DIGITAL THEORY, CULTURE & SOCIETY
https://journal.c-dics.com

DIGITAL THEORY, CULTURE & SOCIETY
ISSN 3031-707X
Center for Digital Culture Studies (C-DICS)

Volume 2, Issue 2, December 2024 **Page 87–104**

Unravelling imaginaries of the digital divide among indigenous communities in Taman Negara Malaysia

Mansurni Abadi[1*]

[1]*Institute of Ethnic Studies, The National University of Malaysia, Malaysia*

[*]*Corresponding author*
Email address: murytech@gmail.com
DOI: https://doi.org/10.61126/dtcs.v2i2.45

ARTICLE INFO

Keywords:
digital divide
Orang Asli
indigenous community
Malaysia ICTs
Semokberi
Batek

ABSTRACT

The digital divide is frequently conceptualized as a disparity between those who possess access to contemporary technologies and those who lack such access. This divide is often defined by factors such as physical access, technological proficiency, and disparate outcomes. However, this perspective frequently neglects its historical origins in the "development" discourse, which has been shaped by global and local telecommunication policies. The recent initiatives to enhance digital access in "remote" regions, such as Malaysia, prompt a reassessment of regional discourses on digital inequality. This study examines the ways in which indigenous groups, particularly the Batek and Semokberi communities in Taman Negara National Park (spanning Pahang, Kelantan, and Terengganu in Malaysia), experience and interpret information and communication technologies (ICTs). For these communities, the use of information and communication technologies (ICTs) is a relatively recent phenomenon. This paper employs the concept of spatial imaginaries to examine how digital access shapes perceptions of social categories like "connected" and "disconnected." The findings reveal that the digital divide is not merely a matter of access; rather, it is actively constructed through institutional and community narratives about how connectivity reshapes spatial and temporal experiences, influencing broader discussions on digital inclusion.

Citation suggestion:
Abadi, M. (2024). Unravelling imaginaries of the digital divide among indigenous communities in Taman Negara Malaysia. *Digital Theory, Culture & Society*, *2*(2), 87–104. https://doi.org/10.61126/dtcs.v2i2.45

Received 17 August 2024; Received in revised form 1 October 2024; Accepted 1 November 2024; Published online 25 December 2024.

Introduction

Taman Negara national park, where I was first exposed to anthropological fieldwork, is Located on the eastern side of the Malaysian peninsula, between Terengganu, Pahang, and Kelantan; this region is the largest conservation area in Malaysia, where indigenous tribes called the Batek and Semokberi live. Their physical appearances look almost similar. Both sub-group classified as Negrito ethnic groups in Malaysia, in popular term they called "Aboriginal Malaysia" (Shah et al., 2018; Shahrul Anuar et al., 2012).

The term for indigenous peoples in Malaysia, especially on the peninsula, is called Orang Asli. According to Masron et al (2013) Orang Asli, the earliest population in Peninsular Malaysia, is believed to have migrated from China and Tibet, establishing a foothold in the region about 5,000 years ago. They are distinct from the Malays, Chinese, and Indians, who comprise most of Malaysia's population that forms as a national minority (Ismail et al., 2019; Ramli et al., 2021; Sukri et al., 2022).

My intellectual curiosity in this topic stretches back to 2019 during my first visit to to Taman negara for a seven-day camping. Back then, both communities' lives in the almost complete absence of ICTs. Little did I know, that visit to Taman Negara would be the penultimate year of its "*disconnectedness*." When the Covid-19 pandemic struck in 2020, a variety of connectivity infrastructures began to enter and transform area surrounding. Indeed, Taman Negara is five hours drive away from the Kuala Lumpur but to reach both communities we need to enter the tropical forest and then continue the journey by boat via the Tembeling River, which takes around 1 hour. Arguably, it was an absolute "*dead zone*" never reached by mobile and internet service providers. However, since 2019, both communities were said to have been "*connected*" to the "*outside world*," made possible by the internet and Information and communication technologies (ICTs) more broadly.

One of these initiatives from Malaysia government to empowered indigenous tribes living in and around Taman Negara through the development of telecommunications infrastructure and strengthening digital literacy in the form of telecentre construction (Bala & Tan, 2021). Apart from state involvement, there is the role of local Malaysian NGOs which also help deal with the digital divide, such as tech outreach Malaysia Developing life skills for children aged 13–16 in Malaysia through a smartphone app to address the digital divide among low-income households and Khazanah Research Institute that make investigation toward digital divide problem in Malaysia.

Khazanah research institute report in early 2023, "USP Fund: A Tool to Close Malaysia's Digital Divide," clearly outlined the problems of digitalization in Malaysia, which, although it appears to be comprehensively connected, does not yet have equality in terms of acceleration and openness of access. On other side, lack of digital education. In fact, this report is in line with research from Lau et al (2023) Which compares the digital infrastructure in East and West Malaysia. Internet access has grown in West Malaysia, but obstacles to emotional intelligence and internet usage remain. Thus, Khazanah Research Institute suggests the need for a comprehensive digital transformation.

On other side, according to Abd Hamid et al (2023) the involvement of technology among Aboriginal people in Taman Negara may affect sustainability and tourism. Ecotourism is a growing segment devoted to rural area development, providing jobs, and preserving communities' traditions. The discourse that Information and

Communication Technologies (ICT) can bring forth development and positive change to remote communities is nothing new. It is commonly assumed that internet access is a democratizing tool that increases people's social, political, and economic participation. In Malaysia, our 'Third World' situation has made '*ICT for development*' particularly attractive, which internet penetration is quite good compared to other ASEAN countries (Digital Business Lab, 2022).

However, the development of ecotourism contains concerns from some Indigenous people and environmental NGOs about the possibility of ecosystem damage due to over-tourism. Therefore, many parties suggest strengthening the three pillars of sustainable tourism, namely environmental, economic, and socio-cultural perspectives. On other side two indigenous communities suggest, there is an application of environmental ethics that focuses on quality of life, humanity, and egalitarianism. The ecological ethics for Indigenous peoples in the Taman Negara, Malaysia, area has developed. The practice is to enjoy the results of the present without risking the next generation and ensuring the continued enjoyment of scarce resources in a relatively abundant situation. For them, the core of environmental ethics is the concept of balance and harmony—harmony between humans and the environment and harmony between humans.

Underlying these arguments is the assumption that connectivity does certain things. It is conceived as a tool that, when used productively, could improve several aspects of social life. This appears to underpin state and development agents' intent to extend internet access to remote areas. Meanwhile, some indigenous peoples in recently "connected" communities have also taken it upon themselves to maximize the affordances of connectivity to their advantage.

