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This manuscript underwent peer review. It was received 1/19/2025 and was with the authors for three revisions.



ID Support: Digital Capitalism and the Digital National Identification Development Project in Nepal

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Abstract:

This paper introduces the concept of ID support to account for the promises and risks of international mechanisms and interventions that contribute to the rapid expansion of digital ID systems in the Global South. It uses Nepal as a case because this country received two grants from a multilateral donor to plan and implement this system and received services from a French multinational tech company to prepare the technological infrastructure. Analyzing the interviews, official documents, and news media content, it elaborates that ID support manifests in three forms: technical support (knowledge), financial support (finance), and technological support (technology). It conceptualizes ID support by drawing upon digital capitalism, a concept related to the political economy of digital technologies, and from projectification, a concept from organization studies. The paper defines ID support as the dynamic conditions created at the intersection of digital capitalism, in the form of the power and politics of foreign aid and capital accumulation by multinational tech companies, and projectification, as the need to implement IDs as development projects funded by international donors in the Global South. The study emphasizes that the fields of ICT4D and ID4D need to foreground support as one of the key components for inquiry.

Keywords: International Development, Global South, ICT4D, Projectification, Digital Capitalism, ID4D.

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1 Introduction

National digital identification systems in the Global South have become sites of convergence for international development agencies and multinational technology corporations, which offer cooperation or assistance to state ID authorities. These systems assign unique identifiers to individuals for official and commercial verification purposes, using characteristics such as biometrics, numbers, and data (International Telecommunication Union, 2016). This assistance is a core component of the development of digital IDs within the development industry and the digital political economy, as it provides the necessary infrastructure.

However, we still lack a broader framework to account for the different dynamic aspects of such assistance from international actors in the Global South in the fields of information and communication technology for development (ICT4D) and identity for development (ID4D). These fields explore the connections between information and communication technologies (ICT) or digital IDs and various facets of development (Masiero & Bailur, 2021; Schelenz & Pawelec, 2022). While ICT4D studies mention the financial and technological infrastructure made possible by the collaboration between international donors and tech companies (Akbari, 2025; Heeks, 2018), these studies have not analyzed these components in detail. The ID4D literature has discussed the implications of supranational actors, such as humanitarian and development donors but examines these implications through the framework of data justice, focusing on harm, exclusion, and violence (Brinham, 2025; Cioffi, 2024; Martin, 2023; Masiero & Bailur, 2021; Weitzberg et al., 2021). Similarly, scholars (Masiero, 2025; Masiero & Bailur, 2021) have built a framework examining ID systems and humanitarian assistance from the perspective of data justice as digital ID4D. This framework prioritizes improved access and inclusion of minorities, as well as better humanitarian aid, while examining the possibilities of injustice and harm caused by these systems. This shows that existing literature gives less emphasis to the situations created by these international actors in the development of the ID system. That means there is an urgent need to develop a framework that can explain the assistance provided by international development agencies and multinational tech companies, as these entities play a crucial role in the planning and implementation of digital IDs in the Global South.

In this context, this paper develops a new framework for analyzing the roles and implications of these international actors' participation in implementing digital IDs in the Global South. Using empirical data primarily from Nepal, it asks the following political and economic questions: What situations, opportunities, and challenges evolve when international development agencies and multinational tech companies participate in implementing digital IDs in Nepal? How do domestic actors respond to these conditions? What implications do these actions have on our understanding of the relationship between supranational entities and state ID authorities in the Global South?

To theorize such opportunities and challenges, this study proposes international assistance/support for IDs or *ID support*, as a framework by engaging with the debates in the political economy of digital technologies and organization studies. Drawing from the concept of digital capitalism within the political economy of digital technologies, it explains the power of foreign aid in the development industry and the capital accumulation of multinational tech companies. Since many IDs are implemented as donor-funded projects, they have timeframes that may not align with the sociopolitical environment. In such cases, the paper uses the concept of projectification from organization studies to explain the implications of temporary organizations and the need to accelerate the process by designing projects and building the capacity of government officials to implement digital IDs as development projects in the Global South in order to complete the projects within the timeframe.

Nepal is an important case for theorizing this sort of assistance because it has received financial and technological assistance for a long time. For example, the Asian Development Bank (ADB) provided two grants for planning and implementing an e-government project with a national ID (NID) component from 2006 to 2018. Since 2016, Nepal has received services from the French tech company IDEMIA in developing the technological aspects of the ID. The long duration of foreign aid and services from this tech company provides an opportunity to examine how NIDs are influenced by these international actors. This also makes Nepal's case generalizable to other Global South countries that rely on foreign aid and support from multinational tech companies. According to a study, other international organizations, such as the United Nations Development Programme (UNDP), United Nations Children's Fund (UNICEF), the African Development Bank, and the ADB, have promoted similar systems in the Global South (Center for

Human Rights and Global Justice [CFHRGJ], 2022). Similarly, IDEMIA (2021), a multinational IT company, worked in more than 30 countries in 2021.

