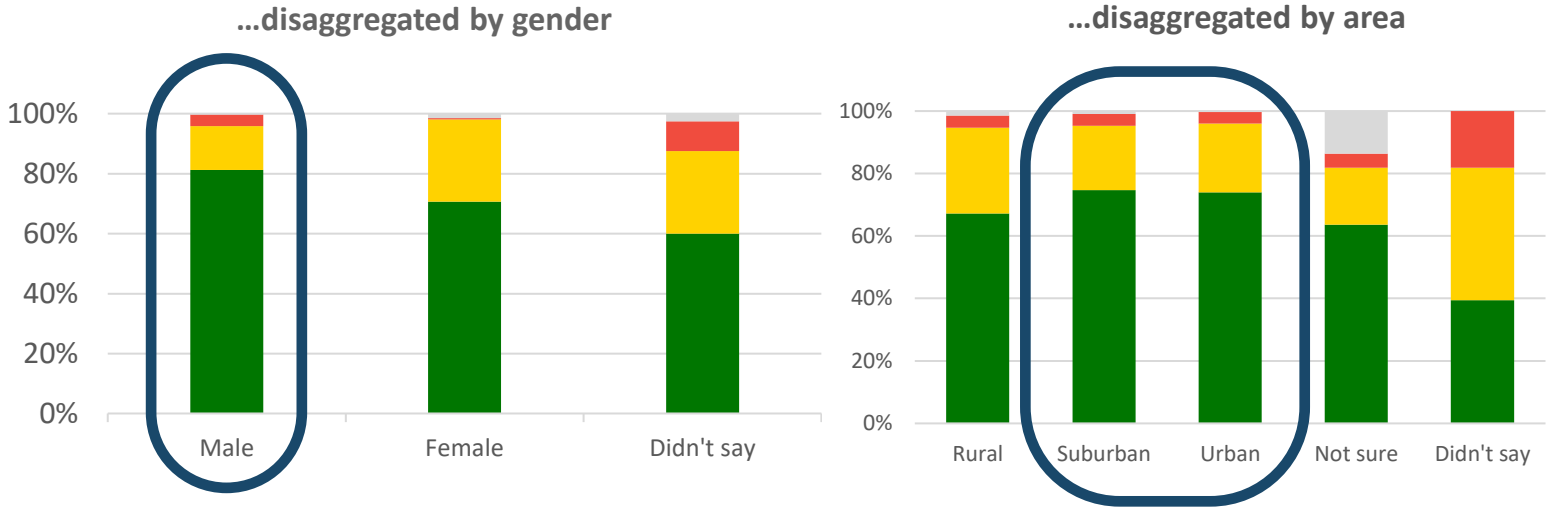


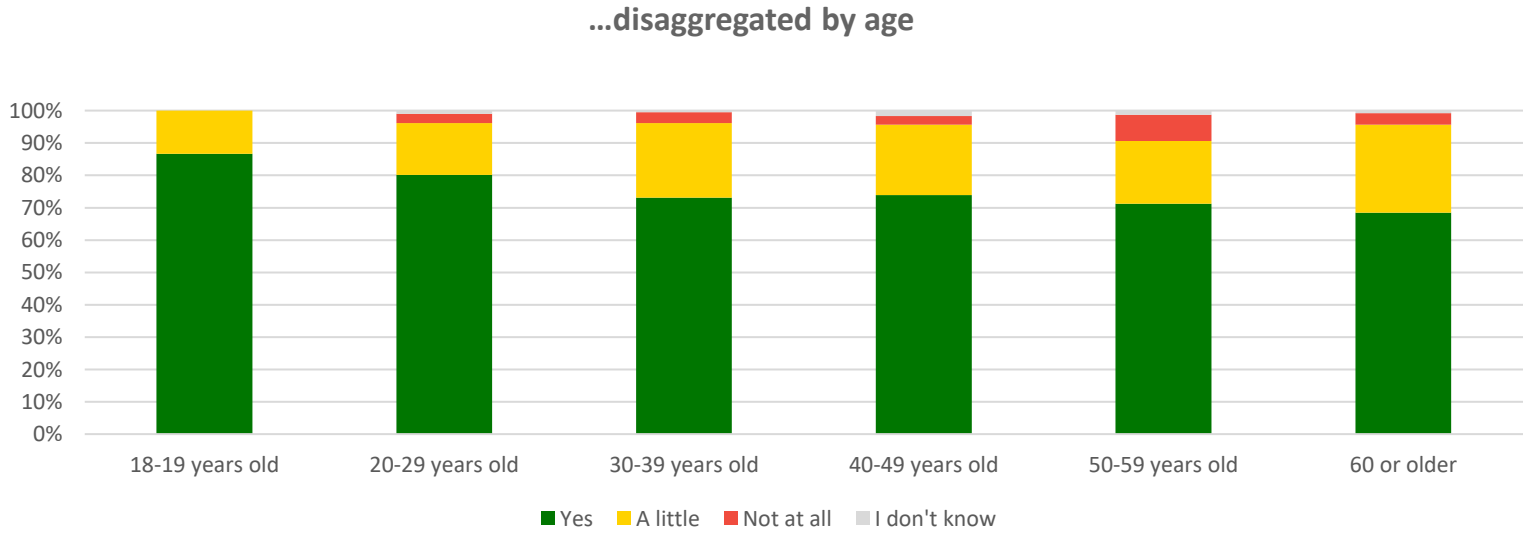




More privileged sections of society (men and sub-/urban residents) continue to be more engaged with the potential of digital and technology







People: sub-pillars

Digital literacy skills | **Culture** | Digital wellbeing | Usage and ownership

- Social media use, particularly Facebook and YouTube, has increased substantially in recent years. The total number of social media users at present represents around 70% of the population (Data Reportal 2021). This suggests a growing **digital culture** and appetite for digital products and services. Reflecting this, Trinidad and Tobago receives a high Consumer Readiness score of 78.8 in the GSMA Mobile Connectivity Index (2019). 73% of public survey respondents also revealed a high interest in digital (*Do you feel excited by technology?*), and an overwhelming 95% of 1737 respondents believed in the importance of digital as a national priority (*How important are digital technologies for making TT better compared to other priorities?*).

- However, despite having some of the strongest digital foundations in the region, the availability of digital Content and Services of relevance to the local populace is comparatively low, at 68.6 (see right). Perhaps reflecting this, the government identifies the need to develop an 'upload' culture in the country that could catalyse a creative industry focusing on promoting the unique characteristics of Trinidad and Tobago (Roadmap 2021). Specifically, the government sees the potential of a digital creative economy to enhance the visibility of the country's tourism sector –and feature marketable products such as digital art, movies, and animations about the countries' stories.

