# JOURNAL OF COMMERCE & INDUSTRY

Vol. 1, 2023

## Current Trends and Issues in Business

CONFEDERATION OF ASIA-PACIFIC CHAMBERS OF COMMERCE AND INDUSTRY

# CACCI JOURNAL OF COMMERCE AND INDUSTRY

The Journal of Commerce and Industry hopes to provide its readers with ideas and visions on regional economic cooperation. Articles on industrial enterpreneurship and management and on international trade and business practices also offer challenging and inspiring models.

The CACCI Secretariat welcomes opinions and comments and will be glad to consider for possible publication articles which will help advance the aims and objectives of the Confederation of Asia-Pacific Chambers of Commerce and Industry (CACCI) and of this Journal.



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## IN THIS ISSUE (VOL. 1, 2023)

This issue features insights and analyses on the current trends and issues in the business world.

It includes articles published by the International Monetary Fund (IMF), World Trade Organization, and the World Economic Forum.

It also contains materials that appeared in BRINK, the news service of Marsh & MCLennan Insights, and The Conversation, a leading publisher of research-based news and analysis.


The editors and staff of the CACCI Journal of Commerce and Industry would like to take this opportunity to thank the authors for sharing their materials with CACCI and its members.

**CACCI JOURNAL OF COMMERCE AND INDUSTRY**

**2023** **Vol. 1**

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# How to Mitigate ESG Risk Using Sustainable Procurement

***Xavier Nouguès,***
***Partner, Global Head of Value Sourcing at Oliver Wyman***

Because supply chain emissions often dominate corporate carbon footprints, procurement is central to delivering on a company's environmental, social and governance (ESG) agenda and ultimately on corporate net-zero pledges on emissions. Yet still too many companies fall short of being able to use procurement as a primary lever to reduce their own greenhouse gas emissions.

That's because only a tiny minority — 2% to 3% — rely on ESG quantitative data as predominant factors in decisions on the selection of suppliers and sourcing, according to a 2022 Oliver Wyman survey of 300 chief procurement officers. Instead, most still depend heavily on historical metrics, such as cost, quality, and service level. As a result, many companies are missing out on an important opportunity to make their operations more sustainable and reduce their ESG risks.

But the news is not all bad. A majority of companies told Oliver Wyman that they now routinely include ESG quantitative criteria in decisions on suppliers and sourcing. Only around one-fifth said they don't consider ESG at all. That's significant progress over where things stood a few short years ago.

We expect even more attention to be paid to procurement and supply chains in the coming months. Chief procurement officers continue to address the plethora of disruptions from natural disasters, geopolitical conflicts, inflation, labor shortages and the COVID-19 pandemic that have kept them up at night for the past two years.

With things in flux anyway, this is a perfect time for CPOs to overhaul procurement processes to make them and corporate operations more sustainable.

***Using the ESG Lever***

That said, it's no easy task. Even though procurement is the primary way companies can reduce their Scope 3 supply chain emissions, senior leaders often need to be shown the real cost of failing to embed ESG into business as usual. For sustainability to become a driving force in companies, sustainable procurement must be a substantial part of the business model.

What needs to change? Essentially, the problem stems from the failure to make quantitative ESG criteria a day-to-day predominant factor in supplier selections and sourcing decisions. This prevents procurement from realizing its full potential as a strategic tool.

In the small minority of companies where ESG-driven procurement is business as usual, procurement

teams are able to translate ESG ambition into robust management objectives, key performance indicators (KPIs), and even new operational approaches to the core business.

These leaders do not wait for legislation to tell them how to address sustainability. They listen to what their customers and investors are looking for in terms of emissions reductions and climate risk management. They respond instead to the marketplace zeitgeist, which is after all, also driving legislation.

But to do this successfully, companies must give sustainable performance metrics proper priority and have in place the right managers with sufficient understanding of ESG principles and climate challenges as well as the training to implement and adapt policies. Almost always this requires significantly expanding the skillsets of both managers and buyers.

***Reinventing Performance Monitoring***

How performance is monitored is also key to whether ESG will become embedded in procurement. ESG needs to drive purchasing, but if the metrics for sustainability are of secondary importance in decision-making, then the outcomes will likely not reflect the company's net-zero or sustainability goals.

Various methodologies can be used to reinvent the monitoring of procurement performance. Looking at the environmental pillar of ESG, this might include adopting a narrowly targeted metric, such as carbon pricing. The metric calculates the carbon impact of every purchasing alternative.

More broadly, an ESG-adjusted total cost of ownership model can present a powerful and comprehensive approach that can be incorporated directly into an environmental profit and loss (EP&L) account and reported on the company balance sheet. A worldwide luxury goods company that adopted this approach to monitor its ESG performance has received accolades from financial rating organizations for the clarity this produces. Additional credibility comes from ensuring the independent monitoring of outcomes in a third-party assessment or independent audit.

***Training Procurement Teams***

ESG is such a complex topic, with regulation constantly evolving. It places extraordinary demands on category managers and buyers involved in the procurement process that go well beyond their usual remit.

For these decision-makers to understand ESG fundamentals and stay well-informed on evolving best practices, companies must make it an urgent priority to expand their skill sets and reprioritize decision-making processes to emphasize ESG criteria. This upskilling will require much more than a few random training sessions and may require them to be more involved in strategy-setting efforts.

But it is not only category managers and buyers who need to understand how the new ESG KPIs apply in procurement. ESG needs to be understood companywide. This is an area where the procurement teams can take a lead in training internal stakeholders across the company.

***Tracking Outcomes Using Digital Solutions***

One final piece of the jigsaw needs to be in place to ensure the company can embed its ESG metrics: the right technology. This is easier to do than ever before because of the evolution of software and networks.

Four out of 10 companies report that they leverage the latest available procurement tools to collect, digest and report ESG data. The next step is to ensure these enhance the efficiency of procurement. Chief procurement officers are looking to their teams to employ digital solutions that enable them to focus on value-adding activities and eliminate those that are more transactional in nature.

Overall, in terms of the data itself, it is important to favor data quality over data quantity. This will help avoid creating massive data reserves that end up producing meaningless averages with data points of low credibility.

The urgency of this task has been underlined by COP27. The pressures driving ESG are growing all the time and are shining a spotlight on corporate procurement. For chief procurement officers, doing nothing to make procurement more ESG-aligned is becoming a very risky game.

***Brink News***

# Why skills-first hiring is the solution to the global talent shortage

***Rand Ghayad,***
***Head of Economics and Global Labor Markets, LinkedIn***

At a time when the skills shortage has never been more acute, how can employers fill open positions with top talent? Adopting a skills-first hiring approach can offer companies a means to fill critical skill gaps and stay competitive in a challenging labour market, as it broadens the range of candidates they consider.

Exacerbated by the COVID-19 pandemic and an ageing population, the scarcity of skilled workers has employers feeling the crunch. In February 2023, job openings in the United States exceeded 9.9 million, yet there are currently 5.8 million Americans who are unemployed. While there are many reasons for this discrepancy between available jobs and workers, it often comes down to skills.

During a period where employers across many industries face difficulties in filling open vacancies, having a degree requirement in the US automatically eliminates 64% of working-age adults who don't possess a bachelor's degree.

Unfortunately, with more and more of these jobs now requiring a bachelor's degree, approximately 80 million prime working-age Americans are excluded. This results in imbalances between the demand for talent and its supply and it can also lead non-degree holders to lose a vital path for upward mobility, furthering the already widening income inequality.

LinkedIn data indicates that the COVID-19 pandemic has further worsened these demand-supply imbalances across numerous industries. This is especially true in sectors such as accommodation and healthcare, which continue to experience a shortage of skilled workers, despite a notable slowdown in the labour market.

By assessing candidates based on their skills and abilities, rather than their academic qualifications, employers in industries where labour market conditions are still relatively tight can effectively tackle the issue of skills shortages, while also providing more opportunities for individuals seeking to enhance their employment prospects. These industries could also present an excellent opportunity for career changers and recent graduates seeking employment.

Labour markets are cooling down, but conditions vary across industries

The effects of the pandemic, the persistently high inflation rate and the potential for a recession have forced many employers to re-evaluate their approach to human capital and talent management. While some employers

have reduced their hiring plans and are reassessing their talent strategies, there are still numerous job openings that remain unfilled.

This problem appears to be more pronounced in certain sectors than in others. As a result, the demand for skilled workers continues to exceed the available supply in a number of industries when compared to the pre-pandemic era.

LinkedIn's data from Jan 2020 to March 2023 shows that industries fall into three categories:

(1) Those where job markets are exhibiting more slack than pre-pandemic norms.

(2) Those where labour market conditions have returned to pre-pandemic levels.

(3) Those where job markets remain significantly tighter than pre-pandemic levels.

The first category comprises industries such as professional services, consumer services, education, financial services, technology and media and information. Job markets in these sectors are experiencing significant slack, with signs of a surplus of job seekers compared to the number of open jobs. The situation in these industries has worsened from its pre-pandemic norm and job seekers are having to send many more applications than before to land a job.

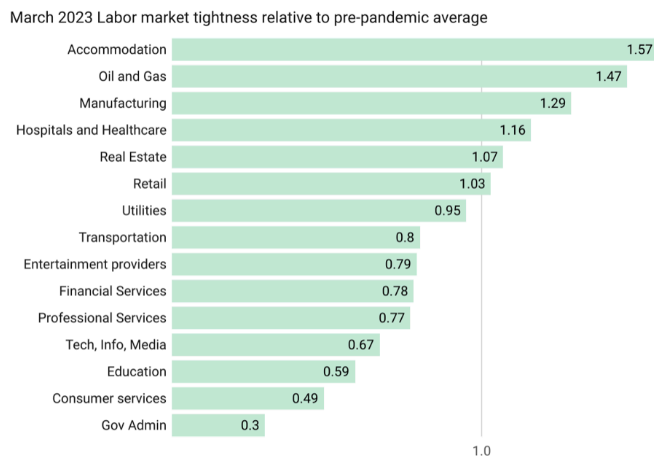
In the second category are utilities, transportation, retail and real estate. In these industries, job market conditions have returned back to their pre-pandemic norm after tightening considerably over the past two years. Despite this rebalancing, there are still many open jobs for people looking to work in these industries.

The last category is where labour market conditions are exceptionally tight when compared to the pre-pandemic era. In addition to manufacturing and oil and gas, this category includes a number of low-wage industries, such as accommodation, hospitals and healthcare.

