Vol.13, No.2   November 2023   ISSN 1839-5988

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Foreword

ANZRSAI 46th Annual Conference 2023

For more than forty-five years, the Australia and New Zealand Regional Science Association has brought together researchers across academic and policy fields to explore the cutting edge of regional development and regional analysis in Australia, New Zealand and around the world. If your work involves regions, join us at our 46th Annual Conference at RMIT University Melbourne Australia. The 2023 Conference will be convened jointly with the Regional Studies Association (RSA), bring together researchers from Asia, Europe, Australasia and beyond. The event will be hosted by the European Union Centre at RMIT on 26-28 November 2023. Two Best Paper Awards sponsored by the Department of Infrastructure, Transport, Regional Development and Communications and the Arts will be presented at the conference.

2023 Conference Theme: "Global Crises and Regional Futures"

It will be an in-person conference, although opportunities for on-line presentation and streaming will be available. To register, and for more information on the conference, visit the ANZRSAI website at: www.anzrsai.org.

Conference sponsors/supporters:

COVID didn't change internal migration as much as claimed!

At its height, the COVID-19 pandemic disrupted well-established patterns of migration within Australia. Reports of a regional renaissance suggested city dwellers were moving to regional areas in droves. The governments of Tasmania, South Australia and the Northern Territory were also keen to promote new migration flows to reverse long-standing declines in their shares of the national population.

Advice from the Australian Bureau of Statistics (ABS) that internal migration numbers were "implausibly high" received less attention. The ABS suspended these data releases due to this concern. Its latest population data release uses a revised model for net interstate migration.

These data indicate a new normal rather than a renaissance for South Australia, the Northern Territory and Tasmania.

Internal migration losses for capital cities have also slowed.

Components of annual population growth
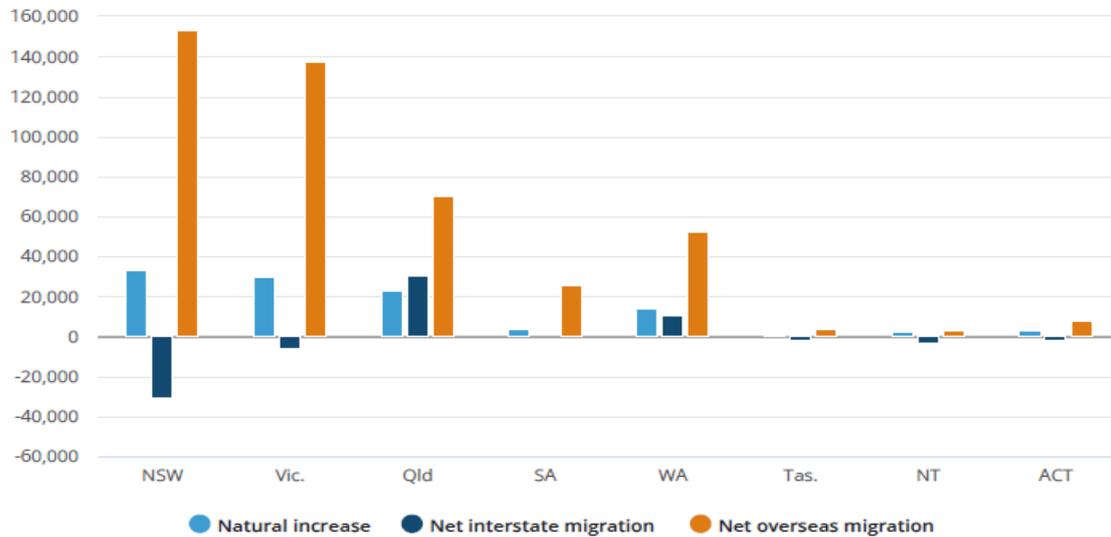
[Source: The Conversation and ABS]

So what was going on?

In reality, the data present a different story to the popular narrative. Pandemic-era ABS data for 2020 showed increased growth in non-metropolitan areas was due more to retaining residents than attracting new ones.

This is unsurprising. Much of Australia was in lockdown, restricting movement, and case numbers were highest in the capital cities. The historical main reasons for leaving regional areas – education and/or jobs – were no longer viable options.

In 2020, interstate migration fell by 29%. In 2021, it increased on paper by 45% compared with 2020.

However, the ABS advised this large increase was mainly due to people updating their addresses with Medicare during mass vaccination rollouts. The distorting effect of these belated updates prompted the ABS to suspend the release of regional internal migration estimates.

The under-counts and over-counts identified from the 2021 census show just how far off estimates of population and migration were for some areas. The ABS has revised its methodology, based on the census findings and updated Medicare data.

Last week, the ABS released details of its new assumptions for modelling interstate migration with the latest population data for the last quarter of 2022. Under this model, total interstate migration for 2022 fell 21%, compared with 2021, to levels similar to those of 2016.

As for movement between capital cities and regional areas within states, we have data for four quarters since March 2022 when the ABS resumed releases. ("Regional areas" include large centres like the Gold Coast, Geelong and Newcastle.) The numbers moving to greater capital cities have been

increasing, and the numbers leaving have been declining. Even so, more people are still leaving capital cities than arriving (excluding overseas arrivals).

Population changes by capital city for year to June 30 2022

Components of population change for 2021-22 financial year

Natural Increase   Internal Migration   Overseas Migration
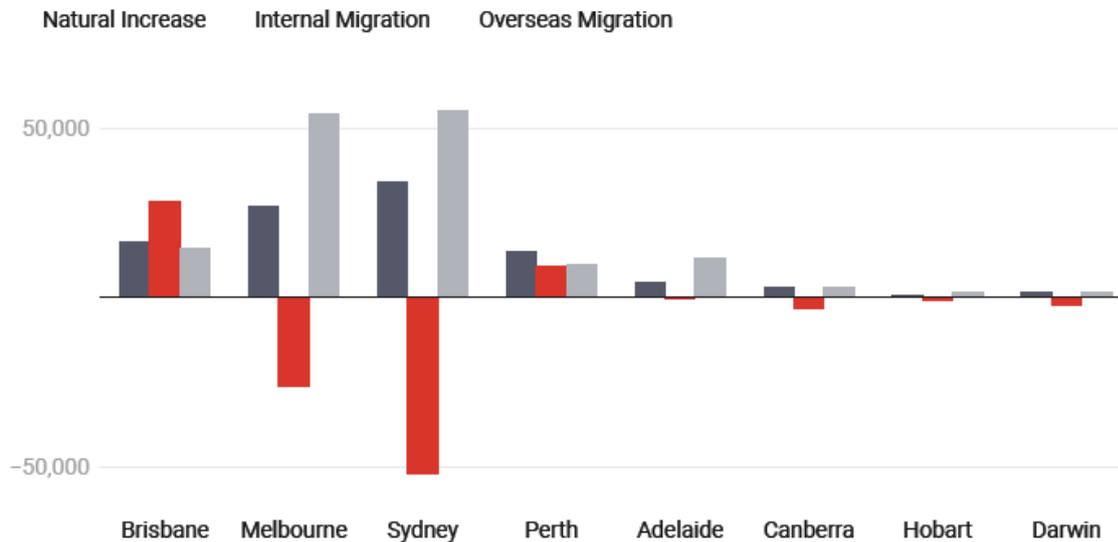
[Source: The Conversation and ABS]

What does this mean for state and territory populations?

The revised data allow us to assess migration flows between states and territories for the last quarter of 2022 as well as back through time, including the pandemic.

In the peak pandemic year of 2020, South Australia recorded a net gain from interstate migration. The then premier attributed the reversal of the state's brain drain to its "performance in containing COVID, accelerating industrial transformation and strong jobs growth".

A closer look at the data shows the upward trend began well before the pandemic. The net loss due to interstate migration had decreased from -7,693 in 2017 to -2,885 in 2019.

The pandemic did accelerate this trend. Early in the pandemic, the net gain of 2,348 people in SA was driven by retention of people. Arrivals fell by 21.7%, but the decrease in departures was larger at 35.4%. In 2021, the net gain of 2,310 people was slightly smaller as arrivals increased by 43.6% and departures by 48.5%.

In 2022, however, the net gain was only 670 people. This suggests a return to net interstate migration losses is possible.

The then premier, Steven Marshall, hailed the reversal of the brain drain from South Australia in February 2021, but it may be short-lived.

The revised data for the Northern Territory show a consistent net population loss to interstate migration of about 2,100 in the five years leading up to the pandemic. Then, in 2020, interstate arrivals fell considerably but departures fell even more. The result was a small net gain of 110.

When the territory's borders reopened in 2021, both arrivals and departures surged to 1.5 times the average of the five years to 2020 at 16,992 arrivals and 19,298 departures. But in 2022 both figures wound back to 14% below the five-year pre-COVID average. Departures once again outstripped arrivals, by 2,120, very close to the average net loss of 2,306 for those five years.

The Tasmanian government is refreshing its 2015 Population Growth Strategy and plans to appoint a state demographer. In November 2021, the then premier declared people were "knocking on the door and knocking loudly" to move to the state. This was not the case.

In 2020, interstate arrivals fell by 18% and departures by 28%. The state's net gain was 2,633. For 2021, at the time of the vaccination rollout, arrivals increased by 39% and departures by 53%, resulting in a smaller net gain. For 2022, arrivals fell by 30% and departures by 16%, for a net loss of 941 people.

This reverses a seven-year period of interstate migration gains for Tasmania. With the lowest growth since 2015, the state has returned to the times before a population growth strategy. The level of natural increase (births minus deaths) is the lowest on record.

Then premier Peter Gutwein said people were 'knocking loudly' to enter Tasmania in late 2021, but population growth has slumped since then.

Getting the numbers right matters for us all.

More information with some other significant data can be explored here at the following links:

https://theconversation.com/covid-didnt-change-internal-migration-as-much-as-claimed-new-abs-data-show-207312

https://www.abs.gov.au/statistics/people/population/regional-population/latest-release#key-statistics

Largest-ever survey of First Nations Australian art opens in New Zealand?

More than 150 artworks – and some of the country's biggest names – are represented in an exhibition that's equal parts poignant and powerful.

