

Optimizing Natural Resource Value-Added through Creative Human Capital Empowerment in the Regional Digital Economy Ecosystem

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Abstract

The world economy is changing, and this research examines how to maximize profits from a place's natural resources. It does this by building the skills of inventive people in the area's digital world. Essentially, it's about how combining digital tools with people's imagination can turn basic materials into things that are actually in demand and worth a lot of money. After a thorough review of past research, the report shows that a combination of government plans to process materials using digital means and increasing the skills of the people who live in the area is the most important way to establish growth for the region that's both lasting and benefits everyone. The creative economy isn't just something to help the economy; it's the main thing that will allow a region to rely less on selling off raw materials and more on new ideas. The findings offer guidance to those in charge of areas, showing them how to build an economic development plan that considers future resource management and strengthens the digital market.

Keywords: Added Value of Natural Resources, Creative Human Resources, Digital Economy, Regional Economic Growth, Downstreaming.

1. INTRODUCTION

The world is changing rapidly thanks to technology, and areas find themselves with a tough balancing act. They're reliant on basic materials, yet also have to be transformed into digital spaces. Often, areas don't do well because they aren't turning their natural wealth into something that will continue to benefit them economically. And now, the creative

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economy isn't just something that helps...it's a whole new way of doing things, connecting what comes from the ground with what people can do. Mellander and Florida (2021) point out that being creative remains the main engine of growth as we go digital, and that how well an area does now rests largely on how many creative, innovative thinkers it has.

The idea of a creative economy has evolved from being about beauty alone to a deliberate strategy for lasting progress. In fact, after the pandemic, the creative economy bounced back best of all and generated considerable revenue for countries, even when we were all restricted in where we could go (Siagian & Cahyono, 2021). Using ingenuity to derive value from ideas is now a good way to break the "resource curse"—when a province is rich in natural resources but its people aren't as well off as they should be (Septiadi et al., 2021). This means moving from just taking things from the earth to a knowledge economy, and managing those natural resources with a focus on being green and long-lasting (Ghobakhloo et al., 2021).

The fourth Industrial Revolution has completely altered how we create value by incorporating digital technology. E-commerce, social media, and apps mean local talent can reach international customers without being limited by location (Sari & Widodo, 2022). However, a major problem for areas is that people lack the skills to use these digital tools effectively. Yu et al. (2021) suggest that digital transformation can compensate for a lack of innovation in companies that rely on natural resources by enabling them to collaborate and innovate jointly. So, building people's abilities through education for all and empowering communities are vital to making villages and areas more financially competitive (Rahman & Hakim, 2020).

In Indonesia, we're seeing this in the shift away from older industries toward more valuable, technology-driven products. The government is actively encouraging "downstreaming" creative ventures—ensuring that natural resources aren't just shipped away in their raw state but are instead enhanced through digital innovation. This combination is essential because a robust digital economy requires government support to strengthen an area's economy by improving the structure of its industries (Sheng et al., 2023). Ultimately, getting the most value from natural resources means a set of policies that link resource stewardship with digital competitiveness.

Given all this, this research will examine how to enhance the value of natural resources by improving the skills of creative people in an area's digital economy. Most previous research has treated the digital economy and natural resources as separate entities, but this study seeks to integrate them into a single strategic unit. The results should add to what we know about how regional economies work and provide practical help to

those in government creating plans to make areas more competitive and sustainable in the digital age.

2. LITERATURE REVIEW.

The creative economy isn't just about art anymore; it's now a central force in how value is created worldwide. In our digital age, being creative isn't just a matter of people; it's a vital economic advantage that turns basic materials into something far more valuable simply by applying ideas and securing intellectual property (Bauwens et al., 2022). And in the creative economy, how much something is worth isn't really about owning buildings and equipment, it's about people's power to think in new ways and improve on what's available. As information technology has advanced, the amount of intellectual capital a region has will determine whether it remains stuck selling raw materials or moves towards a knowledge-based economy (Cheng et al., 2021).

The "resource curse" – the way having lots of natural resources can actually hold back a region's growth – is frequently overcome when people's skills are improved. Recent work shows that going digital is the connection, allowing places rich in natural materials to develop those materials further, without needing polluting, large factories (Hao et al., 2023). Combining the sustainable use of natural resources with the development of creative people's skills provides a more stable path of development when global commodity prices fluctuate. In this situation, human capital isn't just about being able to read and write; it's about having the digital skills to adapt to and leverage a place's unique qualities to reach a global audience via the internet (Li et al., 2022). And for areas to grow economically in a way that includes everyone, government support for the transfer of knowledge and technology to small businesses that use natural resources is crucial (Murshed et al., 2021).

Digital systems have completely changed the boundaries of the market for creative businesses in more isolated locations. Digitalization isn't merely a way to advertise; it's a new foundation for making things work more smoothly and developing innovative business approaches (Nambisan et al., 2020). A thriving digital system in a region has been shown to make that region better able to withstand external problems by providing more ways to make money that aren't reliant on a single traditional industry (Sheng et al., 2023). However, the gap in digital access remains a significant problem, and if it's not addressed, it will only widen economic disparities between regions (Sun & Luo, 2022). Building up this system requires everyone to work together - platform companies, researchers, local craftspeople - to make sure digital improvements actually improve the financial situation of people in the community (Trushkina et al., 2021).