These industries predominantly employ women, workers of colour and those without a college degree, historically vulnerable workers who have faced discrimination in the labour market. Here, employers are struggling to meet the rising demand for their services and firms cannot fill vacancies fast enough. The number of job openings has surpassed the number of job applicants, indicating a job seeker's market by historical standards.

In some of these industries, firms have alleviated labour shortages by raising wages. This puts upward pressure on wages for low-wage occupations — a welcome feature of a more equitable recovery compared to past recoveries. It is a good sign of growing worker power in low-wage industries, which allows jobseekers to demand better working conditions and higher pay. But despite this, the demand for skilled workers in these industries continues to outstrip the available supply, leading to a significant shortage of qualified workers.

***A skills first approach can help alleviate the talent crunch in many sectors***



Given the tight labour market conditions in various industries, adopting a skills-based approach to hiring can assist companies in finding and attracting a broader talent pool to fill these positions in the long term. Globally on average, talent pipelines can increase by nearly ten times when using a skills-first approach. In the US, talent pipelines can increase by 19 times when using a skills first approach.

These practices also provide opportunities for non-traditional candidates, including individuals without typical credentials on their resumes, as well as women and additional underrepresented groups. If companies hire for skills versus traditional experience, the talent pool of women will increase by 24% more than men globally in jobs where women are underrepresented.

Many employers have already started to embrace skills-based hiring practices as a powerful solution to challenges that have intensified since the pandemic, whether it is finding the right candidates or retaining the talent they hire. According to LinkedIn data, over the past year, more than 45% of hirers explicitly used skills data to fill their roles, marking a 12% year-on-year increase.

Moreover, the Future of Recruiting Report March 2023 finds that 75% of recruiting pros predict skills-first hiring will be a priority for their company in the next 18 months. Through a skills-based approach, employers can boost the number and quality of applicants who apply to open positions and can assist workers to find more opportunities to advance internally, which helps employers improve retention.

For employers, hiring based on skills is five times more predictive of job performance than hiring based on education and more than twice as predictive as hiring based on work experience. Employees who feel their skills are not being put to good use in their current job are ten times more likely to be looking for a new job, compared to those who do feel their skills are being put to good use. Therefore, a skills-first model allows employers to not only find the best workers but also retain them during a time when it is historically difficult to do so.

Job seekers also benefit from this approach. When LinkedIn started highlighting to job seekers that their skills matched job postings, we discovered that individuals who applied to jobs that matched their skills had a higher success rate in landing a job, often requiring fewer applications. In addition, skill qualification transparency motivated more women to apply for jobs that typically set higher self-qualification standards. Women applying for jobs increased by 1.8 times the increase observed in men, with a similar positive impact on hiring outcomes.

By removing degree requirements, more career paths that offer higher-paying positions become accessible to workers who are frequently overlooked by employers. This can aid in decreasing inequality by promoting a more diverse workforce as underrepresented groups, including Black and Latino people, are less likely to have bachelor’s degrees in comparison to non-Hispanic whites and Asian Americans.

***World Economic Forum***

# Human capital development for women: A case for closing the global gender gap

*Manasi Gajjalapurna & Sualeha Irshad*

2154 is forecast to be the year that we finally attain global gender parity, but we cannot afford to wait that long.

131 years is the estimated timespan for the global gender gap to close, according to the World Economic Forum's Global Gender Gap Report released in June 2023.

The downstream effects of the COVID-19 pandemic — from workforce disruption to improper care infrastructure — severely lengthened this timeframe. The Global Gender Gap Report highlights the necessity with which human capital, covering the capabilities and skills of individuals and self-sustaining communities, must be prioritised moving forwards.

***Evolving gaps in human capital development — differences between men and women***

Across the 146 countries covered in the 2023 Global Gender Gap Report, the economic participation and opportunity gap closed by only 60.1%, even receding in the past year. Furthermore, women account for only 38% of human capital wealth globally in comparison to 62% of their male counterparts.

Human capital development equates to skill development and investments in education, health and societal infrastructure as a means of increasing consistent and equitable earning potential. By investing across these sectors, governments can enable women to generate enough launch velocity to avoid cycles of intergenerational poverty where the burden falls disproportionately on women.

Evolving gaps in human capital development — differences between men and women

Across the 146 countries covered in the 2023 Global Gender Gap Report, we are 68.6% of the way to achieving complete gender parity, a composite metric across four key dimensions: health and survival, educational attainment, economic participation and opportunity and political empowerment.

Inherently, skill development affects labour outcomes, but its value also extends beyond careers. Adults, particularly women, with low foundational skills have a higher likelihood of decreased health outcomes and less civic engagement. The opposite is true for those with high levels of foundational skills. There is a connection between human capital development and social mobility.

Investing in educational and healthcare infrastructure also builds professional opportunity and capacity

for personal growth. Increases in earning potential that occur as a result of improved social infrastructure and democratised access to knowledge enable women to have more decision-making power, a key component for furthering the prosperity of a family, community and society.

***How rapid investment in women can accelerate societal development***

Saudi Arabia showed a critical increase of 3.3% in attaining gender parity between 2021 and 2022. It ranked third in the highest gender parity increase, although the country still has long strides to make before reaching gender parity relative to other nations. It is one of five countries that has recently closed its gender gap in primary education and has nearly closed gaps in secondary and tertiary education, a key strategy for its investments in developing human capital.

In Saudi Vision 2030 — a strategic framework developed by the Council of Economic and Development Affairs to reconstruct a thriving economy through diversifying investments and building better public infrastructure — a major goal includes creating one million new jobs for women and enabling 30% of Saudi women to join the formal workforce. The latter has been exceeded seven years ahead of schedule with 37% of women forming part of the formal workforce in the first quarter of 2023.

Out of the 14 countries that reported increased parity in workforce participation, Saudi Arabia ranked highest, with a 9.7% increase in its gender parity score. The country has also encouraged women's labour participation by prohibiting gender-based discrimination in accessing financial services, expanding childcare support programmes, such as Qurrah, and reducing transportation costs for over 20,000 women going to work.

When looking at countries that have had the greatest increase in gender parity from the 2023 Gender Gap Report, Liberia stands highest at an increase of 5.1%, now reaching a gender parity score of 76%. Liberia's significant strides towards women's rights have not directly correlated with workplace equality, given that 74% of female workers are employed in the informal sector and face heavy challenges in credit services, financial literacy, social protection and childcare training.

However, grassroots efforts, such as the UN Women's Next Level Business Program for Market Women, and larger government-based partnerships between groups, such as the National Petty Trader Union and the Central Bank of Liberia, have begun to reduce the friction for female workers to transition into the formal economy.

Strides in gender equality in the public and private sectors, from local and widespread government intervention to corporate investments, allow for the accelerated development of advanced and emerging economies globally.

***Viewing gender equity through a multilateral lens***

One of the main indicators of gender equality includes equality in work. On a global scale, women are entering or re-entering the labour force at higher rates than men, which has led to slight increases in gender parity in the labour-force participation rate within certain regions. Even when women secure employment, however, the substandard working conditions and the dependence on informal employment highlight the widening gaps in workplace equity.

Much of the employment recovery since 2020 is due to informal employment, which leaves employees often without protection of labour laws, social benefits, insurance, equitable wages or governance and safety regulation, even opening up a higher risk of sexual harassment. Out of every five jobs created for women globally, four are within the informal economy, while this number is two out of every three jobs for men.

Essential services and enablers of economic opportunity, legal protection and political voice and physical security and autonomy – the remaining three categories of gender equality indicators — are metrics of social mobility. These are necessary to ensure increased autonomy and the ability for economic growth and productivity to remain sustainable.

The gap in political empowerment remains by far the largest gap in achieving global gender parity. Out of the 146 countries covered by the 2023 index, the political empowerment gap has closed by only 22.1%. When women's political leadership reaches a critical mass — defined as about 25 to 30% of the legislative system —

women are more likely to challenge their male counterparts, conventions and political agendas.

Meanwhile, women are not only more likely to advocate for policies supporting education and health infrastructure, as shown by the highest-GDP OECD countries, but also promote stability through the increase of humanistic practices that include inclusive decision-making processes at a national and grassroots level and a focus on peaceful international reconciliation.

***Achieving full potential – optimising for rapid progress***

Investing in human capital is the single most effective way of promoting rapid social and economic growth and distributing its benefits more fairly.

Furthermore, the investments add extraordinary value to all societies, given the progress that is yet to be made in the lowest and highest decile of countries making strides towards gender parity. In a world where women play an identical role in labour markets to that of men, as much as $28 trillion, or 26%, could be added to the global annual GDP by 2025. This impact is roughly equivalent to the size of the combined Chinese and US economies.

The benefits of gender parity are shown through various metrics of prosperity — from GDP increases to reported levels of individual fulfilment. This is consistent for countries standing both at the top of the list for gender parity in all four sectors – Iceland, Norway, Finland, New Zealand and Sweden – and countries, such as Liberia, Estonia, Bhutan and Malawi, which are experiencing rapid increases in gender-aware practices.

When we collectively begin to view women as assets to global development and recognize their rights as a means of social prosperity, we can invest in a future that leverages the human capital of men and women as we progress towards further developing exponential technologies and agile systems.

***World Economic Forum***

# Why big business must support SMEs to achieve economic growth and get to net zero

***Henadi Al-Saleh***
***Chairperson, Agility***

As the COVID-19 pandemic wanes, policymakers and corporate leaders have arrived at a long overdue conclusion: small business really matters. There's a consensus that smaller enterprises are critical to the world's two most pressing challenges. The first of these is how to spur broad-based, equitable and sustainable economic growth. The second is how to decarbonise to meet Net-Zero climate goals.

Supporting small and medium-sized businesses (SMEs) to rise to meet these challenges is not purely a governmental responsibility. Large corporates must also play a part when it comes to supporting SMEs in skills-building, especially around digitization and helping create the ecosystem for environmental transition, including unlocking financing.

***The importance of resilience for SMEs***

SMEs, largely overlooked in the 2008-2009 global downturn, were not an afterthought when COVID-19 hit three years ago. In many countries, they were quickly targeted with direct government assistance, public loan guarantees, tax relief and other aid intended to keep them afloat and provide them with incentives to avoid shedding workers. Despite this help, a look at SMEs in 32 countries found that most lost 30% to 50% of their revenue between February 2020 and April 2021.

Small businesses represent 90% of all companies and generate nearly 70% of jobs and GDP globally. SMEs are the bedrock of developed and developing economies. They are at the heart of economic growth strategies for most emerging markets looking to climb the development curve.