	Trinidad and Tobago	Suriname	Jamaica	Guyana	Saint Vincent and the Grenadines	Dominican Republic	Barbados
Infrastructure	67.5	57.3	58.2	42.5	58.9	57.2	65.6
Affordability	55.9	39.9	42.4	45	43.6	43.8	44.5
Consumer readiness	78.8	72.7	73	70.6	73.6	75.2	82.8
Content and Services	68.6	42.6	68.2	63.1	73.4	67.9	72.6

Source: GSMA Mobile Connectivity Index (2019)

People: sub-pillars

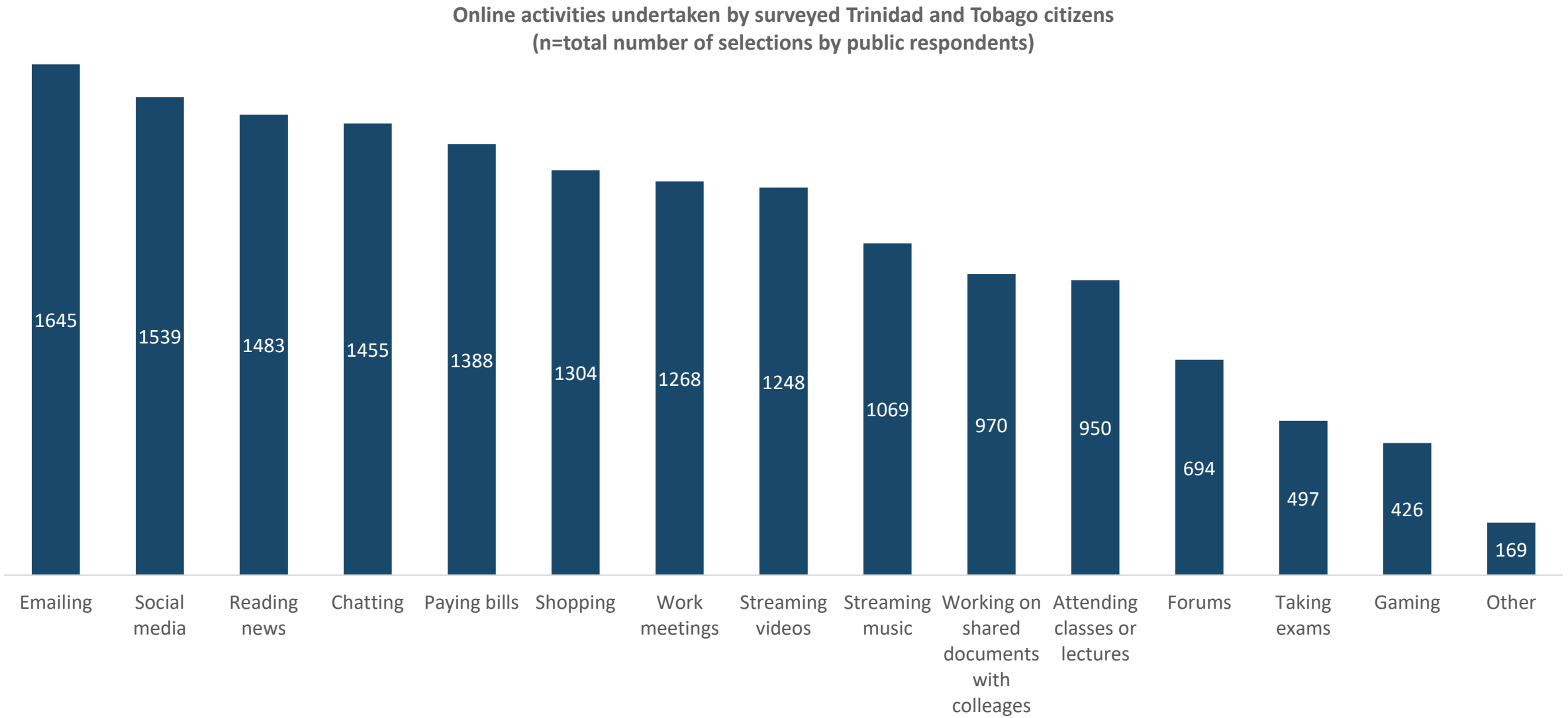
Digital literacy skills	Culture	**Digital wellbeing**	**Usage and ownership**

- Enhancing **digital wellbeing** in the population may require increased government prioritisation, especially in communicating the opportunities of digital to improve citizen participation - as well as identifying exemplar initiatives which could demonstrate to the public the potential of digital to safely meet their needs and aspirations. At present, initiatives in this area are limited to government plans to roll out cybersecurity awareness programmes, as well as cyberbullying policies for schools, though public survey respondents feedbacked that more could be done to address the emergence of online scams targeting the uninformed. Related to the digital economy, the Ministry of Trade and Industry intends to institute an online Consumer Affairs Portal to disseminate information on telemarketing scams, as well as risks associated with e-commerce. In this regard, holistic approaches towards digital wellbeing have seen success in a number of SIDS; in Samoa, Fiji, and the Solomon Islands, community telecentres provide digital connectivity to underserved communities, but also serve as government information channels to disseminate digital wellbeing messages (cybersecurity, online misinformation, cyberbullying) to the public. This model could be replicated in Trinidad and Tobago to increase last-mile digital literacy and inclusivity.

- Disaggregated population census data collection and analytics focused on ICT access, and usage will be important to guide data-driven decision making in support of **digital inclusion**. Survey respondents highlighted a need for more data to be gathered on marginalised and minority groups to better understand their digital needs and perspectives, as 31% or respondents considered existing processes to be ‘weak’. A strong step forward in this direction are the recently commissioned Digital Inclusion surveys, which could provide critical information on the digital needs and perspectives of marginalised and minority groups. The government should ensure the insights from these surveys are used to inform policy and service design and delivery.

- Notable efforts in tacking the digital divide include the leveraging of Universal Service Funds to bridge the connectivity infrastructure investment gap between the islands of Trinidad and Tobago, as well as the provision of mobile devices with assistive technologies for persons with disabilities. These efforts could be systematically mapped and planned as part of a wider digital inclusion strategy, to mitigate potential divides as digital transformation efforts accelerate.

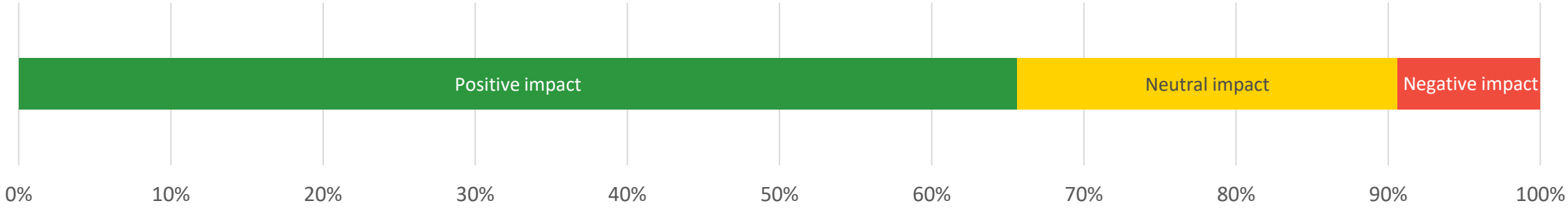
Citizens are digitally-savvy…



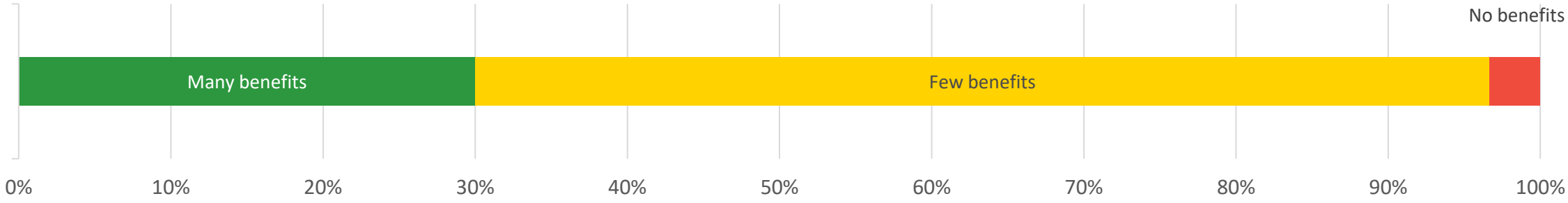
Respondents answering 'I don't know' not included