For instance, during my fieldwork in area near with Taman Negara, more than 90% of the population in each community had already adopted ICTs within two years since internet access became widely available. However, indigenous peoples may also opt to utilize connectivity for other ends. Recognizing its multiple affordances, connectivity offers myriad opportunities to communicate with kin, maintain social networks, and engage in different forms of entertainment. Those who are participating in this digital world have been considered to enjoy more expansive opportunities and are viewed as more likely to be able to "catch up" with the globalized world. Meanwhile, those who remain disconnected may tend to be perceived as frozen in some primitive, unchanging past.

The concept of spatial imaginaries offers an opportunity to reconsider assumptions about the digital divide and to reframe the discussion around ICT for development. This paper examines the powerful influence of imaginaries on the adoption of ICT among indigenous communities, aiming to illuminate a less-explored aspect of ICT for development. Specifically, it explores the characteristics and contradictions between the state's and remote communities' perceptions of connectivity. While spatial imaginaries have been predominantly studied in geography, this paper aims to adapt these concepts for anthropological theorizing, thus advancing our understanding of connectivity and space (Smart et al., 2016).

Despite the abundance of literature on the digital divide, scholarly work from and on 'developing' countries remains minimal compared to 'developed' countries. In Malaysia, much of the research is fixed, to use Jan Van-Dijk (2017, 2005) terminology, on the "first-level divide," specifically focusing on questions of physical access to

the internet. However, I argue that following such binary classifications (e.g., haves and have-nots, wants and want-nots) severely limits our understanding of indigenous peoples' nuanced experiences with ICTs. Generally, my online review has also shown a dearth of anthropological research on this aspect of the digital divide.

Although anthropological interest in the digital has existed for a time, ethnographic accounts 'from the other side' of the digital divide have unfortunately remained scarce (Were, 2015). It is in this context that I will venture into an analysis of the high ICT uptake among the Orang Asli community from sub-group Batek and Semokberi, while fully acknowledging the fact that deliberate resistance to ICT use, however minimal, is also inevitable. For this paper, my interest is to unpack the former by addressing two main inquiries: How is connectivity imagined in the process of "bridging the digital divide" and what does this imply about how the 'connected' and the 'disconnected' are constructed.

Method

This paper employs a mixed-methods approach to examine the digital divide in two indigenous communities in Taman Negara: Bateq communities that live inside Taman Negara in Pahang state side and Semokberi communities that live near with Taman Negara in Gua Musang, Kelantan state side. I conducted ethnographic fieldwork from February to June 2022, spending the first half in Taman negara in Gua Musang, Kelantan side and the second half in Taman negara in Pahang side.

The mixed-methods design was crucial for this research as it allowed me to gather quantitative data on internet usage in my field sites, which was previously unavailable, while also enabling me to ground my findings in the lived experiences of the communities through qualitative methods. The qualitative aspect of this research entailed daily participant observation and field notes. Key informant interviews (KIIs) and focus group discussions (FGDs) were also employed following a non-probability purposive and snowball sampling method.

I conducted a total of 2 key informant interviews with the administration telecenter and 14 key informant interviews with locals, including indigenous and non-indigenous people. Additionally, I facilitated 8 focus group discussions with locals, each group segmented according to age to ensure rapport and relatability among participants. Data from interviews and focus group discussions were then processed through thematic analysis and critical discourse analysis (CDA). The latter allowed for an examination of the digital divide discourse from the dimensions of discourse-as-text, discourse-as-discursive-practice, and discourse-as-social-practice (Frawley, 1993; Madsen, 1994; Thibault, 1993).

On the other hand, quantitative household surveys were conducted using the population in four orang asli villages in or outside Taman Negara. I was able to survey a total of 138 households, representing the entire population in 2 villages outside Taman Negara, Kampung Pos Gob and Kampung Aring 5 in Gua Musang, Kelantan (83 households), and three villages inside Taman Negara (in the middle of the forest) that consist of Kampung Gol (Settlement of smokers tribes), Kampung Dedari (Settlement of batik tribes), and Kampung Teresik (Settlement of batik tribes) from three villages in the middle of the forest I got 55 households.

Allowing for a comprehensive understanding of internet usage in these communities. The two-part survey questionnaire measured internet penetration,

usage, skills, and outcomes of ICT use, the results of which served as my baseline data for the qualitative aspect of the research. I also collected data on the usage of specific applications by checking respondents' mobile phone settings for usage metrics, when available and upon their consent, to triangulate their reported and actual internet use. Univariate and multivariate analyses proved useful in processing the quantitative survey results, providing descriptive statistics and enabling the exploration of relationships between variables. Then I am employed online tools such as Numbers and Tableau to visualize the data and draw conclusions.

This paper employs a mixed-method approach to examine the digital divide in two indigenous communities in Taman Negara: Bateq communities that live inside Taman Negara in Pahang state side and Semokberi communities that live near with Taman Negara in Gua Musang, Kelantan state side. I conducted ethnographic fieldwork from February to June 2022, spending the first half in Taman negara in Gua Musang, Kelantan side and the second half in Taman negara in Pahang side.

Results and Discussion

The invention of the digital divide

The digital divide is a concept that has evolved significantly since it first entered academic discussions in the 1990s. Early research focused primarily on disparities in physical access to information and communication technologies (ICTs), framing the divide as a binary between the "haves" and "have-nots" (Cuneo & Norris, 2003; T. Lee, 2002; Luyt, 2003) However, as ICT adoption increased in developed countries, scholars began to recognize the limitations of this dichotomous framing and expanded the concept to encompass more nuanced aspects of digital inequality beyond the simple binary notion of technology haves and have-nots (Robinson, 2003).

But Anthropologists have long argued that current discourses on technology and development are heavily influenced by Western ideas and interests. Arturo Escobar (1988) has argued that US President Harry Truman's Four Points Inauguration Speech established the discursive precedent for the widespread use of the term "*underdeveloped*," referring to societies that were at the receiving end of U.S. modernization programs. Particularly, Truman's fourth point was "*closely related to the establishment and impact of the discourse of technology and national development in the international context*" (Hwang, 2006, P71).

Despite its humanitarian overtures, the Point Four program was heavily criticized locally and abroad. Critics pointed out the harms of short-term technical assistance, emphasizing that these programs only "*open the door to exploitative Western business interests*" (Hendrickson & Ruttan, 1996; Macekura, 2013; Sterken, 1997). However, Truman's successors seem to have been unfazed by these criticisms, seeing instead more value in expanded international development as a strategic foreign policy.