There was a telling moment during the recent opening of a landmark First Nations Australian art exhibition in Aotearoa/New Zealand: a speaker commented that Australia is racist and the entire room laughed.

On a panel exploring indigenising creative practices, South Australian artist Yhonnie Scarce described her home state as being known for its racism – but then, a beat later, went on to list all other states as having the same reputation, prompting laughter from the crowd.

If that's what Australia is known for abroad, a cultural reckoning is quietly taking place – and some are further along in the journey than others, says Nathan Pohio, the senior curator of Māori collections at the Auckland Art Gallery.

Touring exhibition Ever Present – which has already shown at the Art Gallery of Western Australia and Singapore's National Gallery – is the largest overview of art by First Peoples of Australia to show in Aotearoa, with panel discussions, artists talks and workshops accompanying the opening weekend.

"One of the themes of this exhibition is self-determination through action," Pohio says. "There's this decolonial action taking place internationally with Indigenous people around the world.

"There's something in the air at the moment … that reckoning. People are just being honest about it and are talking about it and it is a particularly powerful idea."

The rich – and at times confronting – exhibition brings together more than 150 works by First Nations artists from diverse nations, backgrounds and experiences, including some the country's most influential names, such as Brook Andrew, Richard Bell, Vernon Ah Kee, Emily Kame Kngwarreye, Archie Moore and Albert Namatjira.

The show takes up most of the first floor of Auckland Art Gallery, beginning in two intimate spaces exploring ancestors and ancestral creators, before opening out through the gallery's wide halls and dark rooms.

One powerful exhibit is Ah Kee's Tall Man, a video work that plays out across a large long screen split into panels, to explore the death in police custody of Cameron Doomadgee in 2004 and the outpouring of rage and grief it provoked in Palm Island.

Grainy vision of the 2004 Palm Island protests and its aftermath is intercut with a triptych of police body-worn camera vision, news media and personal videos shot by community members. An elder's plea: "What's it gonna take to stop deaths in custody? Our boys in custody? It's still going on!"

The work remains as painfully relevant today as when it debuted in 2010.

Ah Kee's work takes centre stage for a reason, Pohio says. "It's been confronting and challenging quite a lot of our visitors, but people have been really engaging with the piece."

Scarce and fellow artist Damien Shen have travelled to Auckland for the opening, to speak with a public that seems hungry to engage with the exhibition and its themes. A young staff member at a vintage store in central Auckland tells the Guardian he visited the gallery with his parents: "It was great – I had no idea there were so many different styles."

Shen's work explores his Ngarrindjeri, Kaurna and Chinese heritage and his familial and cultural ties, through two photographs that are part of a series of a dozen.

The work features the artist and his beloved uncle, respected Adelaide elder Uncle Moogy, photographed by collaborator Richard Lyons.
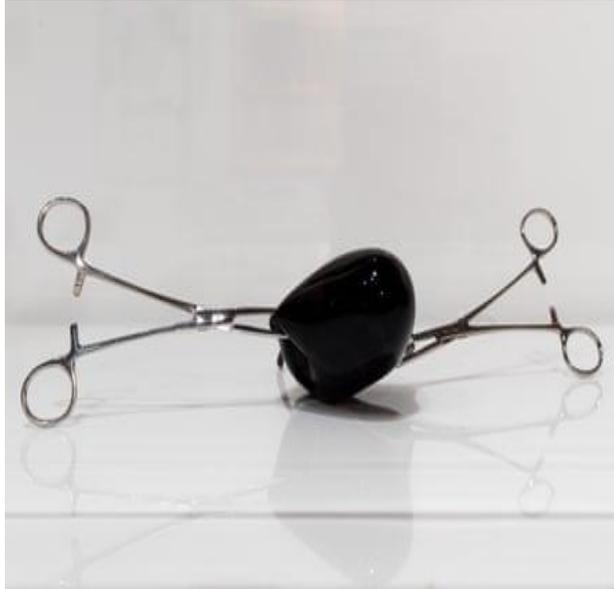
"Ventral aspect of two males by Damien Shen" and "Detail of Silence part 1 + 2 by Yhonnie Scarce"

Source: https://www.theguardian.com/

Uncle Moogy is shown practising his culture and handing it down, with both men painted in the striking markings of their Ngarrindjeri heritage: it was the first time Shen had been painted in the way of his ancestors. His works also hark back to anthropologists and ethnographers such as Norman Tindale, who photographed and studied thousands of First Nations families during the 1920s and 30s, an era in which Indigenous people's remains were taken from country to be studied and exhibited. Shen's family were among those who worked to repatriate them.

"[These photographs] were deliberately shot in the old ethnographic style," Shen says. "But also part of the narrative arc captures the contemporary world of Uncle Moogy, retaining and reviving culture each and every day he gets out of bed."

He said the work is about his power and choice as a First Nations artist. "These works are very personal. They sat in my private collection for a long time before I showed anyone."

Scarce's glass work examines Australia's often exploitative relationship with First Nations people in a visceral way: as test subjects, lab rats and flora and fauna to be poked and prodded through medical experiments, including the forced sterilisation of Aboriginal women.

"For me, it's about calling out the perpetrator and holding them accountable for their disrespectful behaviour towards us. The rest of the world needs to know about it," the Kokatha/Nukunu artist says.

Her glossy black glass shapes seem to echo disembodied body parts, with a delicate sliver of a tail recalling that of a dead lab rat, encased in a glass case. The objects represent the flesh of her ancestors who have been stabbed with sterile medical scissors, forceps brutally pinching the "skin" of the glass.

'I'm not afraid to talk about the hard stuff. Scarce says her work is not always easily understood: "When I first started making my work, people used to ask me whether I needed counselling. Non-white Australians were saying, 'It's really intense. I think there's something wrong with you.'

"I don't need counselling. My counselling or my trauma work is making artwork and giving our ancestors a voice, because they were being told to shut up all the time," Scarce says. "I'm not afraid to talk about the hard stuff."

She hopes the viewer is challenged but also comes away with an appreciation of Aboriginal and Torres Strait Islander people, who continue to persevere, thrive and survive on and off their traditional lands.

"We're human beings. There's such an element of strength and beauty in us. And it comes from our ancestors."

The work in the show was drawn from the Wesfarmers collection of Australian art and the National Gallery of Australia's collection, under the curation of Tina Baum from the NGA. It moves through various themes, including culture and ceremony, community and family, and innovation and identity.

"Time collapses, it's not linear. It's not one way, it's cyclical, it's everywhere. Many of the works fit into many of the other themes," says Baum, a Gulumirrgin, Wardaman and Karajarri woman. "I think people have been really surprised at the diversity, the excellence and just the sheer beauty of these works.

"For me it was important to start with resistance. That fight that we had from the very beginning. Yes, there was colonisation, but there was resistance and there still is resistance.

"Art is a form of resistance. When you see these works, you can see that artists are really using it in such beautiful, poignant ways."

The director of the Auckland Art Gallery, Kirsten Lacy, says tens of thousands have already visited the show since its soft launch on 28 July.

"I think there's a fascination and desire to learn. [First Nations Australian culture is] so different to New Zealand, in the volume of language groups, nations, the scale of the country and the variance of its topography," Lacy says.

"First Nations people in Australia have never ceded country and have been present for 65,000 years. There's a lot of interest in seeing these cultures side by side and coming together in dialogue."

Further information can be found at:

https://www.theguardian.com/artanddesign/2023/aug/22/a-cultural-reckoning-largest-ever-survey-of-first-nations-australian-art-opens-in-new-zealand

Commentary

From the Regional Australia Institute

Intergenerational Report puts regional Australia at the centre of nation's future economy

The release of the Regional Australia Institute (RAI)'s 2023 Intergenerational Report (IGR) highlights how critical regional Australia is to the nation's future over the next four decades.

Transitioning Australia to a net-zero economy has been called out as a major pillar for productivity gains over the next 40 years. Regional Australia, the traditional engine room of the nation's

productivity, will step up again as home to the majority of the country's renewable and clean energy sectors with some predicting 90% of jobs to be based in regions.

Regional Australia Institute (RAI) CEO Liz Ritchie said supporting regional Australia in this generational transition is critical to the success of the nation's overall productivity gains.

"Regional Australia has always played a key role in Australia's productivity, driving key output industries like agriculture, fishing, mining, and manufacturing," Ms Ritchie said.

"The transition to net zero will again see regional Australia in productivity's driving seat, however this time, we have some major handbrakes, the result of decades of neglect.

"Lack of housing supply and diversity, chronic labour and skill shortages and poor access to medical services, childcare and aged care services are all holding regional Australia back.

"The government is right to call out addressing these entrenched and intergenerational disadvantages through placed-based policy as being critical.

"If we want to aim to be a clean energy superpower, supporting our growing populations in regions should be a first priority."

The RAI launched the 10-year Regionalisation Ambition 2032 – a framework to rebalance the nation, in September last year and will release its first annual review of the 20 targets set, next month. Each target is categorised by a pillar – Jobs & Skills, Population, Productivity & Innovation,

Liveability and Sustainability & Resilience: "We launched the Ambition with five pillars because we wanted to acknowledge that many of these issues are interlinked and require long-term thinking and planning," Ms Ritchie said.

"Having a National Population Plan is a really necessary support step for driving productivity and to ensure our regions are in the best position to take full advantage of the opportunities the transition to net zero will provide.

"Our research shows that there are little future agglomeration benefits for productivity coming out of our major cities like Sydney and Melbourne which are on track to be mega cities by 2056.

"The biggest productivity gains will come from our regions – and we are currently in the best position we have ever been in to take advantage of this.

"Demand for life in regional Australia has never been higher. City to regional net-migration has been positive for the last two census periods showing that COVID was no blip. Net-migration is still around 16% higher than what it was pre-COVID."