…but the financial impact of the digital economy needs to be more wide-ranging

‘What impact is the internet having on individuals?’
(n=118, stakeholders)



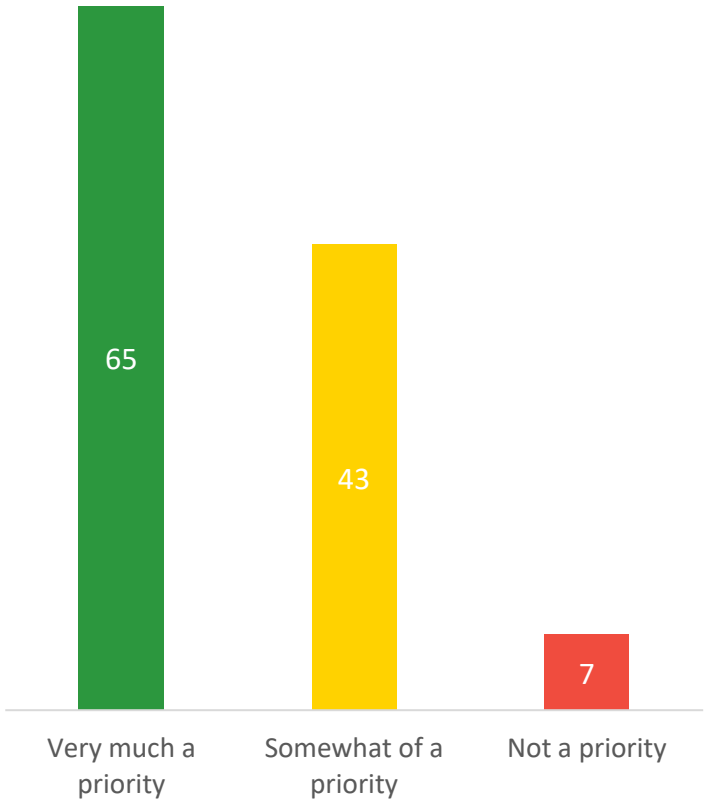
‘Is the digital economy leading to financial benefits for citizens?’
(n=90, stakeholders)

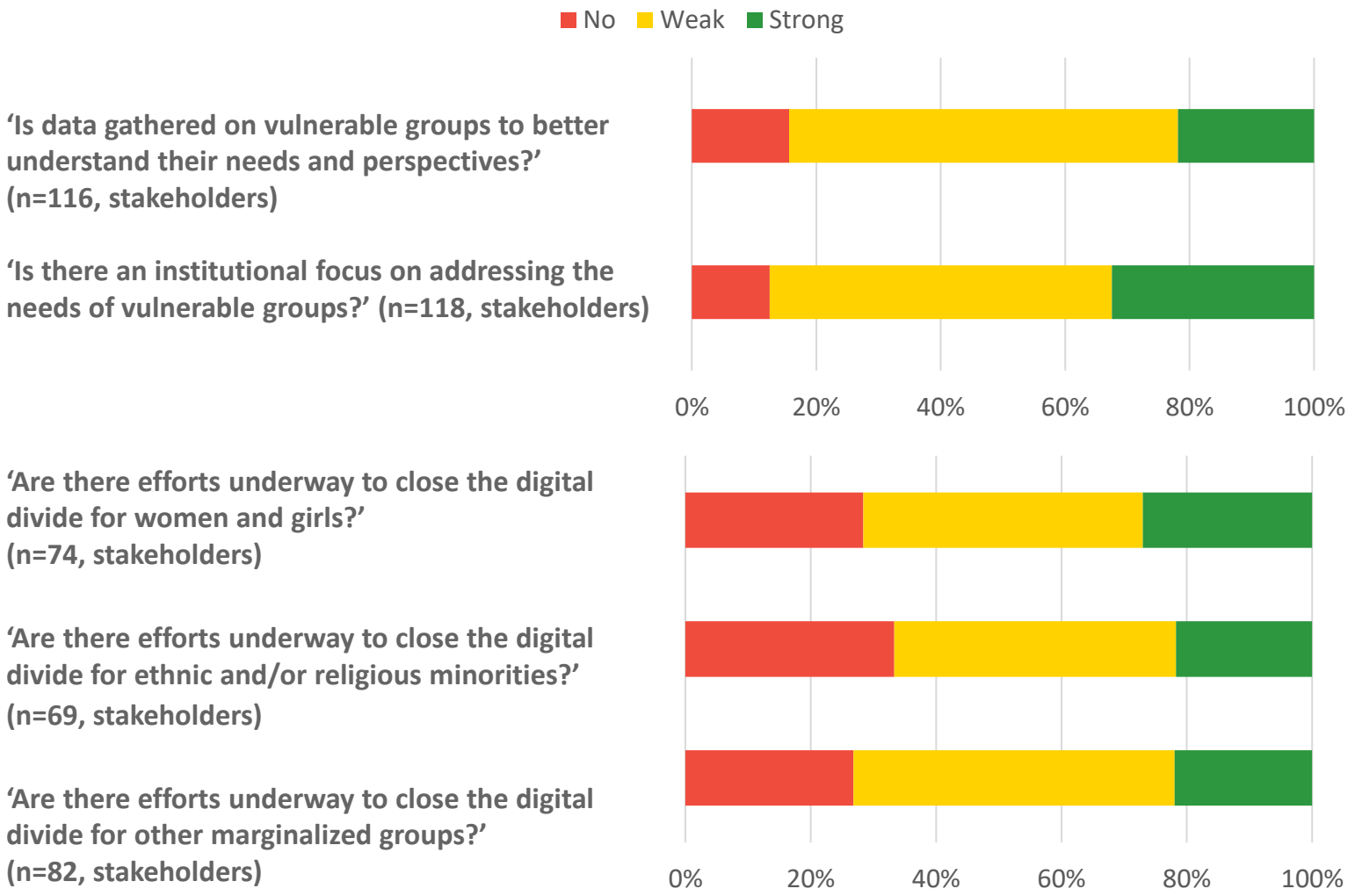


Respondents answering ‘I don’t know’ not included

Although digital inclusion is seen to be a priority for government, strategies and policies may not always be translating into action

