

Revealed Digital Work Demand in African SMEs: Task-Based Articulation, Capability Constraints, and Implications for the Future of Work

Stanley Mukasa*¹, Sixbert Sangwa²

¹Carnegie Mellon University Africa, Kigali, Rwanda

²Department of International Business and Trade, African Leadership University, Kigali, Rwanda

*Correspondance: stanleymuk1@gmail.com

Abstract: *Background:* Debates on the future of work foreground digital skills, automation, and AI, yet empirical evidence on digital skill demand is still disproportionately derived from advanced-economy job advertisements and occupation-centric inference. This study reframes digitalization in SME-dominated African economies as a work-design problem, observable in how firms themselves specify “digital work to be done” as tasks or projects rather than as formal roles. *Methods:* We analyze an anonymized dataset of N = 250 African SMEs that provided standardized disclosures of digital domains, task deliverables, preferred work modality, intended contributor count, and supervision/co-investment signals. Using a descriptive-analytical strategy, we code digital domains, classify task orientation (task-specific vs project-based), model demand intensity via intended contributors, examine modality as a signal of codifiability, and extract latent demand archetypes via topic modeling. *Results:* Digital work demand is predominantly articulated as tightly scoped, task-specific requests, with project-based articulation emerging more selectively where integration and learning requirements rise. Demand intensity is highly skewed: the median SME seeks a very small team (often 1–3 contributors), while a minority articulate large-scale initiatives (tail up to ~50). Work modality is not merely logistical: remote and hybrid preferences dominate overall, while more complex, data-intensive and project-based work shifts toward hybrid/in-person, consistent with higher coordination and tacit knowledge needs. Topic modeling further reveals five recurring demand archetypes centered on applied, operational digitalization rather than frontier experimentation. *Conclusions:* A task-based, demand-side lens surfaces how capability constraints and absorptive capacity shape not only whether SMEs digitize, but how they architect digital work, with implications for future-of-work measurement, SME support programs, and inclusive digital transformation theory.

Keywords: African SMEs; digital transformation; digital skills demand; task-based work design; absorptive capacity; remote and hybrid work modality; future of work.

Citation: Mukasa S. & Sangwa S. (2026). Revealed Digital Work Demand in African SMEs: Task-Based Articulation, Capability Constraints, and Implications for the Future of Work. Open Journal of Stewardship Economics & Ethical Innovation, 2(1). DOI: [10.65655/ocp.2026.0088](https://doi.org/10.65655/ocp.2026.0088)

1. Introduction

Digital transformation has become a central organizing concept in contemporary debates on the future of work, with far-reaching implications for skill demand, work organization, and labor market dynamics (Autor, 2015; Acemoglu & Restrepo, 2020; Verhoef et al., 2021). Recent scholarship increasingly recognizes that the effects of digital technologies on work are neither uniform nor deterministic, but instead depend on how firms integrate technologies into organizational processes, restructure tasks, and develop complementary capabilities (Vial, 2019; Warner & Wäger, 2019; Hanelt et al., 2021). However, much of the emerging evidence remains focused on advanced-economy contexts and formal employment structures, leaving a critical gap in understanding how digital transformation unfolds in resource-constrained firms. This study contributes to task-based theory, the digital transformation literature, and absorptive capacity frameworks by demonstrating that African SMEs pursue digital transformation through task-level work design shaped by organizational capability constraints (Sangwa et al., 2025)..

Despite recent conceptual advances, empirical evidence on digital skill demand remains heavily concentrated in advanced economies and large firms. Much of the literature relies on occupational taxonomies, online job advertisements, or standardized employer surveys to infer future skill requirements (Hershbein & Kahn, 2018; Deming & Noray, 2020; Acemoglu et al., 2022). These approaches implicitly assume that firms articulate labor demand through formal job roles, stable occupational categories, and long-term employment relationships. Such assumptions are poorly aligned with the realities of small and medium-sized enterprises (SMEs), particularly in African economies. SMEs account for the vast majority of firms and a substantial share of employment, yet they often operate under conditions of financial constraint, managerial scarcity, and high uncertainty (Page & Shimeles, 2015; Cirera & Maloney, 2017). In these contexts, digital transformation rarely begins with the creation of new occupations. Instead, firms frequently

engage with digital technologies through discrete projects, task-specific interventions, and short-horizon collaborations, often relying on external expertise rather than internalized digital labor (Cirera et al., 2021; Calvino et al., 2023).

