Artificial intelligence in the informal economy: game changer for microentrepreneurs?

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Artificial intelligence in the informal economy: game changer for microentrepreneurs?

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Abstract

Purpose – This article integrates insights from bricolage theory and the dynamic capability (DC) framework to explore the potentialities and dangers of artificial intelligence (AI) in the informal sector, where microenterprises could harness its powers to transform their business models and scale, or risk falling further behind in the wake of AI-enabled disruption.

Design/methodology/approach – This article takes a conceptual approach complemented with case illustrations. In the first part, it draws on bricolage and DCs theories to introduce nine new propositions that explicate the dynamic, sometimes bidirectional, relationships, between AI, digital bricolage, DCs and enterprise growth and competitiveness. In the second part, it highlights three illustrative cases of microenterprises to further elucidate these relationships.

Findings – This study proposes a novel framework integrating AI, digital bricolage and DCs to enhance the performance of informal microenterprises. It highlights the role of digital bricolage as a mechanism for adapting existing resources to develop AI capabilities, and the complementary role of DC in deploying AI for growth, scaling and competitiveness. The study demonstrates AI's role in strengthening opportunity sensing, seizing and transformative capacities that differentiate struggling enterprises from thriving ones, while also addressing critical limitations such as infrastructural inequities and fragmented skills.

Practical implications – The study offers valuable practical implications for fostering inclusive digital transformation in informal microenterprises. It highlights the role of digital bricolage in enabling resource-constrained entrepreneurs to creatively adapt and deploy AI for value creation, operational efficiency and agility. Policymakers and practitioners can leverage these insights to address barriers such as infrastructural inequities and skill gaps, fostering AI adoption. This approach supports sustainable competitiveness and market integration for marginalised enterprises.

Originality/value – This study proposes a novel framework integrating AI, digital bricolage and DCs to explicate the mechanisms and processes through which informal microenterprises achieve differential outcomes that propel some microenterprises to growth and scaling, on the one hand, while leaving others to fall further behind. To the best of our knowledge, this is the first article that aims to unpack the double-edged sword of AI as both a potential leveller and stratifier in the informal sector.

Keywords Technology, Dynamic capabilities, Resource-based theory, Institutions, Institutional theory

Paper type Research article

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1. Introduction

Artificial intelligence (AI) holds transformative potential, yet also intensifies challenges tied to digital inequity, workforce precarity and entrenched institutional disadvantages. We define AI as computer systems and applications that are designed to perform tasks that normally require human intelligence, such as recognising patterns, making predictions, generating content or supporting decision-making. Our focus here is on practical AI applications in informal enterprises rather than the underlying technical artefacts which would typically be beyond the reach and capacity of informal sector firms in developing countries.

In the global South, where informal work dominates labour markets, AI offers avenues for improving productivity and market access through digital platformisation. Yet, as these advancements promise to bridge certain resource gaps, they also risk exacerbating structural inequities and fostering new forms of worker vulnerability. For informal micro-entrepreneurs, who often face resource asymmetries and operate with limited institutional support, the prospect of AI brings a blend of hope and complexity: hope for overcoming historical barriers to growth and digital access, and complexity due to intensified challenges like double precarity, re-intermediation through algorithmic control and deepening resource inequality.

The informal economy, characterised by unregistered, unregulated and mostly micro-sized businesses, plays a crucial role in many developing economies, providing employment and income for a significant portion of the population. It provides over half of non-agricultural jobs and contributes nearly one-third of gross domestic product (GDP), offering income for billions, particularly where formal jobs are scarce (Bu and Cuervo-Cazurra, 2020; Castro *et al.*, 2014). Informal entrepreneurs also play a key role in the circular economy, particularly in resource-constrained settings. They frequently engage in practices such as recycling, repair and repurposing of goods, thereby reducing waste and extending the lifecycle of products (Kolade *et al.*, 2024). Informal enterprises show resilience, swiftly adapting to economic shifts and crises, thereby stabilising local economies by meeting essential needs (Williams and Vorley, 2014). Their flexibility allows rapid responses to market demands, unlike formal enterprises burdened by bureaucracy (Webb *et al.*, 2014). Additionally, the informal economy fosters entrepreneurship and innovation as many entrepreneurs launch informally to avoid registration costs and complexities, tailoring products to local needs and promoting a culture of innovation (Williams *et al.*, 2017). Informal ventures also serve as a foundation for transitioning to the formal economy, helping entrepreneurs acquire experience and resources (Monsen *et al.*, 2011).

The adoption of AI technologies can lead to significant productivity improvements, with some studies reporting increases in labour productivity by as much as 7.4% among adopters compared to non-adopters (Bettiol, 2023). This enhancement in productivity is crucial for microenterprises, which often operate under resource constraints and face intense competition from larger firms (Hwang and Kim, 2021). Furthermore, AI applications can analyse large datasets to provide insights into market trends, customer preferences and competitive dynamics, enabling microenterprises to make informed decisions that enhance their market positioning (Obschonka and Audretsch, 2019).

The potential for AI to drive innovation in the informal economy is substantial. AI can facilitate the development of new products and services, enabling microenterprises to differentiate themselves in competitive markets. For instance, generative AI models can assist in product design and development, allowing small firms to innovate rapidly and respond to changing consumer demands (Norbäck, 2023). Other relevant AI technologies include predictive analytics that help vendors anticipate sales trends, AI-powered chatbots that automate basic customer interactions on social media platforms such as WhatsApp or Facebook, and AI translation tools that bridge language gaps in multilingual trading contexts. In addition, AI can enhance collaboration among microenterprises by enabling knowledge sharing and networking through digital platforms, fostering a culture of innovation and collective growth (Grashof and Kopka, 2022). Examples of these include AI-powered freelancing platforms like Upwork, crowdsourcing tools such as Amazon Mechanical Turk,

and knowledge-sharing ecosystems like Kaggle, where even small-scale entrepreneurs can access communities, datasets and problem-solving resources. It is worth noting that AI capabilities are increasingly being integrated into the traditional information technology tools and solutions, enabling businesses in the informal sector to better sense and seize opportunities, for example, the mobile app and social media platforms, and payment solutions such as mobile banking apps (Owoseni and Twinomurinzi, 2019).

However, the adoption of AI in the informal economy is not without challenges. Many microenterprises face significant barriers to integrating AI technologies, including a lack of technical expertise, limited access to financial resources and insufficient infrastructure (Crockett *et al*., 2023). Additionally, the ethical implications of AI deployment, such as data privacy concerns and algorithmic bias, must be addressed to build trust among consumers and stakeholders (Huang *et al*., 2023). The limited understanding of AI ethics among microentrepreneurs further complicates the responsible adoption of these technologies (Crockett *et al*., 2023) and can lead to underutilisation or misuse (Huggins *et al*., 2017). While AI has the potential to drive innovation, the outcomes may not be uniformly positive.

Moreover, the digital divide remains one of the most pressing challenges for micro-entrepreneurs in the informal economy. AI and digital platforms have largely benefitted entrepreneurs and workers with access to digital infrastructure. However, for entrepreneurs on the fringes of the digital economy, lacking access to consistent Internet and digital devices, these advancements underscore exacerbate inequalities (Gmyrek *et al*., 2024). The digital divide restricts opportunities for skill acquisition and upwards mobility, leaving informal actors trapped in cycles of low-value entrepreneurial activities and limited opportunities for growth and scaling (Cazzaniga *et al*.., 2024).

Platformisation introduces both opportunities and risks, reshaping how informal labour and entrepreneurial opportunities are managed and monetised (Kolade *et al*., 2022). For example, ride-hailing and delivery platforms have proliferated in urban centres across the global South, offering on-demand jobs that circumvent traditional employment barriers. These platforms promise flexibility and independence for workers and microenterprises, yet algorithmic management practices have fostered new forms of precarity. Algorithms often overlook real-world complexities, worsening the 'double precarity' in the informal sector. Already vulnerable due to unstable work, informal economic actors face real-time algorithmic control that reduces agency and increases stress from performance metrics and punitive evaluations, further amplifying their challenges (Raval, 2019)

Building on the preceding outline, this article grapples with the character of AI as a double-edged sword of inclusion and exclusion, with wide-ranging and far-reaching implications for microentrepreneurs in the informal economy. Our interest in the informal economy is premised on the realisation that it is the central locus of hyper-precarity, on the one hand, and potentially game-changing opportunities, on the other. In the absence of institutional protection and regulations, informal microenterprises are exposed to hyper-vulnerabilities aggravated by the liabilities of smallness and resource asymmetry. On the other hand, they are also, on the very account of this institutional exclusion, able to access and harness potentially path-breaking opportunities enabled by frontier digital technologies such as AI.

In a turbulent context defined by the increasing ubiquity and disruptive impacts of AI, micro-entrepreneurs are either able to make a leap forward in opportunity recognition and exploitation or are likely to fall further behind. The difference between these hugely disparate outcomes may be associated with the nature of AI technology accessed, the manner in which microentrepreneurs are able to mobilise required resources to develop the AI capabilities, and the capacity to continually adapt and re-invent their operational strategies towards growth and upscaling. In order to unpack these factors and forces that shape microentrepreneurial outcomes and aspirations in an AI-enabled informal landscape, we integrate insights from bricolage and dynamic capabilities (DCs) theories to propose a new conceptual framework of dynamic digital bricolage for micro-enterprise outcomes and growth.

Bricolage is well-suited to explication of entrepreneurial resource mobilisation strategies in the resource-constrained environment in which informal micro-entrepreneurs invariably operate. Digital bricolage focuses this framework within the context of digital resources, to explicate the process through which entrepreneurs mobilise and recombine underused and disused digital resources and tools for entrepreneurial value creation, value delivery and value capture. DC theory builds on the perspective offered by digital bricolage to deepen the understanding of the process through which micro-entrepreneurs can sense and adapt to new opportunities in a fast-moving and rapidly evolving digital landscape, in order to grow their business and scale their operations.

Given the foregoing, this article explores two related research questions: firstly, in what ways, and to what extent, does digital bricolage shape the development of AI capabilities among informal micro-entrepreneurs? Secondly, how do DCs help microenterprises in the informal sector mitigate the double precarity of AI while leveraging it to enhance innovation, competitiveness, operational efficiency, agility and the development of new business models?

The first question aims to illuminate the process through which resource-constrained microenterprises make do with existing, often underused or disused digital resources, to unlock AI-enabled entrepreneurial opportunities. The second question digs deeper by interrogating the double-sided reality of opportunities and vulnerabilities for informal microentrepreneurs, and what distinguishes those who thrive from those barely surviving. The rest of the article is organised as follows: the next section describes the empirical context of resource asymmetry and institutional disadvantage for microenterprises in the informal economy. This is followed by an outline of the theoretical background in Section 3. In Section 4, the article describes the methodological approach of a conceptual article with case illustrations, and Section 5 develops and discusses nine propositions, all building towards the conceptual framework presented in Figure 1. Section 6 builds on this by explicating the propositions in the light of case illustrations from an ongoing study. Finally, the concluding Section 6 highlights the key contributions of the article and then provides recommendations for future studies that can further unpack the propositions.

2. Theoretical background

2.1 Digital bricolage and the informal economy

Bricolage is defined as "making do by applying combinations of resources at hand to new problems and opportunities" (Baker and Nelson, 2005, p. 334). This concept is built on three core components: identifying available resources, recombining those resources to address novel challenges and adopting a "making do" mindset. Bricolage theory has been widely used to understand how individuals and organisations creatively respond to resource constraints, using whatever is available to navigate limitations and accomplish goals. This form of resourcefulness is particularly prominent in situations of scarcity, where improvisation is essential, and design and execution occur simultaneously (Baker *et al.*, 2003; Luseno and Kolade, 2022).