For example, while the Eisenhower administration revamped the administrative structure of Point Four, the ideology of development through technical assistance continued to flourish (Macekura, 2013). The trend persisted into the 1960s, with modernization theory influencing the ideological underpinning of nation-building efforts during the Kennedy and Johnson administrations. Both administrations allocated substantial resources to ambitious development initiatives, ultimately representing the culmination of a protracted process that originated in Truman's inaugural address (Macekura, 2013).

As it were, Point Four's discursive project established that Western science and technology, educational assistance, and foreign investment were necessary for underdeveloped countries to attain economic development. Moreover, it presupposed that "increased production in the underdeveloped areas will not only benefit the inhabitants of those areas but will have far-reaching effects on the world as a whole. These measured a society's social and economic progress according to Western terms. Unless incorporated into the world trade system, underdeveloped countries were doomed to be left behind by the privileged West (HAYES, 1950; Hendrickson & Ruttan, 1996; Paterson, 1972; Robertson, 2004; Salant, 1950).

Implicit in the discourse was the US intention to find markets overseas for American capital and goods and to secure control over the sources of raw materials (Hwang 2006). This constitutes what Escobar (1988) has rightly called the 'invention of development,' where "the notions of 'underdevelopment' and 'Third World' emerged as working concepts in the process by which the West (and the East) redefined themselves and the global power structures." Examining the issue from a historical and discourse-based perspective, I posit that the concept of the 'digital divide' is essentially a continuation of the Western development discourse. Embedded within another crisis of hegemony, the US's promotion of the digital divide mirrors the objectives outlined by Truman in 1949. In the 1990s, as the US faced another economic downturn, the economic policies of the Clinton-Gore administration were heavily focused on technological solutions. Clinton and Gore actively pursued the revitalization of the economy, viewing technology as a new growth industry with both domestic and global implications (Foraker, 2007).

Thus, when Clinton was elected into office in January 1993, his top agenda was leading the so-called 'knowledge society' (Steyn, 2011). The national strategy was composed of a series of policies for the wide dissemination of digital information and communication technologies (ICT) throughout the country" (Steyn & Johanson, 2010). According to (Clinton, (1993) This would later be expanded into a global strategy that Clinton and Gore envisioned would enable the US to regain "world leadership in basic science, mathematics, and engineering."

Most sources routinely point to the NTIA's four-part Falling Through the Net reports to trace the origin of the term "digital divide" as it is understood in the present day. Published between 1995 to 2000, these reports provided the first definition of the digital divide and introduced the concept of "haves" and "have-nots". The result was the establishment and propagation of a discourse that, firstly, statistically validated the divide between those with access to digital technologies and those without, and secondly, reinforced the notion that disconnectedness signified disadvantage. The poor had a problem, it implied, and unless they got connected, they would be left behind. Taken together, the four reports reflect the US's technological optimism and determinism (Foraker, 2007).Thus, as soon as multilateral agencies picked up this discourse in the second half of the 1990s, the desire to benefit from the emerging digital economy spread rapidly to developing countries (Davis et al., 2015; Hamerly, 2012; Straubhaar et al., 2012).

In Malaysia, most credit Mahathir Mohammad for successfully liberalizing the telecommunication sector in 1983 that make private sector was allowed to supply terminal equipment such as phones and teleprinters, complementing JTM. This move to liberalize the telecommunications sector was driven

by a shortage of terminal equipment and the private sector's potential to address the issue (C. Lee, 2002). According to Yong Hon et al (2015) The industry's dynamism has been fueled by regulatory reforms and market liberalization, which have sparked increased competition and structural changes.

Much like Clinton's vision of a knowledge society, Mahathir Mohammad also identified the development of ICTs as one of her administration's key priorities. after he was re-elected in 2020, Mahathir Mohammad administration's developed Wawasan 2020, known as 'Vision 2020,' aimed to make Malaysia fully developed by 2020. The vision focused on both the economy and social well-being. It included the use of ICTs. One significant ICT development was the establishment of the Multimedia Super Corridor (MSC) in 1996, the largest initiative of the National Information Technology Council (NITC). The MSC is a high-profile ICT project that aims to create a top technology environment that helps Malaysia become a knowledge-based society. This includes attracting and supporting cutting-edge and world-class companies (Muhammad, 2016).

On other side, Van Dijk (2020) The evolution of the digital divide concept can be segmented into three phases. The first phase (1995-2003) focused on physical access, the second phase (2004-present) concentrated on skills and usage, and the third phase (2012-present) has focused on outcomes. During the first phase, public sentiment towards the internet was very positive and optimistic, with researchers believing that market forces would lead to near-universal dissemination (Huisman, 2021; Robinson, 2003).

This technologically deterministic view was challenged by Pippa Norris (2001), who conceptualized the digital divide in three areas: the global divide, the social divide, and the democratic divide. Although Norris's work was influential, it was criticized for treating the divide primarily as a problem of access and for suggesting a trickle-down principle where affluent users would adopt the internet earlier than their less privileged counterparts (Huisman, 2021; Jan Van-Dijk, 2017).

Meanwhile, the second phase of digital divide research contested earlier definitions and argued that providing physical access was insufficient without the requisite technical and literacy skills for effective use (Hargittai, 2002). Karen Mossberger and colleagues (2003) reformulated the divide by conceptualizing it as a series of gaps in access, skills, economic opportunity, and democratic participation. Their work was important in highlighting the digital divide as a public problem embedded in economic and political systems rather than a mere private misfortune.

Similarly, reorienting the discussion from mere gaps in physical access to one that is focused on the intersections between ICTs and social inclusion was a key alternative (Warschauer 2003). Building on the discourse of social inclusion, according to Selwyn (2004) will make an important distinction about the hierarchical rather than dichotomous nature of the digital divide and recognized the mediating role of capital in shaping ICT engagement. This framing was crucial for scholars of the second-level divide as it expanded the argument from providing mere economic capital to ensuring that access was paired with the requisite cultural and social capital.

The third-level digital divide then emerged in response to the view that some policies on providing physical access failed to meet their goals (Park, 2017). Research in this phase focused on the consequences of internet access and use, examining both positive outcomes (van Deursen and van Dijk, 2012) and negative effects. Massimo Ragnedda (2017, 1) makes a striking argument that inequalities in the

digital sphere are "certainly entangled with inequalities present in the social sphere."