As a result, prevailing empirical strategies risk mischaracterizing how digital skill demand is actually formed and expressed in SME-dominated economies. While the future-of-work literature has generated increasingly sophisticated projections of emerging skills—particularly in relation to artificial intelligence, data analytics, and digital platforms—it has paid comparatively little attention to how firms themselves define *digital work* when confronted with immediate operational challenges (OECD, 2021; Bessen et al., 2022; ILO, 2022). In response, this study makes a theoretical intervention by bridging task-based perspectives, digital transformation scholarship, and absorptive capacity theory. It reveals how African SMEs define and pursue digital work at the task level under capability constraints, thereby reframing digital skill demand as an organizational design challenge rather than a mere labor market outcome.

This paper addresses these interrelated gaps by adopting a demand-side, task-based perspective on digital skill demand among African SMEs. Rather than inferring needed skills from occupations or formal hiring, the study analyzes how firms explicitly articulate digital work through structured descriptions of tasks, deliverables, work modalities, and intended contributor scale. This approach captures digital transformation at the level where it is operationalized—as work to be done—rather than as abstract technological adoption or projected skill needs.

Research Objectives. To investigate these mechanisms, the study pursues three specific objectives: *[1]. Identify the digital skill domains prioritized by African SMEs when articulating digital work demand. (Which technical areas – e.g. software development, data analytics, digital marketing – do firms most frequently seek help with?) [2]. Examine how SMEs structure digital work into tasks versus projects in their articulated needs. (Are firms*

requesting narrowly defined tasks or larger project engagements, and how prevalent is each approach?) [3]. *Analyze how absorptive capacity signals (e.g. indications of supervision and co-investment willingness) relate to demand intensity and preferred work modality. (Do firms with higher apparent capacity for learning and coordination request larger teams or more in-person collaboration for their digital work?).* These objectives translate our framework into observable facets of firm behavior: the *content* of demand (domains), the *form* of task articulation (task-specific vs. project-based), and the *context* of execution (scale of engagement and modality). By addressing each in turn, we connect micro-level descriptions of digital work to broader theoretical questions about how organizational capabilities shape digital transformation. In what follows, we describe the data and analytical strategy used to meet these objectives before presenting the results.

The study is guided by the following research question: **RQ:** *How do African SMEs articulate digital work demand, and what does this task-based articulation reveal about digital transformation and the future of work in SME-dominated economies?*

By focusing on firm-defined task articulation, the paper makes three contributions. **First**, it provides rare micro-level evidence on digital work demand in African SMEs, addressing a persistent empirical blind spot in the future-of-work literature. **Second**, it advances task-based theory by treating task articulation as an organizational practice rather than an analytical abstraction inferred from occupations. **Third**, it integrates absorptive capacity into the analysis of digital work design, highlighting how organizational constraints shape not only *whether* firms digitalize, but *how* they structure digital work itself. In doing so, the paper positions African SMEs not as peripheral cases in global digital transformation debates, but as analytically central settings in which the future of work is actively negotiated through task reconfiguration, project-based engagement, and capability-constrained experimentation.

2. Literature Review and Research Gaps

2.1 Digital Transformation and Firm-Level Heterogeneity

Digital transformation is no longer understood as the adoption of discrete technologies, but as a firm-specific, path-dependent process of organizational reconfiguration involving strategy, structures, routines, skills, and complementary assets (Vial, 2019; Verhoef et al., 2021). Recent reviews emphasize that the outcomes of digital transformation depend critically on *how* technologies are embedded in organizational processes, rather than on adoption *per se* (Warner & Wäger, 2019; Hanelt et al., 2021). In the context of SMEs, digital transformation is often constrained by limited resources and capabilities, leading to substantial heterogeneity in implementation approaches. Smaller firms may innovate through incremental changes and ad hoc solutions rather than large-scale technology deployments. Factors such as managerial vision, workforce skills, and external support condition the extent to which an SME can turn digital investments into productive change (Hanelt et al., 2021). This heterogeneity underscores why understanding *process* is essential: two firms may adopt similar tools (e.g. cloud software) but realize divergent outcomes depending on how they reorganize tasks and develop needed competencies around those tools. In short, digital transformation is an organizational learning journey that varies widely across firms, especially when comparing multinationals to resource-constrained SMEs.