Detailed information can be found at:

https://www.regionalaustralia.org.au/Web/Media/Media-Releases/2023/Intergenerational_Report_puts_regional_Australia_at_the_centre_of_nations_future_economy.aspx

https://www.regionalaustralia.org.au/common/Uploaded%20files/Rebalance-the-Nation/Rebalance-the-Nation-Report-2022.pdf

https://www.regionalaustralia.org.au/Conference2023/National_Summit_2023

From Brookings

AI makes rules for the metaverse even more important

Tom Wheeler (July 2023)

Too often, public policymakers' lack of technological understanding has been exploited to promote a fear that regulation will break the magic of the tech innovators.

The establishment of digital norms is a matter of getting there first. Once new digital patterns are established, they are difficult to correct.

Social media companies capture private information and deny others access to that data, thwarting competition through the unequal distribution of the essential assets necessary for competition.

When it comes to digital platform policy development, the United States has been satisfied to sit back and allow others to do the heavy lifting.

Source: https://www.brookings.edu/

From Social Media to Virtual Reality

The United States has failed to control or mitigate the adverse effects of online digital platforms. The next online innovation—the metaverse—will reinforce these old problems while launching an expanded collection of new challenges.

The move from the internet we know today to the metaverse is a transformational move from observation to participation. Today's online activity began as an observational experience that gradually expanded through social media and online games to become more participatory. The

metaverse accelerates that expansion utilizing virtual reality (VR), augmented reality (AR), and artificial intelligence to create an immersive 3-D first person experience that puts the user "inside" a new pseudo-world.

We are moving from social media to social virtual reality without a plan for mitigating its ills.

But we are told by its proponents not to worry, that the full realization of the metaverse is still a long time off. That very well may be true, but that cannot be a reason to delay dealing with its challenges. Early metaverse services are a reality. Billions are being spent by the dominant digital platforms to further expand the capabilities of the metaverse. We the public—acting through our government— cannot stand idly by as the pseudo-world begins to redefine our real world.

When asked by a reporter what his company was doing "to ensure the problems of today's internet don't carry over into—or, worse, get amplified by—the metaverse," Mark Zuckerberg, Meta CEO and metaverse evangelist, responded, "We have some time to try to work some of the stuff out up front."

Yet, that statement is misleading because we don't have time to work out the emerging problems.

We must reverse the experience of digital pioneers charging ahead to exploit the capabilities of technology without considering the consequences only to act surprised about the adverse effects they created.

Gartner Research forecasts that by 2026—that's less than three years away—one quarter of the population will spend at least one hour per day in the metaverse. Even if the Gartner research is optimistic (as some other reports seem to indicate), the clock is ticking. The companies that hope to profit from the metaverse are charging ahead. The effects of the metaverse on individuals and the public interest will be determined by who uses the next few years better: those with private interests or those concerned about the public interest.

The evolution from social media to social virtual reality is upon us. We must reverse the experience of digital pioneers charging ahead to exploit the capabilities of technology without considering the consequences only to act surprised about the adverse effects they created. Now is the time to get in front of the coming transformation to assert the role of the public interest and societal norms…before it is once again too late.

An Existential Question

"Move fast and break things," the Silicon Valley mantra coined by Mark Zuckerberg in the early days of Facebook, has found a new application in the metaverse. To "move fast" is essential in the metaverse strategy—as it was in the original internet strategy—to define corporate behavior before the public fully understands the consequences. The "things" that are broken are not physical objects, but the societal and economic norms that have previously provided stability.

Both the public and policymakers were caught unprepared by the internet and online platforms, such as Facebook, YouTube, Twitter, Google, Amazon, and others. The "move fast" blitzkrieg of new products, services, and convenience allowed the companies to make their own behavioral rules. The profits generated by those self-serving rules then financed public relations and lobbying campaigns opposing the imposition of public interest-oriented regulation.

Whether the metaverse will be a replay of the companies' making their own rules is the internet's new existential question. We have learned from experience that adverse consequences result from self-

serving corporate decision-making. We have not, however, learned how to regulate in the "move fast and break things" world. The appearance of the metaverse has created both the incentive and the opportunity to reclaim the public interest to determine what we collectively want in our digital future.

Old Problems Expanded and New Problems Created

"The Metaverse will also render more acute many of the hard problems of digital existence today," Matthew Ball observed in The Metaverse: And How It Will Revolutionize Everything. Whether the metaverse's amplification of today's online problems is the force that finally galvanizes public policymakers to address the ongoing digital policy gauntlet remains to be seen. What is not in doubt, however, is how the metaverse will metastasize the problems of digital privacy, competition, and misinformation beyond our current experience.

Privacy – Today, online platforms combine user information such as location, interaction with other users, and online usage patterns into cohorts of users with similar characteristics. The metaverse will expand the tracking of users to include personal biometric data, and apply that information to individuals, not just groups. Biometric data, such as eye movement, reveals our emotions and can be used to influence behavior. And because metaverse avatars will have personal identities, user identification will move from grouping into cohorts to the specific identification and authentication of individual users.

Competition – Today, a handful of companies are gatekeepers that dominate the online world. These companies control vast amounts of the data necessary for the metaverse to operate. The companies' high margins in their current businesses allow them to extend their dominance, including through the acquisition of potential metaverse competitors.

Misinformation – Today, online technology has automated the distribution of untruths, hate, and propaganda. The metaverse will have the capability to bring such information to life by inserting each user into a world that measures their emotions and uses that information to manipulate behavior. Inventing a new world does not absolve those building the metaverse of the responsibility over abuse in the world they are creating.

Beyond how the metaverse expands and exacerbates such traditional digital abuses, it also expands the potential for other abuses.

Harassment – Social media today is a vehicle for harassment in words and images. When individuals "step in" to the metaverse they expose themselves through their virtual representation to new levels of physical, verbal, and sexual harassment.

Safety – Concerns about the safety of children on today's digital platforms are well documented. The metaverse will invite those same children—along with potential predators—into a virtual world with increased ability to manipulate their emotions.

Discrimination and Bias – The digital divide of haves and have nots has been a long-running challenge of the internet. Beyond current issues of economics and availability, early experiences with artificial intelligence (AI) have raised discrimination and bias concerns.15 With AI as the engine of the metaverse, such biases could move us from a digital divide to institutionalized biases based on the information from which the AI model is trained.

<u>Fraud</u> – Today's online world is built on advertising. The new business opportunity of the metaverse is real-time transactions involving everything from virtual real estate to virtual clothing. Accompanying these transactions is the opportunity for virtual world fraud.

<u>Larceny</u> – The ownership of virtual goods creates the opportunity for theft of those goods.

Will Privatized Governance Continue?

Thus far in the internet age, the dominant companies have privatized governance and made their own behavioral rules free of much effective governmental oversight. Too often, public policymakers' lack of technological understanding has been exploited to promote a fear that regulation will break the magic of the tech innovators.

As we consider the effects of a multi-decade lack of oversight of the activities of digital companies, it is imperative to reassert a role for public interest oversight of digital private interests. Such a prioritization becomes even more urgent as we watch the unsupervised creation of a new virtual world with unprecedented powers.

We may have been technologically naïve and surprised by the new world the digital revolution ushered in and, as a result, lulled into giving the digital companies free rein. But we have no such excuse this time.

Now is the moment to decide about the kind of digital world in which we want to live. The metaverse will—like the digital platforms that preceded it—deliver wonderous new capabilities. The development of such capabilities must be encouraged and expedited but not at the cost of trampling the rights of individuals and the public interest. The coming metaverse gives us the opportunity to both rectify the abuses of the early internet era while getting in front of the changes to come.

Metaverse Wonders and Woes

Mark Zuckerberg has described the metaverse as "an embodied internet that you are inside of rather than just looking at." Being immersed in an unreal world will bring with it both amazing new capabilities and frightening new threats.

Metaverse Wonders

Meta Platforms, Inc. (the renamed Facebook) has been the champion of promoting the metaverse and its wonders. Its advertising campaign to promote a benign explanation of the metaverse proclaims "The metaverse may be virtual, but the impact will be real."

One of the ads shows a medical student bending over a virtual patient with the quote "A surgeon will one day be able to practice virtually as many times as needed before laying her hands on a real patient."18 It is a message reinforced in print advertisements such as this:

Source: Meta, 2022.
https://about.meta.com/metaverse/impact/?utm_source=about.facebook.com&utm_medium=redirect

In another commercial, the camera pans across a lecture hall to promote the value of the metaverse to education. "One day, this lecture hall will be made of code," it promises. Switching to a scene from the Roman Forum, the ad explains, "These students aren't really back in 32 B.C.E., but they can still watch Mark Antony debate in ancient Rome."

Even grandma could benefit from the metaverse. In another ad, a grandmother and granddaughter are shown strolling the streets of another time and place as the voice-over explains, "Even though you've heard grandma's stories, one day you'll visit her past and experience her history."

How we work will also be changed by the metaverse. "Boeing wants to build its next airplane in the 'metaverse,'" Reuters reported. Farmers will utilize the metaverse to improve crop yields, a Meta commercial promises. A study commissioned by Nokia found companies are already reporting benefits from the deployment of metaverse capabilities for industrial applications.

Beyond its application in traditional businesses, the metaverse will create a whole new economy, just like the internet did. New companies, new jobs, and new job descriptions will come into being to build and manage the metaverse. One research group called it "tech's next trillion-dollar opportunity." With economic growth and wonderous new capabilities—what's there not to love about the metaverse?

More Powerful than a Lie Detector

The metaverse is a world of expanded surveillance by those offering the service. That this new surveillance is being developed by the same companies that have already trampled personal privacy should be of concern. When the world's leading neurologists assembled in Seattle in June 2022 for a Symposium on Eye Tracking Research and Applications, sponsors included Google and Reality Labs, a division of Meta Platforms. The companies that have set out to build the metaverse have taken an interest in neurology because of the insights it provides into human behavior. Poets say the eyes are

the window into a person's soul. Neurologists are less romantic. Neurological studies have found that eye movements can reveal our thought processes.

Thus far in internet history, digital platform companies have collected previously private information about each of us by tracking keystrokes, mouse clicks, or location coordinates. That all changes when consumers don virtual reality headsets to access the metaverse and thus open the door to the collection and manipulation of even more powerful biometric information.