***The digitization imperative***

The long-term viability of many micro-enterprises, startups, entrepreneur-led organizations and other SMEs will be determined by their ability to go digital. Digital transformation is underway in businesses of all sizes, sectors and geographies. But small enterprises are generally less digitalised than medium-sized companies, which, in turn, are less digitalised than big corporations. One reason is that so many digital tools and solutions are

FIGURE 3: THE ECONOMIC IMPORTANCE OF SMES

| | SMALL AND MEDIUM ENTERPRISES (SMES) | | |
|---|---|---|---|
| | GDP | EMPLOYMENT | EXPORTS |
| CHINA | 60-70 PER CENT | 80-90 PER CENT | 80 PER CENT |
| INDIA* | 30-33 PER CENT | 40 PER CENT | 48 PER CENT |
| JAPAN | 50 PER CENT | 70 PER CENT | 25 PER CENT |
| | | | |

*Source: OECD, Zhang (2020), Asia House Research.*
**India's figures correspond to MSMEs.*

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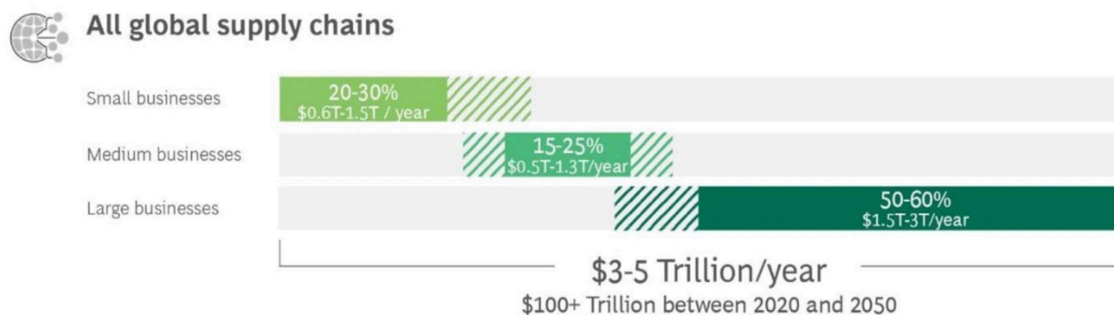
priced and tailored to the needs of larger organizations.

In the case of small businesses, the challenge of going digital is especially difficult, but the need to do so is increasingly apparent. Research shows that the largest 10% of companies in digital channels reap 60% to 95% of digital revenues. If we want a future with shared prosperity and sustainable growth, we must ensure that SMEs are part of the digital transformation.

SME development has historically been led by governments through national champion programmes that offer formal management training, goal setting, peer-to-peer networking and guidance on tailored financial services. These yield strong results worldwide. Singapore and Malaysia, for example, say their small business outreach programmes are a critical factor in boosting their participants' exports and growth.

But big businesses are also increasingly aware that they have a role to play, particularly in helping close the financing and digitization gap for SMEs. About 13,000 business owners have graduated from Goldman Sachs' 10,000 Small Business programme, which began in the US in 2009 and expanded to France and the UK. This course covers entrepreneurship, advice on getting loans and opportunities to meet government officials. A similar initiative by Unilever provides access to digital tools, financial services and entrepreneurship support to 1.2 million SMEs in eight Asian countries. And, Google has launched Google Hustle Academy, training entrepreneurs and business owners in Africa in growth strategies, digital marketing and how to pitch for funding.

These efforts are paying off. Goldman Sachs says 70% of its handpicked graduates reported that their companies had higher revenues and more than half hired additional employees in the two years after they completed the programme.



***Greening SMEs***

If digitization represents a challenge, the scale of transformation required for a Net Zero world is even more daunting for SMEs.

The need to put SMEs at the heart of any discussion on climate is clear. Smaller businesses generate 60%-70% of industrial emissions. A study by the environmental non-profit CDP says that the "combined carbon footprint of SME suppliers is on average five times greater than their large corporate counterparts."

The barriers to change, however, are enormous. A study by Boston Consulting Group (BCG) and HSBC asserts that global supply chains need $100 trillion of investment by 2050 to achieve Net-Zero. It found that as much as half of that investment must come from small businesses, which have to rethink product design, invest in climate tech and improve data gathering. To date, however, small companies are recipients of less than 3% of total support for greening.

Large corporates are directly affected. As ESG regulations change around the world, big businesses are realizing that they have a small business problem. Banks and large corporates facing pressure to show progress on ESG goals and emissions targets have recognized that they will struggle to measure their climate impact, meet reporting requirements and hit their goals. This is because too many of their small business suppliers and customers lack the means to collect and report accurate data on their emissions, waste, energy use and environmental impact.

Resources, such as the SME Climate Hub, built in partnership with corporate climate leaders, are a good step forward, as are new sustainability technology solutions that target SMEs. Long term though, larger businesses must support their suppliers in making the switch.

Walmart is one of the companies that concluded smaller suppliers couldn't keep up. It acted so that SMEs in its vendor network could comply with the sustainability requirements in its Project Gigaton drive, which aims to cut 1 gigaton of $CO_2$ emissions from the company's global supply chain by 2030. The retailer provides small businesses with help and resources to make ESG reporting easier. And, it is working with HSBC to make preferential financing available to small vendors to reduce emissions in six categories: energy, waste, nature, packaging, transportation and product use and design. Similarly, Gucci is helping its SME suppliers access loans on favourable terms if the supplier becomes more sustainable. While IKEA is financing sustainability investments in innovative companies that help it meet its sustainability goals.

At Agility, we believe that SME empowerment is a critical future growth driver and change agent. This is especially true of emerging markets that power many of our businesses. We've built this belief into our business model: from building warehousing and light-industrial facilities catering specifically to SME needs across the Middle East and Africa, to an online freight forwarding and e-commerce logistics business that helps SMEs trade across borders. We've also built this belief into our investment approach. Agility is proud to be a founding member of the First Mover Coalition, which is creating a market for sustainable innovation across the supply chains of heavy industry.

For policymakers and corporate leaders alike, it's time to acknowledge the obvious: without small business, there is no sustainable growth and no green transition.

***World Economic Forum***

# How Financing Can Boost Low-Income Countries' Resilience to Shocks

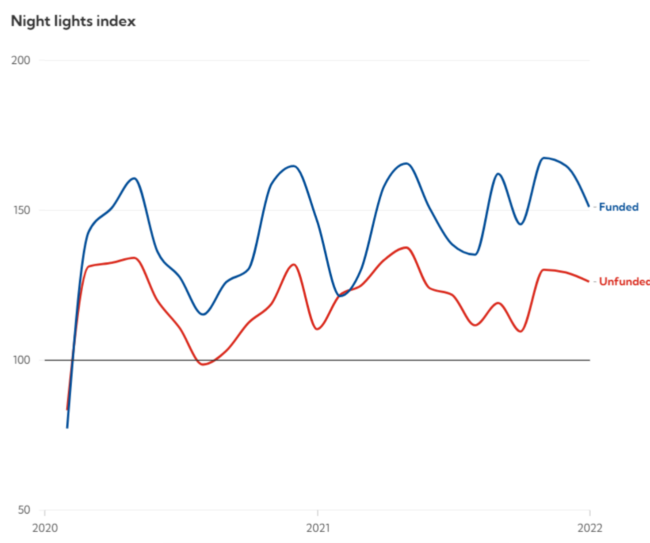
***Karmen Naidoo & Nelson Sobrinho***

Low-income countries face multiple economic challenges—including rapid inflation, food insecurity, costly borrowing, and mounting debt—heightened by shocks from the pandemic and Russia's war in Ukraine.

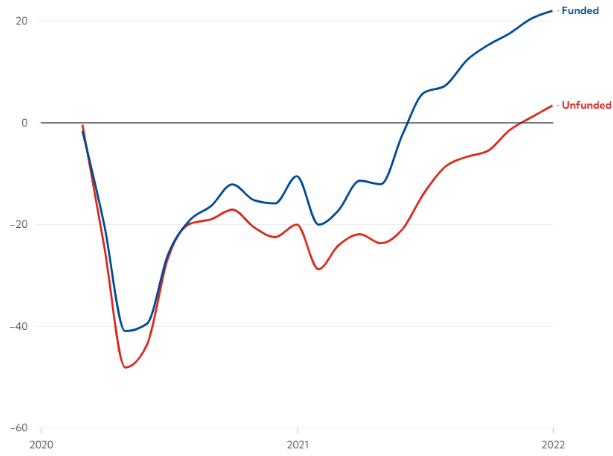
As a result, the IMF has revised down its growth projections for low-income countries, where per capita income growth is falling further behind the rates needed to catch up with advanced economies. This threatens to reverse a decades-long trend of steadily converging living standards.

To boost economic growth and put them back on a path to income convergence with advanced economies, we estimate that low-income countries need an additional $440 billion of financing through 2026 from all available sources. As part of this, IMF concessional financing offered at low or zero interest rates will play a key role in helping these countries cushion the impact on growth from ongoing shocks and future crises.

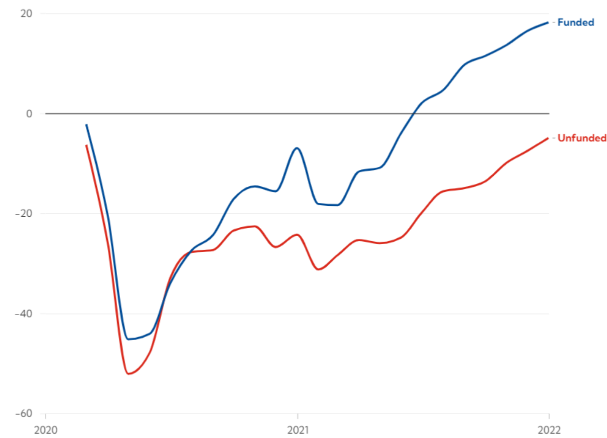
As the Chart of the Week shows, the benefits of such financing were visible during the pandemic, when IMF-funded economies, on average, saw stronger, faster recoveries than unfunded counterparts, based on readings across three indexes tracking economic activity. Two of these are nontraditional metrics: Google Mobility Reports, drawn from smartphone location data, and nighttime satellite imagery, obtained from the Earth Observation Group. The third combines conventional economic indicators like gross domestic product, industrial production, and tourist visits.