Scholars like Kwong *et al.* (2019) have further highlighted the significance of bricolage in extreme settings, such as among displaced individuals, where constraints force reliance on a distinct mix of prepossessed and newly acquired resources. Within such environments, actors often face a choice: attempt to source additional resources, scale down operations or cease activities entirely. However, the act of bricolage presents another option – repurposing existing resources, both tangible and intangible, to meet immediate needs. This process of creative recombination allows individuals and organisations to view resources in new ways, transforming seemingly ordinary or overlooked assets and disused resources into functional solutions for new challenges (Desa and Basu, 2013; Luseno and Kolade, 2022).

Digital resources, encompassing both hardware and software, have unique characteristics that make them highly conducive to bricolage. Unlike traditional physical resources, digital assets-such as mobile phones, audio files and various software applications-are generally

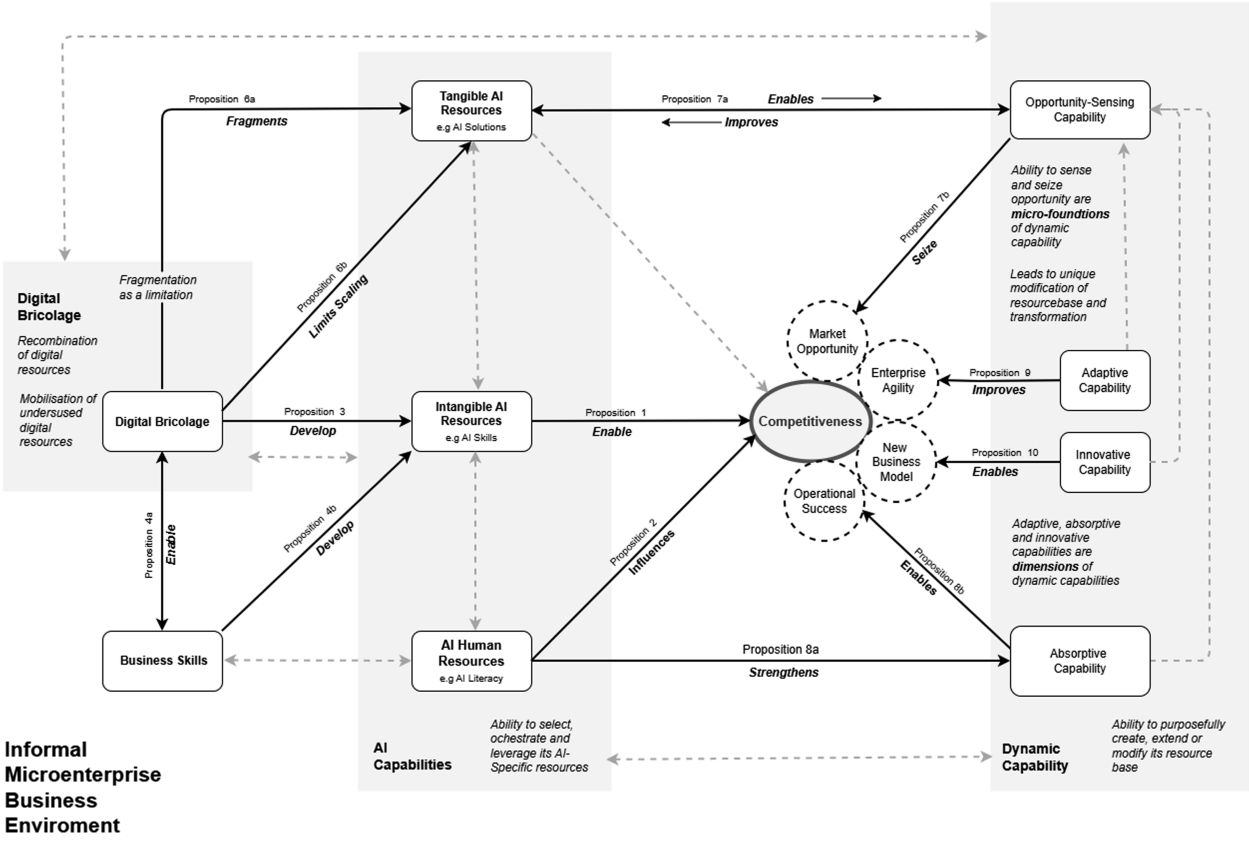

Figure 1. Conceptual framework: AI-enabled digital bricolage and dynamic capabilities for microenterprise competitiveness

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compact, easy to manage, and do not require extensive storage space, making them ideal for flexible, on-the-go use (Rüling and Duymedjian, 2014). In addition, these resources are versatile: users often utilise only a fraction of a device's full functionality, which means that, with creativity and new skills, these devices can be adapted for alternative uses beyond their original intent or dominant use cases. Digital devices are also increasingly interoperable, allowing users to combine and recombine different digital tools in innovative ways to generate new value (Hodapp and Hanelt, 2022). This interoperability enables bricoleurs to tap into the latent potential of each device or application, forming unique configurations that serve emerging needs or solve unanticipated problems.

Moreover, digital devices are frequently updated, leading to quick cycles of planned obsolescence. However, older models retain a wide range of capabilities and features that can be invaluable for bricoleurs. Rather than discarding these devices, individuals can repurpose them to address specific requirements, creating a resource pool of functional, reusable digital tools. Altogether, these characteristics-portability, versatility, interoperability and sustained utility-make digital resources exceptionally well-suited for bricolage, providing individuals and organisations with the tools to innovate under constraints and respond adaptively to new challenges (Basaure *et al.*, 2020; Li *et al.*, 2017).

Digital bricolage offers pathways to navigate these constraints, allowing informal entrepreneurs to creatively leverage available digital resources. We define digital bricolage as the mobilisation and creative recombination of under-used and dis-used digital resources and tools for entrepreneurial value creation, value delivery and value capture. Through tools like mobile money, blockchain and decentralised finance, digital bricolage enables entrepreneurs to bypass traditional barriers by facilitating financial transactions, building trust through decentralised contracts and expanding market access without reliance on formal banking systems or intermediaries. For instance, mobile money services allow entrepreneurs to participate in financial transactions, while blockchain's decentralised contracts provide an alternative means of establishing trust and reducing operational costs (Kikulwe *et al*., 2014; Okello Candiya Bongomin *et al.*, 2018; Kolade *et al*., 2022). Furthermore, AI offers unprecedented opportunities for informal entrepreneurs to enact digital bricolage by leveraging data analytics, automated decision-making and machine learning tools (Mramba, 2024). In the context of Lagos, for instance, service sector entrepreneurs often employ bricolage strategies to address gaps in formal infrastructure and leverage digital tools, including AI, in creative ways that align with their resources and capabilities. These technologies also support the innovative repurposing of low-tech devices, enabling informal entrepreneurs to turn basic resources into valuable tools for expansion and efficiency. By fostering a digitally enabled "alternative economy," digital bricolage can blur the boundary between formality and informality, providing informal enterprises with pathways to participate in broader economic networks without full regulatory compliance. The resourcefulness and creative recombination inherent in bricolage provide a foundation for understanding how DCs enable informal enterprise to adapt and thrive in changing environments. The next section focuses on DCs.

2.2 Dynamic capabilities and the creation of unique outcomes

The DC framework provides a more granular perspective on the process of bricolage. The DC framework, rooted in the resource-based view (RBV) theory (Butler *et al.*, 2008), focuses on how organisations integrate, build and reconfigure both internal and external competencies to adapt to rapidly changing environments (Teece *et al.*, 1997). DC is broadly defined as "the capacity of an organisation to purposefully create, extend, or modify its resource base" (Helfat *et al.*, 2007). Key dimensions of DCs include absorptive, adaptive and innovative capabilities, each of which contributes uniquely to a business's resilience and adaptability (Owoseni and Twinomurinzi, 2019). Absorptive capability refers to the firm's capacity to extract external information, assimilate it and leverage it to create or maximise opportunities (Wales *et al.*, 2013).

Adaptive capability reflects a firm's ability to identify and respond swiftly to environmental shifts by adjusting its practices, thus maintaining relevance and agility (Wang and Ahmed, 2007). Innovative capability, on the other hand, involves creativity and the generation of new business ideas, which can result in the modification or creation of new products, services, markets or business models (Grimaldi *et al.*, 2013). These capabilities are critical for businesses, especially small and micro-enterprises, as they often operate in unpredictable and resource-constrained environments yet still need to thrive in competitive markets.

The DC framework underscores an organisation's ability to sense and seize opportunities through the development of uniquely adaptive capabilities. Each instance of sensing and seizing reinforces an organisation's capacity to respond effectively to external pressures (Tolani *et al.*, 2019). Over time, as the resource base is repeatedly enhanced through new or enhanced capabilities, an organisation becomes more adept at maintaining and growing its competitive edge. This cyclical process, involving constant resource reconfiguration, transformation and development of capabilities is what differentiates firms in competitive environments (Teece *et al.*, 1997). In this sense, DCs lead to the development of novel or enhanced capabilities. These new capabilities are typically unique to the organisations that develop them, even if they are not new to the world. The DC framework, therefore, allows for an understanding of why organisations operating under similar economic conditions, with comparable resources, may exhibit divergent outcomes. It also highlights the unique and purposeful actions firms undertake to generate competitive advantages (Alwani *et al.*, 2021; Yuan and Pan, 2023).

Capabilities within the DC framework are considered bundles of knowledge and skills that enable firms to optimise their resources and adapt to changing market conditions (Grant, 1996). The process through which businesses develop these capabilities can be understood through the conceptual lens of bricolage. For instance, recent studies on the DCs of microbusiness owners in Nigeria and Ghana illustrate how entrepreneurs in Lagos satisfy their needs by creatively utilising up to six freely available mobile applications to conduct business transactions (Owoseni *et al.*, 2022; Owoseni and Twinomurinzi, 2018, 2019, 2020). This form of digital bricolage exemplifies what Teece (2007) refers to as the micro-foundations of DCs: the ability to sense opportunities and adapt using a variety of tools or resources, which often leads to transformation.

While the DCs framework provides a granular perspective on how firms adapt and thrive in rapidly changing environments, the rise of AI introduces a new dimension where the empowerment and disempowerment occasioned by AI technologies (such as AI-powered FinTech solutions, predictive algorithms and customisable chatbots) impact the resilience and dynamics of informal enterprises. The next sub-section examines how AI could both empower and disempower informal enterprises.

2.3 AI: double-edged sword of empowerment and disempowerment

The transformational implications of AI for the informal economies of the Global South are two-faced. On one hand, AI applications such as predictive algorithms for market insights and customisable chatbots for customer engagement offer opportunities for empowerment by increasing productivity, enabling market access and optimising operations. On the other hand, these same applications have the potential to exacerbate inequalities, intensify precarity and perpetuate systemic exclusion. This dual nature demands a thorough examination of how AI impacts micro-entrepreneurs and workers in informal economies. AI facilitates empowerment by enabling resource optimisation, data-driven decision-making and market expansion. Tools such as predictive analytics and recommendation algorithms allow businesses to anticipate consumer needs, optimise inventory and access broader markets (Gmyrek *et al.*, 2024; Mramba, 2024; Chacaltana *et al.*, 2024).

AI offers informal sector firms opportunities for growth by improving access to resources and market insights. Rammer *et al.* (2022) highlight how AI-driven analytics enable informal businesses to assess market trends and optimise pricing strategies, fostering competitiveness. Similarly, Minola *et al.* (2016) emphasise the role of AI role in demand forecasting, allowing

small enterprises to adjust inventory dynamically. Financial inclusion is another key benefit, as AI-powered FinTech solutions leverage alternative data (e.g. transaction histories) to assess creditworthiness (Senyo *et al.*, 2022). This expands funding access for informal businesses traditionally excluded from formal banking (Saraf *et al.*, 2012). Additionally, AI facilitates skill development through adaptive learning platforms, enhancing workforce productivity (Molecke and Pinkse, 2017; Grashof and Kopka, 2022).