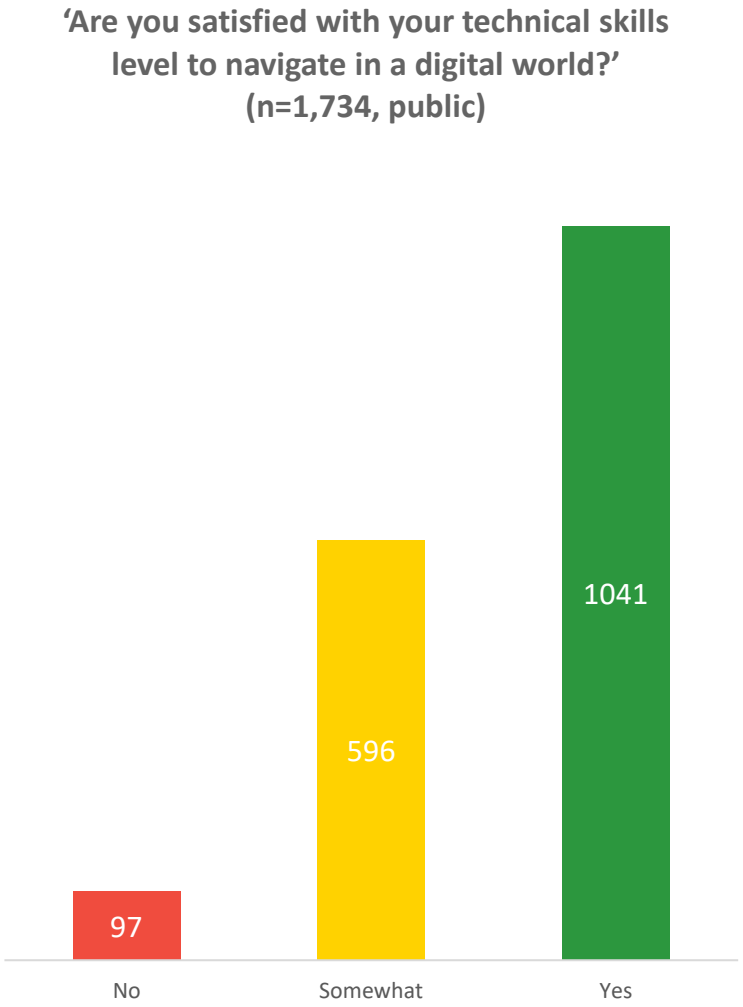
'Is inclusivity considered a priority for digital transformation?' (n=115, stakeholders)

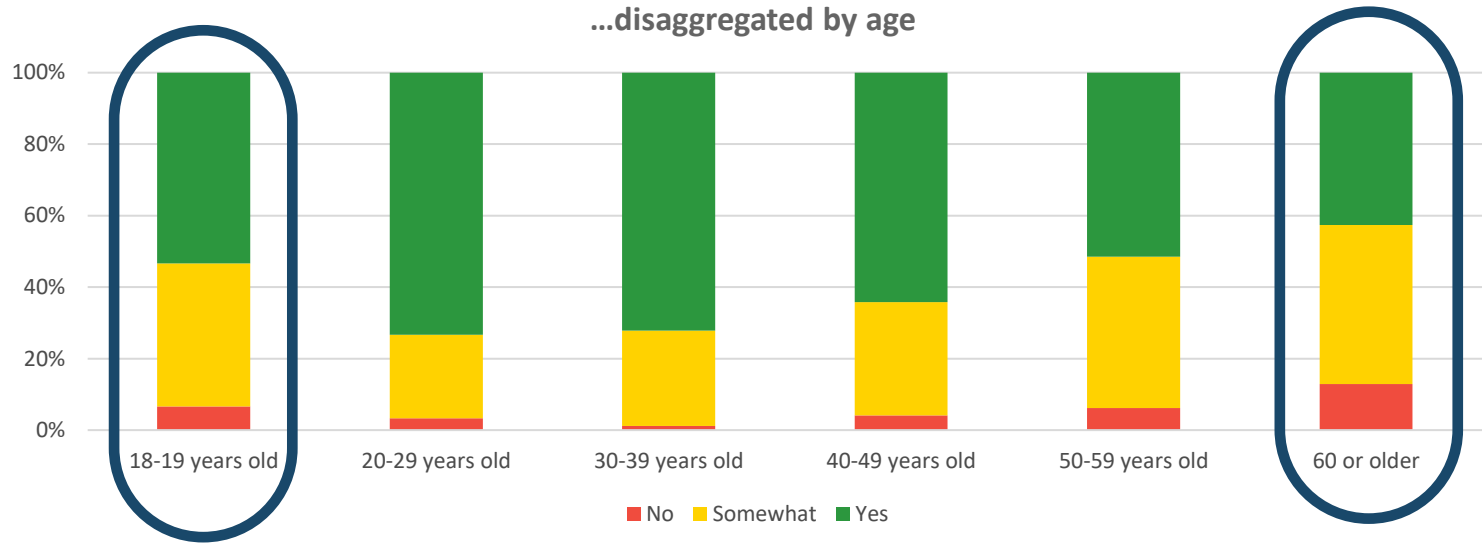


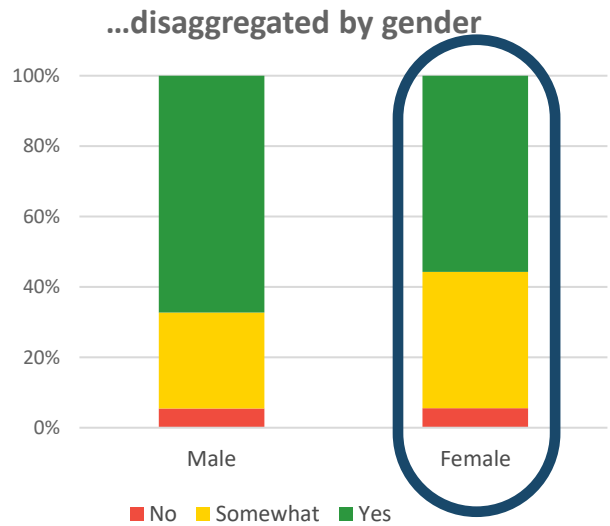


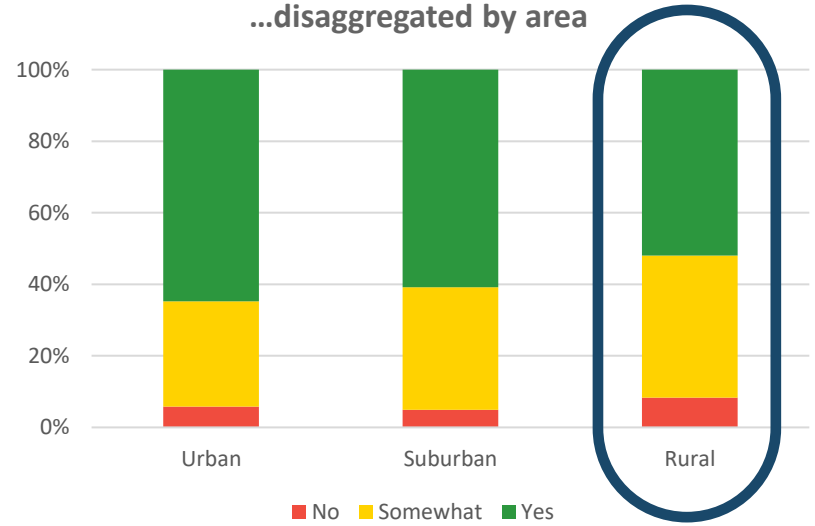
Respondents answering 'I don't know' not included

This is a broad challenge. Digital skills may also be lacking in key populations – particularly women, rural residents, and the young and old.