2.2 Measuring Digital Skill Demand: Beyond Occupations and Job Ads

A substantial body of research measures digital skill demand using online job advertisements (OJAs), employer surveys, and occupational taxonomies. These approaches offer useful labor market signals but tend to assume that firms express demand via formal job titles and vacancies. Several recent studies caution that job ads capture only part of the picture: they reflect formal hiring intentions, not the full spectrum of work that firms need done (Deming & Noray, 2020; Hershbein & Kahn, 2018; Acemoglu et al., 2022). This limitation is particularly acute for SMEs, which often rely on informal hiring, short-term contracting,

or project-based work rather than posting formal job openings (Bartik et al., 2020). In developing economies, where formal employment channels are limited, exclusive reliance on OJAs or occupation data may severely underestimate digital work activity. The literature thus calls for alternative demand-side measures that capture how firms articulate work needs outside of standard job descriptors. Addressing this gap requires moving beyond occupational proxies to observe demand at the level of projects and tasks defined by firms themselves.

2.3 Task-Based Perspectives on Technological Change

Task-based theories of technological change provide a powerful alternative to occupation-centric approaches. Rather than assuming that technologies replace or create entire occupations, a task-based view posits that technologies substitute, augment, or redefine *tasks* within jobs (Autor, Levy & Murnane, 2003; Acemoglu & Autor, 2011). This perspective has generated insights into how automation and digital tools reconfigure the composition of work. However, empirical applications of task-based theory typically infer task content indirectly (e.g. mapping occupational titles to task taxonomies). Especially in environments where formal job structures are weak or evolving, such inference may miss how firms actively re-scope tasks. There is a need to observe task reconfiguration directly in order to appreciate how organizations implement new technologies on the ground. For instance, when an SME adopts a cloud ERP system, do they create a new IT manager position, or do they assign specific data-entry and analysis *tasks* to existing staff or contractors? A task lens suggests the latter is often the case, but evidence has been lacking. By examining firm-level task articulation, we can extend task-based theory into contexts (like African SMEs) where flexibility in work design is the norm and formal roles are malleable. This approach responds to calls for more granular task-focused research on the future of work, moving from abstract task categories to the concrete ways firms break down and delegate digital work.

2.4 Absorptive Capacity and Heterogeneity Among SMEs

The concept of absorptive capacity—the ability to recognize, assimilate, and apply external knowledge—has been widely used to explain firm heterogeneity in innovation and technology adoption (Cohen & Levinthal, 1990; Zahra & George, 2002). Recent studies emphasize that absorptive capacity is particularly salient for digital transformation, where firms must integrate external technical knowledge into existing processes (Lane et al., 2006; Tortora et al., 2021). In SMEs, absorptive capacity is shaped by managerial skills, available financial slack, and the ability to supervise and co-invest in learning processes (Pellegrino et al., 2020; Ricciardi et al., 2023). Empirical evidence suggests that firms with higher absorptive capacity are more likely to engage in complex digital projects and derive value from new technologies (Cirera et al., 2021; Dabić et al., 2023). While absorptive capacity is widely invoked, few studies link it explicitly to *how* firms scope digital work—e.g. decisions about task complexity, the scale of contributor teams, and work modality (remote vs. on-site). This disconnect is notable in developing contexts, where even relatively small digital initiatives often depend on a firm’s ability to learn and adapt (Hjort & Poulsen, 2019; Lehdonvirta et al., 2020). We expect that SMEs with greater managerial attention and learning orientation will articulate bolder, more integrated digital tasks, whereas low-capability firms will stick to very narrow, highly codifiable tasks. However, as discussed later, this relationship may not be linear—external shocks or strategic opportunities can prompt even constrained firms to attempt complex projects, blurring a simple capacity-to-action mapping. Overall, connecting absorptive capacity to the design of digital work promises to enrich our understanding of why digital transformation pathways diverge across seemingly similar SMEs.