Despite its advantages, AI can deepen inequalities within the informal sector. Grashof and Kopka (2022) argue that larger firms leverage AI more effectively, marginalising smaller enterprises with limited technological access. Rammer *et al.* (2022) further note that AI-driven innovations disproportionately benefit established firms, reinforcing market dominance. In addition, dependency on AI platforms may render informal businesses vulnerable to operational disruptions if these technologies become inaccessible (Rammer *et al.*, 2022). Moreover, structural inequalities in digital infrastructure, education and technological access exclude large segments of informal workers, particularly in developing countries (Amankwah-Amoah and Lu, 2022). Research from Latin America shows that while urban, educated workers are well-positioned to leverage AI tools, rural and less-educated workers face increasing marginalisation (Gmyrek *et al.*, 2024). This divide underscores the uneven capacity of micro-entrepreneurs to enact digital bricolage, where those with greater digital literacy and resources are better positioned to succeed (Luseno and Kolade, 2022).

3. Methodology

This article takes a conceptual approach complemented with illustrative cases to unpack the key propositions and outline a research agenda. Firstly, we review the extant literature to explain the motivation for the article and explicate the theoretical premise of the article. Following this, we synthesised and integrated different elements of digital bricolage and DC theories to develop a new conceptual framework of AI-enabled competitiveness and growth for informal microentrepreneurs. This conceptual framework-the linchpin of the article's theoretical contribution-illuminates the process through which AI can propel informal microentrepreneurs forward in their journey of growth and scaling, on the one hand; or exacerbate their disadvantage and make them fall further behind, on the other hand. This conceptual framework, comprising ten propositions, is then explained in the context of three illustrative cases from an ongoing study.

The selected cases are all from Lagos, Nigeria-one of Africa's largest commercial capitals and a major hub for informal microentrepreneurs. These cases were drawn from a broader study involving 17 small businesses (SBs), represented by microentrepreneurs who own these businesses. The microentrepreneurs participated in research, utilising picture-elicitation techniques to explore the figurative meanings of digital transformation within the Nigerian informal business settings (Owoseni, 2023).

The motivation for selecting the three specific cases was based on their distinctive engagement with digital transformation and AI. These businesses emerged as the top three participants with the most comprehensive adoption of digital tool, including AI, as evidenced by their vision boards, one of the creative outputs generated during the data collection and ideation exercises. This makes them exemplary cases for investigating the interplay between AI adoption and informal business transformation.

Notwithstanding, the 17 small businesses represented a diverse range of sectors, including healthcare, education, construction, logistics, engineering, agriculture, consulting and fashion. These businesses had been in operation for durations ranging from 3 to 15 years. The largest business in terms of staffing employed 15 people, while the smallest employed just two. All participating businesses employed at least one form of digital technology to enhance their productivity. Examples of these technologies include social media platforms, online payment systems, e-commerce platforms, virtual meeting and collaboration tools, productivity applications and custom software solutions. In addition, these businesses demonstrated

awareness of advanced digital technologies and expressed mid-to long-term plans to adopt these technologies for transformative purposes.

4. Towards a conceptual framework of AI-enabled competitiveness for informal microentrepreneurs

4.1 AI capabilities and informal microenterprise competitiveness

While AI has attracted heightened public interest and practitioner attention regarding its potential and promise for organisations, scholars are still grappling with the operational conceptualisation of AI capabilities in applied contexts. AI capability has been defined as "the ability of a firm to select, orchestrate and leverage its AI-specific resources" (Mikalef and Gupta, 2021). The selection and deployment of these resources are often context-dependent. Thus, AI capabilities for servitisation in the manufacturing sector: data pipeline capabilities, algorithm development capabilities, and AI democratisation capabilities (Sjödin *et al*., 2023). Data pipeline capabilities enable firms to capture large amount of data from multiple sources and then present them in structured form in order to generate valuable insights; algorithm development capabilities refers to the ability of organisations to create basic cognitive functions of AI that enables it to predict future actions and activities, using a combination of internal and external data; and AI democratising capabilities in the process through which an organisation enable the workforce to use AI applications to create data-driven insights that enhance organisational activities. In terms of value co-creation, AI capabilities can also be divided into four categories: sensing and seizing capabilities; business optimisation capabilities, transforming capabilities and capabilities that focuses on enhancement of societal goods (Abou-Foul *et al*., 2023)While the focus here is explicitly on AI capabilities, one could begin to see implicit alignment with the terminologies of DCs, in particular, the sensing and seizin capabilities, and which raises a question of potential theoretical linkage between AI capabilities and DCs.

Within the context of the circular economy, AI capabilities are operationalised as bundles of routines that enable firms to optimise resource use and reduce waste as they create, deliver and capture value (Madanaguli *et al.*, 2024). Thus, AI capabilities are categorised as: infrastructure and platform capabilities; process automation and augmentation capabilities; integrated intelligence capabilities and AI ecosystem orchestration capabilities. Given the heterogeneity of contexts and industry sectors in which informal micro-enterprises are engaged, we adopt, for the present article, an operationalisation of AI capability that captures a variety of contextual and sectoral applications of AI capabilities. This conceptualisation, proposed by Mikalef and Gupta (2021), identified three broad categories of AI capabilities: tangible resources, human resources and intangible resources.

Tangible resources: These comprise (1) data, including structured data but often unstructured data gathered from multiple sources – including internal and external – and in different formats, underlining the convergence of big data with AI; (2) technology-that is, the technological infrastructure, such as integrated cloud services, required to bring AI applications to life; (3) basic resources especially financial resources and time required to pilot and develop AI applications.

Human resources: These are divided into (1) technical skills comprise the skills necessary to develop, implement and manage AI applications, typically requiring a combination of competencies in mathematics, statistics and programming, or functional competencies in the use of front-end AI applications (without the need for higher level programming skills); (2) business skills, including the understanding of AI potentials, knowing where and how to apply them and the ability to handle transition to AI-enabled activities.

Intangible resources: In line with the RBV of the firm, the intangible AI resources are the ones most difficult to replicate by other firms, and Mikalef and Gupta (2021) categorised them into three types: (1) inter-departmental coordination – the ability to coordinate tasks and share a mutual vision across departments in an organisation in order to unleash the value of AI; (2)

organisational change capacity – the ability to plan for and manage change at multiple levels within an organisation; (3) risk proclivity – the willingness to move out of standard practices and conservative approaches to deploy AI tools and technologies.

Below, we present a list of propositions summarised in a conceptual framework (Figure 1). The propositions outline different aspects of AI applications and implications in the landscape of informal entrepreneurship, integrating ideas around digital bricolage and DCs.

Within the context of micro-entrepreneurs in the informal economy, the combination of tangible AI resources, human resources and intangible resources can enable competitiveness relative to other informal micro-enterprises and larger, formalised corporations. For example, in resource-constrained contexts, informal micro-entrepreneurs often use AI-driven mobile money platforms to improve financial inclusion and streamline transactions, enabling them to overcome regulatory obstacles, face market externalities and ultimately compete with larger, formalised entities (Johri *et al*.., 2024). Similarly, AI-powered crop monitoring tools provide smallholder farmers with actionable insights into weather patterns and soil health, optimising resource use and reducing waste (Aijaz *et al*.., 2025). Furthermore, one of the potential sources of microenterprise competitiveness is the unique sets of data they generate internally from their business activities, and the potentials that can be unleashed when these are creatively combined with internal data sources fed into AI tools and platforms (Akanfe *et al.*, 2025). Across developed and developing country contexts, informal micro-enterprises such as gig workers leverage data-driven AI-based platforms like task-matching apps and predictive scheduling to secure jobs and enhance efficiency. In addition, human resources such as AI literacy empower entrepreneurs to use chatbots for customer engagement, while intangible resources like organisational adaptability allow them to integrate emerging technologies despite limited infrastructure. Together, these capabilities enhance survival and growth prospects for informal enterprises. Given the foregoing, we propose that:

Proposition 1. Tangible AI resources such as AI-driven mobile money platforms enable informal micro-enterprises to achieve competitiveness-

Proposition 2. AI literacy significantly influences competitive outcomes for informal micro-enterprise owners

However, it is also clear that existing conceptualisation of AI capabilities, including the most comprehensive categorisations proposed by Mikalef and Gupta (2021), are framed within the perspective of large, formalised corporations with, for example, financial and technical resources to develop bespoke AI applications and infrastructure. Such, however, is the increasing ubiquity of AI tools, since Mikalef and Gupta's paper was published in 2021, that micro and small enterprises do not require capital-intensive AI infrastructure in order to access and harness the power of AI. They can make do with existing digital tools, repurpose and recombine them in order to achieve competitiveness. The next section explores this process of digital bricolage to explicate the means through which resource-constrained micro-entrepreneurs develop AI capabilities.

4.2 Digital bricolage and the development of AI capabilities

Informal microenterprises often lack the resources needed to adopt sophisticated AI systems, particularly so in resource-constrained environments. However, through digital bricolage, these enterprises mobilise and creatively recombine available digital tools to build critical AI capabilities in practice. Thus, bricolage is not merely an abstract idea, but a lived strategy of improvisation, where experimentation and adaptability are central to overcoming resource constraints. The rest of this section discusses how informal enterprises develop AI capabilities through digital bricolage, with a focus on the three broad categories of AI capabilities described above: tangible, human and intangible resources.

Tangible AI resources, including data, technology infrastructure and basic financial resources, form the backbone of AI capabilities. Where these resources are in short supply,

informal microenterprises can leverage what is available to strengthen their capabilities. For instance, smartphones are frequently repurposed for tasks beyond their basic telephony functions. Studies in East Asia and Africa show a negative correlation between the use of mobile banking apps and the share of informal economic activity in GDP (Hunter *et al*.., 2024; Kearney, 2018; Awasthi and Engelschalk, 2018). Market women in Uganda were also reported to recognise mobile phones as tools that both enhance the security of their transactions and create a useable trail of financial information (Larsson and Svensson, 2018). In Ghana, smallholder farmers combine weather apps with local soil analysis tools to generate actionable insights into crop management. These improvisations illustrate bricolage in action: integrating data streams from diverse sources to create rudimentary but effective AI-driven analytics. This shows more clearly how microentrepreneurs transform simple, readily available tools into foundational AI-related capabilities (Paparrizos *et al*.., 2023, p. 546).

Digital bricolage also enables process automation. For instance, informal retailers sometimes use basic management systems built on free or low-cost software platforms and free analytics tools to predict sales trends. This process aligns with the development of basic data pipeline capabilities that enable businesses to collect and organise structured and unstructured data from various sources (Sjödin *et al*.., 2023). The integration by transport operators of GPS-enabled smartphones with navigation apps to optimise route planning and fuel consumption has also been reported, in Kenya, for instance (Yanocha *et al*., 2020a, b). This adaptation mimics advanced logistics platforms without requiring significant financial investment, highlighting how bricolage enables resource optimisation in resource-constrained settings.

Human resources, comprising technical and business skills, are essential for the effective development of AI capabilities. Digital bricolage facilitates the incremental acquisition of these skills by enabling informal microentrepreneurs to experiment with accessible technologies. For example, small and micro business owners in Lagos use messaging apps like WhatsApp in combination with free chatbot APIs to manage customer interactions automatically. This demonstrates how bricolage occurs within and around digital platforms to extend their functionality. This hands-on approach allows entrepreneurs to develop practical technical skills related to automation and customer engagement (Owoseni and Twinomurinzi, 2019).