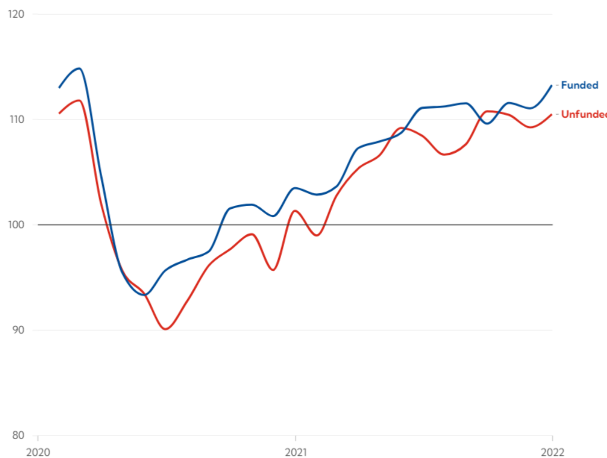

These indicators include measuring nighttime lights, which are increasingly used as a proxy for economic and social outcomes, including GDP growth.




As well as mobility based measures, which are positively correlated with overall economic activity




These mobility indicators have been widely used to nowcast GDP and economic activity during the pandemic.




Source: "The Impact of the IMF's COVID-19 Support to Developing and Emerging Economies"

To complement this data, we also construct an economic activity index using more traditional measures such as direct estimates of quarterly GDP, monthly industrial production, and monthly real imports.

The use of high-frequency indicators enables the analysis of economic dynamics over a shorter period and improves the identification of the effect. Our analysis addresses potential selection bias by excluding high income countries or those that are very fragile, and by controlling for key variables that represent the country-level demand for and availability of financing.

An illustrative 10 percent increase in IMF financing was associated with a 0.2 percentage point increase in economic activity, on average over the course of the pandemic, as we showed in a recent working paper. This finding implies that increasing access to IMF financing by half would be associated with an increase in economic activity by around 1 percentage point in IMF-funded countries relative to unfunded ones. Our study, among the first to gauge the effects of IMF COVID-19 lending, showed the strongest gains in the poorest and more vulnerable recipients of concessional financing.

This study comes after more than $272 billion in support to 94 of our 190 member countries since the start of the pandemic, including $34 billion in emergency financing. Our conclusions hold when we control for a range of country characteristics, including income levels, pandemic severity, lockdown intensity, and other multilateral financing.

The findings also indicate that these effects are larger in low-income countries with interest-free borrowing from the Poverty Reduction and Growth Trust, the IMF's tried-and-tested vehicle to provide concessional financing to its poorest and most vulnerable members.

Overall, the evidence suggests that PRGT concessional financing can have greater positive effects on low-income countries, partly due to their more constrained policy space and limited access to international credit, compared to advanced and emerging market countries. This underscores the importance of keeping the PRGT adequately financed—so it can continue to provide strong support to low-income countries for years to come.

***IMF Blogs***

# Resilience Mindset Needed in Response to Compounding Global Risks

***Carolina Klint***
***Risk Management Leader, Continental Europe at Marsh***

As the volatility, velocity and magnitude of global risks increase, many organizations are caught unprepared for the cascading impacts of developing polycrises — multiple events occurring close together in time, space or both.

As highlighted in the 2023 Global Risks Report (GRR) — prepared by the World Economic Forum (WEF) with the support of Marsh McLennan and others — the likelihood of polycrises increases as interacting risk events compound one another, resulting in impacts that greatly exceed the sum of each part.

Such events currently include uneven recovery from COVID-19, the Russia-Ukraine conflict, inflation, natural catastrophes, cyberattacks and more. Taken together, these compounding risks raise the level of food, energy, cyber, supply chain and livelihood insecurity worldwide, while challenging effective short-term responses and long-term resilience strategies.

This is forcing many business leaders, policymakers, and other societal stakeholders to refocus their resilience approaches in order to simultaneously manage today's crises while preparing for future risk states.

In much the same way that risks themselves interact, early and effective actions aimed at increasing resilience can also have a compounding effect. Adopting a refreshed, proactive and inclusive resilience mindset can lead resilience actions in one area to take on a multiplier effect on overall preparedness.

***Geopolitical and Geoeconomic Insecurity Dominates 2023***

Russia's invasion of Ukraine in February, 2022 propelled geopolitical risk front and center. As the conflict continues, many organizations and nations have found themselves ill-prepared for the knock-on impacts on energy markets, cost of living increases, supply chains and other areas. Cybersecurity, food security, climate change mitigation and other risks also have become entangled.

Geopolitical and geoeconomic risks have heightened in other regions and even among trading partners. There are increased tensions within the Asia-Pacific region as well as between the U.S. and China; EU concerns about the U.S. Inflation Reduction Act, given its significant tax credits and subsidies for local green technologies; and more frequent delistings of foreign companies from stock exchanges to protect local ones.

In the coming years, countries will use economic policies to build self-sufficiency from rivals and restrict the rise of others. This is likely to create inefficiencies in supply chains and lead to rising prices worldwide, among other impacts.

The GRR notes that economic and information warfare is expected to pose a more severe threat than "hot conflict" over the next decade, even though military expenditures are on the rise and new technologies are proliferating. Both interstate conflict and the use of weapons of mass destruction ranked lower this year for anticipated severity compared to geoeconomic confrontation and misinformation and disinformation in the

coming decade.

***Climate Change Critical in the Short- and Long-Term***

Climate change and related environmental issues continue to rank at or near the top of risk issues in both the short and long term. The failure to mitigate climate change and its related natural disasters and extreme weather events is seen as one of the most severe short-term threats, as well as being the risk with the most severe impact over the next 10 years. These environmental risks are also seen as ones for which the world is least prepared.

There remains a large gap between what needs to be done to make progress toward a net-zero carbon economy and the political will to do so. This is due in large measure to a "climate action hiatus" as the increased demands that other issues — such as the cost of living crisis and the Russia-Ukraine conflict — are placing on public- and private-sector resources.

If there is a plus side on climate-related issues, it can be seen in the increase in worldwide investment in clean energy sources after years of remaining flat. The International Energy Agency (IEA) projects that clean energy investment will have exceeded $1.4 trillion by the end of 2022 and account for almost three-quarters of the overall growth in energy investment. Additionally, signs of global cooperation were witnessed at COP27, where a breakthrough was reached as countries agreed on a fund to compensate developing countries for losses and damages caused by climate change.

Some progress also can be seen in new approaches being considered to climate change and renewables risk modeling, assessment, and allocation, which could help businesses, governments and financial markets accelerate moves toward a net-zero economy. But with each year that passes without significant progress, the existential nature of this risk will increase.

***Cyber Risk a Continuous Threat Given Technological Transformations***

The risk of cyberattacks continues to increase globally, and widespread cybercrime and cyber insecurity ranked among the top 10 risks for both the short and long term. One area highlighted by the Russia-Ukraine conflict is the ongoing and growing threat of direct and spillover cyberattacks on technology-enabled resources and services, whether financial, security, transport, energy, health care or other critical infrastructure. For instance, during 2022, critical infrastructure cyberattacks detected by Microsoft comprised 40% of all nation-state attacks, whereas previously they comprised only 20%.

Building cyber resilience in part depends on cybersecurity awareness, engagement and cooperation by the public and private sectors, which will improve protection against future threats, whether from a state actor, rogue consortium or individual.

Concerns about cyber insecurity also are rising as businesses and governments gather ever-larger data sets of valuable and value-added commercial and personal information. The nature of the data being collected includes more sensitive vocal inflections, facial expressions and other biometrics, which could be the target of geopolitical or commercial warfare and bioweaponry. Inconsistent global regulations and governments' efforts to address data concentration by private-sector technology companies may enable larger-scale breaches or misuse.

Organizations need to protect their own intellectual property and processes, as well as sensitive data gathered from suppliers, employees and customers. Resilience strategies should include efforts to address and

manage cyber risk as an enterprise-wide endeavor.

***Inflation and Other Risks Complicate Personal Security and Health***

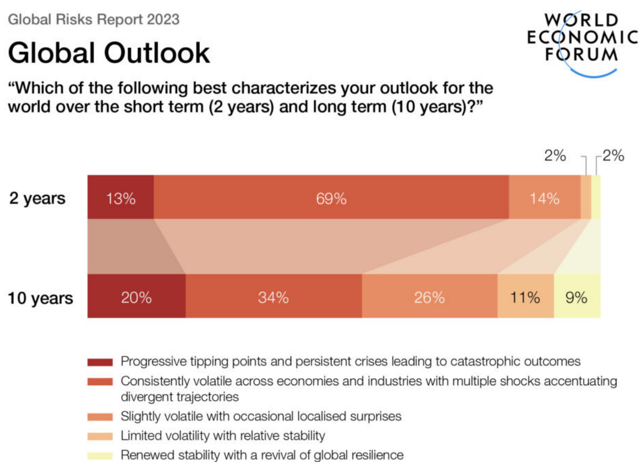
The rising cost of living is seen as the most severe risk for the coming two years. Though it is viewed as a short-term threat, if it persists, the resulting economic pressures could lead to extraordinary social unrest and political instability. In 2022 alone, fuel price increases led to protests in an estimated 92 countries, some of which resulted in political upheaval and fatalities, alongside strikes and industrial action.

Additionally, in a world of compounding risks, the impacts of inflation will be felt elsewhere, and over the longer term, some countries may divert resources away from education and health care, as well as climate adaptation and green energy investments, in order to meet basic food and energy security needs. This is of particular significance in relation to reductions in climate change and nature loss mitigation investments since exposure to heatwaves, air pollution, waterborne diseases and malnutrition can compromise health and well-being. Accumulating impacts would be detrimental to sustainability and the advancement of society, which could prove disastrous when the next major global shock materializes.

Keeping employees and their families physically and mentally healthy amid cost of living, infectious disease, political and environmental crises is a critical step in risk resilience. This lesson was learned during the worst of the COVID-19 pandemic, which amplified existing pressures and strains on global health systems and revealed inadequacies in physical and mental health management.

On a positive note, the pandemic increased focus and engagement with health and safety issues by C-suite executives. It has shown companies that if they understand and address their employees' workplace and personal needs, they are likely to fare better in the competition for talent and their ability to respond effectively to a crisis. The pandemic further highlighted the importance of building blocks such as digital access to health care and support for essential workers.

Businesses and governments are able to improve both the social determinants of health and health behaviors, boosting the resilience of individuals, societies and health systems. This can be accomplished by focusing on changing the environments that people work and live in and improving the availability of the supports they truly need.




***Advancing a Risk-Resilience Mindset***

Though we face the most severe geopolitical, geoeconomic and societal crises in a generation, we should recognize that resilience investments are not a drag on national and corporate growth, but an enabler. In that sense, a resilience mindset needs to become more deep-rooted.