The present research found that *ID support* operates in three interrelated ways: technical, financial, and technological. Technical support involves using experts for knowledge production and policy translation but may also create conflicts of interest. Similarly, financial support for projects may overlook the importance of legal governance mechanisms. Technological support can lead to vendor lock-in, where state ID authorities depend on a particular vendor as it becomes difficult to switch services due to the high cost required. Alternatively, technological support also leads to vendor-neutral support, where state ID authorities can reduce the dependency. While the general understanding of vendor-neutral support is an open standard (World Bank, 2019), this paper uses it in the context of ending vendor lock-in and diversifying vendors.

The current study defines *ID support* as the network of conditions that emerges when multinational technology companies and international development agencies collaborate in developing digital IDs in the Global South within the contexts of projectification and digital capitalism. This includes technical, financial, and technological support, such as the necessary expertise, funds, and technology for implementing IDs. However, this support may lead to risks, such as vendor lock-in, conflicts of interest among consultants, and lack of legal governance mechanisms. This paper argues that *ID support* manifests as the dynamic conditions of promises and risks when digital capitalism and projectification interact in the Global South where foreign aid pushes the implementation of digital IDs as development projects, and multinational tech companies accumulate wealth. This happens as a large amount of international aid goes to these companies for their services, and even after the projects end, countries in the Global South need to spend a significant amount of money to get international technological support.

ID support contributes to the fields of ICT4D and ID4D in three ways. First, it highlights support as a key component of digital development in the Global South, where international development agencies and multinational tech companies influence many countries' implementation. By conceptualizing *ID support*, this paper moves from existing debates that focus on "data practices in aid," such as the consequences for data subjects, including recognition and surveillance (Weitzberg et al., 2021) and justice (Masiero & Bailur, 2021). Instead, it treats support as an object of study to expand the scope of digital studies, as support provided by international actors shapes the implementation of digital IDs in the Global South. Second, it focuses on the debate about projects as salient loci for research, because "projects" are important to the rapid expansion of digital IDs in the Global South and projectification conditions how these systems are developed. Third, it highlights not only the potential benefits of such support, including policy and technical knowledge transfer, finance, and vendor-neutral technological assistance, but also the possible risks, such as the lack of legal governance of these systems, the translation of the interests of experts, and vendor lock-in.

The remainder of this paper is organized into six sections. Section 2 discusses two conceptual blocks of *ID support*. Section 3 describes the various methodologies used to collect and triangulate data. Section 4 elaborates on the *ID support* framework. Section 5 presents and discusses empirical data from Nepal. Sections 6 and 7 provide a conclusion and suggest future research paths.

2 Conceptual Background and Contribution

In answering the above questions, particularly regarding the role and implications of these supranational actors, this paper develops the *ID support* framework to understand support as a central component and necessary object of research for comprehending digital identification. It engages with debates in ID4D, the political economy of digital technologies, and organization studies.

The ICT4D literature on digital identities mainly focuses on the implications for data subjects. Scholars have highlighted the relationship between identity and development, linking it to the achievement of the Sustainable Development Goals (SDGs). They have demonstrated that these identities can both empower and disempower citizens (Cioffi, 2024; Gelb & Clark, 2013; Gelb & Metz, 2018). Others have linked these IDs to e-governance, improving the relationship between governments and data subjects (Addo & Senyo, 2021; Buddhacarya & Chatterjee, 2019; Rao & Greenleaf, 2013). Using the framework of data justice, researchers have examined the socioeconomic aspects of these identification systems, as well as questions related to oppression, exclusion, and injustice (Drèze et al., 2017; Krishna, 2021; Martin & Taylor, 2021; Masiero, 2024; Masiero & Das, 2019). Additionally, a group of scholars has examined the role of aid in surveillance (Madianou, 2019, 2024; Martin, 2023; Weitzberg et al., 2021) and violence

(Brinham, 2025). These scholars have emphasized the outcomes of these systems. Such studies are very important as digital IDs have become tools of exclusion, harm, and violence (Masiero, 2025); however, researchers have paid less attention to the role of supranational actors in developing these systems and their implications. In this regard, the current research contributes to the ongoing debate by building upon the political economy of identification, highlighting support mechanisms, processes, and implications.