Bricolage also supports the acquisition of business skills. Informal traders often use social media platforms to track customer preferences and monitor competitors. This process exemplifies how bricolage fosters a hands-on learning environment where entrepreneurs acquire not only technical expertise but also the business acumen needed to integrate AI capabilities effectively (Obschonka and Audretsch, 2019).

Intangible resources are an important input into the process of developing AI capabilities. Informal microenterprises often rely on digital bricolage to cultivate these intangible assets. For example, in small informal cooperatives, entrepreneurs sometimes use simple project management tools, such as Trello or Google Docs, to coordinate tasks and share information across members. This approach fosters inter-departmental coordination and demonstrates how bricolage can overcome the operational fragmentation typical in informal settings (Mikalef and Gupta, 2021). Similarly, informal enterprises frequently adapt to volatile market conditions by experimenting with digital tools to meet emerging demands. For instance, gig workers in urban centres use task-matching apps creatively, combining them with scheduling tools to optimise their workflows. This iterative adaptation builds resilience and flexibility, allowing businesses to navigate rapid changes in market dynamics (Canelas, 2018).

The above discussion suggests that digital bricolage provides a mechanism for informal microenterprises to creatively leverage existing resources with a view to developing AI capabilities. The following propositions build on this understanding:

Proposition 3. In resource-constrained environments, digital bricolage allows informal microenterprises to creatively adapt existing digital resources, such as data and technical skills, to build foundational AI capabilities.

Proposition 4. Through digital bricolage, informal microentrepreneurs incrementally acquire technical and business skills, fostering the human resource capacity needed for AI adoption.

While digital bricolage offers informal microenterprises a practical means of mobilising resources and developing AI capabilities, it is not without its drawbacks. One significant limitation is the potential fragmentation of capabilities. Digital bricolage often relies on a mix of mismatched tools and improvised solutions that may not be interoperable in the long term. For instance, while smallholder farmers might combine weather apps and soil analysis tools to create rudimentary analytics systems, the lack of integration between these tools can result in inefficiencies, data silos and limited scalability. Additionally, the learning pathways enabled by bricolage, while valuable, may not always foster deep technical expertise or strategic competencies. Entrepreneurs often acquire skills through trial and error, which might encourage piecemeal learning rather than systematic skill development (Chaudhuri *et al.*, 2018). This can hinder their ability to transition from basic bricolage solutions to more sophisticated AI systems that require a comprehensive understanding of data analytics, automation or AI-driven decision-making processes.

Moreover, the reliance on low-cost tools may restrict innovation and growth. Tools such as free chatbot APIs or basic analytics software, though accessible, often lack customisation options or the robustness needed for more advanced AI applications (Canelas, 2018). Consequently, informal enterprises that depend heavily on bricolage may find themselves constrained by the limitations of these tools, unable to compete effectively with larger firms equipped with bespoke AI systems and infrastructure. Finally, digital bricolage, by circumventing formal systems, may inadvertently reinforce structural constraints. While bricolage enables entrepreneurs to work around issues such as limited infrastructure or regulatory barriers, it does not address the root causes of these challenges. Instead, it may perpetuate the marginalisation of informal microenterprises by keeping them reliant on improvised solutions rather than enabling them to transition to formal, sustainable AI systems. These challenges raise the need to balance the immediate benefits of bricolage with its potential to limit long-term growth and integration into more structured economic systems.

Proposition 5. The reliance on digital bricolage in resource-constrained environments may lead to suboptimal or fragmented AI capabilities, thereby limiting the ability of informal microenterprises to scale or integrate more advanced AI solutions.

4.3 Dynamic capabilities and the deployment of AI capabilities

DCs, those unique competencies that enable firms to sense opportunities, seize them and reconfigure resources, play a critical role in facilitating the effective deployment of AI capabilities in practice (Mikalef and Gupta, 2021). In the context of informal microenterprises, which often operate under resource constraints and in dynamic environments, leveraging AI capabilities can mean the difference between mere survival and thriving success. This section draws on DCs literature to propose how microenterprises achieve competitive advantage through sensing, seizing, absorptive, adaptive and transformative capabilities enabled by AI tools.

The analytical features of AI can be harnessed to enhance the AI capabilities of Informal microenterprises in a few ways, for example through predictive analytics and data visualisation tools, to identify new customer demands, shifts in market trends, or emerging competitive pressures. For instance, a small-scale artisan business operating in a local market might utilise AI-powered tools to analyse social media trends and customer feedback. By integrating sentiment analysis and keyword tracking, the enterprise could identify a growing demand for eco-friendly products, enabling it to tailor its offerings to meet this trend.

This ability to sense opportunities through data analytics highlights the symbiotic relationship between DCs and AI deployment. While AI tools provide the technological foundation for generating insights, DCs ensure that these insights are interpreted and acted upon in ways that align with the enterprise's objectives. In this light, we propose the following:

Proposition 6. The opportunity-sensing micro-foundation of dynamic capabilities, supported by digital bricolage, enhances the ability of informal microenterprises to creatively deploy AI tools for identifying and seizing market opportunities in resource-constrained environments.

In the informal economy, DCs such as absorptive, adaptive and transformative capabilities are essential for navigating resource scarcity, unpredictable markets and limited access to formal infrastructure. Emerging technologies like AI and digitalisation can enhance these capabilities by enabling informal enterprises to leverage new information, respond to market changes and explore innovative business models. Below, we present three propositions to illustrate how AI and digitalisation interact with DC attributes to influence informal enterprises' growth and resilience.

4.3.1 Absorptive capability and digital literacy in informal enterprises. Absorptive capability, the ability to recognise, assimilate and apply new knowledge, is often constrained in informal economies due to limited access to formal education and resources (Zahra and George, 2002). Informal enterprises typically develop absorptive capabilities through practical sources like social networks, community knowledge and customer feedback, which provide market insights and operational strategies (Gebreeyesus and Mohnen, 2013). Digitalisation and AI can significantly enhance this capability by offering informal entrepreneurs new ways to acquire and absorb information through online resources, social media and customer data analytics. Digital tools like social media platforms give informal businesses access to market insights, emerging trends and customer preferences, while AI-powered analytics can uncover valuable data patterns previously out of reach. However, limited digital literacy often hinders the ability of entrepreneurs to interpret and apply these insights, restricting absorptive capabilities. For example, while platforms like WhatsApp and Facebook are critical for gathering insights, many informal entrepreneurs lack the skills to fully leverage them (Tong *et al.*, 2021; Wong, 2024). This underscores the need for digital literacy programs that can support informal enterprises in integrating these tools effectively into their business practices. Thus, we propose:

Proposition 7a. Absorptive capabilities, when strengthened by digital literacy, enable informal enterprises to leverage AI and digitalisation for operational success.

Proposition 7b. AI adoption enhances absorptive capabilities in informal enterprises, improving their ability to assimilate operational insights and achieve greater efficiency

4.3.2 Adaptive capability and real-time decision-making through AI tools. Informal businesses often exhibit strong adaptive capability, quickly adjusting products, locations or pricing to respond to fluctuating demand and competition. AI and digitalisation can further enhance this capability by providing real-time data that enables more informed, timely decisions. AI tools such as predictive analytics and mobile applications allow informal enterprises to anticipate market trends, adjust inventory, and respond to customer needs swiftly. AI-powered tools, such as predictive analytics and mobile applications, support informal enterprises in anticipating market trends, adjusting inventory levels or responding to customer needs. The integration of mobile banking into business operations also supports data-driven decision-making (Ajibade and Mutula, 2020). Based on the foregoing analysis, we propose:

Proposition 8. AI adoption strengthens adaptive capabilities in informal enterprises, enhancing their agility to respond to environmental uncertainties and changing customer demands.

4.3.3 Transformative capability and business model innovation via digital platforms. Informal microenterprises engage in various forms of innovation, including process, managerial and technological innovations (Adeosun *et al.*, 2021; Khan, 2018). Transformative capability involves the capacity to reconfigure resources and develop new operational frameworks. This is particularly impactful for informal enterprises, as transformative, sustainable business models can leverage DCs to generate novel value propositions in the digital era (Brenner, 2018). Capability-driven development can help enterprises innovate digital services at business model and service process levels and compete in the digital environment (Ji, 2022). Platforms such as Facebook Marketplace enable informal enterprises to engage customers beyond local areas, empowering them to explore new business models and operational frameworks. However, digital platform dependency also carries risks, as changes in algorithms or policies could disrupt business operations. Additionally, some entrepreneurs face challenges in maintaining consistency on these platforms due to limited digital skills or resources, pointing to a need for support systems that mitigate platform dependency and foster sustainable transformation (Burtch *et al.*, 2018). Thus, we propose as follows:

Proposition 9. AI adoption, when combined with transformative capabilities, enables informal entrepreneurs to develop innovative business models that create value and access new revenue streams.

4.4 Overview of the conceptual framework

We bring these positions together in an integrated framework that explores the role of AI capabilities, digital bricolage and DCs in fostering competitiveness within informal microenterprises. Tangible AI resources, such as mobile money platforms (Proposition 1), and AI literacy (Proposition 2), are key enablers of competitive outcomes, providing foundational tools and knowledge for informal entrepreneurs. Digital bricolage (Proposition 3) emerges as a critical process in resource-constrained environments, allowing entrepreneurs to creatively adapt and repurpose existing digital resources. This bricolage also supports incremental development of technical and business skills (Proposition 4), laying the groundwork for human resources essential for AI adoption.

However, reliance on bricolage can lead to fragmented AI capabilities, limiting scalability and integration of advanced solutions (Proposition 5). Despite this, opportunity-sensing capabilities (Proposition 6), underpinned by dynamic bricolage, enhance market agility and enable entrepreneurs to identify and seize opportunities. Absorptive capabilities, strengthened through digital literacy and AI adoption, further bolster operational success by enabling businesses to assimilate insights and improve efficiency (Propositions 7a and 7b). Similarly, adaptive capabilities (Proposition 8) are enhanced, empowering informal enterprises to remain agile in response to environmental uncertainties and shifting customer demands.

Finally, the integration of AI with transformative capabilities enables innovative business models, allowing entrepreneurs to create new value and revenue streams (Proposition 9). Together, these propositions highlight how AI capabilities and digital bricolage foster resilience, adaptability, and innovation in informal microenterprises, even in resource-scarce contexts. This dynamic framework illustrates the interplay between technological tools, human skills and strategic adaptability in driving competitiveness.

5. Discussion and case illustrations

We now draw on some preliminary data from an ongoing study to explicate the preceding discussion and the conceptual framework on the role of AI-centred bricolage among microenterprises in the informal economy. The AI capabilities of the listed microenterprises – Healthcare Multimedia Services, Market Research Services and Fashion Tech Innovations – are framed within three key dimensions outlined in the preceding section: tangible resources, human resources and intangible resources (Figure 2). For these illustrative enterprises, Tangible AI resources include the use of smartphones, cloud-based platforms and basic data management tools, which allow these businesses to implement affordable, accessible AI applications. Intangible resources, such as organisational adaptability and risk proclivity, enable iterative improvements and experimentation with emerging technologies. These capabilities, though limited in scale, are creatively leveraged to align with competitive strategies, allowing the businesses to expand market opportunities and foster customer trust.