Investments in resilience strategies and solutions should cover common capabilities that can address multiple risks. Doing so will support greater agility in our responses to crises and our ability to anticipate the next ones. By focusing on resilience strategies that position organizations, states and the world to better tackle short- and long-term risks, we can reduce uncertainties and make better decisions about where to invest limited resources.

If we think creatively and collaboratively about resilience, we can prepare for and respond to today's compounding risks and coming polycrises with greater agility and increase the possibilities for a more secure and stable future.

***Brink***

# How Pandemic Accelerated Digital Transformation in Advanced Economies

*Florence Jaumotte, Myrto Oikonomou , Carlo Pizzinelli & Marina M. Tavares*

As the world does its best to move on from the pandemic, one of the lasting legacies for many advanced economies has been greater adoption of digital technologies. Working from home is now common, and many companies have expanded online operations.

And as the crisis recedes, we can now see that digitalization, as measured by the share of workers using a computer connected to the internet, has proved to be a silver lining across many economies. This has far-reaching and long-lasting implications for productivity and labor markets, as we detail in a new staff discussion note focusing on advanced economies.

Before the pandemic, digitalization varied widely by country, industry, and company. For example, more than four-fifths of workers in Sweden had computers with internet access in 2019, the most in our study, while Greece had the lowest share, with less than two-fifths. Two years later, the Greek share had surged almost 8 percentage points, to 45 percent, narrowing the gap with Sweden with one of the most significant gains shown in our study.

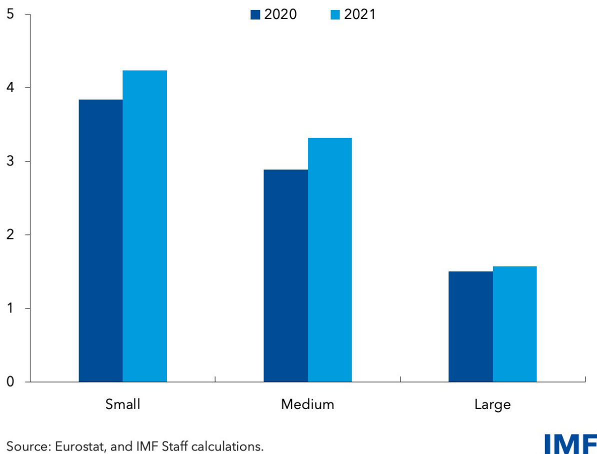
Across advanced economies, digitalization increased by an average of 6 percentage points, our research shows. The results underscore how the pandemic accelerated digitalization, especially in economies or industries that had been lagging.

Digitalization has historically been lower in contact-intensive sectors, while small businesses tend to lag larger counterparts, a trend observed across many countries. Notably, however, these disparities were not solely driven by differences by industry. Greek restaurants and hotels, for example, trail Sweden's by 38 percentage points.

Small firms, which have historically been less digitalized, enjoyed the biggest gains. Similarly, sectors that are least digitalized invested more in digitalization.

The surge in digitalization saved many firms during the pandemic, helping them adapt to lockdowns through remote work and online operations. Our research measures possible gains of digitalization using two different productivity gauges: labor productivity, which measures output per hours worked, and total factor productivity, which tracks output relative to the total inputs used in its production. Our findings confirm that high levels of digitalization helped shield productivity and employment from the shock, with the most digitalized industries experiencing significantly smaller losses in labor productivity and hours worked than less digitalized sectors.

At the depths of the pandemic in 2020, our research shows, higher digitalization in a sector reduced labor




productivity losses by a sizable 20 percent when comparing the 75th and 25th percentiles of digitalization. Moreover, had less-digitalized economies matched the 75th percentile in the sample for each sector, aggregate labor productivity growth during the pandemic would have been a quarter higher.

While some changes brought about by the pandemic may not endure, evidence for larger firms shows a growing total factor productivity differential between high- and low-digitalized firms as the crisis drew to a close.

It's too soon to assess the longer-term effects of digitalization, but we can see that it helped boost productivity, protect employment, and mitigate economic disruptions during the pandemic.

***Labor markets and remote work***

At the onset of the pandemic, policymakers feared greater digitalization could widen job market inequality by increasing demand for higher-skilled workers and displacing low- and medium-skilled workers.

While digital occupations were more shielded from layoffs than non-digital ones during the crisis, there is little evidence so far of a structural shift in the composition of labor demand toward digital occupations. Indeed, as we showed in a September working paper, vacancies data showed a strong increase in the demand for less-skilled workers as the economy started to recover.

A change that is more persistent and could have long-term implications in the labor market is the working-from-home revolution. Prior to the crisis, only 5 percent of workers typically worked from home in Europe, but by 2021 that had topped 16 percent.

Countries where working from home is more common saw larger increases in labor force participation, indicating that this arrangement may attract more workers to the labor market. For example, participation has already surpassed pre-crisis levels in the Netherlands, where over 20 percent of workers usually work from home, while in Italy, where less than 10 percent of workers work from home, participation remains below pre-pandemic trends.

Working from home can generate significant welfare gains by reducing commutes and increasing time management flexibility. Working from home can boost attachment to the labor market and the labor supply, while supporting the environment by reducing commuting.

The pandemic accelerated adoption of digital technologies and shielded productivity. However, with persistent gaps across countries and sectors, policymakers must seize the moment and take steps to continue closing the digitalization gap and ensure that the gains from digitalization are broadly shared.

This includes promoting policies that maintain healthy competition in digital markets and adapting labor laws and regulations to facilitate remote work. Doing so can build a more resilient and adaptable economy better prepared to navigate future crises.

***IMF Blogs***

# Technology Behind Crypto Can Also Improve Payments, Providing a Public Good

***Tobias Adrian & Tommaso Mancini-Griffoli***

Crypto assets have been more of a disappointment than a revolution for many users, and global bodies like the IMF and the Financial Stability Board urge tighter regulation.

Some of the rapidly evolving technology behind crypto, however, may ultimately hold greater promise. The private sector keeps innovating and customizing financial services.

But the public sector too should leverage technology to upgrade its payment infrastructure and ensure interoperability, safety, and efficiency in digital finance, as we noted in a recent working paper: A Multi-Currency Exchange and Contracting Platform. Others too are advancing similar views.

***Technology has jumped ahead***

New payment technologies include tokenization, encryption, and programmability:

- Tokenization means representing property rights to an asset, such as money, on an electronic ledger—a database held by all market participants, optimized to be widely accessible, synchronized, easily updatable, and tamper-proof. Anonymity of token balances and transactions is not required (and in fact undermines financial integrity).
- Encryption helps decouple compliance checks from transactions so only authorized parties access sensitive information. This facilitates transparency while promoting trust.
- Programmability allows financial contracts to be more easily written and automatically executed, such as with "smart contracts," without relying on a trusted third party.

***Private-sector innovation***

With these new tools in hand, the private sector is innovating in ways that may be more transformative than the initial wave of crypto assets: tokenization of financial assets, tokenization of money, and automation.

The tokenization of stocks, bonds, and other assets may cut trading costs, integrate markets, and enlarge access. But paying for such assets will require money on a compatible ledger. One example is stablecoins, are one example to the extent they comply with regulation. More importantly, banks are testing tokenized checking accounts. And automation is widespread, allowing third parties to program functionality much as developers build smartphone apps.

While the private sector pushes the boundaries of innovation and customization, it will not ensure that transactions are safe, efficient, and interoperable, even if well regulated. Rather, the private sector is likely to create client-only networks for trading assets and making payments. Open ledgers may emerge in an attempt

to bridge private networks, but are likely to lack standardization and sufficient investment given limited profit potential. And using private forms of money to settle transactions would put counterparties at risk.

***Central bank role***

Central bank digital currencies can help because of their dual nature as both a monetary instrument—a store of value and means of payment—but also as infrastructure essential to clear and settle transactions. Policy discussions have mostly focused on the first aspect, but we believe the second should receive just as much attention.

As a monetary instrument, CBDC provides safety; it alleviates counterparty risks and provides liquidity in payments. But as infrastructure, CBDC could bring interoperability and efficiency among private networks for digital money and even assets.

Payments could be made from one private money to another, through the CBDC ledger or platform. Money could be escrowed on the CBDC platform, then released when certain conditions are met, such as when a tokenized asset is received. And the CBDC platform could offer a basic programming language to ensure smart contracts are trusted and compatible with one another. That too will become a public good in tomorrow's digital world.

***Cross-border payments***

The same vision applies to cross-border payments, although governance gets more complicated (an important topic we leave for another time).

A public platform could allow banks and other regulated financial institutions to trade digital representations of domestic central bank reserves across borders, as suggested in our working paper.

Participants could trade safe central bank reserves without being formally regulated by each central bank, nor requiring major changes to national payment systems.

Again, transactions require more than the movement of funds. Risk-sharing, currency exchange, liquidity management—all are part of the package.

Thanks to the single ledger and programmability, currencies could be exchanged simultaneously, so one party does not bear the risk of the other walking away. More generally, risk-sharing contracts can be written, auctions can support thinly traded currency markets, and limits on capital flows (which exist in many countries) can be automated.

Importantly, the platform would minimize risks inherent in such contracts. It would ensure that contracts be fully backed with escrowed money, automatically executed to avoid failed trades, and consistent with one another. For instance, a contract to receive a payment tomorrow could be pledged as collateral today, lowering costs of idle funds.

Beyond the transfer of value, encryption can help manage the transfer of information. For instance, the platform could check that participants comply with anti-money laundering requirements, but allow them to bid anonymously on the platform for, say, foreign exchange, while still seeing the aggregate balance between bids and asks.

Technology can thus support key public policy objectives:

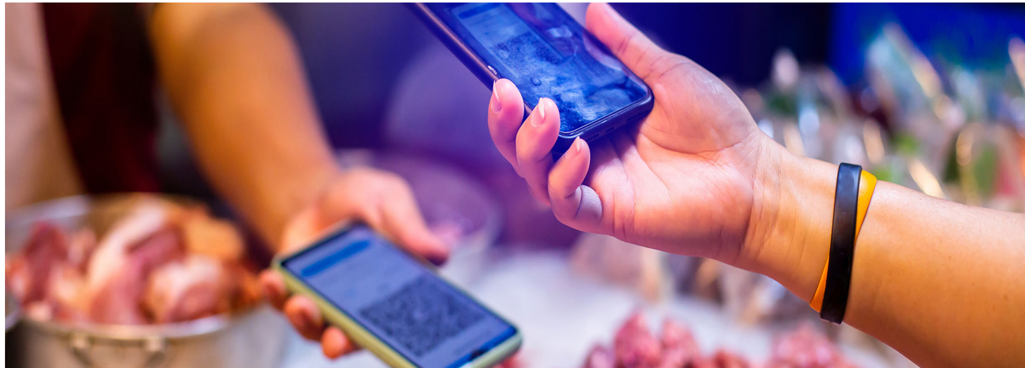
- Interoperability among national currencies;
- Safety thanks to escrowed central bank reserves, settlement finality, and automatic contract execution;
- Efficiency from low transaction costs, open participation, contract consistency, and transparency.