People: recommendations

There are a number of priority recommendations within this pillar, largely linked with prior recommendations:

- **Digital skills strategy**: the government intends to create a 'repository' of existing ICT professionals in the country to map the availability of skillsets in the country, and match talents with labour market demands (ICT Plan 2018-2022). This would guide a data-driven approach to national human capital management and increase awareness of the availability of ICT human resources in the country – informing the 10-year skills development plan, and ensuring focus on digital literacy development.

- **Digitalising schools as community digital centres:** in September 2020, 29% of the local student population was estimated to lack a device to access online learning (IDB 2021). More broadly, 23% of the population lacks access to the internet or does not use the internet. By investing in schools as digital hubs, educational institutions could be better positioned to shape digital literacy in students from younger ages, whilst doubling as communal digital 'service centres' for residents. Furthermore, this is aligned with the government's plans to roll out TT-Wifi to all schools, in addition to all health institutions, libraries, and transport hubs – as well as to establish ICT Access Centres in underserved areas (Budget 2022). In considering how these two models could coalesce, Fiji could serve as a useful reference. Here, community 'telecentres' are established in government schools throughout the country, and are open to the community after school hours with 'lab assistants' available to provide users with technical support. These centres have logged users totaling some 15% of the national population. Similarly, the government of Sierra Leone (in collaboration with UNICEF) initiated an infrastructure mapping exercise for schools and their connectivity statuses in 2020, in order to inform procurement decisions relating to connecting schools without power supply to electricity and broadband networks.

- **Leverage data:** the digital Inclusion surveys – and the upcoming ICT labour skills assessment - are an important and innovative step in identifying the digital needs and perspectives of marginalised and minority groups. The government should ensure the insights from these surveys are used to inform policy and service design and delivery. This could require building processed to make this data available to innovators within and beyond the public sector.

People: recommendations (continued)

There are a number of priority recommendations within this pillar, largely linked with prior recommendations:

- **Developing the creative economy:** the government could consider the establishment of co-working spaces for creative actors, and providing fiscal incentives for R&D in the creative industry to develop digital products and services. State-owned enterprise CreativeTT could be an important actor in this endeavour, and has been investing in initiatives that could strengthen the creative industry's competitive advantage in the global digital value chain. Specific to Tobago, the government intends to enhance the international visibility of the tourism sector through digital marketing, with focus on supporting the creative sector in creating digital art, movies, and animations about the 'Tobago Story' (National ICT Plan 2018-2022). Nevertheless, a more systematic and strategy approach is necessary; for example, in Barbados, the government has a dedicated Ministry of Creative Economy that offers multiple funding streams and tax incentives for creative entrepreneurs looking to develop digital products and services. Similarly, Jamaica most recently launched a National Policy on Culture and Creative Economy (2020-2030), with plans to further develop a dedicated national development fund for the creative sector, an open data framework to map actors in the creative industry through the sector's e-registry portal, and a digital literacy programme for the creative industry.

- **Strategy for Universal Service Fund utilisation:** as highlighted in the 2019 USFs for Persons with Disabilities report by ECLAC (2019), there is potential for Trinidad and Tobago to expand its USF to better incorporate other marginalised groups – in addition to persons with disabilities - as well as to consider the use of USFs to fund the development and uptake of new and emerging ICTs. At the same time, M&E mechanisms for the USF appear to be lacking, and the government could expand on the above plans for Digital Inclusion Surveys to develop a more robust evaluation framework to best direct its Universal Service Funds towards underserved communities and areas. For example, in Vanuatu, the telecommunications regulator has a dedicated USF policy, which sets out the regulator's responsibilities in monitoring progress towards specific outcomes set out in the policy, as well as measurement and reporting standards.

Foundational digital catalysts

Although digital transformation is a truly whole-of-government and whole-of society endeavour, it is also founded on – and accelerated by – a small number of digital catalysts. These are key products, services, or systems that improve the functioning, inclusivity, and sustainability of digital transformation.

UNDP has identified three foundational digital catalysts that have supported the digital development of countries around the world.

Digital transformation is driven by data, and this makes **data exchange** a crucial component of a country's digital progress. This includes systems of open government data, including to drive the development of products and services in the private sector, and canonical data registries. Data exchange is closely related to the need for a **digital legal identity,** covering the entire population to ensure participation in the digital – and broader – economy. This legal identity is often the unique identifier used in databases and other digital government components.

Finally, a **digital payments ecosystem** is crucial in enabling the benefits of e-commerce and financial inclusion. This ecosystem includes digital financial service providers, but also the national and global enablers (such as platforms, agents, processors, and a commitment to interoperability).

Foundational digital catalysts: key insights and considerations

Data exchange | Digital legal identity | Digital payments

- With data-driven decision making a priority for the government in recent years, a shift towards improved **data exchange** components – including Open Data infrastructures, interoperable cloud architectures for public administration, and information security measures - has been evident. This has been bolstered by the government's participation in various Open Data capacity development projects, such as the World Bank Open Data Readiness Assessment and the Caribbean TIDE Regional Conference.

- Within the government, the Central Statistical Office in the Ministry of Planning and Development serves as the key statistical body for Trinidad and Tobago. The Cloud Computing Consideration Policy (2020) is a promising development for the purposes of data exchange, as it facilitates the development of an interoperable data foundation and safe information sharing between government departments. However, Open Data projects and standards are still in their infancy. The national Open Data Portal (data.gov.tt) was launched in August 2015, following the World Bank Open Data Readiness Assessment in 2014, and an open data event Caribbean TIDE: Technology, Innovation and Digital Economy Regional Conference; yet actual progress in advancing an open data strategy appears limited, as the portal only contains one demo Dataset yet to be updated since end-2017. However, the Department of Computing and Information Technology of the University of the West Indies maintains a separate Trinidad and Tobago Open Data portal (data.tt) independent from its Government counterpart, which is more active. It hosts 30 datasets from a number of government agencies.

- Nevertheless, the recently concluded Data Strategy Survey, as well as future plans to develop a data classification scheme with the Ministry of Communications, the Ministry of the Attorney General and Legal Affairs, and the Ministry of National Security, are promising. These efforts may better systemise data collection and publication benchmarks, and perhaps lead to reforms in open data publishing. Capabilities in data exchange and data-driven policy making could also be improved, as civil servants note a lack of a data-driven culture in the government despite various M&E mechanisms in place. It is imperative that, amidst growing desires to invest in more advanced cloud architectures and data collection techniques, that public servants are equipped with the skills required to engage in these technologies and processes – but also more foundational ones too.