Nevertheless, the listed enterprises demonstrate how digital bricolage can drive innovation and functionality in resource-constrained environments. Each business creatively mobilises tangible resources like smartphones, low-cost software and open-source tools to implement AI capabilities. For instance, Healthcare Multimedia Services uses AR and VR in a piecemeal fashion, combining simple apps with existing hardware to deliver advanced training and consultations. Market Research Services relies on free analytics tools to perform functions that mimic proprietary systems, enabling predictive analytics without incurring prohibitive costs. These cases also demonstrate the dual dynamics of empowerment and disempowerment outlined earlier. On one hand, bricolage enables microenterprises to creatively harness low-cost AI tools, expand market opportunities and enhance operational efficiency. On the other

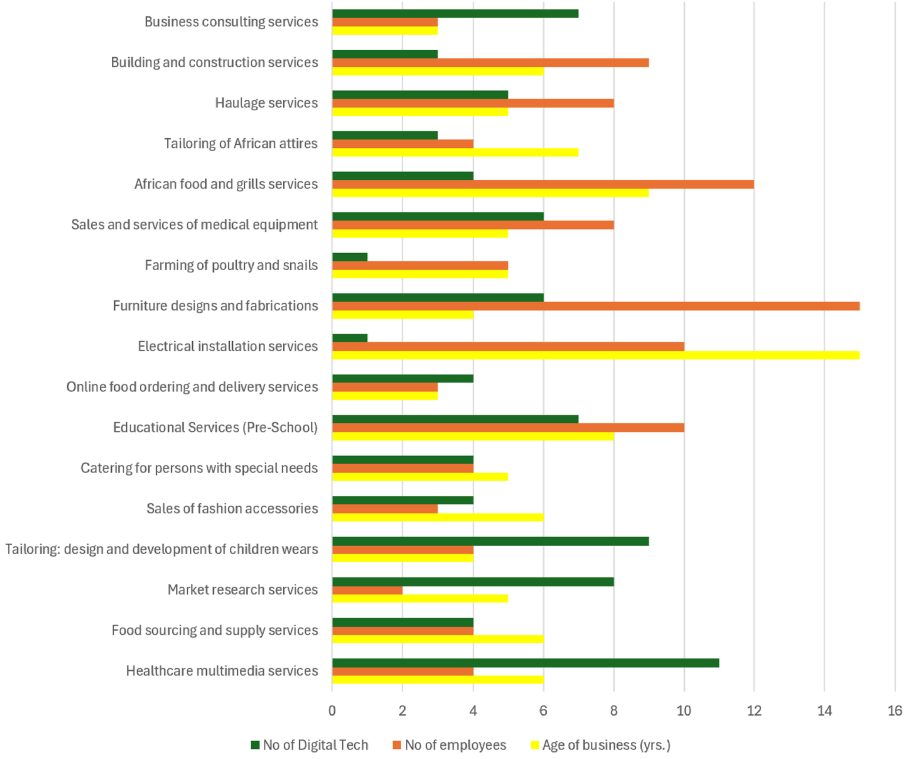

Figure 2. Sectoral distribution and profile of microenterprises

hand, continued reliance on fragmented systems with limited scalability shows how AI can reinforce the vulnerabilities of informal firms and create excessive dependence.

Figure 3 presents a comparative overview of digital technologies, including AI currently in use and proposed for future integration across 17 distinct small business areas. The table indicates varied levels of digital adoption, with the business in healthcare multimedia services demonstrating the highest uptake, utilising 11 different technologies, including multimedia software, virtual meetings and proposed tools like data analytics and digital surveillance, followed by the market research business and fashion house that is into children's outfits. Notably, social media and online payments are the most used technologies across businesses, reflecting a baseline level of digital interaction. The figure underscores a growing awareness of advanced digital possibilities, such as 3D printing, augmented reality and process management, but also highlights indirect or potential capabilities for digital bricolage. This snapshot provides critical insight into the uneven but evolving digital landscape among small enterprises, particularly within the diverse, often underserved, informal economy. It also informed why, in the bricolage illustration (Table 1), we explore how the top three businesses with the highest use of digital tools demonstrate digital bricolage.

These businesses also develop human AI resources incrementally. The learning-by-doing approach enables employees to acquire technical and business skills, such as data analysis and customer engagement, through experimentation. For example, Fashion Tech Innovations trains staff to use open-source AI platforms, enhancing their ability to manage virtual fitting rooms and predictive algorithms.

However, the lack of integration between tools often results in fragmented capabilities, reducing efficiency and scalability. For instance, while Fashion Tech Innovations' virtual fitting rooms enhance customer interaction, the absence of robust interoperability can limit the effectiveness of inventory management. Similarly, the reliance on low-cost tools constrains these businesses' ability to scale AI applications or transition to formalised, high-capability systems. Thus, these enterprises illustrate the practical applications of digital bricolage through their creative mobilisation, while also discussing the limitations.

Proposition 1 highlights how tangible AI resources, such as smartphones, cloud-based platforms, and basic data management tools, enable informal microenterprises to achieve competitiveness. These resources allow these businesses to implement affordable, accessible AI applications, crucial for their operational efficiency. For example, Fashion Tech Innovations repurposes AR technology for virtual fitting rooms, aligning its capabilities with customer engagement strategies. Similarly, Healthcare Multimedia Services leverages basic AR tools to provide interactive training, demonstrating the importance of resource adaptability in addressing operational challenges (Baker and Nelson, 2005; Sjödin *et al.*, 2023). Proposition 3 further emphasises that resource-constrained environments necessitate the creative adaptation of existing digital resources, such as the integration of free or open-source tools with minimal infrastructure requirements (Luseno and Kolade, 2022).

Human resources, particularly practical AI literacy and basic technical skills, empower business owners to use free chatbot APIs or predictive analytics tools, as seen in Market Research Services. This aligns with Proposition 4, which underscores the incremental development of technical and business skills through digital bricolage. Employees in these enterprises adopt a learning-by-doing approach, gradually improving their competencies in managing AI-enabled processes. For instance, Market Research Services combines basic analytics tools with localised market data to provide actionable insights, reflecting the focus of Proposition 8 on absorptive capabilities that enable operational success (Gebreeyesus and Mohnen, 2013; Obschonka and Audretsch, 2019). Indeed, digital literacy and basic AI skills enable microenterprises to extend their operational reach while mitigating resource constraints.

Intangible resources, such as organisational adaptability and risk proclivity, further enable iterative improvements and experimentation with emerging technologies. Proposition 7 highlights how opportunity-sensing capabilities allow enterprises like Fashion Tech

S/No	Small Business Area	Digital Technologies Curently In use								Digital Technologies Proposed for Future Use								Count of Digital Technologies
		Social Media	Online Payments	Online Store	E-Learning	Virtual Meeting	Productivity Apps	Multimedia Software	Custom Software	3D printing	Digital Tailoring	Augememted Reality	Data Analytics	Process Mgt	Building Information Modeling	Digital Survelance	Smart Boards	
1	Healthcare multimedia services	X	X		X	X	X	X		X		X	X	X		X		11
2	Food sourcing and supply services	X	X			X								X				4
3	Market research services	X	X		X	X	X		X				X	X				8
4	Tailoring: design and development of children wears	X	X	X			X	X	X		X	X	X					9
5	Sales of fashion accessories	X	X	X										X				4
6	Catering for persons with special needs	X	X				X									X		4
7	Educational Services (Pre-School)	X	X			X	X		X				X				X	7
8	Online food ordering and delivery services	X	X	X										X				4
9	Electrical installation services		X															1
10	Furniture designs and fabrications		X		X		X					X		X		X		6
11	Farming of poultry and snails															X		1
12	Sales and services of medical equipment	X	X		X	X	X						X					6
13	African food and grills services	X	X				X							X				4
14	Tailoring of African attires	X	X									X						3
15	Haulage services	X	X			X								X		X		5
16	Building and construction services		X							X					X			3
17	Business consulting services	X	X	X	X	X			X					X				7

Figure 3. Mapping of digital usage by the microenterprises

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Table 1. Illustrative examples of AI bricolage and dynamic capabilities among informal microenterprises

Name of enterprise	Overview of activities	AI applications	Bricolage in context	Dynamic capabilities in action
Healthcare Multimedia Services Lagos and Abuja, Nigeria Age: 6 years Employees: 4	This business provides multimedia tools and digital solutions to enhance healthcare services, focusing on patient education, professional training and operational efficiencies. Operating in resource-constrained settings, it bridges gaps in access to advanced healthcare infrastructure	AI-powered tools are used to personalise content, such as interactive simulations for patient engagement and professional training modules. The business also uses AR and VR for virtual consultations and hands-on training for healthcare workers	Exemplifies bricolage by repurposing accessible digital tools like smartphones and basic AR applications to address gaps in healthcare services. While the AI systems are not fully integrated, they creatively leverage existing resources to enhance service delivery and adapt to evolving healthcare needs	Demonstrates dynamic capability by identifying gaps in healthcare services, such as the need for improved patient education, and responding with a unique combination of readily available digital tools. These actions lead to a strategic shift in the company's resource base, thereby enhancing its ability to recognise evolving patient needs, leverage technological opportunities and refine service delivery methods. This responsiveness and resourcefulness exemplifies the essence of dynamic capability.
Market Research Services Virtual Online in Lagos, Nigeria Age: 5 years Employee: 2	Microenterprise delivering insights and analytics to businesses in emerging markets. It focuses on understanding market trends, consumer behaviour and competitive landscapes to inform business strategies	AI tools, including machine learning and predictive analytics, are used to interpret large datasets and forecast trends, providing actionable insights for clients	Employs bricolage by integrating free and low-cost data analytics platforms and leveraging widely available digital resources. For example, simple tools for visualisation and predictive modelling are recombined with local market data to create customised insights. This approach allows them to operate effectively without requiring high-end proprietary AI systems	Exemplifies dynamic capability by using a resourceful approach that integrates low-cost, widely available data analytics tools rather than relying solely on expensive proprietary AI systems. For instance, they combine basic visualisation platforms with local market data and simple predictive AI modelling solutions to produce tailored insights. This method enables the company to adapt its analytical processes quickly and effectively, ensuring responsive decision-making in a constantly evolving marketplace

(*continued*)

Table 1. Continued

Name of enterprise	Overview of activities	AI applications	Bricolage in context	Dynamic capabilities in action
Fashion Tech Innovations Lagos, Nigeria Age: 4 years Employee: 4	Focuses on integrating technology into fashion design, manufacturing and retail. It supports e-commerce platforms, garment customisation and enhanced customer experiences	AI is used for virtual fitting rooms, customer preference prediction and inventory optimisation. Machine learning algorithms process data from customer interactions to tailor shopping experiences and forecast demand	Applies bricolage by combining free or affordable digital tools, such as open-source AI frameworks, with existing e-commerce systems. Virtual fitting rooms leverage basic AR features integrated into low-cost apps, enabling enhanced customer interaction without substantial technological investment	Reflects dynamic capability by absorbing external knowledge about emerging technologies and their competitive potential, then strategically selecting AI tools and processes to gain a unique edge. This approach fosters innovations like virtual fitting rooms, preference prediction and inventory optimisation, ensuring continuous improvement and responsiveness to evolving consumer needs

Innovations to leverage predictive algorithms and AI-driven consumer insights, improving their agility in dynamic markets. Similarly, Healthcare Multimedia Services uses its adaptive capabilities to modify existing technologies for unique healthcare needs. This is consistent with the focus of Proposition 8 on real-time responsiveness (Wang and Ahmed, 2007; Teece *et al.*, 1997). These intangible capabilities are particularly crucial for managing the volatile, uncertain, complex and ambiguous characteristics of the informal economy.

The role of DCs in deploying AI also emerges as a critical consideration for informal microenterprises. Proposition 9 underscores how transformative capabilities, such as resource reconfiguration and innovation, enable informal enterprises to experiment with new business models and expand their market reach. For example, Fashion Tech Innovations demonstrates transformative capacity by combining affordable AI-driven AR tools with e-commerce platforms, enabling it to extend its operational scope despite limited resources. Similarly, Market Research Services integrates free and low-cost data analytics tools to enhance decision-making processes, showing how DCs can drive innovation and competitiveness even in resource-scarce environments (Senyard *et al.*, 2014; Yuan and Pan, 2023).