The first concept the study draws on is the political economy of digital technology, such as digital capitalism. Schiller (1999) used digital capitalism to describe the privatization of the Internet, its increasing use in production processes, and the growth of transnational IT corporations. Other scholars have proposed alternative forms, such as surveillance capitalism (Foster & McChesney, 2014; Zuboff, 2019) and platform capitalism (Srniczek, 2017). Zuboff defines surveillance capitalism as the use of personal data to predict human behavior. Similarly, Srniczek presents platform capitalism as data extraction by digital platforms and the network effect. These two debates have one thing in common: data extraction from people. Using evidence from Aadhaar, India's digital ID system, Hicks (2020) claims that both Srniczek and Zuboff do not focus on the role of the state but rather on corporations. Hicks (2020) employed digital capitalism to illustrate the capital accumulation of private IT companies through the India Stack, coining the term "digital ID capitalism." Jonathan Pace (2018, p. 262) defines digital capitalism as "the collection of processes, sites, and moments in which digital technology mediates the structural tendencies of capitalism." Building on this definition, the present research discusses digital ID capitalism in political economic contexts, such as the implications of foreign aid from international development agencies and technological support from multinational tech companies.

The second concept this study employs is "projectification" from organization studies, which examines the temporary nature of organizations or programs. Since support occurs through development projects, scholarship on projectification is helpful here. The term "projectification" originated in organizational studies and was initially used to analyze project management models in a French company. Midler (1995) conceptualizes projectification as temporary project organizations and activities inside private companies that increase efficiency and autonomy. Jacobsson and Jałocha (2021) discuss "projectification as a social trend," examining its impact on individuals and society with a focus on international funding and short-term projects. In this regard, the current paper uses projectification as a social trend to highlight the broader implications of development projects. This is an example of projectification in the public sector. Jacobsen (2022) argues that studies on the projectification of the public sector have implications at three levels: personal, organizational, and societal. At the personal level, he mentions that projectification leads to temporary employment and a new professional identity. At the organizational level, it manifests as weakened local autonomy and an increase in bureaucratic activities, such as documentation and standardization. At the societal level, the studies show that projectification brings changes to the labor market and could result in a mismatch between the problem framed by funders and the targeted community. In this context, the present research draws on the concept of "projectification" to explain the broader implications of funding provided by the ADB in Nepal's ID sector at the organizational and societal levels. It emphasizes the temporal aspect of the projectification of public organizations (Godenhjelm et al., 2015) and the environment that foreign aid creates for development projects, such as capacity building, and the resulting need to expedite processes associated with NID efforts. That means projectification is an aspect of digital capitalism.

Thus, this paper employs digital capitalism and projectification as two conceptual blocks of *ID support*.

3 Research Setting and Methodology

3.1 Setting

Support from international development agencies and multinational technology companies is crucial to the implementation of digital identification in Nepal. From 2006 to 2018, the ADB provided two grants for a project related to e-government that included a NID component. During this period, Nepal announced the card in 2009 for use in elections and the distribution of welfare services (Maharjan, 2021). In July 2011, the National ID Management Center (NIDMC) was established under the Ministry of Home Affairs. In 2019, vital registration work under the Ministry of Local Development merged with the NIDMC, establishing the Department of National ID and Civil Registration (DoNIDCR) in October of that year. While the Office of the Prime Minister and Council of Ministers (OPMCM) led the project "Nepal: Information and Communication Technology Development Project" from 2008 to 2018, state ID authorities such as NIDMC and DoNIDCR implemented the aspect of the national digital ID. From 2016 to 2025, a

French multinational technology company, IDEMIA, formed in 2017 by the merger of Safran, Morpho, and Oberthur Technologies (Trikanad & Bhandari, 2022), provided technology services. Although the relationship with the ADB has ended, IDEMIA continues to work with the DoNIDCR.

3.2 Research Methodology

3.2.1 Qualitative Methods

This paper uses various qualitative methods, such as document analysis, interviews, and news media content analysis to collect and triangulate data, surrounding the international financial and technological aspects of the national digital ID system in Nepal. Qualitative methods allow us to examine discourses and practices of social phenomena.

3.2.2 Data Collection

From 2021 to 2025, the data related to Nepal's national digital identification program from multiple sources, including documents, news media, and interviews, were collected.

One such source is official documents, such as plans, policies, and advertisements related to Nepal's digital ID system, which are accessible online. These documents are prepared by state ID authorities, states, donors, and multinational tech companies. For instance, project documents, including proposals and periodic reports (e.g., completion and evaluation reports), available on the ADB's website, were gathered because they contained information on the different components of the project. These documents also include advertisements for international bids, which included general information about the services IDEMIA provided. This partially mitigated the drawback of not having access to the contract details between IDEMIA and the state ID authority. This is one of the drawbacks of document analysis, as important documents may not be available (Karppinen & Moe, 2019). Although right-to-information applications were submitted to the ID department during the current research, information about this contract was denied due to confidentiality concerns. However, the advertisements gave information about the broader services offered by IDEMIA. Researchers in the Global South, such as in Uganda (Unwanted Witness, 2020) and India (Belorgey, 2023), have raised concerns about the lack of access to such contracts.

Data from news media content, primarily from online sources, were collected to explore various aspects and concerns about the system raised by news media organizations. First, news articles published after the introduction of the NID in 2009 were collected using search keywords such as "national ID Nepal" in English and Nepali. The trajectory of NIDs and the important issues that evolved from 2009 to 2025 were understood with the help of these materials.