Using large amounts of data and artificial intelligence also enables companies in the creative economy to better understand what customers want and design products from natural resources that align with changing international trends (Vrontis et al., 2021). And starting digital businesses in creative areas speeds up the creation of new, more adaptable, and higher-skilled jobs (Wang et al., 2022). Eventually, all of this leads to the development of cities or regions that are financially stable and environmentally friendly (Yang et al., 2021). How well digital changes work in resource-based industries depends largely on how effectively the combination of digital technology and human ingenuity produces truly original products that are difficult for companies around the world to copy (Zhang et al., 2023). Finally, having laws that protect ideas in the digital world is absolutely essential to ensuring that local creators have a lasting income (Zhu et al., 2022).

3. RESEARCH METHODOLOGY

The study examines how improving the use of Natural Resources (NR) and the digital skills of Human Resources (HR) are connected. It does this using a descriptive qualitative approach and a careful review of existing research to synthesize prior findings and generate fresh ideas about how the digital economy operates in a particular area. Snyder (2019) explains why this method is useful. The researchers gathered existing research from well-respected collections of information, namely Scopus, Web of Science, and Google Scholar, looking at publications between and including 2019 and 2024 to be sure it's all current. They chose the articles to study using the PRISMA guidelines, meaning the ones they analyzed were well conducted research and genuinely about the creative economy, natural resources, and the extra value they bring (Moher et al., 2015).

Data analysis occurred in three steps: reducing the data, presenting it, and drawing conclusions. First, the research was organized around key topics: "digital human capital," "how natural resources are used after initial extraction," and "how well a region bounces back from difficulties." This meant the researchers could identify where further research is needed on how digital technology can actually increase the revenue a local product generates, all while protecting the environment. Xiao and Watson (2019) point out that a good review of the literature does more than just summarise findings; it must seriously examine the strengths and weaknesses of current theories and suggest new paths for real-world plans at the local level.

To double-check the results, the study used 'data-source triangulation': it compared details from academic journals with official reports from global organizations such as UNCTAD and Indonesia's own plans for regional growth. Software for qualitative analysis, such as NVivo 12 or VOSviewer, was employed for bibliometric mapping and to group

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keywords, uncovering the main directions of discussion around a creative economy built on natural resources. This is important for reducing the researcher's personal bias and ensuring the suggested strategy is firmly supported by evidence within the complex system of the digital economy (Donthu et al., 2021). By examining the data and trends, the study aims to develop a comprehensive understanding of how a region's natural advantages relate to the inventiveness of its inhabitants.

4. RESULTS AND DISCUSSION

Moving digital technology into how we get value from natural resources is really shaking up how things are done - turning the simple taking of materials into something far more inventive. Using the "Internet of Things" and blockchain to manage natural resources makes the entire supply chain much clearer, and, as Hao and colleagues found in 2023, this boosts trust in goods from those areas on the world stage. This is part of a bigger idea of "digital downstreaming" (Vrontis et al, 2021), where huge amounts of data are used to guess what people will want globally, and natural materials aren't just sold in their basic form, but are turned into things that suit the current, more specialized tastes of the market. And importantly, this reduces the risks posed by price fluctuations in these materials, which often hold back growth in developing regions (Murshed et al., 2021).

Importantly, just having a lot of natural resources won't make life better for people unless there are skilled people around who can easily adapt to and use digital tools. In fact, Li and others in 2022 showed that investing in digital skills in a region can double the productivity of the creative industries compared to more traditional ones. People who understand both natural resources and digital creativity, and possess a blend of skills, can develop entirely new, competitive products for the world (Zhang et al., 2023). And when a "creative class" begins to appear in a region, it makes for a more lively, and a more broadly beneficial, environment for new businesses (Mellander & Florida, 2021) - though this relies a lot on what schools and colleges in the region are teaching and how it matches up with what industries will need in the future (Wang et al., 2022).

A well-developed digital system in a region helps it withstand events such as pandemics or massive shifts in the world's energy supply. Digital platforms in creative industries let tiny businesses in remote locations be part of the global supply chain, without needing someone physically to act as a go-between (Sheng et al., 2023). A digital infrastructure that everyone can use doesn't just speed up growth; it also narrows income gaps across areas by giving everyone equal access to information and places to sell (Sun & Luo, 2022). But to make this work in remote areas, the government and private companies need to collaborate to establish connectivity (Yang et al., 2021). Also, new ways of doing

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business through digital platforms are fostering a more sustainable “circular economy” in which we use natural resources in ways that are kinder to the environment (Bauwens et al., 2022).