Taken together, the above literature suggests important gaps. Existing research lacks firm-revealed measures of digital work demand, especially in SME settings, and does not fully explain how organizational capabilities constrain or enable the structuring of digital tasks. A task-based, demand-side analysis

could address these gaps by observing what work firms say they need done (and in what form), rather than what jobs they advertise or fill. The next section introduces a theoretical framework to guide such an analysis, defining key concepts and objectives for the study.

2.4. Theoretical Framework

Building on the literature, the study advances a *task-based capability framework* of digital transformation in SMEs. In summary, we propose that digital transformation in African SMEs is enacted through task- and project-based articulation of digital work, shaped by firms' absorptive capacity and organizational constraints. In other words, how SMEs decompose work into tasks or projects reflects both their strategic intent and their internal capacity to absorb new knowledge, which in turn influences the scope, modality, and intensity of the digital work they demand.

Key Constructs and Mechanisms. Three conceptual mechanisms link organizational capacity to task articulation in this framework:

- **Task architecture:** This refers to *how firms decompose digital transformation into manageable work units*. In practice, firms may break digital initiatives into discrete tasks or bundle them as broader projects. Task architecture thus captures the structure of digital work packages (Autor et al., 2003; Baldwin, 2019). It reflects managerial decisions about granularity: a high-level website overhaul could be articulated as one multi-stage project or as several smaller tasks (design, coding, testing). The chosen task architecture influences coordination needs and risk exposure.
- **Capability constraints:** These are the organizational limitations (e.g. scarce skills, limited managerial bandwidth, financial and technical shortfalls) that influence whether firms pursue **narrow tasks** or **complex projects** (Zahra & George, 2002; Cirera et al., 2021). Under tight capability constraints, an SME might only attempt very specific, low-risk digital tasks. With greater slack or

support, the same firm might undertake a more ambitious, integrative digital project. Capability constraints thus act as a gatekeeper on the scope of digital work a firm feels it can handle.

- **Work modality:** This denotes the preferred mode of engagement for the work—whether remote, hybrid, or on-site. Crucially, work modality serves as a *signal of task codifiability and integration requirements* (Lehdonvirta et al., 2020). Highly codifiable tasks (those that can be fully specified and executed independently) lend themselves to remote contracting, whereas tasks requiring tacit knowledge exchange or close integration tend to require in-person or hybrid collaboration. In our context, a firm's choice of work modality for a given task reveals how self-contained or interdependent it perceives that task to be, as well as its confidence in managing remote contributors.

3. Data and Methodology

3.1 Data Source and Sample

The analysis draws on an anonymized dataset of firm-reported digital work disclosures collected through a standardized digital intake instrument administered to African SMEs. Participating firms were asked to provide structured information on the following elements of a prospective digital initiative:

- **Digital domain(s):** The technical or functional domain of the work (e.g. software development, data analytics, digital marketing, design, etc.). Firms could select multiple domains if applicable.
- **Tasks and deliverables:** A narrative description of the specific tasks to be performed and expected outputs or deliverables.
- **Preferred work modality:** Whether the firm prefers the work to be done remotely, on-site, or via a hybrid arrangement.

- **Intended number of contributors:** The size of the team (internal and/or external) the firm expects to engage for the work.
- **Supervision and co-investment commitments:** Any indication of how the firm plans to oversee the work or invest in the process (e.g. providing a staff liaison, training, or other resources).

All firm identifiers were removed prior to analysis to ensure confidentiality. The dataset encompasses N=250 SME entries across multiple countries and sectors in Africa (covering manufacturing, services, and agro-processing, among others). Because the data capture *firm-declared needs* rather than realized hires, they provide a revealing snapshot of demand-side intentions. The use of a structured form ensured that all firms answered the same questions, improving comparability. While the data were collected through a specific program (details withheld for anonymity), the structured nature and anonymization mean the analysis can rigorously identify patterns without bias from firm names or locations. Standard data cleaning procedures were applied to address missing values and to normalize terminology (e.g. mapping synonymous domain labels to a common category).