Foundational digital catalysts: key insights and considerations

Data exchange | **Digital legal identity** | Digital payments

- The government intends to become a 'Digital First Government', and sees the creation of a **digital legal identity** as a first step towards this. The pandemic has prioritized the development of a digital ID solution for Trinidad and Tobago, with the Roadmap to Recovery Committee and Prime Minister having recommended fast-tracking the nation's digital ID plans; in addition, the Minister of Finance has cited an ambitious internal target of December 2022 for the onboarding of all citizens to a digital identity system.

- At the moment, the national ID card issued by the Election and Boundaries Commission is used as the main form of personal identification in Trinidad and Tobago. The physical ID card was updated in January 2021 to introduce more advanced security features to protect against counterfeit and fraud. The card does not incorporate a machine-readable zone that stores personal data, perhaps out of considerations for the government's accelerated plans to develop a digital ID system. Instead, the card contains a unique analogue identifier to verify individuals across government databases. Survey respondents mentioned using their ID card to primarily access tax-related services and register businesses. However, this physical ID is currently not a mandatory document, and other forms of identification such as driver's permits and passports are also used for various government functions – including to access TTConnect. This could create challenges in operationalising digital government initiatives – such as validating e-government transactions or introducing 'once-only' legislation to integrate e-government portals.

Services accessed using national ID card	Total respondents (percentage)
Justice	5 (4%)
Health	6 (5%)
Marriage	8 (6%)
Finance	10 (8%)
Elections	13 (10%)
Education	15 (12%)
Business registration	29 (22%)
Taxes	41 (32%)
None of these	13 (10%)
I am not aware	23 (18%)

Foundational digital catalysts: key insights and considerations

Data exchange | **Digital legal identity** | Digital payments

- Information with regards to the progress of the digitalization of the national ID system is currently limited. The 2022 Budget outlines a high level vision for a 'once-only' digital ID solution, including the development of a pilot project and digital ID legislation in 2022. The envisaged digital ID solution is one that integrates all existing identifiers, and serves as a common and unique identifier using which to access and process e-government services on TTConnect (Roadmap 2020).

- This promising development could also support online identification verification for commercial activities – and could be a strong catalyst for the development of e-commerce and broader digital economy modules. Overall, the vision for a comprehensive digital identity system calls for an articulated implementation strategy, which better establishes realistic targets, and coordinates the whole-of-government efforts required for an all-encompassing digital ID system.

- Stakeholder survey respondents highlighted numerous challenges for digital ID delivery (*What are barriers to getting 100% of citizens a digital legal identity?*). With regards to attitudes and culture, many observe that members of the public are generally apprehensive towards the possibility of a digital ID system, with many especially concerned about security. Other respondents also note that older and rural citizens lack the digital literacy to be onboarded onto an electronic ID system.

- Furthermore, the organizational capacity to implement a digital ID system may need to be supplemented, due to a lack of funding, legislation, and the difficulty of reforming various siloed databases with duplicated information into a new national database. As the government begins to design the digital ID system, it is important to prioritise cybersecurity and data privacy, as well as public education and digital literacy amongst underserved communities. It is also important to consider the connectivity constraints, costs and complexity around the logistics of implementation, especially with regards to centralization and interoperability between public sector bodies.

Foundational digital catalysts: key insights and considerations

Data exchange | Digital legal identity | **Digital payments**

- The prospects of a robust **digital payments system** in Trinidad and Tobago are promising. As with the emerging digital ID development, COVID-19 has further accelerated imperatives for e-payments in Trinidad and Tobago, with the Finance Minister setting a target for a '*cashless Trinidad and Tobago by the end of 2022*'. The 2022 Digitalisation of Payments Roadmap is an encouraging step forward in catalysing the fintech sector, particularly with the designation of the Trinidad and Tobago Financial Center Management Company Ltd (T&T IFCMCL) as the '*first point of contact, facilitator, and 'resourceful ally' for all relevant stakeholders related to Trinidad and Tobago becoming a 'Cashless Society*'' (Digitalisation of Payments Roadmap, 2022).

- The Roadmap recognises the role of the government in identifying scalable use cases for digital payments in the public sector – for instance, by prioritising the digitalisation of government payments – which could help Trinidad and Tobago leapfrog into the position of a regional fintech leader. As outlined in Phase One of the Roadmap, some ministries are already in the process of offering digital payment options for public services on their websites, and Phase Two of the Roadmap outlines a support strategy for agencies that have yet to consider or adopt e-payment processes and capabilities. The success of both Phases rest on the strength of the ecosystem survey, best practices analysis, and implementation plan – key tenets of a successful e-payments blueprint in Trinidad and Tobago.

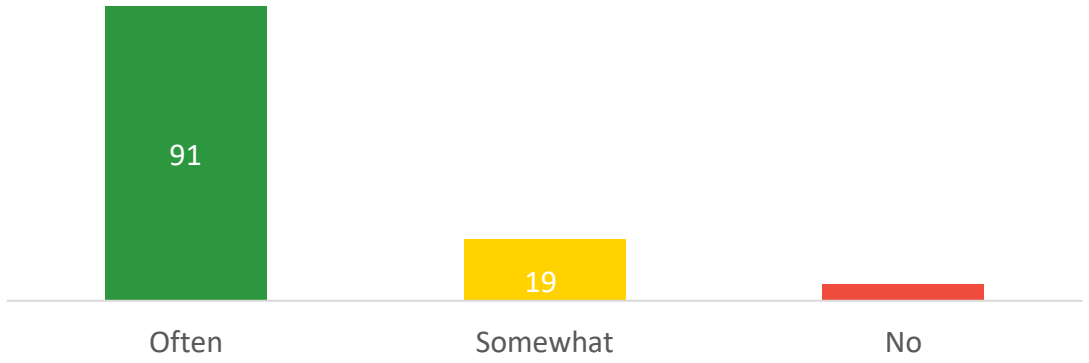
- Similar developments in foundational payments infrastructure, such as an overarching strategy and interoperable payment gateways, will be necessary to onboard the private sector. The Central Bank plans to modernise core payment infrastructures and introduce reforms to digital payments-related Bills. The expansion of Trinidad and Tobago's interoperable payment gateway to a broader set of financial service providers could further facilitate competition and usage in the sector.

- Nevertheless, the local banking sector shows promise, and already offers some e-banking services, with four commercial local banks with payment gateways facilitating digital transactions. There is ambition in the private sector to develop more innovative financial products and services which could catalyse a FinTech sector – and broader development in e-commerce (Roadmap 2020; National E-Commerce Strategy 2018-2022).