Today, the metaverse requires a bulky headset over your eyes. Tomorrow it will be lightweight glasses and eventually contact lenses. These devices are designed to harness virtual reality (VR) and augmented reality (AR) to deliver users to the metaverse. Influencing the user's actions in the metaverse will be the devices' ability to read physical cues and turn them into data for AI algorithms. Eye movements, heart rate, facial expressions, and even perspiration will create new data points to be measured, then manipulated in the metaverse to be monetized in the real world.

The companies' interest in neurological research is, therefore, quite understandable. After all, these same companies relied on psychological research to design their current products. Using psychological studies of casino gambling behavior, social media companies copied techniques that kept people at slot machines. The goal was to similarly make the online experience as addictive as possible. Playing off human psychology to get users to stay online for as long as possible allowed the platform companies to both sell more advertisements and collect more information on each user.

Harnessing neurological patterns can be even more powerful. Research shows that understanding how to interpret eye movements creates data that can be used to manipulate behaviors. One study even demonstrated how eye-tracking can be exploited to influence the moral decisions people make.

Metaverse devices able to collect personal information from our bodily functions are a potent new tool for digital companies. Meta Platforms has already patented technology to build eye tracking and facial movement tracking into the equipment used to access the metaverse.29 All of this means that putting on metaverse gear will have more far-reaching and revealing results than hooking up to a lie detector.

This is a very detailed and interesting commentary report which covers extensive points. A quick summarisation follows.

Yesterday's tech flavor of the month—the metaverse—has been chased from the headlines by ChatGPT and other generative artificial intelligence (AI) models. The Wall Street Journal went so far as to proclaim, "The Metaverse is Quickly Turning Into the Meh-taverse."

Far from it. Every use of the term "metaverse" should be read as "AI-enabled metaverse." The metaverse is a creature of AI in that much of what happens in the metaverse is determined by AI algorithms. Just because the metaverse has disappeared from public consciousness does not mean it should disappear from public concern.

While our attention is focused elsewhere, the company formerly known as Facebook—now known as Meta Platforms—continues its multimillion-dollar advertising campaign to shape a good image for the metaverse. While, indeed, there will be many new and wonderful advantages it will create, the effort to establish a warm and fuzzy vision obscures the threat the metaverse holds to be the next generation of privacy-violating, competition-thwarting, and truth-killing platforms.

The metaverse (a term combining "meta," meaning "transcending," and "universe") creates a video game-like pseudo-world. This is no game, however, but personally identifiable avatars interacting with each other under the control of advanced AI systems. The internet platforms that we have experienced thus far have been an observational experience that principally harnessed text and video. The metaverse is an immersive experience in which real-world people, problems, and patterns come to life in an AI-defined and AI-driven world.

As the advertisements proclaim, the metaverse brings the promise of new tools for education, entertainment, medicine, and commerce. At the same time, it imports the problems associated with the current digital platforms, while creating a host of new issues. Since we have yet to successfully deal with the problems created by the current digital platforms, it is even more pressing to rectify the new genre of potential abuses that are arising.

We are told the metaverse is years away, giving us time to figure out how to deal with its ill effects while encouraging its positive features. Ignoring its obvious risks—or leaving them to the companies to resolve—as digital history has demonstrated, can only make those risks worse. Failure to develop meaningful policies now—on an international basis—will mean we did not learn the lesson of multiple decades of internet exploitation by a handful of companies, and how the companies write their own rules at the expense of the public interest.

The online challenges with which we wrestle today, such as privacy, competition, and misinformation, will be supercharged by the intrusive, immersive, individually identifiable, and manipulative nature of the metaverse. On top of this, the metaverse expands the problems inherent in unsupervised online communities such as harassment, bias, manipulation, and threats to personal safety and the safety of children.

The problems created by the digital platforms of today were, for the most part, a surprise. We cannot claim such innocence about the metaverse. The experience with social media is a warning about what happens when public interest expectations are not part of digital innovation, when "build it and be damned" is the rule. Policymakers need to come to grips with—and preferably get ahead of—the new technology with focus equal to those who are creating the new challenges.

The advertising campaign by Meta Platforms promises, "The metaverse may be virtual, but its impact will be real." That AI-driven reality is barreling down on us now. Now is the time to deal with the public interest issues the metaverse raises.

Read the whole interview here at:

https://www.brookings.edu/articles/ai-makes-rules-for-the-metaverse-even-more-important/.

From the Australia Rural and Regional News

Barley prices rise amid agricultural commodity volatility

ARR.News, 18 September 2023

The removal of tariffs on Australian barley by Chinese authorities has seen barley prices trend higher since the start of August, according to NAB's September Rural Commodities Wrap.

The NAB Rural Commodities Index (*i.e. based on the price and production data for 28 commodities and is weighted by their relative size in Australia's agricultural sector*) fell 1.6% in August and is now 30.7% lower compared to when Australian rural commodity prices peaked in June 2022.

The key drivers of the decline in the Index in August were cattle (down by 5.4% month-on-month), vegetables (down 6.4%) and lamb (down 11.2%).

In contrast, feed barley prices have increased to now be up to $340/tonne, compared with $294/tonne at the same time last month.

Sugar prices have moved back above $900/tonne, underpinned by strong global market conditions, with demand continuing to grow while exports from Thailand and India will be impacted by drought, with the latter banning exports to secure domestic supplies.

NAB Senior Economist, Gerard Burg, said while the Bureau of Meteorology (BoM) has not yet declared an El Nino event, its El Nino alert remains, and it anticipates it will develop in spring.

"This is likely to result in hotter and drier conditions across eastern and northern Australia, negatively impacting a range of key agricultural regions," Mr Burg said.

"Dry conditions due to the emerging El Nino have impacted cattle and trade lamb prices and are expected to substantially impact crop yields.

"Despite a marginal upward revision, the Australian Bureau of Agricultural and Resource Economics and Sciences' (ABARES) September forecasts still expect winter crop production to fall by almost 34% in 2023-24, down from record highs in 2022-23.

"Australian wheat prices continued to broadly track sideways in August, having settled at around $400/t since late 2022. Canola prices edged up above $700/t in mid-August, before dropping back below this level in early September."

Mr Burg said global dairy price trends remain divergent.

"The oversupply of raw milk in China has seen a rapid increase in milk powder production, contributing to the downward pressure in global prices, which are back to levels last seen in mid-2020," Mr Burg said.

"Weakness in export markets and strong domestic output is expected to weigh on farmgate prices, after experiencing historic highs in 2022-23."

The softening trend for the Australian Dollar (AUD) that started in mid-July continued across August and into early September, dropping below US64 cents, reflecting a stronger US dollar and weaker sentiment around China.

NAB now forecasts the AUD will end 2023 at US66c but trending higher across 2024.

The full NAB September Rural Commodities Wrap report is available at:

https://arr.news/2023/09/18/barley-prices-rise-amid-agricultural-commodity-volatility-nab/

https://business.nab.com.au/wp-content/uploads/2023/09/NAB-Rural-Commodities-Wrap-September-2023.pdf

Look up, look down and report koalas

Leanne Linard, Minister for Environment and Science (Qld), Media Release, 17 June 2023

Anew app is allowing members of the public to act as citizen scientists by reporting koala sightings and providing accurate location and population data.

Environment Minister Leanne Linard and Member for Springwood Mick de Brenni launched the app during a visit to the Daisy Hill Koala Centre.

The app is based on the highly successful QWildlife Crocodile Sighting App, which helps the Queensland Parks and Wildlife Service improve the management of crocodiles.

When members of the public spot a koala while enjoying our national parks, state forests and bushlands, or in our urban areas, they can simply upload the details and a photo to the QWildlife Koala Sighting App.

Koala sightings data from the app will provide a better understanding about where koalas live and how they use their environment, and will help support important koala research, conservation and management actions.

The Minister also announced $520,000 in grants for six projects that support long-term koala conservation in Southeast Queensland.

The projects include koala population monitoring, the use of artificial intelligence to help build a road safety monitoring network, thermal drone surveys and habitat connectivity.

Quotes attributable to the Minister for Environment and Science Leanne Linard:

"The koala is one of Australia's most iconic and much-loved species however, despite comprehensive protection strategies, koalas are listed as endangered in Queensland.

"The Palaszczuk Government is committed to protecting and conserving koala populations and their habitat, and the new QWildlife Koala Sighting App is proof of our dedication to the environment and all our magnificent native species.

"The app gives the public an opportunity to work with our Queensland Parks and Wildlife rangers and researchers by providing valuable information on where koalas are living.

"The 2023/24 State Budget also includes $17.3 million to extend and accelerate conservation of koalas in Southeast Queensland as part of our Southeast Queensland Koala Strategy 2020-2025.

"The strategy seeks to boost koala populations by increasing the area and level of protection given to koalas in the south-east corner, restoring koala habitat and mitigating threats they face.

"The Palaszczuk Government has also provided vital funding of $3 million this year to the Southeast Queensland Wildlife Network, which rehabilitates and returns koalas to the wild.

"The network includes the Australia Zoo Wildlife Hospital, the Currumbin Wildlife Hospital, the RSPCA Wildlife Hospital and the department's own Moggill Koala Rehabilitation Centre.

"I encourage Queenslanders to download the QWildlife Koala Sighting App and report sightings of koala populations in your local area."

Quotes attributable to Member for Springwood Mick de Brenni:

"Our community has always taken the commitment to protecting koala populations seriously, and we have always fought to protect them by expanding their habitat, introducing strong protections, as well as educating Queenslanders at our Daisy Hill Koala Centre.

"The koala is not just the official emblem of our great state, it's symbolic of the heritage of our local community, and a legacy that I will continue to defend for the benefit of future generations."

Quotes attributable to Peter Reyne, Consulting Manager, Software developer GP One:

"Our software developers enjoyed working on the rewarding project that would collect information and statistics about koala locations and health.

"The idea is to get better, more centralised reporting and information about koalas.

"The adoption and downloading of the app will increase sightings coming in from the public and wildlife rescue organisations and will contribute to saving the lives of our endangered koalas."