Testing the potential of digital inclusion to overcome other exclusions, Rennie (2018; 2016) concluded that while the internet can enable personal autonomy, it does not necessarily signify a solution to social disadvantage. Their observations raise important questions about the link between digital inclusion and social inclusion, challenging the assumption that bridging the digital divide is an unquestionable imperative. This shift in focus from digital exclusion to digital choices (Rennie, 2015; Selwyn, 2006) emphasizes the need for a more nuanced understanding of ICT engagements that takes into account individual agency and collective influences.

However, it is notable that research on the digital divide has mostly tended to take its existence for granted. Preoccupied with the ideals of 'ICT for development,' scholars seem to have largely ignored the fundamental question of its discursive origins, an exception of which is Hwang (2006), who attempted to deconstruct the discourse of the global digital divide *vis-a-vis* the neoliberal global economy. Hwang's macro perspective, however, has unfortunately obscured the impact of digital divides on smaller communities in favor of larger power structures.

I am inclined to align with Smart and colleagues, who expanded beyond the traditional three-level digital divide by exploring its "spatial imaginaries" and how these narratives validate institutional efforts to connect previously disconnected actors. "Spatial imaginaries" are defined as "bundles of loosely related discourses that conceive of the relationship between technologies and space in particular ways," enabling various actors to assert the transformative impact of communication technologies (Smart et al., 2016).

Furthermore, the authors illuminate the problematic portrayal of the internet as a "*technical fix*" and critically examine the philanthropic themes associated with its imaginaries. It's important to clarify that I do not seek to diminish research on the three-level digital divide, nor do I aim to oversimplify the debate to merely a matter of discourse. Instead, by highlighting the discursive origins of the digital divide, I advocate for emphasizing local epistemologies and practices as a means of challenging the prevailing global discourse of ICT for development.

By advancing this argument, I aim to remove the digital divide from being restricted to the notion that connection and disconnection are inherently natural states. Ultimately, the spatial imaginaries of the digital divide (Smart et al., 2016) underscore the necessity of reframing it in a way that scrutinizes its discursive and performative characteristics. If the digital divide is indeed an outgrowth of the discourse of development and a construct in itself, then there are significant implications when such a concept interacts with local understandings of space, technology, and the good life.

Imaginaries of the digital divide

State/development policy on connectivity

Malaysia adoption of the digital divide discourse and ICT for development can be attributed to the influence of external discourses and the keen reception of these discourses by internal state actors. As shown in the literature review, the discourse was initially propagated by the West in the early 1980s. Before long, successive Malaysia administrations implemented policies aimed at improving the country's ICT situation, driven by the developmentalist fantasy of "modernizing" the nation and ensuring the

Malaysia people's participation in the global "*knowledge society*."

Government policy documents and scholarly works have emphasized the role of internet access as a "tool that can help achieve development and accelerate economic growth (Mohamad Azhar & Mohd Shakil, 2021; Salman et al., 2013). although on the one hand it creates a paradox because the digital side of authoritarianism is still maintained to maintain the stability of the country, especially in relation to the royalty, religon, and race (Muhamad Nadzri & Jamaie, 2018; Shukri, 2023b, 2023a).

Aboriginal Malaysia community, in particular, has been widely neglected in the state's efforts to democratize access to ICTs. Even though their citizenship identity is recognized, this group often experiences discrimination and marginalization. In local media, this group is stereotyped as suffering economically, having poor health, not having access to facilities, having their living space threatened, and having limited access to the political sphere (Jamal & Ganapathy, 2021). In the field of education, the Malaysian aboriginal community is also lagging behind, apart from the lack of awareness of education among themselves, according to Sawalludin et al. (2020) lack of infrastructure is a problem faced by the settlement and this is the barrier to improve the quality of education among them. Schools are unable to function well due to the lack of electricity and water facilities.

The aboriginal community in Malaysia, especially those who live around the customary forests, resists. Their activism is a critical consciousness of what is happening to them, and they appropriate ideas, knowledge, and strategies from the broader world as they develop new forms of political critique (Dauvergne, 2004; Lye, 2011). But authorities use the Sedition Act of 1948 and the Communications and Multimedia Act of 1998 to suppress critical offline and online voices speaking against the government, labeling them as "fake news," "false, or illegal activities that will make Malaysia unstable. although, Malaysia voted to adopt the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007, but has not ratified the ILO (Cultural Survival, 2018).

While state and development agents often evoke the fantasy of the developed and modernized nation when justifying the need for connectivity, I argue that connectivity may also serve a more implicit function. Rather than merely contributing to development, connectivity makes development possible as a "distance-demolishing technology" that renders "remote" and "isolated" populations legible to the state and development agents (Scott, 2009: 166). As James Scott (1998: 82) posits, the state exerts techniques of legibility, simplification, and standardization to monitor, assess, and manage the population, with the builders of the modern nation-state striving *"to shape a people and landscape that will fit their techniques of observation*."

Connectivity, like other state techniques (i.e., imposing common languages, religions, currencies, and legal systems) may potentially homogenize the population by promoting connected systems of trade and communication. From the lens of Scott, this allows the state to actualize its plans for improved "human capital" and accelerated economic growth, satisfying the fantasy of the developed and modernized nation in which legible citizens collectively work towards the attainment of the country's economic goals.

Connectivity in day-to-day lives: The case of Batek and Semokberi communities in Taman Negara, Malaysia

While state and development agents imagine connectivity in terms of modernization and appear to paint it in an

absolutely positive light, the case of Batek and Semokberi demonstrates the nuances of indigenous people's experiences with connectivity in their day-to-day lives. Despite daily ICT usage peaking only between 2020-2021, both communities possess certain fantasies and fears over connectivity, which I argue are predominantly governed by ideas of what Edwards Fischer calls the "good life." While "adequate material resources, physical health and safety, and family and social relations" are important elements of the good life, so too are nonmaterial qualities (Deneulin, 2017). For instance, these include the capacity to aspire, as well as the agency to reach these aspirations, a quality that is undoubtedly present in my informants' sentiments about connectivity's capacity to make the previously impossible become possible.

In Semokberi communities, ideas about a good life are centered on kin and community, with parents emphasizing the importance of teaching good values to their children and working hard to provide for them. As Tungahu, a Semokberi elder, explained: *"Our concern now must be the development of our children. We should look out for them and teach them about their limitations. I don't think overusing cell phones will do them any good. That is where our role as parents comes in. We have to teach and guide the next generation well and make sure they are educated"* (translation mine). The concept of kerja benar (hard work) is closely linked to *membina* (development) among the Semokberi communities, with many parents asserting that hard work is necessary for achieving development.