Data were collected through interviews with key individuals who participated in or observed the implementation of the NID program in Nepal. This research includes five interviews conducted between July 2023 and May 2025 with one IT expert, three government officers (G1, G2, and G3), and a project person in Nepal. The IT expert was selected for their careful observations of the technological development of Nepal's NID system. In May 2024, a one-hour recorded interview focusing on the role of multinational technology companies in the IT sector was conducted. The government officers were chosen because they were working or worked for the state ID authority and were familiar with the relationships between development agencies, multinational technology companies, and the state ID authority in Nepal. Three unrecorded and hour-long interviews were conducted in May 2024 and May 2025 centered on the evolution of Nepal's NID system from 2011 to 2025 as well as the steps the state ID authority took after 2024. The project member was selected because they were involved in the ADB project and were aware of the interactions among development agencies, technology companies, and the government. The unrecorded interview, conducted in June 2023, focused on the project's trajectory from 2008 to 2018.

3.2.3 Data Analysis and Triangulation

Data from multiple sources were interpreted, and key themes were identified. As suggested by Bowen (2009), documents were carefully read to find patterns and themes. Similarly, news media content was analyzed to understand the role of international development agencies and multinational technology companies, employing various coding methods (Schweizer, 2019).

Official documents were examined to identify key themes and patterns. These diverse documents provided a nuanced understanding of how NID was implemented with the support of the ADB. They were

helpful in triangulating the claims of the two authorities, the donor and the recipient. For instance, the Nepalese government's final report (ADB, 2020) emphasized the project's positive aspects, whereas an independent evaluation by the ADB's Independent Evaluation Department (Taylor-Dormond et al., 2021) explicitly stated that the project failed to consider the NID's detailed plan from the outset.

Similarly, news materials were organized on a linear timeline to understand the sequence of events. This approach provided a clear understanding of the development of the NID in Nepal, as well as the evolution of related discourses and practices. Based on this understanding, interviews asking the participants to provide more information about the events and issues discussed in the news were conducted. Notes were taken during these interviews, and the one recorded interview was transcribed.

After analysis of interviews, official documents, and news media content, three key themes of *ID support* emerged: finance, technology, and knowledge. Data were triangulated using a variety of sources, including documents from different organizations and interviews with key informants from the government, international development agencies, and technology sector.

4 ID Support: A Conceptual Framework

This paper defines ID support as the complex web of possibilities through foreign aid and services provided by multinational tech companies in the context of digital capitalism and projectification. This takes the shape of three kinds of such support: technical support, financial support, and technological support.

Technical support refers to the forms and implications of "knowledge" and policy translation through international development. While technical assistance was initially conceived as a one-way exchange from predominantly knowledge-rich countries to predominantly knowledge-poor countries (Berg, 1993), more recent terminology reflects a shift toward a more collaborative and conversational understanding (Wilson, 2007). This aspect involves knowledge translation and the capacity building of government staff members with the help of national and international experts. Other means include the preparation of project documents, policies, and policy recommendations. Although technical support for capacity building may facilitate consensus on the implementation of digital identification systems in the Global South (CFHRGJ, 2022), conflicts of interest among these experts may arise (World Bank, 2019).

While technical support provides the "knowledge" lacking in the recipient country or party, financial support fulfills the lack of "capital" (Degnbol-Martinussen & Engberg-Pedersen, 2003). This financial support covers capital provided by donors in the form of development or pilot projects. This support comes in the form of loans, which must be repaid, or grants, which do not need to be paid back, from multinational and bilateral donors. Although discussions of multilateral financial support are common, bilateral support has also evolved. For instance, India provided a grant in 2022 to implement a NID system in Sri Lanka (Macdonald, 2022). Such grants cover not only the financing of the entire ID-related development project but also the technical support and services necessary for tech companies. However, there are risks, such as implementing ID projects without the necessary legal governance mechanisms (Hosein & Nyst, 2013).

This paper defines technological support as the various forms of support and their implications in the field of technology from multinational tech companies. This includes supplying hardware and software, providing smart cards and maintenance services, and building entire systems. This support can be financed by donors or be self-financed. The nature of this support depends not only on the technological capabilities of the IT industry in recipient countries but also on the interests of state ID authority staff. The choice of multinational tech companies may be shaped by colonial legacies, as seen with IDEMIA in African countries (Debos, 2025). Although multinational tech companies from the Global North usually provide such services, south-south technological support has also been evident. For instance, NADRA Technologies in Pakistan and the International Institute of Information Technology in Bangalore, India, have provided services to countries in the Global South (Maharjan, 2025). There are two forms of such support: vendor neutral and vendor lock-in. With vendor-neutral support, state ID authorities do not need to depend on one vendor for their ID system (Musoni et al., 2023). In contrast, with vendor lock-in, these authorities depend on one vendor, making it difficult to switch services to other vendors (Shapiro & Varian, 1999), creating dependencies on the tech companies (Breckenridge, 2019).