Quotes attributable to Professor Jun Zhou, Research leader, Griffith University:

"We are developing an AI-based monitoring facility to monitor the koalas' road crossing behaviours, so we can analyse how many koalas are crossing the road using underground pathways or the above-road crossings.

"This project will extend our innovative AI-powered koala monitoring system to cover wider areas of koala habitat in Southeast Queensland and engage 10 local councils and community groups to facilitate the installation and maintenance of the camera network.

"Previously, cameras have been set up to monitor the koala crossings, but the captured videos had to be manually checked to see whether the animals filmed using the crossings were koalas or other species.

"Now, with AI, this technology is powerful enough to recognise koalas generally, but identify which individual koalas are using the crossings."

Further details, including the QWildlife Koala Sighting App are available at:

https://arr.news/2023/06/19/look-up-look-down-and-report-koalas-linard/

From the Gulbali Institute of Agriculture, Water and Environment (CSU)

Helping fish to migrate and breed in the Lower Mekong Basin

Sustainable aquatic systems team

As hydropower development increases in the Lower Mekong Basin, there are concerns about the impacts on fisheries which provide significant socio-economic value to the basin population. AWP has partnered with the Mekong River Commission, GIZ and Charles Sturt University (CSU) to test methods to monitor how fish pass through dams.

The Lower Mekong Basin (LMB) is currently in the midst of a hydropower "boom", with multiple hydropower dams currently slated for the mainstream, and many more for its tributaries.

Hydropower growth will contribute to increasing energy supplies, but may disrupt river connectivity and have an impact on the ecological health and productivity of the LMB upon which many people support their livelihoods and income.

There is a specific concern for potential impacts on the LMB's fishery because of its immense socio-economic value.

The fishery has an annual first-sale worth of around $US17 billion, and supplies between 47% and 80% of the animal protein intake of the local people (48% for Lao PDR, 47% for Thailand, 80% for Cambodia and 59% for Vietnam). There is a pressing need to ensure that hydropower development, which is projected to improve the standard of living for Lower Mekong citizens, does not impact a primary source of protein and micronutrients.

The barrier effects of hydropower dams can inhibit some fish species from completing essential life stages by limiting access to refuge, feeding, breeding and nursery habitat. The operational aspects, such as "hydropeaking" of flows during peak power generation periods, can also significantly mess with the natural cycles of fish.

To try and better understand the impacts of hydropower, especially over the long-term, the Mekong River Commission (MRC) recently launched the piloting of the Joint Environment Monitoring (JEM) Programme for Mekong mainstream hydropower projects at two Mekong mainstream hydropower projects located at Xayaburi and in the Don Sahong area, in northern and southern Lao PDR, respectively.

The Australian Water Partnership (AWP) has partnered with the MRC, GIZ and Charles Sturt University (CSU) to test the MRC's pilot fish passage monitoring guidelines and methods.

This includes trialling various cutting-edge fish tracking technologies for potential use in the MRC's pilot study, and running training sessions on the use of these technologies for regional institutions. Most importantly, it also involves close collaboration with in-country partners from fisheries and energy line agencies. This has involved developing and implementing training activities so that in-country partners can implement the monitoring activities over the long term.

The project team has already successfully tested two different fish tracking technologies and built institutional capacity in regional organisations, such as the MRC and national research centres, in using the technologies.

The work has required close consultation with villagers in the region, engagement with lower Mekong countries, training activities for government staff with the aim of minimising the future impacts of hydropower on people in the LMB.

These outcomes will help optimise the adoption and implementation of fish passage monitoring guidelines, to benchmark long-term changes in fisheries resources arising from hydropower development.

Further details are available at:

https://waterpartnership.org.au/helping-fish-to-migrate-and-breed-in-the-lower-mekong-basin/

From CEDA

The green economy: Australia's opportunity

Kate Hardwick and Roger Swinbourne, May 2023.

The green transition is often approached from the angle of risk, focusing on the need to avoid climate change risk to our economy and avoid ecological catastrophe. What is often overlooked are the ways in which the green transition has been a driver of innovation, productivity and competitive advantage, writes Arup Advisory Services Lead Kate Hardwick and Principal Roger Swinbourne.

The green transition is often approached from the angle of risk, focusing on the need to avoid climate change risk to our economy and avoid ecological catastrophe. What is often overlooked are the ways in which the green transition has been a driver of innovation, productivity and competitive advantage.

Over the past few years, new green technologies, expertise and energy sources have rapidly emerged and, driven by the updated target to reach net zero, are set to become the new normal.

What we see before us is the emergence of a multitude of green activities and green jobs focused on one single goal: to develop an economic model that creates a virtuous relationship between economic productivity and environmental wellbeing. Long anticipated, it's an economy that meets ecological objectives while also fostering prosperity and social benefits.

The recently established National Net Zero Authority creates a timely opportunity for Australia to supercharge green economy discussions. These conversations have the potential to plot a pragmatic way forward for climate change adaptation, energy transition, emissions reduction and maintaining economic competitiveness, while providing clarity on Australia's workforce and investment opportunities.

As a resource and biodiversity-rich economy, Australia stands to gain significantly from the greening of its current economic drivers. For example, the country has the potential to be seen as a model for green extraction and green agriculture; a global hub for renewable energy and hydrogen generation; and to foster a generational step change in the stewardship of our forests, marine habitats and biodiversity. The demand for these resources, expertise and technologies is set to boom globally.

In the energy sector, providers are making a holistic transition from coal and gas by repurposing power generation assets into clean energy opportunities and upskilling regional workforces, with the help of organisations such as Arup.

In the construction sector, we are seeing sustainable construction practices on the rise, with property owners and developers increasingly reaching out for our expertise on carbon management and material reuse.

However, leadership from industry is not enough. We will also need strong support from government and policy alignment to create scalable change. To this end, several jurisdictions are taking up the charge.

In Queensland, a mandated climate-positive Brisbane 2032 Olympic and Paralympic Games will help accelerate the state's transition to a lower carbon economy and support industry transition.

In NSW, they'll now be factoring carbon into business cases at a rate of $123 per tonne, which will put the role of embodied carbon in project development under the microscope. This is both a

challenge and an opportunity to rethink the way NSW will deliver the $110 billion pipeline of projects, while creating green jobs and economic opportunities.

It is critical, however, that we have appropriate policies in place that encourage the private sector to move in the right direction, while also providing the safety net and transition mechanisms – such as retraining – needed for workers to move to other industries.

While the ideal of the green economy is clear, the way forward is less clear, and requires an alignment of government, the private sector, workers and communities to ensure the treatment is not worse than the cure.

This must also be backed by the right technical support from engineers, scientists, designers and other professionals to help facilitate discussions, define priorities and keep projects and programs accountable.

While the concept of a green economy isn't new, the opportunity and path forward for countries, including Australia, is still not clearly defined.

In many cases, reporting and classification tools (also known as taxonomies) are designed for defining, monitoring and reporting purposes. They do not provide rigorous quantification of the jobs and economic impact at stake, missing the economic potential the green economy represents.

Further information about this report is available at:

https://www.ceda.com.au/NewsAndResources/Opinion/Sustainability/The-green-economy-Australias-opportunity

https://www.arup.com/perspectives/publications/research/section/the-global-green-economy-capturing-the-opportunity

From the Productivity Commission

Governments falling short on closing the gap commitments

Australian governments do not appear to have grasped the nature and scale of change required to accelerate improvements in life outcomes for Aboriginal and Torres Strait Islander people under the National Agreement on Closing the Gap.

The Productivity Commission's first overarching review of the Agreement highlights the lack of meaningful progress in implementing the four key priority reforms set out by all governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations in 2020.

"This Agreement held – and continues to hold – significant promise. It takes a different approach: a partnership between government and peak Indigenous groups focused on lifting outcomes by changing the systems and structures that drive them. But so far we are seeing too much business-as-usual and too little real transformation," said Productivity Commission Chair Michael Brennan.

The report finds that, despite their commitment to do so, governments are not yet sharing power with Aboriginal and Torres Strait Islander people in a way that enables decisions to be made in genuine partnership. It shows that little effort has been made to reform government agencies or to strengthen the Aboriginal and Torres Strait Islander community-controlled sector.

"Consultation with Aboriginal and Torres Strait Islander people cannot be on solutions that are pre-determined – governments need to allow Aboriginal and Torres Strait Islander people to make decisions for themselves and their communities," said Commissioner Natalie Siegel-Brown.

Instead, governments have listed thousands of initiatives that are disconnected from each other and the ambitions of the Agreement, many of which represent a relabelling of existing practices.

Partly as a consequence of this, the Commission heard from the 200 groups they met with, including 121 Aboriginal and Torres Strait Islander organisations, that government action towards the Agreement is not being felt on the ground.

The report finds that, in particular, slow progress on Priority Reform 3 – requiring the reform of government itself – is impeding progress towards the other Priority Reforms in the Agreement.

"Priority Reform 3 of the Agreement makes it clear that to drive change government agencies need to change how they work with Aboriginal and Torres Strait Islander people. We are yet to identify a government organisation that has a clear vision for what transformation looks like and a strategy to achieve it," said Commissioner Romlie Mokak.

The report finds that much stronger accountability mechanisms are needed to achieve the priority reforms.

"Governments continue to make decisions that disregard or contradict the Agreement. Without better accountability mechanisms, we are unlikely to see the transformative changes governments have committed to," said Commissioner Mokak.

The Commission is requesting further information and feedback on its draft recommendations. Submissions and brief comments in response to this draft report are welcome by 6 October 2023. The Commission will also be meeting with Aboriginal and Torres Strait Islander communities and governments before providing the final report to the Joint Council on Closing the Gap by the end of 2023.

Further information and the full report are available at:

https://www.pc.gov.au/inquiries/current/closing-the-gap-review/draft#media-release

From the Business Insider Australia

After a failed rescue attempt, Australia euthanized 43 whales that were stranded on the beach for 2 days

Sinéad Baker, July 2023 (Business Insider)

- 43 pilot whales were euthanized after they were stranded on an Australian beach for two days.
- Rescuers had brought them back into the water, but they were stranded again.
- Officials described it as a difficult decision but the best one for the animals' welfare.