This emphasis on kinship and hard work is sensible, given the minimal state presence in Semokberi , with people relying on either their kin or their own labor to survive. On the other hand, in Bateq communities that lived inside or in the middle of Taman negara tropical forest notions of the good life are more closely tied to education, religion, economic or infrastructural developments, and peace and order. This seems to reflect their concrete encounters with development through the patronage of the religious mission or the state. When asked about what the good life means for them, several informants invoked images of "progress" or "civilization," such as signal, electricity, schools, boat, and businesses.

Despite these differences, both communities share a good life imaginary where connectivity is perceived to play a vital role. For the Semokberi communities, connectivity offers the possibility of conveniently keeping in touch with distant loved ones, a fantasy that emerges from the challenge of maintaining kinship ties when certain family members break away from the family unit to work in the lowlands. Similarly, for the Batek communities, connectivity is imagined as a means to "recast spatiality and temporality" (Trnka, 2016) enabling them to instantly gratify their needs and desires, such as communicating with people in urban centers for socioeconomic purposes or accessing social services only available in the lowlands.

Alongside these fantasies are anxieties about being " no one left behind" unless they adopt new technologies. As Aubrey, a Semokberi communities' informant, expressed: "For me, it's like an opportunity that you didn't grab. Of course, you would feel bad about missing it. That is why you'll use the internet so that you'll get to know about the updates." *I need to know so that I won't feel like I've been left behind*" (translation mine). Throughout my fieldwork, I uncovered compelling evidence indicating that the hopes and anxieties of these communities have a substantial impact on their use of information and communication technology (ICT). The quantitative surveys revealed that both Indigenous communities primarily used connectivity to stay in touch with distant family and friends. Additionally,

they used connectivity for emergencies, education, work, and entertainment, with some variation between the communities. "Connectivity for business" was a top use in Semokberi, while "connectivity for parenting" was important in the Batek communities. This highlights the communities' values and the significance of kinship. For a comparison of ICT use in both communities, see the figure on the below and next page:

Figure 1. *ICT purpose for Semokberi communities*

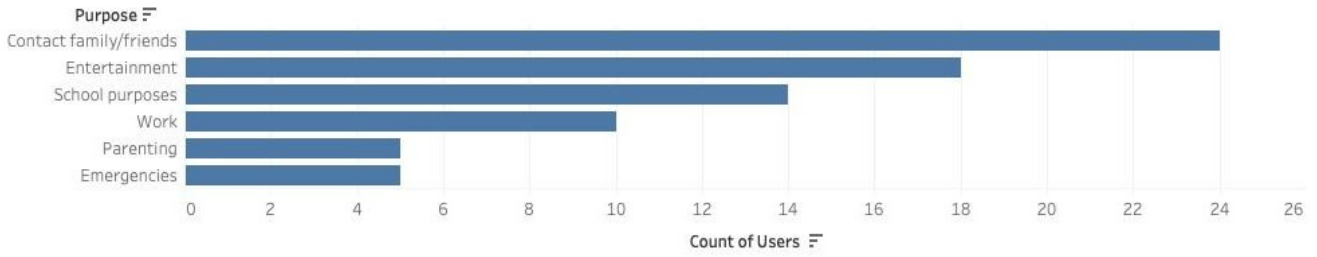


Figure 2. *ICT purpose for Batek communities*

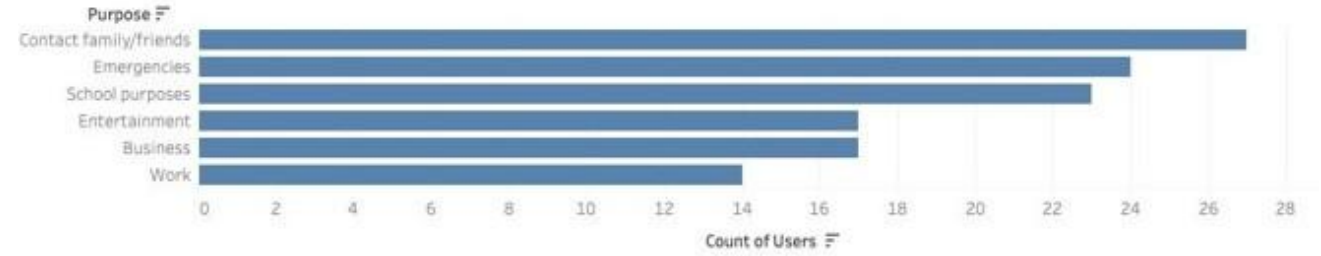


Figure 3. *Top 5 apps in Semokberi communities*

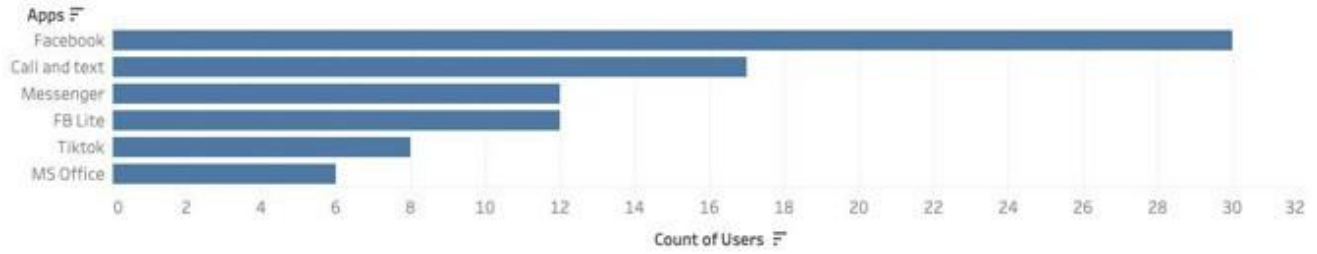
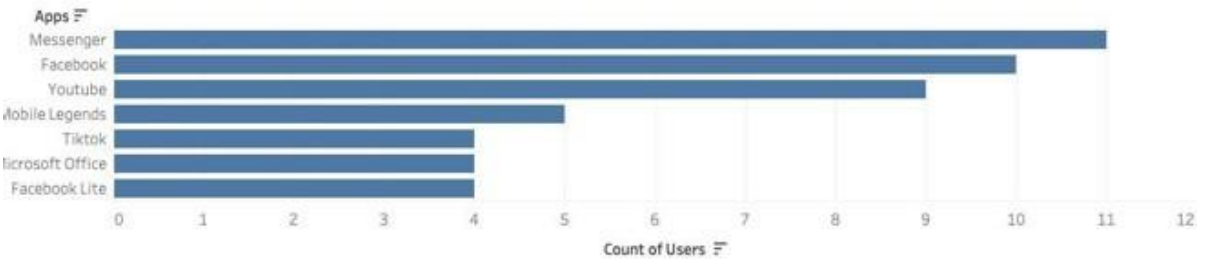


Figure 4. *Top 5 apps in Batek indigenous community*



However, this data must be taken with a grain of salt as an aphorism widely attributed to Mead would caution that "what people say, what people do, and what they say they do are entirely different things." Comparing the data from my household surveys with that of my applications walkthrough and participant observation, there is a clear match between communities reported and actual ICT use. Their most used apps involved either Facebook, Messenger, and calling and texting (for Semokberi), all essential for communication.