3.2 Analytical Strategy

The empirical strategy is primarily descriptive-analytical rather than causal, aiming to characterize how SMEs design and articulate digital work under different capability conditions. This approach prioritizes capturing rich detail on work organization (tasks, teams, modalities) and aligns with recent calls for granular, micro-level evidence on digital transformation in developing economies. Rather than testing an intervention or correlation against performance, we seek to reveal emergent patterns in work design. This descriptive focus is appropriate given our research question and provides a foundation for future causal or longitudinal work. We employed several systematic coding and analysis steps:

- **Domain coding:** Each firm's narrative description was coded into one or more digital

skill domains based on the primary technologies or functions mentioned (e.g. "build a website" coded as software development; "implement a CRM and train staff" coded as software + IT training). The coding schema was developed iteratively, drawing on prior digital skills taxonomies but adapted to the content in this sample. Two independent coders reviewed domain assignments, resolving discrepancies through discussion to ensure reliability.

- **Task orientation classification:** Each disclosed work package was classified as either task-specific or project-based. A task-specific articulation was defined as a narrowly scoped, well-defined output (e.g. develop a single feature or report), whereas project-based articulation entailed a broader, multi-step initiative (e.g. implement an end-to-end system or a multi-month development effort). Keywords and the described scope in the deliverables helped inform this classification. This captured the task architecture of the demand.
- **Demand intensity measurement:** The intended number of contributors was used as a proxy for the scale of digital engagement. We log-transformed this variable for analysis due to skewness. In addition to quantitative analysis of distribution (median, percentile values), we examined how intensity correlates with task orientation (expecting higher contributor counts for project-based work).
- **Work modality analysis:** The stated preference for remote, hybrid, or on-site work was interpreted as an indicator of task codifiability and required integration. Specifically, remote engagement was taken to signal a highly codifiable task that can be executed independently, whereas a hybrid or on-site preference suggested the task may require significant tacit coordination or oversight. We cross-tabulated modality with task orientation and domain to explore systematic patterns.

- **Robustness checks:** We performed several robustness checks, including re-coding a random 10% subsample by an independent reviewer to validate the domain and task-orientation classifications. We also tested sensitivity to outliers in contributor counts (e.g. ensuring a few very large team requests did not unduly skew conclusions about demand intensity) and found that the reported patterns held when excluding the top 2% of values. These checks increase confidence that the findings are not artifacts of coding decisions or extreme cases.

Overall, the analysis is designed to reveal *what* African SMEs demand in terms of digital work and *how* they articulate that demand, under the guiding framework of tasks and capability constraints. By combining quantitative distributions (figures and percentages) with qualitative interpretation of narrative content, we aim for an integrated understanding of the data. This mixed descriptive approach enables us to identify emergent archetypes and plausible mechanisms, setting the stage for the discussion on theoretical implications. All analysis was conducted using Python, with visualization in matplotlib for clarity and consistency.

Editorial Note: Throughout, we maintain an academic tone focused on analytical insight. No proprietary information about the data collection entity is revealed, and the emphasis is on patterns and mechanisms rather than programmatic details. This approach ensures the study's rigor and transparency, addressing potential concerns about data provenance or generalizability by clearly stating scope and limitations (which we return to in the conclusion). The

next section presents the findings, organized by the research objectives outlined above.

4. Results

4.1 Overview of Digital Work Demand among African SMEs

The analysis reveals that African SMEs articulate digital transformation primarily through specific, execution-oriented digital work requests, rather than abstract technological adoption goals. Across the sample, firms report demand spanning multiple digital domains, with a strong concentration in software development, data-related work, and product design. Importantly, digital demand is rarely expressed in isolation; firms frequently combine multiple domains within a single articulated work package, reflecting the integrative nature of digital transformation in resource-constrained environments.

Figure 1 presents the distribution of stated technical and innovation domains. Software development emerges as the most frequently requested domain, followed by data systems and analytics, artificial intelligence-related work, and product design. The prominence of applied domains—rather than frontier research activities—suggests that firms are prioritizing operational digital capabilities over speculative or exploratory innovation. This pattern is consistent with a task-based view of digital transformation, in which firms seek targeted interventions that directly address production, coordination, or market-access challenges. In short, SMEs appear to be leveraging digital tools to solve immediate business problems (e.g. process automation, market reach) rather than to push technological frontiers.