Getting the most value from something is achieved when people’s imaginations successfully find both what something means to people and what it does in a local natural resource. Cheng and colleagues (2021) discovered that areas that combine local culture and branding with technology in natural resource work are much stronger when exporting. Artificial intelligence (AI) helps design nature-inspired creative products, speeding up production and enabling made-to-order products for each customer (Trushkina et al., 2021). And protecting the digital rights to those new ideas (intellectual property) ensures that the money from them continues to go to people in the local area (Zhu et al., 2022). Big companies and creative businesses in a region that cooperate on new ideas and development are vital for moving technology around more quickly (Yu et al., 2021). Ultimately, the digital economy is becoming the main force for change, moving regional economies away from dependence on cheap labor and towards excelling in the knowledge economy (Sari & Widodo, 2022). And as Ghobakhloo and others have proven in 2021, digital plans that also include local traditions and understanding create a more lasting and secure economy in the long run.

5. CONCLUSION AND IMPLICATIONS

5.1 Conclusion

What this research shows is that in our digital age, getting more value from a country’s natural resources isn’t about digging more out of the ground. Instead, it’s about cleverly combining what people can do with the rapidly changing digital economy. For regions to avoid being stuck in the middle of things financially – a common problem for developing countries, as Sheng and others found in 2023 – they really need to move from just selling materials to focusing on knowledge. Human ingenuity, proven to be a main driver, turns unused local ability into new and strong products for the world, using tools like artificial intelligence and sophisticated data analysis (Zhang and colleagues, 2023). If areas keep improving people’s digital skills, they’ll become financially independent in a way that won’t be so easily knocked around by swings in global commodity prices, and they’ll build a base for growth that’s fairer and of a higher standard (Hao and others, 2023). This cooperation between different areas of activity will eventually ensure resources last by fostering greener, more environmentally friendly innovation, and means the region’s natural wealth will continue to generate financial returns over the long haul without harming the environment’s health (Bauwens and others, 2022).

And to be more precise, this confirms that a region's creative businesses will do well depending on how much digital technology is used to help local business starters in isolated places access information. This change in how things are done requires local governments to change their role. They can't just provide roads and buildings; they must also encourage places where new ideas happen and directly link talented, inventive people to markets all over the globe (Sun & Luo, 2022). So, in the future, being competitive won't be about how much of what the land provides a region has; it will be about how smartly it uses the intelligence and knowledge of its people in a digital world without boundaries (Li and others, 2022).

5.2 Policy Implications.

The research leads to a number of suggestions for policy - ways for everyone involved to get the very best results from how natural resources and the digital economy work together. First and most importantly, getting fast digital access to all areas isn't just about extending the internet. We need a really fast network that can handle cloud computing and the 'Internet of Things' in places where natural resources are actually obtained. Sun & Luo (2022) point out that this is essential to level up economies in different areas and to give people with brilliant ideas in the middle of nowhere the same opportunities as everyone else to sell to the world. Second, local councils should create digital training tailored to their specific locations. These courses shouldn't just be about how to use computers, but also about inventing and designing products, building a brand's digital identity, and using digital tools to manage the flow of goods, all tailored to what a region does best with its natural resources. The goal is a workforce that can adapt and generate new ideas (Li et al., 2022). Then, protecting Intellectual Property Rights (IPR) on the internet needs to be a primary concern. We have to defend the rights of local artists and inventors against worldwide copying. As Zhu et al. (2020) emphasize, this will reward them financially and allow innovators in the region to continue making money by improving local products. And finally, we need a plan for how all the different groups involved can work with each other - ideally involving universities, businesses, and creative groups (the 'Triple' or 'Quadruple Helix') - to get new technology and understanding to older, more traditional industries in the countryside. Yu et al (2021) suggest this will speed things up. Plus, it needs to be easy for small and medium-sized businesses with a green outlook to get money to help them manage natural resources sustainably. If we use this connected, inclusive approach, areas with abundant natural resources can turn that bounty into a lasting, strong, and competitive economy for the digital age (Murshed et al., 2021).

5.3 Limitations and Suggestions For Further Research

This research does important work in bringing together ideas about natural resources and human creativity in theory, but it's important to be upfront about what it can't do. For one thing, because it's a qualitative study that carefully and systematically reviews extensive existing research, it yields broad, conceptual results. This means we don't get a really detailed understanding of how digitalization affects different kinds of natural resources, or, more specifically, how it impacts things at the level of an individual business or operation (as Hao and colleagues pointed out in 2023). Plus, the digital world is changing at lightning speed, and some of the research used in this study may already be out of date, especially given the recent explosion of generative AI (Zhang and others, 2023). And the massive differences in digital setups from place to place mean that the general conclusions of this study need to be adapted to each individual area and its unique situation (Sun & Luo, 2022).

Looking forward, research should test how well creative economy policies are working, and that would mean using numbers, or a mix of numbers and more qualitative approaches. One possibility is to analyze data over time across different areas; this would allow us to measure whether a region's investment in the digital skills of its people is related to the growth of the part of the area's economy based on natural resources (Li et al., 2022). Also, we need to investigate blockchain's specific part in guarding the rights of those making things from local materials, so we can more strongly support the idea of looking after local artists and innovators (Zhu and team, 2022). Ultimately, comparing how developing nations are adapting to changes in their economies driven by natural resources and creativity would provide a broader perspective on what works best in international policy (Murshed and others, 2021).

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