However, I found striking contrasts between my informants' other claims and what I witnessed in the field. In both indigenous communities, while schoolwork was among the top five claims in internet use, search engines or applications typically used for educational purposes did not appear in my walkthrough's topmost used applications. Instead, more prominent in the walkthrough were gaming or social networking applications such as Mobile Legends, Tiktok and Youtube. The two figure below shows a comparison of the most used apps in Batek and Semokberi communities:

While I do not intend to ignore the expansive uses of mobile applications, the contrasts between reported and actual ICT use were important starting points as I continued my fieldwork. For instance, my findings from the applications walkthrough were corroborated by participant observation in Semokberi communities where I found young people to be the most avid users of ICTs. On my usual visits to the telecenter stations, I would normally catch them surrounded by young boys playing Mobile Legends or teenage girls recording a Tiktok video.

In Batek communities, connectivity has played a dual role. It has contributed to the economic well-being of the residents while also serving as a platform for staying informed and engaging in online discussions, encompassing news, political speculation, and casual gossip. My fieldwork data supports Rennie and colleagues' (2016, 22) findings that internet use primarily revolves around daily tasks like social networking and entertainment. Nonetheless, I contend that these activities have empowered the community, offering a semblance of control over their lives, which have long been affected by feelings of deprivation and precariousness due to their geographical location.

Spatial imaginaries and the construction of the marginal 'other'

Despite their disparate fantasies about the modernized nation and the good life, state/development agents and everyday users of connectivity share similar spatial imaginaries about what connectivity can do to bring about desirable futures. Drawing on Smart and colleagues' (2016) framework, I propose that connectivity is appreciated in terms of the Global Village and Shrinking World spatial imaginaries. For state and development agents, connectivity is often framed in terms of the Global Village, enabling people to participate in a "global economy" or a shared human space with better socioeconomic prospects. In a "friction-free ontic space" that "exists beyond the material world" (Smart et al., 2016), state and development agents believe in the potential of virtual and placeless organizations or networks to transform society and make people more legible and manageable for the state.

Meanwhile, the Shrinking World imaginary, in which connectivity is perceived to reduce spatial frictions and shrink distance (Smart et al., 2016), is more prominent among everyday connectivity users, particularly those who yearn to communicate with their kin amidst their geographic isolation. As Linda, a mother

from Semokberi indigenous community, pointed out: *"If you encounter a problem here and your child is in Taman negara, video calling gives the feeling that they're just close by. If you miss them, you can call them… it's as if you're talking to them face to face"* (translation mine).

These spatial imaginaries contribute to the framing of connectivity as a technical fix to social disadvantage, suggesting that as long as access to connectivity exists, spatial and socioeconomic barriers can be hurdled. This technologically deterministic view effectively captures the imagination of state/development agents and everyday users, driving efforts to develop new infrastructures and leading to high ICT uptake in communities.

However, my fieldwork revealed the limitations of this view. Embedded structural relations ultimately determined people's access to ICTs, despite the availability of various connectivity infrastructures. Some community members could not utilize connectivity due to a lack of devices or skills, while others were limited by their spatial positionality, with persistent power outages and inclement weather hampering the continuity and quality of internet connectivity. Consequently, the framing of connectivity as a technical fix inevitably constructs those on the "wrong side" of the digital divide as disadvantaged, wherein remoteness hinders their development. While this is a valid concern for some everyday users, it obscures the fact that the totalizing discourse of remoteness is mainly propagated by development outsiders and the state. As Aneng, a Batek informant, astutely observed:

> *If you are from the city, cellphones and laptops will be really important to you, especially if all of your activities are dependent on them. If you're a student, the internet will be very important to you. But for people who grew up in the mountains, cellphones are insignificant. There are children who live deeper in the mountains without any kind of internet connection but feel entirely fine in the absence of these things (translation mine).*

In highlighting these accounts, I neither intend to fetishize people's resilience nor imply that they are misinformed about the affordances of connectivity. Rather, I suggest that defining a causal relationship between remoteness and underdevelopment risks glossing over the fact that indigenous peoples actively exercise their agency in determining their ICT (non) engagements based on unique positionalities, good life imaginaries, and community norms. Instead of being a mere instance of state/development agents impressing certain visions of connectivity in these communities, employ "digital choices" that reflect their creativity in navigating different forms of disadvantage.

Conclusion

This paper posits that the digital divide is not an inherent occurrence but rather a construct influenced by sociopolitical factors that define the "connected" and "disconnected" in specific ways. Through the concept of imaginaries, I have illustrated how differing perceptions of progress between state and development agents and everyday users of connectivity intersect to shape the discourse of connectivity and the widespread adoption of ICTs in Indigenous communities. My fieldwork with the Semokberi and Batek Indigenous communities demonstrates that while state and development agents portray connectivity as a technical solution to social disparity, these communities hold their ideals of a fulfilling life, influencing their embrace and utilization of ICTs. Despite their disparities, both communities harbor aspirations and concerns about how connectivity can contribute to realizing their visions of a fulfilling life and guard against being "*no one left behind*."

The potential for future research lies in conducting multi-site and cross-country ethnography to gain deeper insights into how the digital divide is experienced and understood by Indigenous peoples in different contexts. Additionally, studying internet usage in Indigenous communities could provide valuable insights, especially as these communities transition from "disconnected" to "connected." My findings also suggest important policy implications. Efforts to bridge the access gap must be complemented by programs that empower local communities to acquire the necessary skills and infrastructure for effective ICT use. Initiatives to bridge the digital divide should also consider that connectivity, rather than being a neutral technology, might not only help address disadvantages but could also worsen social inequalities under specific circumstances. Future research should explore the dynamics of digital inclusion, considering potential unintended consequences like reinforcing power imbalances or creating new forms of exclusion. Understanding this can inform policies for equitable digital futures."