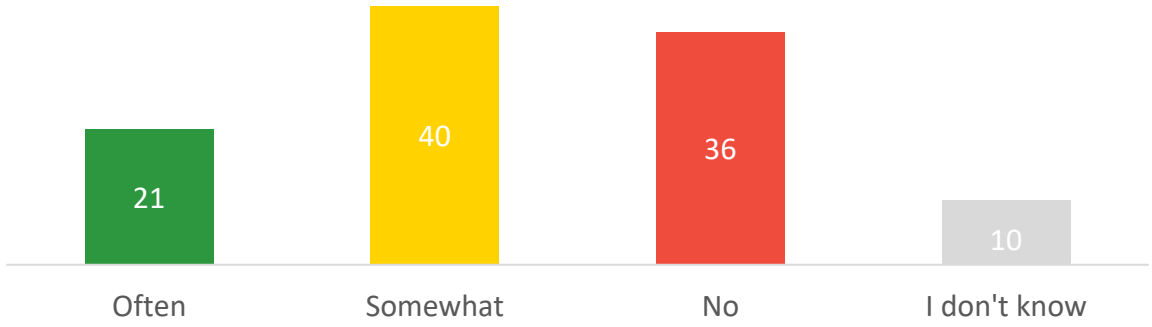
Foundational digital catalysts: key insights and considerations

Data exchange | Digital legal identity | **Digital payments**

Have you made digital payments to someone? (n=115, stakeholders)

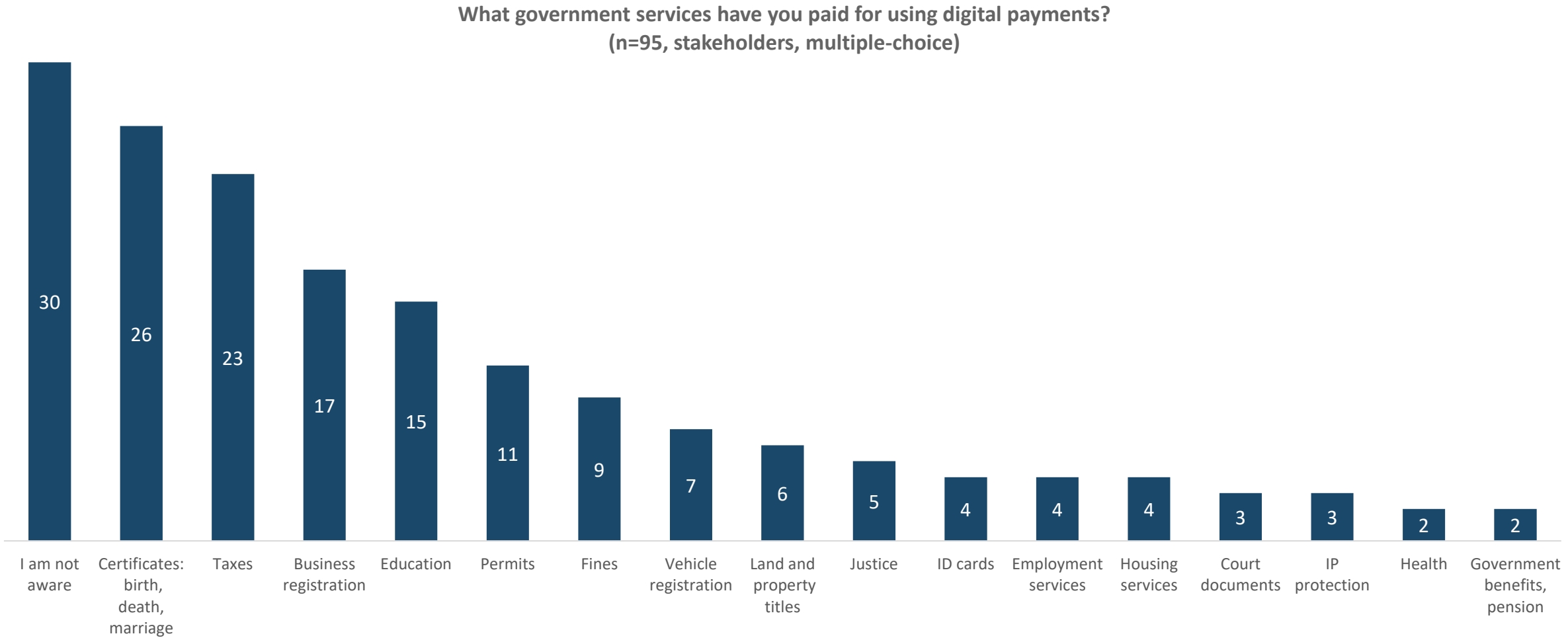


Have you received digital payments? (n=107, stakeholders)