The illustrative cases also highlight some limitations of the bricolage strategy. For instance, while Fashion Tech Innovations' virtual fitting rooms enhance customer interaction, the absence of robust interoperability can limit the effectiveness of inventory management. Similarly, the reliance on low-cost tools constrains the ability of businesses to transition to formalised, high-capability systems. Addressing these gaps requires strategic investments in scalable infrastructure and collaborative partnerships, as implied in the emphasis placed on transformative capabilities in Proposition 9. Public and private sector collaboration could facilitate the transition from fragmented bricolage to cohesive systems. This would mitigate institutional disadvantages and enable microenterprises to innovate and compete more effectively (Chaudhuri *et al.*, 2018; Fu *et al.*, 2018).

The illustrative cases show how informal microenterprises can creatively combine and leverage available resources. However, transitioning from fragmented to integrated systems demands targeted policies and support mechanisms, such as tax incentives for technology adoption and subsidised training programmes. Strengthening linkages with universities and

tech hubs can also provide access to advanced expertise and shared resources, enabling informal microenterprises to evolve their bricolage practices into robust, scalable AI systems that align with long-term growth objectives. In addition, as suggested in Proposition 2, AI literacy could further enhance the capacity of microentrepreneurs to leverage AI effectively and enhance their competitiveness (Mikalef and Gupta, 2021; Abou-Foul *et al*., 2023). Overall, the cases illustrate the empowerment/disempowerment lens developed in Section 2.3. While bricolage facilitates empowerment by enabling incremental capability development and enhanced competitiveness, disempowerment persists through structural inequities, fragmented solutions and limited absorptive capacity. Recognising this duality is critical for understanding both the promises and the risks of AI adoption in informal contexts.

6. Conclusion and recommendations for future studies

This article makes significant contributions to the understanding of how AI, digital bricolage and DCs interact to influence the performance of informal microenterprises. First, it extends the DCs framework to resource-constrained environments by highlighting the role of digital bricolage as a mechanism through which informal entrepreneurs creatively adapt existing resources to develop and deploy AI capabilities. This novel integration provides a nuanced perspective on how informal sector actors overcome resource limitations to create and capture value, enhance market outreach, operational efficiency and enterprise agility.

Secondly, the article contributes to the discourse on the transformative potential of AI in marginalised contexts. By synthesising theoretical insights and contemporary cases, it illustrates how AI enhances opportunity sensing, seizing and transformative capacities in the informal sector. The article underscores the reciprocal relationship between AI and DC, showing how DCs enable the adoption and contextual application of AI while AI strengthens firms' adaptive and transformative capacities. These synergistic adaptive and transformative capacities constitute the game changer that explains the disparate gaps in outcomes and scaling opportunities between microenterprises that otherwise have comparative levels of access to AI technologies.

Thirdly, and concomitant with the second contribution above, this article identifies key limitations, including infrastructural inequities, fragmented skill development, and scalability challenges, which can constrain and limit the benefits of AI for informal enterprises. These limitations, while propositional in the current article, are a fruitful direction for scholarly inquiry. The ensuing insights will be vital for policymakers, practitioners and researchers seeking to foster inclusive digital transformations in underserved sectors.

Finally, the article advances the emerging concept of digital bricolage as a critical construct in entrepreneurship and technology adoption, especially in the field of AI. This is a fertile frontier of entrepreneurship research, not least because of heightened public interest and scholarly engagement on the promises and perils of AI. Digital bricolage is an effective framework to interrogate the potentialities of AI as a tool for value creation and competitiveness among resource-constrained microentrepreneurs, relative to bigger enterprises. Below, we provide final reflections and recommendations for future studies.

Digital bricolage can act as a critical enabler of AI adoption in the informal sector, facilitating the incremental development of technical and business skills. By experimenting with low-cost or existing digital tools, entrepreneurs can enhance their absorptive capacity, gradually building the human and technical resources necessary to sustain innovation. There is a limited body of work in this area. For example, informal vendors in Kenya using M-Pesa demonstrate how bricolage enables access to AI-driven financial services, improving agility and profitability despite infrastructural and financial limitations. Cases like this illustrate the potential game-changing impact of AI for informal microenterprises. However, many informal entrepreneurs struggle with AI literacy, resource inequities and infrastructural barriers, which constrain scalability and create uneven outcomes. In addition, reliance on bricolage can result in fragmented solutions that are effective in the short term but lack the robustness required for sustained growth. Thus, AI may also precipitate risks of widening opportunity and growth gaps

among informal microenterprises. The bi-directional relationship is particularly crucial, given its practical implications. AI technologies can empower informal entrepreneurs to expand their market outreach and develop more efficient operations, thereby driving competitiveness and growth. However, while AI, supported by digital bricolage and DC, has the potential to be a game-changer, its transformative impact depends on addressing systemic inequities and fostering broader access to AI tools and capabilities.

The analysis presented in this article highlights several promising areas for future research, in addition to the obvious need for empirical investigation of the mechanisms that we outline in the propositions. Future research can further unpack the process through which AI enhances the opportunity-sensing and seizing capabilities of informal entrepreneurs, though, for example, the deployment of tools like predictive analytics and mobile platforms that enable market outreach and operational efficiency. Scholars can also investigate the operational processes through which DC enables entrepreneurs to identify, adapt and integrate AI technologies creatively, in resource-constrained environments. This synergy is particularly relevant within the context of digital bricolage, where entrepreneurs can creatively repurpose existing resources, such as basic smartphones or limited datasets, to develop AI capabilities tailored to their specific needs. Moreover, empirical analyses of the mechanisms through which digital bricolage mediates AI capability development in informal microenterprises will be valuable. In addition, the illustrative cases that we propose are cross-sectional and not fully representative of the sectoral and geographical diversity of informal enterprises. Larger studies with longitudinal and comparative case studies across different sectors and geographies could provide a more nuanced understanding of how bricolage evolves over time and the extent to which they enable or constrains the development of sustainable AI capabilities. In particular, examining how microentrepreneurs transition from low-tech improvisations to more sophisticated, scalable AI applications will be critical for strengthening theory and informing policy. Additionally, research should explore how informal entrepreneurs navigate trade-offs between short-term functionality and long-term integration, especially in the face of limited digital infrastructure and regulatory ambiguity.

References

Abou-Foul, M., Ruiz-Alba, J.L. and López-Tenorio, P.J. (2023), "The impact of artificial intelligence capabilities on servitization: the moderating role of absorptive capacity-a dynamic capabilities perspective", *Journal of Business Research*, Vol. 157 No. 3, 113609, doi: 10.1016/j.jbusres.2022.

Adeosun, O.T., Shittu, A.I. and Aju, S.I. (2021), "Innovation capabilities of women enterprise in informal settings", *Journal of Enterprising Communities: People and Place in the Global Economy*, Vol. 15 No. 1, pp. 96-113, doi: 10.1108/JEC-04-2020-0063.

Aijaz, N., Lan, H., Raza, T., Yaqub, M., Iqbal, R. and Pathan, M.S. (2025), "Artificial intelligence in agriculture: advancing crop productivity and sustainability", *Journal of Agriculture and Food Research*, Vol. 20, 101762, doi: 10.1016/j.jafr.2025.101762.

Ajibade, P. and Mutula, S. (2020), "Big data, 4ir and electronic banking and banking systems applications in South Africa and Nigeria", *Banks and Bank Systems*, Vol. 15 No. 2, pp. 187-199, doi: 10.21511/bbs.2020.17.

Akanfe, O., Bhatt, P. and Lawong, D.A. (2025), "Technology advancements shaping the financial inclusion landscape: present interventions, emergence of artificial intelligence and future directions", *Information Systems Frontiers*, Vol. 27 No. 5, pp. 2189-2212. 27, doi: 10.1007/s10796-025-10597-z.

Alwani, D.R., Isfianadewi, D. and Priyono, A. (2021), "Implementation of dynamic capability and sustainable business model in the fashion industry during the COVID-19 pandemic – case study: syalwa Indonesia", *International Journal of New Technology and Research*, Vol. 7 No. 4, pp. 11-16, doi: 10.31871/ijntr.7.4.12.

Amankwah-Amoah, J. and Lu, Y. (2022), "Harnessing AI for business development: a review of drivers and challenges in Africa", *Production Planning and Control*, Vol. 35 No. 13, pp. 1551-1560, 10.1080/09537287.2022.2069049.

Awasthi, R. and Engelschalk, M. (2018), *Taxation and the Shadow Economy: How the Tax System Can Stimulate and Enforce the Formalization of Business Activities*, Vol. 15 No. 2, World Bank, Washington, DC, doi: 10.1596/1813-9450-8391.

Baker, T. and Nelson, R.E. (2005), "Creating something from nothing: resource construction through entrepreneurial bricolage", *Administrative Science Quarterly*, Vol. 50 No. 3, pp. 329-366, doi: 10.2189/asqu.2005.50.3.329.

Baker, T., Miner, A.S. and Eesley, D.T. (2003), "Improvising firms: bricolage, account giving and improvisational competencies in the founding process", *Research Policy*, Vol. 32 No. 2, pp. 255-276, doi: 10.1016/s0048-7333(02)00099-9.

Basaure, A., Vesselkov, A. and Töyli, J. (2020), "Internet of things (IoT) platform competition: consumer switching versus provider multihoming", *Technovation*, Vols 90-91 Nos 2-3, 102101, doi: 10.1016/j.technovation.2019.102101.

Bettiol, M., Capestro, M., Di Maria, E. and Ganau, R. (2023), "Is this time different? How industry 4.0 affects firms' labor productivity", *Small Business Economics*, Vol. 62 No. 4, pp. 1449-1467, doi: 10.1007/s11187-023-00825-8.

Brenner, B. (2018), "Transformative sustainable business models in the light of the digital Imperative-a global business economics perspective", *Sustainability*, Vol. 10 No. 12, 4428, doi: 10.3390/su10124428.

Bu, J. and Cuervo-Cazurra, Á. (2020), "Informality costs: informal entrepreneurship and innovation in emerging economies", *Strategic Entrepreneurship Journal*, Vol. 14 No. 3, pp. 329-368, doi: 10.1002/sej.1358.

Burtch, G., Carnahan, S. and Greenwood, B.N. (2018), "Can you gig it? An empirical examination of the gig economy and entrepreneurial activity", *Management Science*, Vol. 64 No. 12, pp. 5497-5520, doi: 10.1287/mnsc.2017.2916.

Butler, T., Butler, T., Murphy, C. and Murphy, C. (2008), "Integrating dynamic capability and commitment theory for research on IT capabilities and resources", *The Eighth International Conference of Chinese Logistics and Transportation Professionals*, p. 61, doi: 10.1061/40996(330)61.

Canelas, C. (2018), "Informality and poverty in Ecuador", *Small Business Economics*, Vol. 53 No. 4, pp. 1097-1115, doi: 10.1007/s11187-018-0102-9.

Castro, J., Khavul, S. and Bruton, G. (2014), "Shades of grey: how do informal firms navigate between macro and meso institutional environments?", *Strategic Entrepreneurship Journal*, Vol. 8 No. 1, pp. 75-94, doi: 10.1002/sej.1172.

Cazzaniga, M., Jaumotte, F., Li, L., Melina, G., Panton, A.J., Pizzinelli, C., Rockall, E.J. and Tavares, M.M. (2024), "Gen-AI: artificial intelligence and the future of work", IMF Staff Discussion Notes, No. 001, International Monetary Fund, p. 1, available at: https://doi.org/10.5089/9798400262548.006 (accessed 13 December 2025).