5 ID Support and the National Digital Identification in Nepal

Both development agencies and technology firms are actively promoting NID systems in the Global South. This context emphasizes the role of international business and development interests in the context of digital IDs (Hicks, 2023). *ID support* manifests in three interrelated forms: technical support, financial support, and technological support.

5.1 Technical Support

According to literature on global development, technical support encompasses intangible elements, such as technical assistance and policy advice. These elements include activities such as policy dialogue, technical advice, and consultancy (Degnbol-Martinussen & Engberg-Pedersen, 2003). This type of support is embedded in the financial assistance provided by development agencies, such as the World Bank and the ADB.

One thing Nepal's case clearly demonstrates is the importance of technical support for the planning and policy suggestions through consultants. For example, in 2007, a team of 12 consultants, including nationals and internationals, prepared a preparatory report of the project using the technical assistance provided by the ADB of \$0.6 million. The consultants not only prepared a feasibility study but also prioritized NID, because top management was prepared to take ownership of this new initiative (Illawarra Technology Corporation Ltd., 2007). The value of this technical support becomes clear as the report became the basis for the implementation of the whole project. Similarly, following the project's initiation in 2008 with an estimated budget of \$31.2 million (ADB, 2008; Adhikari, 2012), the ADB approved the hiring of an international NID consultant in February 2011. The consultant was hired for 20 months of work at a cost of \$163,550 (Ktm2day, 2011) to expedite the project. This expert prepared the detailed project report (DPR) and tender documents (KTM2day, 2011) and recommended a polycarbonate card. He also highlighted the subpar quality of the biometric data, particularly the fingerprints, collected for the system (The Himalayan Times, 2012). According to an official report, the consultant was needed because the Home Ministry lacked the capacity to prepare project requirements, procure contracts, and implement the NID (Taylor-Dormond et al., 2021, p. 5). Similarly, the executive director of the newly formed NIDMC acknowledged, to news media, that they needed support from an international ID consultant because they had "little knowledge about technology and information systems" (The Himalayan Times, 2011). The discussion in the official report and the acceptance of the lack of knowledge by the government officer highlight the importance of this sort of technical support in the field of digital IDs.

However, Nepal's case also exhibits risks of technical support. When the consultant prepared the tender document, it was later discovered that the standards had been set so high that, out of the nine organizations that submitted sealed bids between April and June of 2013, only Gemalto and Morpho Safran (later renamed IDEMIA) received higher technical evaluation scores (Giri, 2013; Vrankulj, 2013). Subsequently, about a dozen organizations filed complaints with the Prime Minister's Office and the Commission for the Investigation of Abuse of Authority (CIAA). They claimed that "some specifications in the tender documents were manipulated to award the contract to one or two companies." This revelation required rebidding. In June 2015, therefore, the NIDMC again called for bids, and six companies submitted sealed bids (The Kathmandu Post, 2015). In July 2016, Morpho Safran was selected (Neupane, 2016). The final report submitted by the Nepal government to the ADB (2020, p. 3) states that the bank "declared the process to be anomalous ... because of a conflict of interest of the consultant." This indicates the possibility of conflict-of-interest risk. Such issues are widely discussed in the literature on development. For example, the World Bank (2019, p. 62) cautions against such conflicts of interest when employing international technical experts for the procurement process, suggesting that support should be "independent and not directly or indirectly influenced by or an extended arm of any potential bidders or future service providers."

Using consultants for ID projects reveals the nature of projectification and digital capitalism. This practice exemplifies the projectification of organizational capacity building. Fred (2023) uses evidence from Sweden to associate this kind of capacity building with practices such as employing project managers, enrolling government staff in project management courses, and creating project offices. The current research adds the use of consultants in development projects in the Global South to this list of projectification as capacity building. As Marciano (2023) argues, these consultants play two important roles. First, they help the government make sense of the policy environment through evaluation and benchmarking. In Nepal, for example, preparing project preparatory reports aims to build the capacity of

government staff members. The second role is that of legitimizers or validators, who provide governments with grounds to implement controversial policies. In Nepal's case, the project preparatory report recommended against using smart cards because it would increase project costs (Illawarra Technology Corporation Ltd., 2007). However, the government introduced NID as smart cards from 2009 (Maharjan, 2021). Since government staff were not required to follow these recommendations of the project preparatory report, their interests and those of the consultant aligned in choosing smart cards. This projectification is part of digital capitalism because it relates to the global economy and the power and politics of consultants. On the one hand, funding is possible through foreign aid. On the other hand, these consultants play an important role.

This means that such technical support is aimed at creating an environment conducive to implementing ID projects in the Global South. However, there may be a risk of conflict of interest on the part of these consultants.