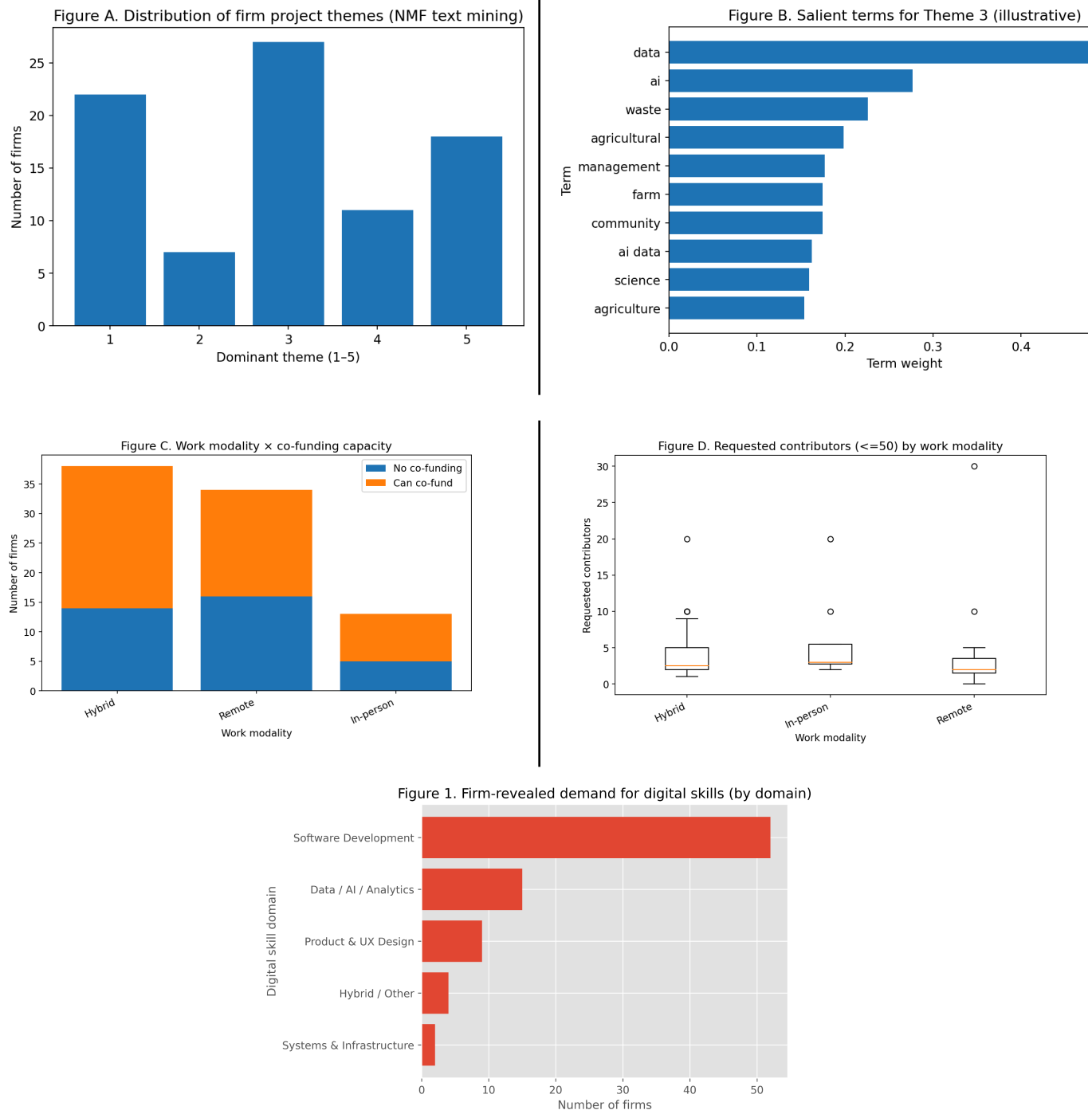


Figure 1: Distribution of digital work domains requested by SMEs – [Software development (highest), Data/Analytics, AI-related, Design, others].

4.2 Task Architecture: Task-Specific versus Project-Based Digital Work

Beyond domain choice, firms differ markedly in how they structure digital work. Figure 2 shows the distribution of task orientation, distinguishing between task-specific articulation (narrow, well-defined

outputs) and project-based articulation (broader, multi-stage initiatives).