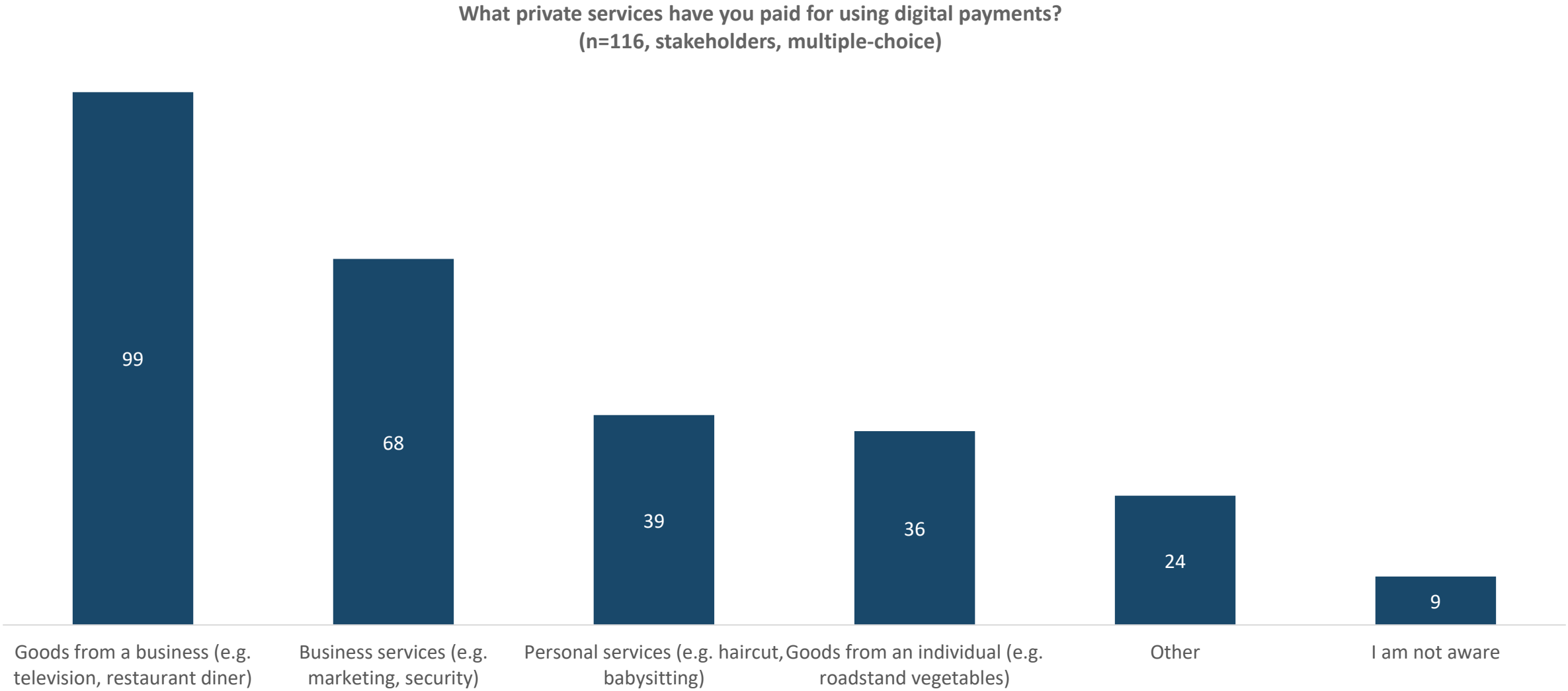


- Despite a promising payments environment, digital payments uptake could be improved. SMEs often do not have the technology to process card payments (public survey respondents note that *'Some local online business may not have access to online payment portals',* the *'lack of payment portals is a hindrance to shopping locally',* and *'local shops can't take payments online'*). The populace tends to rely on cash transactions in purchases (RBC Royal Bank 2021) – or are dissuaded from digital payments owing to high fees. In the context of low operator supply and and low merchant demand, the government may need to play a more active role in shaping a digital payments ecosystem. This could include efforts to increase accessibility and affordability of digital payment solutions – such as facilitating the use of e-payment gateways, introducing legislation regarding interoperability, streamlining procedures for SMEs to obtain local payment solutions, and encouraging payments operators to offer bundled services (BIS 2020). In this regard, a proposed partnership between the T&T IFCM and Mastercard to support FinTech companies to develop digital payment solutions could be another important catalyst in building foundational technical infrastructures and solutions in this area.

There is an exciting opportunity for the government to play an even more active role in facilitating digital payments for its own services…

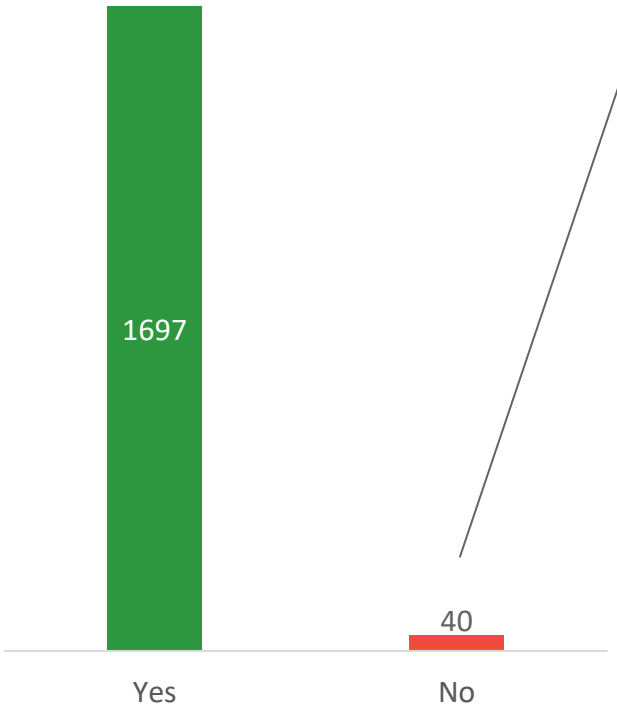


…which could encourage local SMEs to offer digital payment solutions



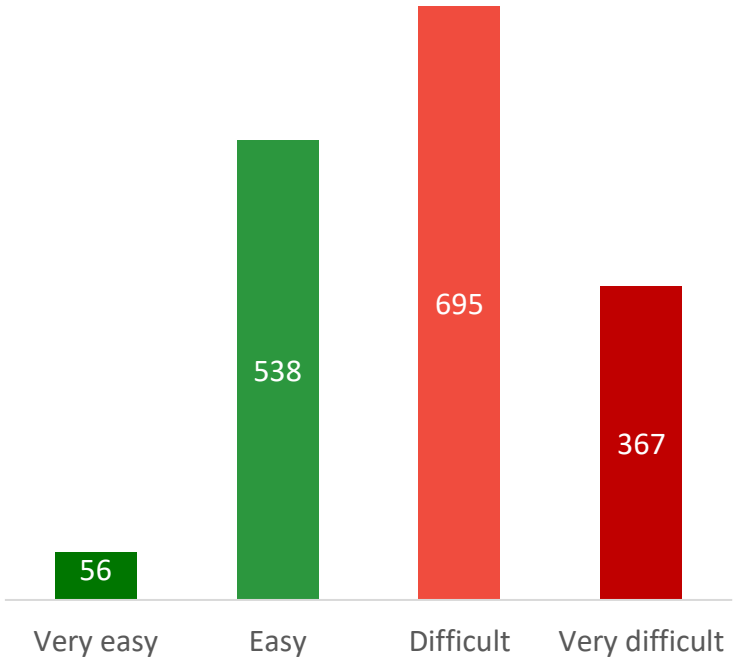
Digital banking could allay difficulties with opening bank accounts, with qualitative responses noting it is *'very difficult to get an appointment'* at physical banks

Do you currently have a bank account at a registered financial institution? (n=1,737, public)



Please tell us why you personally do not have an account, or have experienced difficulty setting up one (multiple-choice)	No. of 'Yes' responses
I don't have enough money to use financial institutions	13
I have no problems with setting up accounts	10
Too difficult to get all the documentation required	10
Too expensive or too many fees	6
Someone else in my family already has an account	6
The process takes too long	5
I don't trust financial institutions	4
I don't see the need for financial services at a formal institution	4
Too far away or travel costs	3
Religious reasons	2

How easy or difficult is it to open a bank account in Trinidad and Tobago? (n=1,656, public)



Next steps

Next steps

- **Presenting the results of the Digital Readiness Assessment to key stakeholders and technical leader:** the Ministry of Digital Transformation may opt to partner with the UNDP to jointly host an event showcasing findings from the DRA, new initiatives which support Trinidad and Tobago's digital transformation agenda, and insights which could help catalyze national digital transformation.
- **Informing the development of a National Digital Strategy:** the UNDP offers technical and implementation support to the government towards the development of a catalytic, future-focused Digital Strategy, using the DRA as a baseline for measurement of future progress.
- **Support for the development of a National Digital Identification Programme:** the UNDP has initiated an offer of ongoing technical support for the National Digital Identification initiative, including senior technical experts, open-source software, and assistance with stakeholder management.
- **Deep Dive into recommendations:** building on the analysis, UNDP is able to convene technical and/or strategic expertise to discuss any of the above recommendations – including an associated roadmap for implementation – in greater detail.
- **Strengthening the country's Digital Finance Infrastructure, ensuring inclusion for all in a cashless society:** the UNDP offers technical support and project financing for digital financial inclusion initiatives which will assist stakeholders in Trinidad and Tobago to achieve their digital finance and financial inclusion goals.

Beta Phase: March 2022

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