Chacaltana, J., de Mattos, F. and García, J. (2024), "New technologies, e-government, and informality", ILO Working Paper 112, doi: 10.54394/NEYY5523.

Chaudhuri, K., Sasidharan, S. and Raj, S. (2018), "Gender, small firm ownership, and credit access: some insights from India", *Small Business Economics*, Vol. 54 No. 4, pp. 1165-1181, doi: 10.1007/s11187-018-0124-3.

Crockett, K., Gerber, L., Latham, A. and Colyer, E. (2023), "Building trustworthy AI solutions: a case for practical solutions for small businesses", *IEEE Transactions on Artificial Intelligence*, Vol. 4 No. 4, pp. 778-791, doi: 10.1109/tai.2021.3137091.

Desa, G. and Basu, S. (2013), "Optimization or bricolage? Overcoming resource constraints in global social entrepreneurship", *Strategic Entrepreneurship Journal*, Vol. 7 No. 1, pp. 26-49, doi: 10.1002/sej.1150.

Fu, X., Mohnen, P. and Zanello, G. (2018), "Innovation and productivity in formal and informal firms in Ghana", *Technological Forecasting and Social Change*, Vol. 131 No. 6, pp. 315-325, doi: 10.1016/j.techfore.2017.08.009.

Gebreeyesus, M. and Mohnen, P. (2013), "Innovation performance and embeddedness in networks: evidence from the Ethiopian footwear cluster", *World Development*, Vol. 41 No. 1, pp. 302-316, doi: 10.1016/j.worlddev.2012.05.029.

Gmyrek, P., Winkler, H. and Garganta, S. (2024), "Buffer or bottleneck? Employment exposure to generative AI and the digital divide in Latin America", ILO Working Paper 121, doi: 10.54394/TFZY7681.

Grant, R.M. (1996), "Prospering in dynamically-competitive environments: organizational capability as knowledge integration", *Organization Science*, Vol. 7 No. 4, pp. 375-387, doi: 10.1287/orsc.7.4.375.

Grashof, N. and Kopka, A. (2022), "Artificial intelligence and radical innovation: an opportunity for all companies?", *Small Business Economics*, Vol. 61 No. 2, pp. 771-797, doi: 10.1007/s11187-022-00698-3.

Grimaldi, M., Quinto, I. and Rippa, P. (2013), "Enabling open innovation in small and medium enterprises: a dynamic capabilities approach", *Knowledge and Process Management*, Vol. 20 No. 4, pp. 199-210, doi: 10.1002/kpm.1423.

Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M.A., Singh, H., Teede, D.J. and Winter, G.S. (2007), *Dynamic Capabilities: Understanding Strategic Change in Organizations*, Blackwell Publishing, ISBN: 978-1-405-13575-7, available at: https://www.wiley.com/en-us/Dynamic+Capabilities%3A+Understanding+Strategic+Change+in+Organizations-p-9781405135757

Hodapp, D. and Hanelt, A. (2022), "Interoperability in the era of digital innovation: an information systems research agenda", *Journal of Information Technology*, Vol. 37 No. 4, pp. 407-427, doi: 10.1177/02683962211064304.

Huang, C., Zhang, Z., Mao, B. and Yao, X. (2023), "An overview of artificial intelligence ethics", *IEEE Transactions on Artificial Intelligence*, Vol. 4 No. 4, pp. 799-819, doi: 10.1109/tai.2022.3194503.

Huggins, R., Prokop, D. and Thompson, P. (2017), "Entrepreneurship and the determinants of firm survival within regions: human capital, growth motivation and locational conditions", *Entrepreneurship and Regional Development*, Vol. 29 Nos 3-4, pp. 357-389, doi: 10.1080/08985626.2016.1271830.

Hunter, S., Chai, A., Morgan, P., Chan, H.F., Torgler, B. and Rohde, N. (2024), "Mobile banking apps and the informal economy: evidence from survey data in Indonesia and Bangladesh", *Applied Economics*, Vol. 57 No. 48, pp. 7873-7888, doi: 10.1080/00036846.2024.2393900.

Hwang, W. and Kim, H. (2021), "Does the adoption of emerging technologies improve technical efficiency? Evidence from Korean manufacturing SMEs", *Small Business Economics*, Vol. 59 No. 2, pp. 627-643, doi: 10.1007/s11187-021-00554-w.

Ji, H. (2022), "A review of research on the impact of digital capabilities on business model innovation", *BCP Business and Management*, Vol. 35, pp. 777-787, doi: 10.54691/bcpbm.v35i.3401.

Johri, A., Asif, M., Tarkar, P., Khan, W. and Wasiq, M. (2024), "Digital financial inclusion in micro enterprises: understanding the determinants and impact on ease of doing business from world bank survey", *Humanities and Social Sciences Communications*, Vol. 11 No. 1, pp. 1-10, doi: 10.1057/s41599-024-02856-2.

Kearney (2018), "Digital payments and the global digital economy", available at: https://www.kearney.com/industry/financial-services/digital-payments-and-the-global-informal-economy (accessed 21 December 2023).

Khan, E.A. (2018), "The voice of informal entrepreneurs: resources and capabilities perspective", *Journal of Developmental Entrepreneurship*, Vol. 23 No. 3, 1850015, doi: 10.1142/S1084946718500152.

Kikulwe, E.M., Fischer, E. and Qaim, M. (2014), "Mobile money, smallholder farmers, and household welfare in Kenya", *PLoS One*, Vol. 9 No. 10, e109804, doi: 10.1371/journal.pone.0109804.

Kolade, O., Adepoju, D. and Adegbile, A. (2022), "Blockchains and the disruption of the sharing economy value chains", *Strategic Change*, Vol. 31 No. 1, pp. 137-145, doi: 10.1002/JSC.2483.

Kolade, O., Oyinlola, M., Ogunde, O., Ilo, C. and Ajala, O. (2024), "Digitally enabled business models for a circular plastic economy in Africa", *Environmental Technology and Innovation*, Vol. 35 No. 8, 103657, doi: 10.1016/j.eti.2024.103657.

Kwong, C.C.Y., Cheung, C.W.M., Manzoor, H. and Rashid, M.U. (2019), "Entrepreneurship through bricolage: a study of displaced entrepreneurs at times of war and conflict", *Entrepreneurship and Regional Development*, Vol. 31 Nos 5-6, pp. 435-455, doi: 10.1080/08985626.2018.1541592.

Larsson, C.W. and Svensson, J. (2018), "Mobile phones in the transformation of the informal economy: stories from market women in Kampala", *Uganda Journal of Eastern African Studies*, Vol. 12 No. 3, pp. 533-551, doi: 10.1080/17531055.2018.1436247.

Li, L., Su, F., Wei, Z. and Mao, J. (2017), "Digital transformation by SME entrepreneurs: a capability perspective", *Information Systems Journal*, Vol. 28 No. 6, pp. 1129-1157, doi: 10.1111/isj.12153.

Luseno, T. and Kolade, O. (2022), "Displaced, excluded, and making do: a study of refugee entrepreneurship in Kenya", *Journal of Entrepreneurship in Emerging Economies*, Vol. 15 No. 4, pp. 808-834, doi: 10.1108/JEEE-04-2021-0163.

Madanaguli, A., Sjödin, D., Parida, V. and Mikalef, P. (2024), "Artificial intelligence capabilities for circular business models: research synthesis and future agenda", *Technological Forecasting and Social Change*, Vol. 200, 123189, doi: 10.1016/j.techfore.2023.123189.

Mikalef, P. and Gupta, M. (2021), "Artificial intelligence capability: conceptualization, measurement calibration and empirical study on its impact on organizational creativity and firm performance", *Information and Management*, Vol. 58 No. 3, 103434, doi: 10.1016/j.im.2021.103434.

Minola, T., Brumana, M., Campopiano, G., Garrett, R. and Cassia, L. (2016), "Corporate venturing in family business: a developmental approach of the enterprising family", *Strategic Entrepreneurship Journal*, Vol. 10 No. 4, pp. 395-412, doi: 10.1002/sej.1236.

Molecke, G. and Pinkse, J. (2017), "Accountability for social impact: a bricolage perspective on impact measurement in social enterprises", *Journal of Business Venturing*, Vol. 32 No. 5, pp. 550-568, doi: 10.1016/j.jbusvent.2017.05.003.

Monsen, E., Mahagaonkar, P. and Dienes, C. (2011), "Entrepreneurship in India: the question of occupational transition", *Small Business Economics*, Vol. 39 No. 2, pp. 359-382, doi: 10.1007/s11187-011-9316-9.

Mramba, N.R. (2024), "The potentials of artificial intelligence in improving Africa informal cross border trade. What works, what doesn't and what's next to Africans?", *African Journal on Land Policy and Geospatial Sciences*, Vol. 7 No. 1, pp. 2657-2664, doi: 10.48346/IMIST.PRSM/ajlp-gs.v7i1.45572.

Norbäck, P. and Persson, L. (2023), "Why generative ai can make creative destruction more creative but less destructive", *Small Business Economics*, Vol. 63 No. 1, pp. 349-377, doi: 10.1007/s11187-023-00829-4.

Obschonka, M. and Audretsch, D. (2019), "Artificial intelligence and big data in entrepreneurship: a new era has begun", *Small Business Economics*, Vol. 55 No. 3, pp. 529-539, doi: 10.1007/s11187-019-00202-4.

Okello Candiya Bongomin, G., Ntayi, J.M., Munene, J.C. and Malinga, C.A. (2018), "Mobile money and financial inclusion in Sub-Saharan Africa: the moderating role of social networks", *Journal of African Business*, Vol. 19 No. 3, pp. 361-384, doi: 10.1080/15228916.2017.

Owoseni, A. (2023), "What is digital transformation? Investigating the metaphorical meaning of digital transformation and why it matters", *Digital Transformation and Society*, Vol. 2 No. 1, pp. 78-96, doi: 10.1108/DTS-10-2022-0049.

Owoseni, A. and Twinomurinzi, H. (2018), "Mobile apps usage and dynamic capabilities: a structural equation model of SMEs in Lagos, Nigeria", *Telematics and Informatics*, Vol. 35 No. 7, pp. 2067-2081, doi: 10.1016/j.tele.2018.07.009.

Owoseni, A. and Twinomurinzi, H. (2019), "The dynamic capabilities of small and medium-scale enterprises using mobile apps in Lagos, Nigeria", *The Electronic Journal on Information Systems in Developing Countries*, Vol. 85 No. 1, e12061, doi: 10.1002/isd2.12061.

Owoseni, A. and Twinomurinzi, H. (2020), "Evaluating mobile app usage by service sector micro and small enterprises in Nigeria: an abductive approach", *Information Technology for Development*, Vol. 26 No. 4, pp. 762-772, doi: 10.1080/02681102.2020.1727825.

Owoseni, A., Hatsu, S. and Tolani, A. (2022), "How do digital technologies influence the dynamic capabilities of micro and small businesses in a pandemic and low-income country context?", *The Electronic Journal on Information Systems in Developing Countries*, Vol. 88 No. 2, pp. 1-17, doi: 10.1002/isd2.12202.

Paparrizos, S., Dogbey, R.K., Sutanto, S.J., Gbangou, T., Kranjac-Berisavljevic, G., Gandaa, B.Z., Ludwig, F. and van Slobbe, E. (2023), "Hydro-climate information services for smallholder farmers: Farmer support app principles, implementation, and evaluation", *Climate Services*, Vol. 30, 100387, doi: 10.1016/j.cliser.2023.100387.