5.2 Financial Support

Many Global South countries have relied heavily on foreign aid from organizations such as the World Bank, the U.S. Agency for International Development (USAID), the International Development Research Centre (IDRC), the World Health Organization (WHO), and the UNDP to develop technology through development projects (Hanna & Schware, 1990; Schware & Choudhury, 1988). In the digital ID sector, the World Bank has provided financial assistance to several Global South countries, including Bangladesh (World Bank, 2011), Nigeria (Eke et al., 2022), Côte d'Ivoire (Banégas & Cutolo, 2024), and Indonesia (World Bank, 2022). Similarly, the ADB provided financial support to Nepal (Adhikari, 2012).

One thing that Nepal's case clearly illustrates is the projectification of digital IDs through the development of a pilot project that created a new market for IDEMIA. According to the projectification literature, pilot projects are related to the resolution of uncertainty (Bailey et al., 2019). A project member who was interviewed in Kathmandu in 2023 said that the project's NID aspect was not implemented until 2013. This may be because, although the project began in 2008 (ADB, 2008), the international NID consultant was not hired until 2011. The scope of the NID component was unclear and lacked a list of requirements (Taylor-Dormond et al., 2021). The budget was insufficient as well. Initially, it was estimated that \$3.30 million of the total \$31.2 million in funding would be used for the NID component (ADB, 2020). However, around 2012, the consultant estimated that \$8 million was required for the pilot project to build the system and issue approximately 110,000 smart cards. Surprisingly, of the pilot project's actual budget of \$5.8 million, \$4.8 million went to IDEMIA to develop the system and purchase hardware, software, and 117,000 smart cards (ADB, 2020). This means that the French company profited financially from the pilot project.

Promoting IDs in Nepal through foreign aid demonstrates the deepening of digital capitalism in the Global South. Hicks defines digital ID capitalism as the commercialization of ID data collected by the state and its subsequent use by private businesses. Here, the current paper expands upon this concept by suggesting that digital ID capitalism can also account for the role of the development industry in promoting IDs. Digital capitalism results from the collaboration of state ID authorities, development agencies, and multinational tech companies (Coppi, 2024; Lyon, 2009; Lyon & Topak, 2013). Alternatively, it is the result of a condition that, in the case of Africa, Iwuoha and Doevenspeck (2025) call digital consensus among national elites, big tech companies, and international development agencies. In such situations, big tech companies in the Global North capitalize on foreign aid provided by development agencies.

Similarly, Nepal's situation highlights a potential risk associated with the projectification of digital IDs in the Global South. This involves ignoring the legal governance mechanism. For instance, when Nepal introduced the NID card in 2018, there was no law governing data collection or the system (Kayastha & Sanjeevani, 2023; Sigdel, 2023). The media labeled the initiative "A Journey in a Hurry," highlighting the possibility of data misuse (Sapkota, 2018). However, news reports indicate that the National Identity Management Center began preparing a new NID law in 2012 (The Himalayan Times, 2012). Yet it was never submitted to Parliament because a consensus on the NID law could not be reached during the project period. Despite this, there was an urgent need to enroll citizens in the NID system and issue 117,000 smart cards to complete the project by 2018. The project ended on December 31, 2018, with "live enrollment of data, personalization, and issuance of NID cards" (ADB, 2020, p. 3).

In fact, the projectification of NID, which leads to a lack of adequate governing mechanisms, is widespread in the Global South. For instance, Hosein and Nyst (2013) noted that development agencies often promote programs such as NID systems as pilot projects, despite lacking the necessary legal and

regulatory framework. In the case of Nepal, there is a mismatch between political and project logic. As Fred (2020, p. 357) suggested, political logic emphasizes flexible, change-oriented ways of doing things that align with the interests of political actors. In contrast, project logic emphasizes "a break with bureaucratic ideals and practices" and "control, standard operating procedures, and hierarchical structures." This happens as project staff concentrate on achieving targets so that projects do not fail (Hodgson et al., 2019; Ika & Hodgson, 2014). This evidence also suggests that, despite development agencies' claims to prioritize the governance of digital legal identification to promote inclusion and respect human rights (Schoemaker et al., 2023), this may not always be the case (Hosein & Nyst, 2013).

Thus, *ID support* provides insight into how international donors, in connection with the state ID authority, influence ID development projects through financing. This includes projects, pilots, and the construction of technological infrastructure. However, when project logic prevails, the necessary legal governance mechanisms may be overlooked.

5.3 Technological Support

As countries transition to digital identification systems, multinational technology companies from the Global North have increased their influence in the Global South. Companies such as IDEMIA and Thales provide technical assistance to state identification authorities. IDEMIA operates in many countries in the Global South, including Nepal (IDEMIA, 2018; Lal, 2022) and Colombia (Lopez-Solano & Castañeda, 2024). These vendors supply the technologies necessary for building digital ID systems, including hardware and software (CFHRGJ, 2022). They contribute not only to the development of technology but also to its maintenance.