Although like Hwang (2006: 108), I would caution against assuming that bridging the digital divide is an entirely noble enterprise especially as more indigenous communities are incorporated "into the world capitalist system through the discourse of technology and development," I am not suggesting that indigenous peoples should refrain from participating in the information age. Rather, I am suggesting that we free the digital divide from the prison of ethnocentrism and recognize that although state and development actors' ideals of connectivity and indigenous peoples' actual appreciation and use of technology have little in common, they are nonetheless equally but variously legitimate forms of ICT engagement.

Acknowledgments

Thanks to Semokberi and Batek Indigenous community in Taman Negara, Malaysia.

Declaration of Ownership

This article is my original work.

Conflict of Interest

There is no conflict of interest to declare in this article.

Ethical Clearance

This study was approved by the institution.

References

Azhar, N. A. Z., &Shakil, N. S. (2021). The intervention of micro, small and medium enterprises (MSMEs) in Malaysia's digital economy. *Global Business and Management Research: An International Journal*, *13*(4), 16–37.

Bala, P., & Tan, C. E. (2021). Digital inclusion of the Orang Asli of Peninsular Malaysia: Remote virtual mechanism for usability of telecentres amongst indigenous peoples. *Electronic Journal of Information Systems in Developing Countries, 87*(4), e12171. https://doi.org/10.1002/isd2.12171

Clinton, W. J. (1993). Technology for America's economic growth: A new direction to build economic strength. *The Bottom Line, 6*(3/4), 4–17. https://doi.org/10.1108/eb025379

Cultural Survival. (2018). Observations on the state of indigenous human rights in Malaysia. *Prepared for the 31st Session of the United Nations Human Rights Council Universal Periodic Review 05 November 2018–16 November 2018*, *1*(617).

Cuneo, C., & Norris, P. (2003). Digital divide: Civic engagement, information poverty, and the internet worldwide. *Labour / Le Travail, 52*, 339–341. https://doi.org/10.2307/25149431

Davis, S., Palmer, L., & Etienne, J. (2015). The geography of digital literacy: Mapping communications technology training programs in Austin, Texas. In *Handbook of research on comparative approaches to the digital age revolution in Europe and the Americas*. IGI Global. https://doi.org/10.4018/978-1-4666-8740-0.ch022

Deneulin, S. (2017). The good life: Aspiration, dignity, and the anthropology of wellbeing. *Journal of Human Development and Capabilities, 18*(2), 314–316. https://doi.org/10.1080/19452829.2017.1294750

Digital Business Lab. (2022). *Social media penetration in Malaysia [Research]*. Digital Bussines Lab.

Escobar, A. (1988). Power and visibility: Development and the invention and management of the third world. *Cultural Anthropology, 3*(4), 428–443. https://doi.org/10.1525/can.1988.3.4.02a00060

Foraker, A. (2007). Crossing the digital divide: Race, writing, and technology in the classroom, by Barbara Jean Monroe. *Journal of Catholic Education, 11*(2), 259–261. https://doi.org/10.15365/joce.1102152013

Frawley, W. (1993). Norman Fairclough, discourse and social change. Cambridge: Polity, 1992. Pp. vii + 259. *Language in Society, 22*(3), 421–424. doi:10.1017/S004740450001730

Hamerly, D. (2012). Review of 'Inequity in the technopolis: Race, class, gender, and the digital divide in Austin' (University of Texas Press, 2012). *First Monday, 17*(11). https://doi.org/10.5210/fm.v17i11.4286

Hamid, M., Rahmat, N., Ngali, N., & Hanafiah, M. H. (2023). A case study of bateq community adapted to communication technology in Taman Negara. *International Journal of Business and Technology Management, 5*(S1), 1–8. https://doi.org/10.55057/ijbtm.2023.5.s1.1

Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday 7*(4). https://doi.org/10.5210/fm.v7i4.942

Hayes, S. P. (1950). The United States 'Point Four' program. *The Milbank Memorial Fund Quarterly, 28*(3), 263–272. https://doi.org/10.2307/3348136

Hendrickson, D. C., & Ruttan, V. W. (1996). United States development assistance policy: The domestic politics of foreign economic aid. *Foreign Affairs, 75*(4), 147–148. https://doi.org/10.2307/20047692

Huisman, M. (2021). van Dijk, J. (2020). The digital divide. Cambridge/Medford: Polity. 208 pp. *Communications, 46*(4), 611–612. https://doi.org/10.1515/commun-2020-0026

Hwang, J. (2006). *Deconstructing the discourse of the global digital divide in the age of neoliberalglobal economy*. PhDDissertation. Pennsylvania State University.

Ismail, R., Gopalasamy, R. C., Saputra, J., & Puteh, N. (2019). Impacts of a colonial policy legacy on indigenous livelihoods in peninsular Malaysia. *Journal of Southwest Jiaotong University, 54*(5), 1–11. https://doi.org/10.35741/issn.0258-2724.54.5.18

Jamal, M., & Ganapathy, M. (2021). Framing the actors though thematic structures: The case of the Malaysian orang asli. *Academic Journal of Interdisciplinary Studies, 10*(2), 249–267. https://doi.org/10.36941/ajis-2021-0055

Lau, Y. L., Loi, C. K., Ku, C. J., Yap, T. K., Nasir, E., & Yong, Z. H. (2023). A catalyst for the 5G era, a green economy, and inclusive growth: Closing Malaysia's digital divide. In 5G, *artificial intelligence, and next generation internet of things:*

Digital innovation for green and sustainable economies. IGI Global. https://doi.org/10.4018/978-1-6684-8634-4.ch001

Lee, C. (2002). Telecommunications reforms in Malaysia. *Annals of Public and Cooperative Economics, 73*(4), 521–540. https://doi.org/10.1111/1467-8292.00203

Lee, T. (2002). Review: Digital divide: Civic engagement,informationpoverty,andthe internet worldwide. *Media International Australia, 103*(1), 147–148. https://doi.org/10.1177/1329878x0210300124

Luyt, B. (2003). Digital divide: Civic engagement, information poverty, and the internet worldwide. *Social Science Computer Review, 21*(1), 120–123. https://doi.org/10.1177/0894439302238974

Lye, T. P. (2011). A history of Orang Asli studies: Landmarks and generations. *Kajian Malaysia, 29* (SUPPL 1).