Rammer, C., Fernández, G. and Czarnitzki, D. (2022), "Artificial intelligence and industrial innovation: evidence from German firm-level data", *Research Policy*, Vol. 51 No. 7, 104555, doi: 10.1016/j.respol.2022.104555.

Raval, N. (2019), "Automating informality: on AI and labour in the global south. Global information society watch", in *Artificial Intelligence: Human Rights, Social Justice and Development*, available at: https://giswatch.org/sites/default/files/gisw2019_artificial_intelligence.pdf (accessed 20 October 2023).

Rüling, C.C. and Duymedjian, R. (2014), "Digital bricolage: resources and coordination in the production of digital visual effects", *Technological Forecasting and Social Change*, Vol. 83 No. 1, pp. 98-110, doi: 10.1016/j.techfore.2013.05.003.

Saraf, N., Liang, H., Xue, Y. and Hu, Q. (2012), "How does organisational absorptive capacity matter in the assimilation of enterprise information systems?", *Information Systems Journal*, Vol. 23 No. 3, pp. 245-267, doi: 10.1111/j.1365-2575.2011.00397.x.

Senyard, J., Baker, T., Steffens, P. and Davidsson, P. (2014), "Bricolage as a path to innovativeness for resource-constrained new firms", *Journal of Product Innovation Management*, Vol. 31 No. 2, pp. 211-230, doi: 10.1111/jpim.12091.

Senyo, P., Gozman, D., Karanasios, S., Dacre, N. and Baba, M. (2022), "Moving away from trading on the margins: economic empowerment of informal businesses through Fintech", *Information Systems Journal*, Vol. 33 No. 1, pp. 154-184, doi: 10.1111/isj.12403.

Sjödin, D., Parida, V. and Kohtamäki, M. (2023), "Artificial intelligence enabling circular business model innovation in digital servitization: conceptualizing dynamic capabilities, AI capacities, business models and effects", *Technological Forecasting and Social Change*, Vol. 197, 122903, doi: 10.1016/j.techfore.2023.122903.

Teece, D.J. (2007), "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance", *Strategic Management Journal*, Vol. 28 No. 13, pp. 1319-1350, doi: 10.1002/smj.640.

Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533, doi: 10.1002/(sici)1097-0266(199708)18:7<509::aid-smj882>3.0.co;2-z, available at: http://links.jstor.org/sici?sici=0143-2095%28199708%2918%3A7%3C509%3ADCASM%3E2.0.CO%3B2-%23

Tolani, A., Owoseni, A. and Twinomurinzi, H. (2019), "Exploring the effect of mobile apps on SMEs in Nigeria: a critical realist study", in Nielsen, P. and Kimaro, H.C. (Eds), *Information and Communication Technologies for Development. Strengthening Southern-Driven Cooperation as a Catalyst for ICT4D. ICT4D 2019. IFIP Advances in Information and Communication Technology*, Springer, Cham, Vol. 551, pp. 606-618, doi: 10.1007/978-3-030-18400-1_50.

Tong, S., Jia, N., Luo, X. and Fang, Z. (2021), "The janus face of artificial intelligence feedback: deployment versus disclosure effects on employee performance", *Strategic Management Journal*, Vol. 42 No. 9, pp. 1600-1631, doi: 10.1002/smj.3322.

Wales, W.J., Parida, V. and Patel, P.C. (2013), "Too much of a good thing? Absorptive capacity, firm performance, and the moderating role of entrepreneurial orientation", *Strategic Management Journal*, Vol. 34, pp. 622-633, doi: 10.1002/smj.2026.

Wang, C.L. and Ahmed, P.K. (2007), "Dynamic capabilities: a review and research agenda", *International Journal of Management Reviews*, Vol. 9 No. 2007, pp. 31-51, doi: 10.1111/j.1468-2370.2007.00201.x.

Webb, J., Ireland, R. and Ketchen, D. (2014), "Toward a greater understanding of entrepreneurship and strategy in the informal economy", *Strategic Entrepreneurship Journal*, Vol. 8 No. 1, pp. 1-15, doi: 10.1002/sej.1176.

Williams, N. and Vorley, T. (2014), "Economic resilience and entrepreneurship: lessons from the Sheffield city region", *Entrepreneurship and Regional Development*, Vol. 26 Nos 3-4, pp. 257-281, doi: 10.1080/08985626.2014.894129.

Williams, C., Martínez-Pérez, Á. and Kedir, A. (2017), "Informal entrepreneurship in developing economies: the impacts of starting up unregistered on firm performance", *Entrepreneurship Theory and Practice*, Vol. 41 No. 5, pp. 773-799, doi: 10.1111/etap.12238.

Wong, J. and Yap, K.H.A. (2024), "Factors influencing the adoption of artificial intelligence in accounting among micro, small medium enterprises (MSMEs)", *Quantum Journal of Social Sciences and Humanities*, Vol. 5 No. 1, pp. 16-28, doi: 10.55197/qjssh.v5i1.323.

Yanocha, D., Mason, J. and Hagen, J. (2020a), "Using data and technology to integrate mobility modes in low-income cities", *Transport Reviews*, Vol. 41 No. 3, pp. 262-284, doi: 10.1080/01441647.2020.

Yanocha, D., Mason, J. and Hagen, J. (2020b), "Using data and technology to integrate mobility modes in low-income cities", *Transport Reviews*, Vol. 41 No. 3, pp. 262-284, doi: 10.1080/01441647.2020.1834006.

Yuan, S. and Pan, X. (2023), "The effects of digital technology application and supply chain management on corporate circular economy: a dynamic capability view", *Journal of Environmental Management*, Vol. 341, 118082, doi: 10.1016/j.jenvman.2023.118082.

Zhara, S.A. and George, G. (2002), "Absorptive capacity: a review, reconceptualization, and extension", *Academy of Management Review*, Vol. 27 No. 2, pp. 185-203, doi: 10.5465/amr.2002.6587995.

Further reading

Adekoya, O.D., Mordi, C. and Ajonbadi, H.A. (2024), "A dystopian or utopian tale? The challenges and opportunities of AI-Powered workplace in the Nigerian gig economy", in Adekoya, O.D., Mordi, C. and Ajonbadi, H.A. (Eds), *HRM, Artificial Intelligence and the Future of Work*, Palgrave Macmillan, Cham, pp. 305-328, doi: 10.1007/978-3-031-62369-1_16.

Al Dhaheri, M.H., Ahmad, S.Z. and Papastathopoulos, A. (2024), "Do environmental turbulence, dynamic capabilities, and artificial intelligence force SMEs to be innovative?", *Journal of Innovation and Knowledge*, Vol. 9 No. 3, 100528, doi: 10.1016/j.jik.2024.100528.

Anwar, M.A. and Graham, M. (2021), "Between a rock and a hard place: freedom, flexibility, precarity and vulnerability in the gig economy in Africa", *Competition and Change*, Vol. 25 No. 2, pp. 237-258, doi: 10.1177/1024529420914473.

Bruton, G., Filatotchev, I., Si, S. and Wright, M. (2013), "Entrepreneurship and strategy in emerging economies", *Strategic Entrepreneurship Journal*, Vol. 7 No. 3, pp. 169-180, doi: 10.1002/sej.1159.

Felten, E., Raj, M. and Seamans, R. (2021), "Occupational, industry, and geographic exposure to artificial intelligence: a novel dataset and its potential uses", *Strategic Management Journal*, Vol. 42 No. 12, pp. 2195-2217, doi: 10.1002/smj.3286.

Ge, L., Li, J. and Chandrashekar, S. (2020), "Entrepreneurs' socioeconomic status and government expropriation in an emerging economy", *Strategic Entrepreneurship Journal*, Vol. 14 No. 3, pp. 396-418, doi: 10.1002/sej.1361.

International Labour Organization (2021), *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work*, International Labour Office, Geneva, available at: https://www.ilo.org/publications/flagship-reports/role-digital-labour-platforms-transforming-world-work

International Monetary Fund (2024), "Gen AI: artificial intelligence and the future of work".

Khayesi, J., George, G. and Antonakis, J. (2014), "Kinship in entrepreneur networks: performance effects of resource assembly in Africa", *Entrepreneurship Theory and Practice*, Vol. 38 No. 6, pp. 1323-1342, doi: 10.1111/etap.12127.

Kolade, O. and Owoseni, A. (2022), "Employment 5.0: the work of the future and the future of work", *Technology in Society*, Vol. 71 No. 11, 102086, doi: 10.1016/j.techsoc.2022.102086.

Kristoffersen, E., Mikalef, P., Blomsma, F. and Li, J. (2021), "Towards a business analytics capability for the circular economy", *Technological Forecasting and Social Change*, Vol. 171, 120957, doi: 10.1016/j.techfore.2021.120957.

Kuk, G., Meyer, C. and Giamporcaro, S. (2023), "Complementary currencies and entrepreneurship: sustaining micro-entrepreneurs in Kenyan informal settlements", *Strategic Entrepreneurship Journal*, Vol. 18 No. 1, pp. 21-54, doi: 10.1002/sej.1484.

Kumar, V., Rajan, B., Venkatesan, R. and Lecinski, J. (2019), "Understanding the role of artificial intelligence in personalized engagement marketing", *California Management Review*, Vol. 61 No. 4, pp. 135-155, doi: 10.1177/0008125619859317.

Li, Y., Zhong, H. and Tong, Q. (2024), "The impact of artificial intelligence on corporate financial asset allocation: moderating role of organizational dynamic capabilities", *International Review of Financial Analysis*, Vol. 96, 103773, doi: 10.1016/j.irfa.2024.103773.

Menard, P. and Bott, G. (2024), "Artificial intelligence misuse and concern for information privacy: new construct validation and future directions", *Information Systems Journal*, Vol. 35 No. 1, pp. 322-367, doi: 10.1111/isj.12544.

Minto-Coy, I., Lashley, J. and Storey, D. (2018), "Enterprise and entrepreneurship in the Caribbean region: introduction to the special issue", *Entrepreneurship and Regional Development*, Vol. 30 Nos 9-10, pp. 921-941, doi: 10.1080/08985626.2018.1515823.

Overgoor, G., Chica, M., Rand, W. and Weishampel, A. (2019), "Letting the computers take over: using ai to solve marketing problems", *California Management Review*, Vol. 61 No. 4, pp. 156-185, doi: 10.1177/0008125619859318.

Siqueira, A., Webb, J. and Bruton, G. (2016), "Informal entrepreneurship and industry conditions", *Entrepreneurship Theory and Practice*, Vol. 40 No. 1, pp. 177-200, doi: 10.1111/etap.12115.

Soluk, J., Decker-Lange, C. and Hack, A. (2023), "Small steps for the big hit: a dynamic capabilities perspective on business networks and non-disruptive digital technologies in SMEs", *Technological Forecasting and Social Change*, Vol. 191, 122490, doi: 10.1016/j.techfore.2023.122490.

Takahashi, K. and Hashimoto, Y. (2022), "Small grant subsidy application effects on productivity improvement: evidence from Japanese SMEs", *Small Business Economics*, Vol. 60 No. 4, pp. 1631-1658, doi: 10.1007/s11187-022-00663-0.

Walton, N. and Nayak, B. (2021), "Rethinking of Marxist perspectives on big data, artificial intelligence (Ai) and capitalist economic development", *Technological Forecasting and Social Change*, Vol. 166, 120576, doi: 10.1016/j.techfore.2021.120576.

Xie, X., Han, Y., Anderson, A.R. and Ribeiro-Navarrete, S. (2022), "Digital platforms and SMEs' business model innovation: exploring the mediating mechanisms of capability reconfiguration", *International Journal of Information Management*, Vol. 65, 102513, doi: 10.1016/j.ijinfomgt.2022.102513.

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