One aspect that Nepal's case showcases related to technological support is the risk of vendor lock-in. This is so because Nepal not only depended on a vendor for multiple services from the beginning but also continued to take services from the company for a long time. This is the opposite of what Shapiro and Varian (1999) suggested, because taking multiple services from a vendor or taking a service from a vendor for a long time can lead to vendor lock-in, making it costly to switch to another vendor. However, the 2015 advertisement calling for international bids reveals that Nepal received support from IDEMIA for five components: hardware, software, cards, e-services, and training. It seems that government officers gradually realized the risk of vendor lock-in. For example, in 2019, when Nepal selected IDEMIA directly for system maintenance and upgrades, paying \$16 million over three years without bidding, government officers argued that the system might collapse if other vendors were selected (Giri, 2019). Similarly, in 2021, IDEMIA was selected through a bidding process to supply 12 million smart cards for \$14.61 million (Shrestha & Giri, 2021). This reliance on IDEMIA prompted debate about vendor lock-in in Nepal (USAID, 2022). Nevertheless, a government officer (G1) informed me during an interview in 2025 that IDEMIA engineers stayed in the government office until July 2024 for full-scale maintenance. This means that Nepal outsourced the maintenance service to outsiders. This outsourcing also increased the risks. This was different from the original plan. During a video interview with a BBC journalist in September 2013, the NIDMC director clearly stated that they would receive technology from foreigners but would have an internal core team to operate and manage the system.

This also means that vendor lock-in is contingent on many factors. The absence of an internal team has been discussed in African countries. For instance, outsourcing maintenance services to international vendors in Namibia has entrenched tendencies of vendor lock-in (Shaanika et al., 2022). However, the interviews conducted revealed differences in understanding of vendor lock-in among stakeholders too. While an IT expert during an interview in 2024 highlighted that Nepal used proprietary software and took all services from one company without guardrails and claimed this was vendor lock-in, two government officers (G2 and G3) argued during interviews in 2025 that Nepal did not experience vendor lock-in because NID is interoperable with other systems. Yet concerns raised in 2019 about the risk of selecting other vendors and the fact that Nepal used the services of only one vendor for a long time are tendencies of vendor lock-in. These findings align with those of numerous other African countries that have experienced vendor lock-in with regard to digital IDs (Burt, 2019). Even so, evidence also shows that some countries considered the possibility of vendor lock-in and planned to avoid it. Therefore, although Nepal and other African countries experienced vendor lock-in, India avoided it by diversifying its vendors. This reduces dependence on a single vendor's software and biometric systems, which limits scalability and operability (Nilekani & Shah, 2015). These examples demonstrate that vendor lock-in is a complex sociotechnical environment created by the decisions of multinational technology companies and state identification actors.

Another aspect that Nepal's case exhibits is the possibility of mitigating vendor lock-in through vendor-neutral support, which is achieved by diversifying vendors. This discourse and practice emerged in response to the realization of overreliance on IDEMIA. In 2023, the news media revealed a few details. First, the NID system might cease if IDEMIA did not provide maintenance services because the government had not paid its fees for a year (Anuragi, 2023). Second, the state was compelled to renew the annual maintenance contract for the following year because Nepal did not have its own capable IT team. Third, Nepal planned to create its own capable team to reduce its reliance on IDEMIA (Ghimire, 2023). In 2024, the DoNIDCR began to argue that smart cards were unnecessary because they were expensive, citing India's example (Sharma, 2020). Though this argument was presented in the context of economics, not having smart cards would decrease dependence on the French company. During an interview in 2025, two government officers (G2 and G3) shared the developments since 2023. According to them, after July 2024, the department stopped receiving full support from IDEMIA, and the internal technical team began handling the system, replacing the IDEMIA engineers. They also revealed the department's new plan to decrease dependence on one vendor by dividing work into four categories: services they need IDEMIA for, services other international vendors can perform, services Nepali vendors can perform, and services they can perform internally. In line with this plan, the department published an international bid in March 2025 for "Support and Maintenance of the National Identity Management Information System." A decision had not been made by August 2025. This paper refers to this situation as "vendor neutral" because Nepal is diversifying its vendors. This differs from the general definition, which focuses on open standards (Jurek, 2024; Musoni et al., 2023). During the 2025 interview, a government staff member (G2) told me that the NID system of Nepal is composite and includes the Automated Biometric Identification System, which is proprietary software owned by IDEMIA, and other open-source subsystems. This means that if the plan succeeds, Nepal will still need to rely on IDEMIA, albeit on a smaller scale.