Macekura, S. (2013). The point four program and U.S. international development policy. *Political Science Quarterly, 128*(1), 127–160. https://doi.org/10.1002/polq.12000

Madsen, H. L. (1994). Norman Fairclough: Discourse and social change. *NyS, Nydanske Sprogstudier, 18*(18), 119–126. https://doi.org/10.7146/nys.v18i18.13363

Masron, T., Masami, F., & Ismail, N. (2013). Orang Asli in peninsular Malaysia: Population, spatial distribution and socio-economic condition. *Ritsumeikan Journal of Social Sciences and Humanities, 6*, 75–115.

Muhammad, R. (2015). The development of ICT and its political impact in Malaysia. *Journal of Borneo Social Transformation Studies, 1*(1), 83–98. https://doi.org/10.51200/jobsts.v1i1.143

Nadzri, M. N., & Jamaie, H. H. (2018). Politics, electorates and the malay/bumiputera's factor: An analysis on the failure of Barisan Nasional in the 2018 general election. *Jebat-Malaysian Journal of History Politics and Strategic Studies, 45*(2), 386–408.

Park, S. (2017). Digital capital. Palgrave Macmillan. https://doi.org/10.1057/978-1-137-59332-0

Paterson, T. G. (1972). Foreign aid under wraps: The point four program. *The Wisconsin Magazine of History, 56*(2), 119–126.

Ramli, M. R., Malek, S., Milow, P., & Aziz, N. J. (2021). Traditional knowledge of medicinal plants in the kampung orang asli Donglai Baru, Hulu Langat, Malaysia. *Biodiversitas, 22*(3), 1304–1309. https://doi.org/10.13057/biodiv/d220329

Rennie, E. (2018). Policy experiments and the digital divide: Understanding the context of internet adoption in remote aboriginal communities. In *Digital participation through social living labs: Valuing local knowledge, enhancing engagement*. Chandos Publishing. https://doi.org/10.1016/B978-0-08-102059-3.00016-2

Rennie, E., Hogan, E., Gregory, R., Crouch, A., Thomas, J., Wright, A., & Thomas, J. (2016). *Internet on the outstation. The digital divide and remote aboriginal communitites*. Institute of Network Cultures.

Robertson, K. A. (2004). The main street approach to downtown development: An examination of the four-point program. *Journal of Architectural and Planning Research, 21*(1), 55–73.

Robinson, J. P. (2003). Digital divide: Civic engagement, information poverty and the internet worldwide by Pippa Norris: Digital divide: Civic engagement, information poverty and the internet worldwide. *American Journal of Sociology, 108*(4), 87–90. https://doi.org/10.1086/378471

Salman, A., Choy, E. A., Wan Mahmud, W. A., & Abdul Latif, R. (2013). Tracing the diffusion of internet in Malaysia: Then and now. *Asian Social Science, 9*(6), 9–15. https://doi.org/10.5539/ass.v9n6p9

Sánchez, J. A. (2022). Divergencias y convergencias del estoicismo de la época imperial con el cristianismo primitivo. *Estudio Agustiniano, 57*(2), 333–372. https:// doi.org/ 10.53111/ estagus. v57i2.1057

Sawalludin, A. F., Jia Min, C. L., & Mohd Ishar, M. I. (2020). The struggle of Orang Asli in education: Quality of education. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 5(1), 46–51. https:// doi.org/10.47405/mjssh.v5i1.346

Smart, C., Donner, J., & Graham, M. (2016). Connecting the world from the sky": Spatial discourses around Internet access in the developing world. *ACM International Conference Proceeding Series, 03-06-June-2016*. https://doi. org/10.1145/2909609.2909659

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media and Society, 6(3)*, 341–362. https://doi. org/10.1177/1461444804042519

Shah, N. M., Rus, R. C., Mustapha, R., Hussain, M. A. M., & Wahab, N. A. (2018). The Orang Asli profile in peninsular Malaysia: Background & challenges. *International Journal of Academic Research in Business and Social Sciences, 8(7)*, 1157–1164. https://doi.org/10.6007/ijarbss/v8-i7/4563

Shahrul, T., M. Al-Mekhlafi, H., Ghani, M. K., Osman, E., Yasin, A., Nordin, A., Nor Azreen, S., Md Salleh, F., Ghazali, N., Bernadus, M., & Moktar, N. (2012). Prevalence and risk factors associated with entamoeba histolytica/dispar/ moshkovskii infection among three Orang Asli ethnic groups in Malaysia. PLoS ONE, 7(10), e48165. https://doi. org/10.1371/journal.pone.0048165

Shukri, S. (2023a). Digital authoritarianism: Protecting Islam in multireligious Malaysia. *Religions, 14*(1), 87–101. https:// doi.org/10.3390/rel14010087

Shukri, S. (2023b). *Digital authoritarianism and religion in Malaysia. In Digital Authoritarianism and its Religious Legitimization: The Cases of Turkey, Indonesia, Malaysia, Pakistan, and India*. Palgrave Macmillan. https://doi. org/10.1007/978-981-99-3600-7_4

Sterken, R. E. (1997). United States development assistance policy: The domestic politics of foreign economic aid. Vernon W. Ruttan. *The Journal of Politics, 59*(3), 36–39. https://doi. org/10.2307/2998672

Steyn, J. (2011). ICTs and sustainable solutions for the digital divide: Theory and perspectives. IGI Global. https://doi. org/10.4018/978-1-61520-799-2

Straubhaar, J., Spence, J., Tufekci, Z., & Lend, R. G. (2012). Inequity in the technopolis: Race, class, gender, and the digital divide in Austin. *In Inequity in the Technopolis: Race, class, gender, and the digital divide in Austin* (Vol. 9780292737105). https://doi. org/10.1108/00242531211292169

Sukri, A., Noorizhab, M. N. F., Teh, L. K., & Salleh, M. Z. (2022). Insight of the mitochondrial genomes of the Orang Asli and Malays: The heterogeneity and the disease-associated variants. *Mitochondrion, 62*, 74–84. https://doi. org/10.1016/j.mito.2021.10.010

Thibault, P. (1993). Review of Norman Fairclough discourse and social change 1992. *Social Semiotics, 3*(2), 293–310. https:// doi.org/10.1080/10350339309384422

Trnka, S. H. (2016). Digital care: Agency and temporality in young people's use of health apps. *Engaging Science, Technology, and Society, 2*, 248–265. https://doi. org/10.17351/ests2016.119

van Dijk, J. A. G. M. (2005). *The deepening divide: Inequality in the information society*. SAGE Publications. https://doi. org/10.4135/9781452229812

Were, G. (2015). Digital heritage in a Melanesian context: Authenticity, integrity and ancestrality from the other side of the digital divide. *International Journal of Heritage Studies*, *21*(2), 153–165. https://doi.org/10.1080/13527258.2013.842607.