An image shows volunteers working to keep a pod of long-finned pilot whales alive near Cheynes Beach east of Albany, Australia July 26, 2023.

Source: https://www.insider.com/WA Department of Biodiversity, Conservation and Attractions via REUTERS

Wildlife officials in Australia euthanized 43 pilot whales that were stranded after attempts to move them into deeper waters failed.

The Parks and Wildlife Service of Western Australia said on Thursday that its officials decided, after veterinarians assessed the whales, that the most appropriate and humane course of action was to "euthanize the 43 remaining whales to avoid prolonging their suffering."

The whales were part of a larger group of almost 100 whales that were stranded at Cheynes Beach on Tuesday, the Parks and Wildlife Service said. Fifty-one perished overnight on Wednesday, according to reports.

Parks and Wildlife Service personnel and volunteers had tried to move the whales that were still alive back out into deeper waters on Wednesday, with the group sharing videos of people holding the animals in the sea as they were "in the water preparing to safely lead the 45 whales into deeper waters."

It said at the time that "staff and volunteers, with the assistance of small vessels and surf skis, will attempt to safely and gently move the animals into deeper waters, giving them the best chance of survival."

But in a later update, it said the whales had become re-stranded "further along the beach." It added that veterinarians would keep assessing the whales and "advise of the most appropriate course of action to ensure the most humane outcome for the whales."

The next update revealed the decision to end their lives.

"It was a difficult decision for all involved however the welfare of the whales had to take precedence," the Parks and Wildlife Service said.

Tractors later removed the bodies, and volunteers who tried to save them struggled to leave, The Guardian reported.

Wildlife researcher Vanessa Parotta told CNN that it's unclear why the whales were stranded.

"It could be that they are trying to avoid a predator, like a killer whale," she said.

Parotta added that they could also have been following one of the pod members who was lost as they are "very social and dynamic with strong bonds with others."

Peter Hartley, from the Australian government's Department of Biodiversity, Conservation and Attractions, told reporters that the decision was "one of the hardest" in his 34 years working in wildlife management, CNN reported.

"We know that whale stranding is a natural phenomenon. But we gave it a good go, spending the whole day in the water to give them to best opportunity," he said.

Earlier this month a pod of 55 pilot whales died after a mass stranding on a beach in Scotland. A marine life charity said it may have happened after they tried to help a female suffering complication while giving birth.

Further details are available at:

https://www.insider.com/australia-euthanized-43-whales-stranded-after-rescue-effort-stranded-again-2023-7

THE CONVERSATION

What is a flash flood? A civil engineer explains

Janey Camp, July 2023

Flash flooding is a specific type of flooding that occurs in a short time frame after a precipitation event – generally less than six hours. It often is caused by heavy or excessive rainfall and happens in areas near rivers or lakes, but it also can happen in places with no water bodies nearby.

Flash floods happen in both rural and urban areas, as in July 2023 in New York state's Hudson Valley. When more rainfall lands in an area than the ground can absorb, or it falls in areas with a lot of impervious surfaces like concrete and asphalt that prevent the ground from absorbing the precipitation, the water has few places to go and can rise very quickly.

If an area has had recent rainfall, the soil may be saturated to capacity and unable to absorb any more water. Flooding can also occur after a drought, when soil is too dry and hardened to absorb the precipitation.

Flash floods are common in desert landscapes after heavy rainfalls and in areas with shallow soil depths above solid bedrock that limits the soil's ability to absorb rain.

Since water runs downhill, rainfall will seek the lowest point in a potential pathway. In urban areas, that's often streets, parking lots and basements in low-lying zones. In rural areas with steep terrain, such as Appalachia, flash flooding can turn creeks and rivers into raging torrents.

Flash floods often catch people by surprise, even though weather forecasters and emergency personnel try to warn and prepare communities. These events can wash away cars and even move buildings off their foundations.

The best way to stay safe in a flash flood is to be aware of the danger and be ready to respond. Low-lying areas are at risk of flooding, whether it happens slowly or quickly and whether it's an urban or rural setting.

It's critical to know where to get up-to-date weather information for your area. And if you're outdoors and encounter flooded spots, such as water-covered roadways, it is always safer to wait for the water to recede or turn back and find a safer route.

Don't attempt to cross it. Flood waters can be much faster and stronger than they appear – and therefore more dangerous.

Building for a wetter future

Engineers design stormwater control systems to limit the damage that rainfall can do. Culverts transfer water and help control where it flows, often directing it underneath roads and railways so that people and goods can continue to move safely. Stormwater containment ponds and detention basins hold water for release at a later time after flooding has ceased.

Many cities also are using green infrastructure systems, such as rain gardens, green roofs and permeable pavement, to reduce flash flooding. Restoring wetlands along rivers and streams helps mitigate flooding as well.

Often the design standards and rules that we use to engineer these features are based on historic rainfall data for the location where we're working. Engineers use that information to calculate how large a culvert, pond or other structure might need to be. We always build in some excess capacity to handle unusually large floods.

Now, however, many parts of the U.S. are experiencing more intense storm events that drop significant amounts of rainfall on an area in a very short time period. On July 9, 2023, West Point, New York, received more than 7.5 inches of rain in 6 hours – a scale that statistically would be expected to occur there once in 1,000 years.

With climate change, we expect this trend to continue, which means that planners and engineers will need to reconsider how to design and manage infrastructure in the future. But it's hard to predict how frequent or intense future storm events will be at a given location. And while it's extremely likely that there will be more intense storm events based upon climate projections, designing and building for the worst-case situation is not cost effective when there are other competing demands for funding.

Right now, engineers, hydrologists and others are working to understand how best to plan for the future, including modeling flood events and development trends, so that we can help communities make themselves more resilient. That will require more, updated data and design standards that better adapt to anticipated future conditions.

More on this story is available at:

https://theconversation.com/what-is-a-flash-flood-a-civil-engineer-explains-187961

CONFERENCES and STUDY OPPORTUNITIES

ANZRSAI 2023 Conference

The ANZRSAI 46th Annual Conference will be held in RMIT University, Melbourne from 26-28 November 2023. Further details are available at the ANZRSAI website.

2023 RSA Winter Conference

The Regional Studies Association Winter Conference 2023 offers a timely opportunity to discuss and debate important issues, to rethink the key theories, concepts and methods, and to explore futures for regions and cities. The organisers seek papers and special sessions that critically evaluate any aspect of regions in transition, including the following topics:

- Resilient Cross Border Regions - Multidisciplinary Perspectives
- Civic Space and Secure Communities
- Green Transition and Regional Labour Market Mismatches

The focus of this year conference is switching to the impact of the changes to how people, work and human activity is taking place in, between and across regions. Discussion is also centering on planning the future design, form and function of regions, cities and rural areas.

Date & Location: London, UK, 9-10 Nov 2023

More details are at https://www.regionalstudies.org/events/2023-winter-conference/

Regional Studies Blog

Professor Paul Dalziel, Executive Officer, ANZRSAI has recommended the Regional Studies Association Blog, which has been running since 2010. Each post is an easy-to-read piece between 500 and 750 words on a topical issue in regional studies.

The link is https://www.regionalstudies.org/category_news/rsa-blog/. A recent contribution that is relevant to ANZRSAI as we plan for the new post-CoVID normal is the following item: Moving towards a new conference model? The rocky road to virtual conferencing, by Daniela Carl and Alex Holmes. Ashleigh Weeden talks about the 'right to be rural' during the CoVID epidemic in a contribution entitled COVID-19 and Cottage Country: Exploring place, power, and policy in the 'right to be rural'.

CURRENT RESEARCH ABSTRACTS

ANZRSAI Abstract Alerts

To contribute to ANZRSAI Abstract Alerts email the editors a title, abstract, and citation.

Yogi.Vidyattama
Yogi.Vidyattama@canberra.edu.au

We would like to draw your attention to the abstracts from Australasian Journal of Regional Studies and a YouTube Channel 'Professor Joseph Drew's World of Local Government'

For the latter it can be found in:
https://www.youtube.com/channel/UCXn5CI2x5h1cgEsaT8nLK9g/videos

The whole purpose of the channel is to help local government help other people. So, please consider subscribing and sending the link on to colleagues.

In a few weeks' time Prof. Joseph Drew will start uploading videos by some of his colleagues from around the world which will provide people with new global insights into what can be done to make LG even stronger.

Assessing optimization techniques for improving water quality model.

Md Galal Uddin, Stephen Nash, Azizur Rahman & Agnieszka I. Olbert

Abstract: In order to keep the "good" status of coastal water quality, it is essential to monitor and assess frequently. The Water quality index (WQI) model is one of the most widely used techniques for the assessment of water quality. It consists of five components, with the indicator selection technique being one of the more crucial components. Several studies conducted recently have shown that the use of the existing techniques results in a significant amount of uncertainty being produced in the final assessment due to the inappropriate indicator selection. The present study carried out a comprehensive assessment of various features selection (FS) techniques for selecting crucial coastal water quality indicators in order to develop an efficient WQI model. This study aims to analyse the effects of eighteen different FS techniques, including (i) nine filter methods, (ii) two wrapper methods, and (iii) seven embedded methods for the comparison of model performance of the WQI. In total, fifteen combinations (subsets) of water quality indicators were constructed, and WQI values were calculated for each combination using the improvement methodology for coastal water quality. The WQI model's performance was tested using nine machine-learning algorithms, which validated the model's performance using various metrics. The results indicated that the tree-based random forest algorithm could be effective for selecting crucial water quality indicators in terms of assessing coastal water. Deep neural network algorithm showed better performance for predicting coastal water quality more accurately incorporating the subset of the random forest.