Much remains to be explored, and this vision is still taking shape. Crypto was fueled by an attempt to circumvent intermediaries and public oversight. Ironically, its real value may come from the technology that the public sector can leverage to upgrade payments and financial infrastructure for the public good—to inject interoperability, safety, and efficiency into private sector innovation and customization.

***IMF Blogs***

# Asia's Productivity Needs a Boost That Digitalization Can Provide

***Antoinette M. Sayeh, Era Dabla-Norris, Tidiane Kinda***



Asia's strong economic rebound from the pandemic is losing steam as tightening financial conditions, reduced export demand, and China's sharp and uncharacteristic slowdown dim the outlook.

More broadly, deep economic scars from the pandemic and the lackluster productivity growth that preceded it are weighing on the region's longer-term growth prospects. But despite these challenges, we see a promising path for boosting Asia's productivity that runs through a landscape in which it has a history of leadership: digitalization.

Digital technologies can increase the efficiency of the public and private sectors, expand financial inclusion, improve access to education, and open new markets by allowing companies to serve distant customers. For instance, during the pandemic, digitalization improved the allocation of precious resources for health and social benefits, allowing a prompt provision of relief while keeping leakages of public spending in check. Digitalization has helped support resilience during the pandemic, where, combined with large fiscal support, remote work and online sales protected workers, students and businesses.

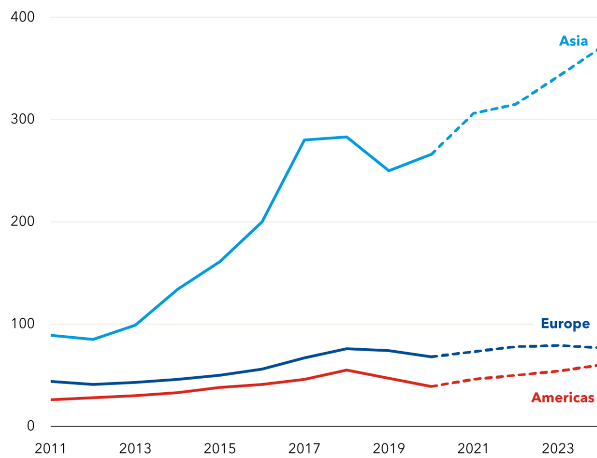
***Asia as digital powerhouse***

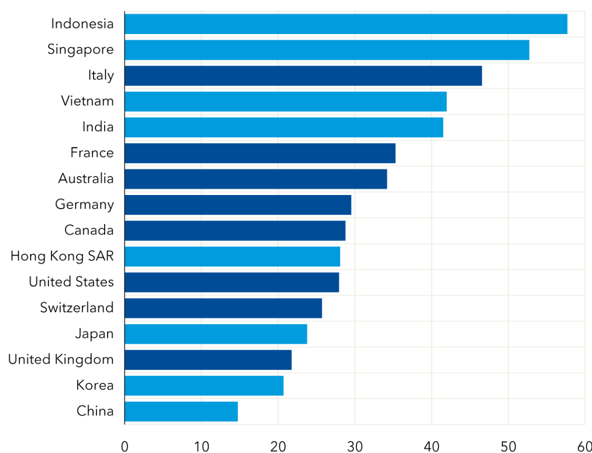
Asia's digital landscape has swelled in recent years, encompassing a broad range of innovations, from manufacturing automation to e-commerce platforms, all the way to digital payments. The region accounted for 60 percent of patents in digital and computer technologies right before the pandemic, up from 40 percent two decades earlier. The manufacturing powerhouse enjoys a wide global lead in installation of industrial robots. China is the single biggest robot user, accounting for some 30 percent of the market.

Japan's Rakuten, China's Alibaba Group, and Indonesia's GoTo Group are major players in e-commerce, with revenues that rival that of Amazon and Walmart. India's pioneering of digital infrastructure known as stacks has made it a leading example of how to bring together digital payments and identification to expand access to finance. Growing youth populations in Bangladesh, Indonesia and Vietnam have rapidly adopted new technologies and become a sizable potential customer base for the digital economy.

The pandemic accelerated the region's digitalization trend. The proportion of patent applications for remote work and e-commerce technologies surged during the pandemic as did spending on e-commerce, with Asia now accounting for nearly 60 percent of the world's online retail sales. E-commerce revenues grew by 40–50 percent in Vietnam, Indonesia, and India in 2020, outpacing most of the world.

This rapid increase was spurred by the shift away from cash payments and a resulting boom in digital alternatives, particularly e-wallets and prepaid cards.




***Digital divides halt progress***

Despite successes, the region's digital divides constrain productivity growth. Access to cutting-edge digital technologies is highly uneven within countries, and across firms.

Small and medium-sized enterprises face significant barriers to access and use of digital technologies. Our new paper shows that nearly half of SMEs and about a third of large firms in emerging and developing Asia report difficulty in obtaining financing as a major barrier to technology adoption. Low levels of digitalization and difficulties in accessing and adopting new technologies made it hard for these firms to telework or sell online amid the pandemic.

A slow diffusion of technology between leading and lagging firms also underpins the technological divide. Constraints such as the scarcity of a digital-savvy workforce, unequal access to digital infrastructure, weaknesses in the legal environment, including lack of adequate legislation on data protection and intellectual property rights, hinder information sharing and confidence in technological adoption.

Digital gaps also prevent workers from reaping the full rewards of participating in the new economy and reaching their full potential. For example, with only a quarter of the overall population using the internet, Indonesia has one of the lowest internet penetration rates in Southeast Asia. And while access is affordable in Vietnam and Bangladesh, internet connections are often slow.

***Path for policy***

Further improving digital literacy and reducing the digital divide across firms, industries, and workers would help close productivity gaps.

Our new paper focuses on needed reforms to bolster broad-based innovation and digitalization to boost aggregate productivity and growth in Asia.

Reform priorities include:

- Enhancing countries' digital infrastructure to improve access to information and technology.
- Upgrading digital literacy and upskilling the young workforce in many countries to meet employers' demand.
- Alleviating financing constraints faced by SMEs to help them adopt new technologies. Greater access to finance would help innovators introduce new products.
- Facilitating adoption of new technologies by streamlining regulations in line with the evolving digital industry, enhancing the legal environment, including on data and intellectual property rights protection, and facilitating digital trade.

Asia is poised to continue leading digital innovation. Facilitating equal access to technologies across firms, industries, and workers will help the region fully benefit from the economic boost that digitization offers.

***IMF Blogs***

# Got a Niche Product to Sell? Augmented Reality Might Help

***Kellogg Insight from the Kellogg School of Management at Northwestern University***
***Based on the research of Yong-Chin Tan, Sandeep R. Chandukala, and Srinivas K. Reddy***

Buying new products online that you haven't used, or even seen, in real life can feel risky. You're left guessing: How would that red couch look in my living room? Would these glasses fit my face? Could I really pull off blue lipstick?

Over the past decade, augmented reality (AR) technology has eased this uncertainty. By superimposing virtual objects onto a live view of physical environments, AR helps users visualize how products would fit into their world. Across industries, retailers have built apps to help consumers virtually try out products—including furniture, glasses, and makeup—with the hopes of attracting customers and ultimately increasing sales.

Because this technology is relatively new, little research exists on just how much it improves sales for different products or customers. In a recent study, Srinivas K. Reddy, a visiting professor of marketing at Kellogg, and his collaborators Sandeep R. Chandukala of Singapore Management University and Yong-Chin Tan of City University of Hong Kong set out to change that.

Using data from an international cosmetics retailer, the team found that AR usage on the retailer's mobile app changed customer behavior in several ways. In addition to boosting overall sales, it led to higher sales for less-popular brands, as well as for expensive products and for products with narrower appeal. The effect was greatest with customers who were new to the app or the product category.

"Many retailers have implemented this technology because it is cool, but many haven't looked into what kind of insights it provides," Reddy says. "What we show is that it does engage customers, it does increase purchasing rate, and it does level the playing field for less-familiar brands and products."

***The Promise of AR in Retail***

AR technology has been touted for years by tech execs as having the ability to transform our everyday experiences. "At some point, we're going to look back and think, how did we not have a digital layer on the physical world?" said Greg Jones, then-director of virtual reality and augmented reality at Google, in 2017. In fact, research estimates that close to 100 million consumers use AR technology regularly.

For retail settings in particular, Reddy and his coauthors identify four broad uses of AR technology: to entertain, to educate, to help consumers evaluate product fit, and to enhance their post-purchase experience.

For example, when Walmart collaborated with DC Comics and Marvel to bring superhero-themed AR games to their stores, it created entertaining, novel experiences for customers. Auto manufacturers like Toyota and Hyundai have used AR to educate consumers about innovative technologies, while IKEA's Place app uses AR to give customers a preview of how furniture will look in their homes, allowing them to evaluate the fit before purchase. And LEGO launched several brick sets with a companion AR app that allowed characters to come to life and interact with physical LEGO sets after they'd been purchased.

Reddy and his colleagues decided to focus on studying customer behavior when they were using AR to evaluate a product. They obtained a data set from an international cosmetics retailer that incorporates AR into

its mobile app to help customers visualize how they would look if they used different cosmetic products, such as eyeshadows and lipsticks.

The dataset contained sales records for 2,300 products, and browsing and purchase histories for 160,400 customers in a key market in Asia Pacific. The data covered a 19-month period from December 2017 to June 2019. Consumers could use the AR feature for lipstick and lip gloss during that entire time; the AR feature for eyeshadow and eyeliner was introduced in March 2018.

The dataset covered more than 800,000 shopping sessions, around 20 percent of which involved AR.

***AR Increases Purchases from Less-Established Brands***

The researchers found that customers who used AR as part of their mobile-app shopping experience spent 20 percent more time browsing (and browsed nearly 30 percent more products). In addition, these customers' purchase rate was nearly 20 percent higher than that of those who did not use AR.

The overall effect is largest for customers who are new to the app or the product category—showing that AR has the opportunity to promote online shopping adoption and category expansion. But it was also successful with the company's regular, loyal shoppers.