Both vendor lock-in and vendor-neutral support exist within the structures of digital capitalism. In the case of digital IDs, the specifics of the contracts between multinational tech companies and state ID authorities are not transparent. This hinders us from determining the exact amount that state ID authorities have spent. However, focusing on the technoeconomic aspect allows us to assume the broader characteristics of the partnership between state ID authorities and multinational tech companies. Multinational tech companies not only lend their proprietary software to collect rents (Birch, 2020; Birch & Bronson, 2022; Sadowski, 2020) but also expand their markets (Pieterse, 2010) by supplying the necessary hardware, software, and smart cards in the Global South. Often, European tech companies are selected in this region not only for their state-of-the-art technologies but also for the different strategies they take to influence state ID authority actors, as Lopez-Solano and Castañeda (2024) argue in the case of Colombia. Similarly, as Wade (2002) argued about the promotion of e-government projects in the 2000s, the expansion of digital IDs has also made many technology-poor countries in the Global South dependent on multinational tech companies in the Global North. So digital IDs demonstrate the Global South's dependence on tech companies in the Global North. This is particularly true in the case of smart cards, as many countries in the Global South do not even manufacture chips (Miller, 2022).

Therefore, *ID support* helps us understand the manifestation of digital capitalism in the Global South in terms of the capital accumulation and market expansion of northern multinational tech companies, by not only supplying technologies but also building systems.

6 Conclusion

This paper has developed the *ID support* framework to understand the support provided by international actors as a building block for the development of digital IDs in the Global South. *ID support* takes the form of digital capitalism, which is based on profit accumulation and market extension for multinational tech companies. This support comes in the form of foreign aid and the projectification of digital IDs, which leads to the capacity building of government officers and the creation of projects and pilots to implement digital IDs using experts. *ID support* evolves in three interrelated ways: technical, financial, and technological, with both promises and risks. While *ID support* fosters environments of knowledge production and policy translation, as well as the funding of projects and technological infrastructure, it may also create conflicts of interest among experts and neglect of governance mechanisms and result in vendor lock-in.

ID support allows us to understand the dynamic nature of the interaction between international and national actors. So one aspect that *ID support* reveals is the power imbalance between northern tech

giants and state ID authorities in the Global South. This means the relationship is unequal. Being donors, development agencies can decide how much financial support to provide, whether in the form of loans or grants (Degnbol-Martinussen & Ebdgerg-Pedersen, 2003). Similarly, multinational tech companies decide whether to support state ID authorities or not, depending on whether the authorities can fulfill the demands of contracts. This makes the authorities dependent on the tech companies.

However, *ID support* also illuminates the fact that state ID authorities are not powerless. When we focus on the agency of recipient countries, this relationship is not static (Lie, 2015). In collaboration with development agencies, recipient countries can use three kinds of support according to their needs. They can also establish different relationships with multinational tech companies by planning to evade and challenge vendor lock-in. There are also chances of mitigating negative implications of projectification.

Thus, this research contributes to the literature on ICT4D and ID4D by foregrounding the support as an important component of digital development by drawing concepts from the political economy of digital technology and organization studies. This study extends the previous studies in ID4D that focus on the implications of supranational actors such as international development agencies on injustice (Masiero, 2025; Masiero & Bailur, 2021), exclusion (Martin & Taylor, 2021; Weitzberg et al., 2021), and harm (Brinham, 2025). This paper offers a conceptual and methodological tool to understand the dynamic situations that evolve during the interaction of international and national actors in the ID sector in the Global South. It does so by building the *ID support* framework, which has three components: technical support, financial support, and technological support.

7 Future Studies

This study presented the situation that evolved due to the participation of multilateral foreign donors and North American multinational tech companies in the Global South. Yet recent evidence suggests that bilateral foreign aid has been evident, and even tech companies from the Global South are working in other countries. This creates at least two opportunities for further research on *ID support*.

7.1 Bilateral Financial Aid

One aspect is bilateral financial aid. This support is different from multilateral support, as they are often driven by political and economic motivations of the donor country (Degnbol-Martinussen & Ebdgerg-Pedersen, 1999). This may be guided by the interest of the donor country to provide support in dire conditions as in the case of Sri Lanka after its economic recession. However, it may create another environment, the debate of digital sovereignty (Macdonald, 2022). This is the fear that the donor country can create conditions of allowing only its own tech companies to work in the recipient country and may have access to the personal data of foreign countries. So the implication of bilateral financial aid may be different from that of multilateral aid.

7.2 South-South Cooperation

Another aspect is south-south cooperation. The bilateral financial aid by India to Sri Lanka is one kind of south-south cooperation. However, in the rise of tech companies from the Global South, which are working in the Global South, technological support such as south-south cooperation seems to be an interesting avenue for further inquiry. There are more studies needed about the role of Pakistan's NADRA Technologies (Malik, 2014) and the International Institute of Information Technology (IIIT-B) in Bangalore, India (Martin, 2021; Thanda, 2024) in the development of digital IDs in the Global South. Such studies will reveal the diversity within the Global South (Milan & Treré, 2022) as well as the hierarchical relationships that exist within it (Bull & Banik, 2025).

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