Subsurface fertilization boosts crop yields and lowers greenhouse gas emissions: A global meta-analysis

Saiful Islam Bhuiyan, Azizur Rahman, Isac Loladze, Shumon Das & Paul J. Kim

Abstract: The subsurface application (SA) of nitrogenous fertilizers is a potential solution to mitigate climate change and improve food security. However, the impacts of SA technology on greenhouse gas (GHG) emissions and agronomic yield are usually evaluated separately and their results are inconsistent. To address this gap, we conducted a meta-analysis synthesizing 40 peer-reviewed studies on the effects of SA technology on GHG and ammonia (NH_3) emissions, nitrogen uptake (NU), crop yield,

and soil residual NO 3-N in rice paddies and upland cropping system. Compared to the surface application of N, SA technology significantly increased rice yields by 32 % and crop yield in upland systems by 62 %. The largest SA-induced increases in crop yield were found at low N input rates (<100 kg Nha −1) in rice paddies and medium N input rates (100–200 kg Nha −1) in upland systems, suggesting that soil moisture is a key factor determining the efficiency of SA technology. SA treatments increased yields by more at reduced fertilizer rates (~30 % less N), a shallow depth (<10 cm), and with urea in both cropping systems than at the full (recommended) N rate, a deeper depth (10–20 cm), and with ammonical fertilizer. SA treatments significantly increased NU in rice paddies (34 %) and upland systems (18 %), and NO 3-N (40 %) in paddyland; however, NO 3-N decreased (28 %) in upland conditions. Ammonia mitigation was greater in paddyland than in upland conditions. SA technology decreased the carbon footprint (CF) in paddyland by 29 % and upland systems by 36 %, and overall by 33 %. Compared with broadcasting, SA significantly reduced CH 4 emissions by 16 %, N 2O emissions by 30 %, and global warming potential (GWP) by 10 % in paddy cultivation. Given SA increased grain yield and NU while reducing NH 3, CF, and GWP, this practice provides dual benefits – mitigating climate change and ensuring food security.

Resilience and economic structure: The case of the Chilean regions during the Asian crises and the Great Recession of 2008

Cristian Delgado-Bello, Andrés Maroto Sáchez, Miguel Atienza Ubeda

Abstract: This paper analyses the effects of the sectoral structure on the economic resilience of Chilean regions during the shocks of the 1998 Asian and 2008 financial crises by employing cycle dissection, phase-differentiated spatially extended shift-share analysis, and regional analysis indices. Regions with more diversified structures exhibited better performance during the crises. Certain service sectors moderated the impacts of the crises in the resistance phases, and in turn, were drivers during the recovery phases. Remarkably, agriculture slowed the recovery of the southern regions. Some of these results were induced by the high demographic and economic concentration in the metropolitan region of Santiago.

Regional Studies
Vol. 57, Issue 6, 2023

Place-based industrial strategy and economic trajectory: advancing agency-based approaches

Andrew Beer, Tom Barnes & Sandy Horne

Abstract: Agency-based approaches represent a fundamental advance in how researchers and policymakers can address questions of place-based industrial strategy, including issues of governance, leadership, new technology and regional assets. However, these approaches can be advanced further by recognizing the centrality of discourse in regional change. This paper does this by synthesizing two conceptual frameworks: Grillitsch and Sotarauta's trinity of change agency and Moulaert et al.'s framework of Agency Structure Institutions Discourse (ASID). Deploying two Australian case studies to shed light on drivers of change at the local scale, this paper demonstrates that discourse is a necessary component of transformative regional processes. Furthermore, it contends that successful

transformation is presupposed by the extent to which local discourse overlaps with local opportunity spaces and forms of agency. Successful place-based industrial strategies need to mobilize these multiple elements of regional change in order to maximize their potential for success.

Towards a problem-oriented regional industrial policy: possibilities for public intervention in framing, valuation and market formation

Kieron Flanagan, Elvira Uyarra & Iris Wanzenböck

Abstract: Thinking about regional industrial policies remains focused on the supply of new knowledge, and recently also on grand challenges and missions, but takes problems, demand and market formation largely for granted. In this paper we build on policy sciences, sociology of markets and valuation approaches to explore the place-based roles of agency, institutions, networks and values in discursive processes of problem-framing and market creation. We identify a number of choices and trade-offs in the processes, practices and constitutive elements of market creation that in turn suggest new possibilities for more societal problem-oriented regional industrial policies.

Towards a regional approach for skills policy

Carlo Corradini, David Morris & Enrico Vanino

Abstract: Focusing on the UK as a case study, this paper offers a critical discussion of current approaches for skills policy in the context of the increasing spatial imbalances that characterize advanced economies. We outline an integrated framework for regional skills policy, allowing a shift from ex-post interventions on industry-specific skills deficiencies towards a place-based perspective reflecting the dynamic evolution of skills requirements. Building on a systemic institutional approach, the proposed framework identifies synergies across skills and regional development policies connecting them through the role of shared skills in providing horizontal platforms, enhancing combinatorial opportunities across sectors for resilient structural change.

Knowledge Spillover Effects and Employment Productivity in the Innovative Startups: Evidence from Italy

Gustavo Barboza, Alessandro Capocchi & Sandra Trejos

Abstract: This paper analyzes the determinants and effects of technological catch-up and knowledge spillover effects on employment productivity in the Innovation Startup Segment in Italy using a sample of 260 Innovative Startup companies. Estimates indicate that regional specialization provides the highest potential for employment productivity gains, while higher levels of competition and higher regional diversity suppress the prospects for knowledge spillover effects to develop. Particularly, the analysis using the comprehensive sample of firms indicates the presence of forces leading to output per worker convergence at the national level, i.e., technological catch-up is present at the per-worker level; yet, the overall value of production convergence across regions is not present. We also detect the presence of Spatial

Dependency in relation to the neighboring firms. That is, there is support for weak convergence across regions in favor of the Marshallian hypotheses. However, sectorial estimations for the Services, Information Technology, and Manufacturing sector indicate the presence of large differences in terms of technological catch-up effects.

Religion and Economic Growth: Evidence from U.S. Counties

Luke Petach & Aiden Powell

Abstract: This paper examines the impact of religious participation on regional economic growth. Using data on GDP growth for United States counties from the Bureau of Economic Analysis (BEA) Regional Economic Accounts and data on county-level religious participation from the Association of Religion Data Archives (ARDA), this paper estimates the impact of religiosity on growth using two-way fixed-effects Barro regressions for the period 2000 to 2020. In our preferred specification, a ten percentage-point increase in the county religious adherent share reduces the 10-year compound annual growth rate of per-capita GDP by 0.14 percentage points (a 19% reduction relative to the sample mean). A battery of sensitivity checks suggests our results are unlikely to be driven by omitted variable bias: both the Oster (2019) adjustment for selection on unobservables and Kinky Least Squares (KLS) regression estimates indicate that OLS understates the negative impact of religion on regional economic growth. We argue that the negative impact of religion on regional economic growth is consistent with previous findings of increased business survival and increased small business activity in a framework where the social capital generated from religious participation results in inefficiently low regional dynamism.

Tax Revenues and State Expenditures in the US with Balanced-Budget Requirements Using Panel VAR

Zuyi Wang & Man-Keun Kim

Abstract: We examine Granger causality between state expenditures and tax revenues in the US with Balanced-Budget Requirements (BBRs). BBRs are statutory or constitutional rules to prevent states from spending more than tax revenues. Policymakers may adjust taxes, change expenditures, or do both to achieve BBRs. Panel VAR is introduced to address endogenous interactions between state expenditures and tax revenues. Panel VAR provides a unifying empirical framework and identification strategy which might be lacking in the previous literature. The empirical result supports that tax revenues Granger cause state expenditures. As BBRs are about planning, tax revenues make states plan on how to spend them. Considering BBRs with the empirical results from this study, states expenditures should be adjusted close to (projected) tax revenues. Additionally, this study finds that the business cycle has counter-intuitive effects. Tax revenues did not change when the US experienced the recession during 2008-2009 with the increases in intergovernmental transfer from the federal. State expenditures also increased during the recession.

Regional Science Policy and Practice
Volume 15, Issue 6, 2023

The asymmetric effect of fiscal policy on private consumption and private investment over a business cycle: Evidence from Sub-Saharan African countries

Gabriel Temesgen Woldu

Abstract: This study examines the response of private consumption and private investment to

an exogenous shock of fiscal policy and estimates the size of fiscal multipliers during periods of economic slacks and positive output gap. Panel vector autoregressive (VAR) estimation technique is performed on a sample of 18 Sub-Saharan African (SSA) countries for the period 2000–2018. The study finds that the output's fiscal impact multiplier is larger during contractions than during expansion. Furthermore, in contractions, the fiscal multipliers are 0.06% for private consumption and 0.6% for private investment. Meanwhile, in expansions, they are −0.03 for private consumption and −0.04% for private investment. The findings of this study are consistent with the results of previous studies predicting Keynesian views. Thus, to earn sizable, persistent, and long-lasting effects through fiscal policy, this study recommends that spending programs should account for countercyclical fiscal policy and consider consumption and investment decisions before implementation. Moreover, the fiscal spending interventions tend to target rule-of-thumb households and financially constrained firms.

Exploring the geographical variations and influencing factors of poverty in Nigeria

Richard Adeleke, Opeyemi Alabede, Michael Joel, Emmanuel Ashibuogwu

Abstract: The high rate of poverty in Nigeria is alarming with over 105 million people living in poverty. Despite the significant proportion of the population living in poverty in the country and the obvious spatial variations, there is scant evidence regarding the spatial factors driving the variations, leading to ineffectual policies for tackling the problem. Thus, the aim of this study is to analyze the geographical distribution of poverty and the predictors across Nigeria with a view to providing spatially explicit policies to curb the high poverty rates. The data were obtained from the United Nations Development Program Report and the National Bureau of Statistics. Spatial statistics of global and local Moran's indexes, ordinary least squares regression, and the geographically weighted regression techniques were adopted for the data analysis. Noticeable geographical variations in poverty rates in the country were observed, with high clusters in northern Nigeria. Moreover, the predictors of poverty differed significantly across the country, following socioeconomic pathways and location. While the illiteracy rate and location (distance to the coast) were predictors of poverty in northern Nigeria, unemployment was more of a predictor in southern Nigeria. The study recommends spatially explicit policies to curb poverty in the country.