Because the researchers had access to many of these shopper's browsing and shopping histories, they could also compare how their purchases differed when they used AR versus when they did not. And they found a few surprises.

When customers used the AR feature, they bought products from less-popular brands and also purchased more expensive and unusual products. That's likely because the AR system allowed them to take a chance on what would otherwise seem like riskier bets.

Indeed, research has shown that when consumers have access to more information about the product, as they do with AR interfaces, they rely less on branding as an indicator of quality.

These interfaces also reduce uncertainty by letting customers visualize how products would look on their faces, perhaps leading them to feel more comfortable investing in more-expensive or less-familiar products.

"This shows augmented reality is leveling the playing field for brands and products," Reddy says. "Customers have never purchased blue lip shade, and now suddenly they buy it. And if this reduces their uncertainty, they are also willing to spend more."

***Deciding If AR Is Right for a Retailer***

One big implication for marketers, then, is that AR is most effective when customers feel a lot of risk or uncertainty around the purchase process. That means AR might work best for less-established brands and for customers who are new to the channel. It could also help replace expensive "try before you buy" programs or help customers feel comfortable with customized products that often cannot be returned.

Of course, AR isn't right for every retail category. It doesn't allow consumers to feel texture or smell scents, for example (though that sort of technology is in development). And AR is not a cheap investment. Customized AR applications cost anywhere from $10,000 to $300,000.

Yet AR retail experiences aren't just limited to mobile apps. Reddy and his collaborators are currently examining a dataset from an AR interface placed within this cosmetic retailer's physical stores. The interface allowed shoppers to virtually try on lipsticks (without physically applying anything to their lips, the normal process of testing products at stores). Initial results show that customers who used the AR interface spent more time sampling more kinds of lipsticks, suggesting that by making the sampling process more convenient, it encourages shoppers to explore more than they usually would.

Reddy ultimately hopes to explore how AR usage affects customers' purchases over time. Was that blue lipstick a one-off purchase? Or does this new behavior continue?

"We want to understand whether AR helps customers continue to explore and experiment," Reddy says. "That will help us understand the value of AR over the long run."

***Brink***

# Building on research for better trade outcomes

***DDG Anabel González, World Trade Organization (WTO)***

To craft impactful trade policies, political will and good intentions is just a starting point. Decisions about how best to allocate scarce political and economic resources must be rooted in analytically sound, policy-relevant, timely research and analysis. Yet, rising geopolitical tensions, rapid technological changes, unpredictable climate events and other pressing global challenges are making the difficult job of designing and implementing growth-enhancing trade policies even harder.

This is why academics, researchers and think tanks have much to contribute to help trade policymakers make better choices and deliver improved results, including at the World Trade Organization (WTO).

***What does research say about the gains from trade?***

Economic science has provided a strong foundation for trade policymaking ever since David Ricardo developed the theory of comparative advantage over two centuries ago. Since then, economists have shown that there is much more to the gains from trade than just specialization according to comparative advantage. In the new trade theory pioneered by Paul Krugman, international trade raises the productivity of firms by enlarging markets, allowing firms to reap economies of scale. And in the new-new trade theory pioneered by Marc Melitz, international trade brings about productivity gains by forcing the least productive firms to contract and leaving a greater share of the market for the most productive firms.

A recent paper by the Swedish National Board of Trade summarizes the latest policy research on the impact of trade in goods on productivity — a key driver of sustained growth — and inclusive economic prosperity. The paper lists six findings:

1. There are stronger links between trade and productivity than previously thought, and trade reforms can have a bigger bang for their buck than anticipated 20 years ago.
2. There is strong, consistent empirical evidence of productivity effects from improved access to intermediate goods, which is why it makes sense to remove trade barriers to inputs, parts and components.
3. The most significant productivity effects relate to imports, but there are productivity gains associated with accessing export markets. Thus, trade agreements should focus on improving both import and export opportunities.
4. When technological diffusion is associated with trade, and with opening up trade, this can greatly increase productivity.
5. According to recent trade theory, international trade today largely takes place within industries rather than via inter-industry trade. This suggests that there are further potential trade opportunities available across segments of the value chain, not necessarily tied to clearly specific sectors.
6. There are winners and losers associated with trade liberalization. This is why social adjustment policies and other public policies are key, even if more research is needed to determine the best policy designs.

Thus, as this paper suggests, there is abundant theoretical and empirical evidence that countries that turn their back on international trade do so at their own peril. However, research also finds that open and transparent trade policies are not a silver bullet. If they are to deliver, these trade policies must be integrated into broader strategies focusing on inclusive, sustainable and resilient economic growth and development.

***Adjusting the connection between trade research and policymaking***

Solid though they are, many of the research findings from the trade literature are, nevertheless, counterintuitive, and do not resonate, even with the informed public or with government officials. This severely hampers the potential of these results to inform decisions and drive good trade outcomes. It also suggests that more resources should be invested to explain them better — not just to policymakers, but also to the public at large — to ensure that good evidence and analysis are not ignored, and to guard against the adoption of policies that would go against decades of theoretical and empirical validation.

It is also often the case that trade economists advocate "first-best" solutions, without taking into account the political constraints that policymakers face. Sometimes second-best, or even third-best, is the only policy that is feasible in the real world, and policymakers would benefit from research that helps them pursue the good, rather than the perfect. To borrow from the Nobel laureate Esther Duflo, economists need to think and act more like plumbers, by getting to grips with the details and messiness of policymaking in order to find solutions and influence policy outcomes in ways that are workable in the real world.

The same is true of understanding local context and conditions, as policy implementation does not happen in the abstract, so what works in an advanced country may not work in a poor land-locked economy or a conflict-afflicted state. And what is less obvious, but just as important, is timing. Data and analysis are very important in the early stages of a policy process, when trade officials are trying to frame the problem at hand and develop a common understanding of how it can be tackled. They are often less useful at the final stages of a trade negotiation or other policy process, where politics normally take over.

***Research into the role of trade in global challenges is needed, today more than ever***

As the current debate about globalization and deglobalization unfolds, there is a view that trade is part of the problem when it comes to confronting the all-important challenges of reducing poverty and inequality, supporting sustainability, and fostering peace and security. Policymakers and the people they serve need researchers to step up their efforts to bring fresh evidence on the critical role that trade and economic integration play in solving global challenges. Economists at the WTO and at the International Monetary Fund have made important contributions in this area, for example by modelling the significant welfare losses that would result from a fragmented global economy.

But more is needed. Take the case of subsidies, and the question of whether new rules may be needed to ensure a global level playing field, given that many unforeseen challenges have emerged since those rules were first negotiated several decades ago. This is a hot topic in trade circles, but not an easy one to tackle, as the economics of subsidies are not black and white. For example, a better understanding of the design, implementation and spillover effects of climate-related government support is key to minimize potential negative impacts and trade tensions, which could otherwise weaken the trading system and make it more difficult and costly to attain sustainability goals.

Paradoxically, in an age awash in information, it is sometimes difficult to distinguish fact from fiction, evidence from speculation, analysis from ideology. More than ever, there are huge returns to deepening the dialogue between policymakers and academics, not least at the WTO. Policymakers can help academics remain grounded in the real world, while academics can help policymakers achieve trade outcomes that are better for people, prosperity and the planet.

***WTO Blog***

# Emotional intelligence is the key to more successful entrepreneurs

*Etayankara Muralidharan, McEwan University and Saurav Pathak, William & Mary*

Entrepreneurs have a key role to play in achieving the United Nations 2030 Agenda for Sustainable Development. This action plan, which has been adopted by all UN member countries, including Canada, was created to tackle today's "most pressing social, economic and environmental challenges."

While governments play a central role in achieving these goals, non- and for-profit organizations can accelerate this progress through innovation. That is where entrepreneurs — anyone who starts or owns a business — come into the picture.

Canada has one of the highest levels of entrepreneurial activity among developed nations and was recently ranked the best in the world for social entrepreneurship. Social entrepreneurship focuses on addressing social issues such as poverty, illiteracy and discrimination.

To maintain its position as an entrepreneurial nation, Canada must continue to foster innovation. Our recent research on how emotional intelligence at the societal level impacts entrepreneurship can help Canada, and other nations, accomplish this.

***About the study***

Using entrepreneurial activity data from the Global Entrepreneurship Monitor in 24 countries, our study found that entrepreneurship flourishes when individuals in society possess higher levels of well-being, adaptability, self-control and sociability.

These are characteristics of societal emotional intelligence — a measure of the collective emotional intelligence of a particular society. Emotional intelligence refers to the ability of an individual to recognize and understand their own emotions, as well as the emotions of others, and use this knowledge to make decisions.

At the societal level, emotional intelligence plays a vital role in addressing challenges present at different stages of the entrepreneurial process, such as idea generation, planning the launch, and growth of an enterprise.

However, the degree to which each characteristic of emotional intelligence impacts entrepreneurship depends on the type of entrepreneurship.

***Fostering commercial entrepreneurship***

Our research found three characteristics of societal emotional intelligence are more likely to foster commercial entrepreneurship: hedonic well-being, adaptability and self-control. Commercial entrepreneurship leads to innovation that contributes to a country's economic growth by generating wealth.

***1. Hedonic well-being***

Hedonic well-being is one of two types of perceived well-being. It refers to an individual's perception of their own life satisfaction, happiness, optimism and self-esteem.

Hedonic well-being can help individuals navigate challenging situations that arise when working as an entrepreneur by providing them with a sense of control over their situation.

Individuals with high levels of hedonic well-being are more likely to have characteristics associated with successful commercial entrepreneurs.

***2. Adaptability***

Individuals with high levels of adaptability are open to new information, willing to let go of preconceived notions and capable of adjusting to new or challenging situations.

An individual's ability to adapt in the face of adversity sets them apart as exceptional. Individuals that are very successful often possess higher levels of adaptability.

In the context of commercial entrepreneurship, having a high degree of adaptability allows entrepreneurs to navigate uncertainty and adapt to changes in the business environment.

***3. Self-control***

Self-control is a mental process that helps individuals align their thoughts and behaviours with their goals, particularly during periods of adversity.

Self-control is beneficial for commercial entrepreneurs, as it encourages them to be mindful of the strategies needed to keep their goals in line with the ever-changing business environment.

Because self-control is valuable for managing commercial enterprises, societies that have more individuals with higher levels of self-control are more likely to facilitate commercial entrepreneurship.

***Fostering social entrepreneurship***

Our research found two characteristics of societal emotional intelligence are more likely to foster social entrepreneurship: eudaimonic well-being and sociability. Social entrepreneurship, as previously mentioned, leads to innovation that addresses social issues.

***1. Eudaimonic well-being***

Eudaimonic well-being refers to an individual's perceived autonomy, self-acceptance, sense of purpose and ability to manage their environment.

The characteristics associated with eudaimonic well-being motivate individuals to make greater contributions to the welfare of others through social entrepreneurship.

While the characteristics of eudaimonic well-being are essential for both types of entrepreneurship, societies with higher levels of eudaimonic well-being tend to foster an environment more conducive for social entrepreneurship.

***2. Sociability***

The American Psychological Association defines sociability as the tendency "to seek out companionship, engage in interpersonal relations, and participate in social activities."

Sociability has three facets: social awareness, emotional management and assertiveness. It plays a more significant role in social entrepreneurship, so societies with a larger amount of individuals with this trait are more likely to facilitate social entrepreneurship.

***Fostering emotional intelligence***

Entrepreneurship in Canada, both commercial and social, needs to flourish to help the country meet its sustainable development goals. For this to happen, Canada should implement strategies to build emotional intelligence among its entrepreneurs.

One way Canada could do this is by investing in programs to monitor, assess and diagnose ways to improve emotional intelligence among entrepreneurs.

In addition, given that emotional intelligence can be developed with training, businesses and innovation hubs should develop emotional competencies among their entrepreneurs.

Finally, Canada should implement education curriculum focused on developing emotional intelligence in students to shape their entrepreneurial behaviours. By equipping students with emotional intelligence skills, Canada will nurture a generation of entrepreneurs ready to create wealth, tackle social challenges and create positive change.

***The Conversation***

# Social entrepreneurs have different reasons for creating their ventures: policymakers should take these into account

*Farsan Madjdi and Badri Zolfaghari, University of Cape Town*

Social entrepreneurs embrace social as well as economic value. They create ventures that aim to meet social needs. They are not only risk-takers and proactive innovators but have a strong ethical fibre. They are compassionate and morally motivated to create social ventures.

One such social venture is Regenize, founded by Chad Robertson and Nkazimlo Miti in the Cape Flats in the Western Cape province of South Africa.

The two social entrepreneurs wanted to make recycling a rewarding endeavour and educate young people about sustaining their environment. Their many awards and the global recognition they've received are testament to the importance of their mission and value creation, not just for their communities but beyond.

Yet, social entrepreneurs such as Chad and Nkazimlo and the ventures they create are not a monolithic group. They can vary in their goals, their motivations, how they judge their situations, and how they build their business in their local context.

Their operating context is shaped by government regulations, policies, financial support (or lack of it), an entrepreneurial ecosystem, and other factors. So, if societies want to promote social entrepreneurship, they must better understand all these motivations and approaches.

Their variety has implications for how advisers, policy makers, incubators or accelerators, and institutes of higher education can better support social entrepreneurs.

Our study explored what motivated different social entrepreneurs to develop businesses that assisted their communities.

We found that social entrepreneurs differed from for-profit entrepreneurs in their venture idea judgements, and strongly relied on their specific social goals and motivations in the creation of social ventures.

***Personal goals, missions and social motivations matter***

Our study was conducted over a 15-month period with 34 (social) entrepreneurs based in Cape Town.

The entrepreneurs had different professional experiences and were focused on a variety of social challenges. We provided them with three different business scenarios. We asked them to imagine being a founder of one of the three and talk us through how they would build this venture.

The aim was to understand the differences in their judgement, motivation and goals.

We found that the social founders used the same criteria for building a social business. But they differed on the importance they gave to each one. The criteria included market demand, competition, personal knowledge and skills, funding and investment requirements, moral and ethical values and social impact.

The differences depended on the needs of the communities or the specific target groups they were imagining building the venture for. They did this by initially looking inward, thinking and talking about their personal emotions and motivations.

When thinking about the business, they paid particular attention to personal and implicit information attributes. And they said they would have to adapt the selected business scenario to fit with an embedded need.

Embeddedness in this context means that they had an intimate knowledge of and concern for the needs of the specific social group or community. They did not try to keep an emotional distance. Instead they let their emotions play an active part in their evaluation process. This showed inner conflicts or tensions during their decision process.

Other social entrepreneurs focused on the feasibility of the business. For these entrepreneurs, their external governing context was more important because their target audience was broader. But they did also look inward to see if they would find an alignment between the business scenarios and their desired goal of social impact generation.

What we saw was that these two types of social entrepreneurs - the community-driven and mission-driven - focused on different criteria in the beginning of the venture creation process. They were driven by different goals and social motivations when continuing to develop the venture idea further.

These variations have implications for their stakeholders. Community-driven founders are more intrinsically motivated than mission-driven founders who focus on intrinsic and extrinsic motivations. Which is why they differ on what they consider to be a social need they aim to address.

These variations suggest that advisers and policy makers should not assume that all entrepreneurs are mainly motivated by profits and wealth generation. They should consider their different motivations. Existing support programmes such as entrepreneurial training focus mostly on assisting entrepreneurs to develop their ideas and related business plans. They focus on generating financial value but not enough on what motivates the entrepreneurs to create social value.

***What support is needed***

Governmental institutions should pay more attention to aligning their policies and support infrastructure with the motivations of social entrepreneurship.

One way could be through the government adopting a regional approach. The development of local clusters governed by a permanent committee could support the individual entrepreneur by increasing their visibility, connectivity and interaction with other like-minded entrepreneurs or potential stakeholders.

Another way could be through incubators and accelerators that recognise the dual focus of social enterprises: economic and social dimensions.

Building support networks for social businesses could also help, as could facilitating access to funding.

University-linked centres, such as the Bertha Centre for Social Innovation and Entrepreneurship, for example, also pay an important role in bringing together social entrepreneurs and their stakeholders.

Regenize started with the needs of its local communities in mind. But it went on to have broader impact. Enterprises can do this either directly by scaling, or indirectly by helping other ventures to create a similar business model and offering.

But they won't be successful if they don't have supportive policies, infrastructure and stakeholders that cater to and understand their goals and motivations for creating their social ventures.

***The Conversation***

# Cognitive flexibility: the science of how to be successful in business and at work

***Barbara Jacquelyn Sahakian, University of Cambridge***
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The word "permacrisis" was selected as the word of the year for 2022, referring to a feeling of being permanently in crisis. The business world has certainly faced continuous and increasingly frequent disruptions over the last few years. These included COVID-19, lots of people leaving the workforce, geopolitical events and now the emergence of sophisticated AI such as ChatGPT.

These changes have unequivocally reminded leaders, human resource practitioners, governments and business schools that the only constant is that organisations need to always adapt. Indeed, the ability to predict and learn from changing environments is increasingly important for businesses.

But how exactly do you do that? Well, you need a flexible workforce to start. But simply telling people to "be flexible" or "adapt" is as effective as asking people to be smart, creative or happy. Similarly, asking people to assess how flexible they are is as unreliable as asking people to assess their own positive and negative qualities.

Luckily, our research has come up with an evidence-based way to train and assess mental flexibility.

Organisational research has repeatedly highlighted terms such as "adaptive leadership", "adaptive salesforce business agility" or "agile enterprises" as key determinants of business resilience and performance. Startups and innovative companies need to be even more adaptive and flexible to compensate for lack of resources. Obviously, the same goes for individuals in such organisations.

Indeed, the entire modern workforce needs high levels of career adaptability to survive in an environment in which skills and roles quickly become obsolete – as technology takes over. Overall, the adaptive organisation is no doubt emerging as an important business model. It is probably the only mindset that can deal with the complexities of modern economies.

While most will likely agree on the importance of being adaptive, there is very little understanding of what cognitive capacities underlie adaptive behaviours. It's unclear how to assess them, and, importantly, how to train this type of thinking. In reality, people do not know what exactly flexibility is, whether they possess it and how to put it into practice.

As it turns out, "being smart", competent, educated – or even having strong social and emotional skills – will not guarantee flexible behaviour.

***The power of cognitive flexibility***

Recent but established research in cognitive neuroscience has drawn attention to a function called cognitive

flexibility. This executive function (a type of skill that helps us plan and achieve goals) enables us to switch between different concepts and patterns. It also helps us adapt choices to achieve goals and problem solve in novel or changing environments.

Cognitive flexibility aids learning under uncertainty and to negotiating complex situations. This is not merely about changing your decisions. Higher cognitive flexibility involves rapidly realising when a strategy is failing and changing strategies.

The importance of cognitive flexibility was first discovered in clinical patients. The function engages areas of the brain involved with decision making, including the prefrontal cortex and striatal circuitry. When this circuitry becomes dysfunctional due to neurological diseases or psychiatric disorders, it can cause rigidity of thought and a failure to adapt.

Cognitive flexibility is required in many real-world situations. The category of workers that requires the highest level of adaptability is arguably entrepreneurs. Entrepreneurs need to show flexibility not only in terms of idea generation, but also for resource allocation and social exchanges.

Indeed, our previous research has shown that entrepreneurs, compared with high-level managers, have increased cognitive flexibility. This ultimately helps them to solve problems and make risky decisions successfully. We have also demonstrated that this flexibility translates to social decision making. Entrepreneurs are simply more flexible in terms of whether and when to trust other people.

***Boosting your mind***

Cognitive flexibility has often been used as a generic and ill-defined term, measured using subjective self assessment. Yet, cognitive neuroscience now has tests to more precisely define and objectively measure it.

Cognitive processes, such as working memory, are strongly linked to intelligence level, or IQ, and therefore are relatively unmodifiable. In contrast, cognitive flexibility isn't as strongly linked to IQ and therefore has the potential to be trained. For example, we might be able to modify and strengthen neural circuits in the brain through cognitive training.

In terms of interventions, seminars on "being flexible and adaptive" will probably have very limited success. Yet, there seems to be a surprising possibility to indirectly train cognitive flexibility by computerised, adaptive training using simple games – though this is something we are still researching.

Researchers are also exploring more "natural" methods, such as learning new languages or having more diverse social interactions.

Ultimately to better evaluate and train cognitive flexibility, it is critical to supplement self-reported assessments with more diverse and objective methods – including computerised testing. This should take place alongside monitoring of direct changes in brain responses. We need to know more about how these brain changes relate to real-world outcomes, such as school attainment and career advancement.

Rapid developments in technology and innovation provide serious challenges for workers in many industries, including in financial services, renewable energy, climate change science and global health. This means they will have to learn new skills as opportunities become available in challenging and emerging areas. Education should ultimately also change to reflect that.

There is no doubt that the need to make good decisions under uncertainty is becoming exceedingly important.

***The Conversation***