Multi-stakeholder involvement in urban market infrastructure renewals in the Aboabo and Central markets of the Tamale Metropolitan District in Ghana: An application of the stakeholder theory

Yakubu A. Zakaria, Mary Asumpta Agamba, Mordze-Ekpampo Ibrahim Musah

Abstract: The renewal of Ghana's urban markets is complicated by sociocultural, economic, and political factors, as in many other sub-Saharan African nations. In Ghana, in particular, the nature of urban market infrastructure renewal (UMIR) projects have been attributed to top-down management and delivery in most developing countries. This study adopts the stakeholder theory as a lens to understand the multi-stakeholder involvement in the urban market's renewal process and the implications for sustainable urban market development in Ghana, using Tamale Metropolis as a case study. Interview guides were used, and data were collected from 23 market operators and representatives of relevant stakeholders responsible for urban

market infrastructure renewals. According to the article, most traders claimed that the market renewal process did not accept input from identifiable groups and that, where information was requested, it was primarily led by experts. The study recommends that metropolitan/municipal/district assemblies or local governments in developing nations provide their physical planning departments with the necessary financial resources throughout the urban market infrastructure renewal process to guarantee the outputs (i.e., engagement of stakeholders). Additionally, urban market infrastructure renewal interventions and policies should positively influence the development of state institutions. This is due to the co-evolution of society and the economy, which should not be seen in isolation. The bottom-up policy should consider the normative codes and the setting in which people live and work. The top-down policy should assist evolving institutions, but it should also be a continuous process.

Papers in Regional Science
Volume 102, Issue 4 (August 2023)

Place-based subsidies and employment growth in rural America: Evidence from the broadband initiatives programme

Anil Rupasingha, John Pender, Ryan Williams, Joshua Goldstein & Devika Nair

Abstract: This paper studies the labour market effects of the Broadband Initiatives Program (BIP), a programme authorized by the American Recovery and Reinvestment Act of 2009 to promote broadband deployment, mainly in rural areas. The BIP is one of the largest USDA broadband programmes implemented to date, providing more than $3.4 billion in grants and loans in FY 2010. We investigate the impacts of BIP investments on employment outcomes in BIP-recipient Census tracts compared to similar tracts outside of BIP project service areas between the inception of the programme in 2010 and 2019. We use a quasi-experimental research design that combines difference-in-difference regression with propensity score matching estimation to identify the causal effect of the BIP investments on employment outcomes. We find that the BIP investments had a positive overall effect on employment growth that increased over time. The subsidized investments had a greater effect on employment in startups than in incumbent businesses, in the goods-producing sector and the information and communications technology sector than other sectors, and a greater effect in micropolitan census tracts than tracts located in metropolitan areas or in small town and remote rural locations.

Mental health assimilation of rural–urban migrants in developing countries: Evidence from Indonesia's four cities

Rus'an Nasrudin & Budy P. Resosudarmo

Abstract: This study investigates the mental health consequences of rural–urban migrants in Indonesia. We use the migrant economic assimilation model applied to our individual longitudinal data specifically designed to observe migrants' performance. Compared with urban non-migrants, this study finds that migrants' mental health conditions are persistently lower. Moreover, their mental health gap has worsened over the years since migration. Along with this pattern, we also found that migrants' earnings are persistently higher than those of urban non-migrants, with

a decline in social support. This study is expected to enrich the literature on the assimilation of internal labour migration in developing countries.

Regional development trap in Turkey: Can relatedness find a way out?

İbrahim Tuğrul Çınar

Abstract: This study investigates the relationship between related and unrelated variety and regional development traps in 26 NUTS 2 regions across Turkey from 2014 to 2021. We propose two unique measures, DT1 and DT2, for these traps based on deviations from EU and emerging market nations. Our findings suggest a notable negative correlation between related variety and DT1, implying that increasing related variety could potentially mitigate the risk of falling into development traps. Furthermore, DT1 appeared to be more reliable than DT2 in accurately representing the risk of regional development traps, particularly in countries experiencing high growth deviations, like Turkey.

Australasian Journal of Regional Studies
Vol. 28, No. 1

THE VALUE OF SPECIALIST ACADEMIC JOURNALS AND THEIR ADAPTION INTO A CHANGED ENVIRONMENT

MIKE HEFFERAN, BRUCE WILSON

Abstract: This short paper is presented by the retiring editors of the Australasian Journal of Regional Studies (AJRS). Its objective is to recognise the continued importance of such specialist, academic publications but, at the same time, to identify a number of existential threats to their ongoing viability. Based on the authors' experience, the paper suggests some realignment and strategies seen as essential if such journals are to remain important and relevant in a demonstrably different environment.

GEOGRAPHIC EQUITY IN VOCATIONAL EDUCATION AND TRAINING MARKETS: INTENTIONAL FAILURE OR BENIGN NEGLECT?

DON ZOELLNER

Abstract: This article explores outcomes resulting from three decades of national competition and new public management policies favouring increased user choice in vocational education and training markets. Large data sets describing system-wide numbers of enrolments, the number of enrolments in the top 20 training packages, the various fields of education, level of relative remoteness/access to services, Indigenous status and level of relative socio-economic disadvantage are interrogated. If the introduction of contestable markets has delivered the anticipated benefits in access, equity and choice, it would be expected that a larger number of students from each equity group and region would show improvements in the measures described. Unfortunately, detailed results from three states identify an inability of the marketised national training system to produce a nation of lifelong learners who experience equitable access by exercising a wide variety of choices as originally anticipated; calling into question 30 years of bi-partisan commitment to vocational education and training reform.

CUMULATIVE CAUSATION REVISITED IN THE CONTEXT OF CONTEMPORARY SOUTHEAST QUEENSLAND ECONOMIC REGIONAL DEVELOPMENT: CONGRUENCE OR DIVERGENCE?

ANDREW FERN, MICHAEL HEFFERAN, OLAV MUURLINK

Abstract: The Swedish economist, Gunnar Myrdal, first postulated his Cumulative Causation Theory (CCT) in the mid-1950s. It presented a multi-cause explanation for differential growth and regional development patterns. Within any such region, it predicted the likely emergence of one activity node that would dominate the long-term economic, political and community character of the entire area. In the intervening period, the theory has been widely adopted as a reasonable explanation of growth and development patterns across many western countries. However, given the scale and compounding nature of contemporary change, it is reasonable to reconsider its current relevance and impact. This paper forms part of a wider, continuing study into the development of Australian regions and businesses within rapidly changing environments. That reflects on both Cumulative Causation Theory (CCT) and on the appropriate role of government in such matters into the future. The paper draws on examples from sub-regions within South East Queensland. Although these sub-regions are diverse in physical characteristics and economic structures, this paper observes that key elements of CCT still resonate. It is hoped that this research will assist government in the formation of better targeted regional support into the future.

EVALUATION OF A NEW SIMPLIFIED POPULATION PROJECTION MODEL: A CASE STUDY OF LOCAL GOVERNMENT AREA PROJECTIONS IN TASMANIA

TOM WILSON, IRINA GROSSMAN

Abstract: Preparing local area population projections with state-of-the-art demographic models can be a challenging, time-consuming and costly task. Alternative simpler models can produce projections quickly and easily, but at the cost of less output detail, less flexibility in creating scenarios, and sometimes lower accuracy. This paper presents an evaluation of a new modelling approach which blends the conceptual sophistication of state-of-the-art cohort-component models with the low data requirements of simple models. A key feature is that no locally-specific fertility, mortality, or migration input data is necessary. The new model is tested by producing 'projections' of local government area populations by age and sex in Tasmania over recent periods, with the results then compared to actual populations. The model is shown to produce reasonably accurate projections, and out-perform a simple benchmark model. The strengths and weaknesses of the new approach are discussed.

MANAGING EXOGENOUS AND ENDOGENOUS RISKS IN AUSTRALIA'S AGRICULTURAL SUPPLY CHAINS

DELWAR AKBAR, TRANG THI THUY NGUYEN, AZAD RAHMAN, JOHN ROLFE, SUSAN KINNEAR, SURYA BHATTARAI

Abstract: Previous research suggests that collaboration among supply chain actors can help mitigate uncertainties and risks. However, little attention has been paid to risks which occur within the chain collaboration itself. This study examines how supply chain actors' agency contributes to effective risk management in agricultural supply chain collaboration (ASCC). Data were obtained from a multi-stakeholder workshop discussion focused on ASCC in regional Australia. An analysis of the stakeholders' positions suggests that internal agency (single chain member's autonomy), collaborative agency (shared goals and interests), and integral agency (connection with internal and external chain entities) performed by chain actors are critical to ensure that the supply chain's risk management plans are put into action. Implications for managing collaboration risks associated with each form of the agency are identified, both for supply chains in general as well as for agricultural supply chains in particular.

REGIONAL EMPLOYMENT RESILIENCE CAPACITY DURING AUSTRALIA'S EARLY COVID-19 PUBLIC HEALTH

RESPONSE: AN ANALYSIS OF THE PAYROLL JOBS INDEX DATA SERIES

SCOTT BAUM, WILLIAM MITCHELL

Abstract: The COVID-19 pandemic has had significant impacts on regional economies and, in particular, has been reflected in the ability of some regions to perform better in the face of an economic downturn than others. Set in the context of regional economic resilience and resistance, this paper presents an exploratory analysis of the impact of a national COVID-related shut-down in Australia on employment resilience across regions. Using data on the changes in payroll jobs, the paper identifies clusters of areas that can be differentiated according to their resilience during this period. The paper explores a range of possible determinants of regional resilience differences and suggests an agenda for a more extensive research endeavour.

ABOUT ANZRSAI

ANZRSAI Council Notes

Council has planned for the 2023 conference in Melbourne at RMIT University and improving access to and ranking of AJRS and the website. Conference participants gain access to support, encouragement, and relevant experience. AJRS offers an opportunity for publication. Council acknowledges Tony O'Malley's contributions to ANZRSAI and proposes his name as a lifetime member of ANZRSAI.

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Contact details:
Paul Dalziel,
Executive Officer, ANZRSAI
PO Box 236, Darling Heights QLD 4350

Email: anzrsai@anzrsai.org
Website: www.anzrsai.org

Facebook: https://www.facebook.com/anzrsai