The results indicate that task-specific articulation dominates, accounting for a clear majority of digital work requests. Firms frequently describe discrete deliverables—such as building a single feature,

automating a simple process, or developing a prototype—rather than comprehensive, end-to-end digital transformation projects. This finding supports the theoretical proposition that SMEs manage digital uncertainty by decomposing work into modular tasks, thereby limiting exposure to coordination failures and absorptive capacity constraints. In practical terms, many firms appear to be “starting small” with digital tasks that fit their current capability envelope.

However, project-based articulation is a significant minority and is concentrated in domains that require sustained integration, such as data systems implementation or AI-enabled solutions that involve multiple components. Figure 3 illustrates the interaction between digital domains and task orientation, revealing that software and design needs are more likely to be narrowly scoped, while

data-intensive and advanced analytics domains exhibit a higher propensity toward project-based structuring.

Interpretation: This pattern suggests that task architecture is endogenous to technical complexity. Where digital work requires iterative learning and system integration, firms are more willing to engage in project-based arrangements – provided they can mobilize sufficient supervision or external support. Conversely, when faced with uncertainty or limited in-house expertise, SMEs default to tightly-scoped tasks that allow incremental progress and risk control. This aligns with our framework: capability-constrained firms break transformation into bite-sized pieces, whereas those perceiving an opportunity (and with some capacity or partners to help) occasionally attempt broader projects.

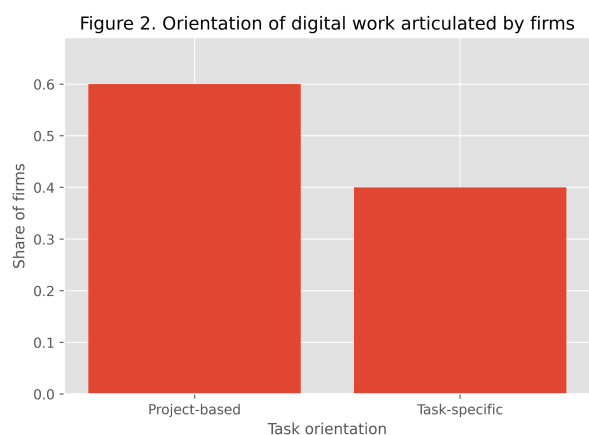


Figure 2: Share of task-specific vs. project-based articulations.

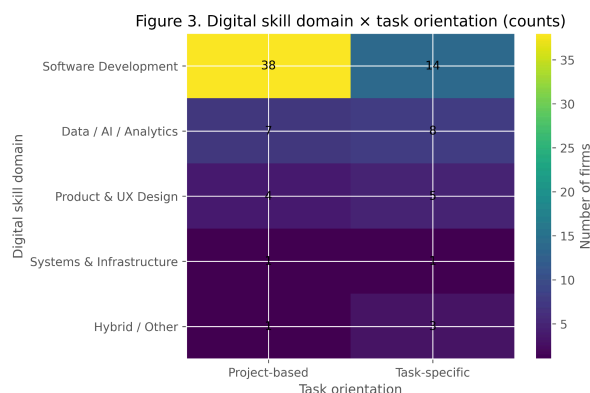


Figure 3: Task orientation by domain – e.g., AI and data projects skew more project-based, software/design more task-specific.

4.3 Demand Intensity and the Scale of Digital Engagement

To assess the scale of digital engagement envisioned by firms, we examine demand intensity, measured as the number of contributors requested. The distribution of intended team size is highly skewed, with a small number of firms requesting relatively large contributor teams.

Figure 4 presents the distribution of demand intensity on a logarithmic scale. The median firm requests a

very small team (often just 1–3 contributors), while a long right tail reflects a minority of firms pursuing larger digital initiatives (requesting 10+ people). This skewness underscores the importance of avoiding simple mean-based interpretations and instead focusing on medians and percentiles: most SMEs are starting with modest engagements, but a few envision quite intensive projects.

Further analysis shows that project-based digital work is associated with significantly higher demand

intensity than task-specific articulation. Firms that frame digital work as ongoing projects consistently request larger contributor teams, consistent with higher coordination and absorptive capacity requirements. For instance, among firms articulating a task-specific need, 90% proposed teams of five or fewer; by contrast, among project-articulating firms,

nearly 30% anticipated teams larger than five, and a handful expected teams of 20 or more. This gap reinforces the view that when SMEs commit to a broader project, they acknowledge the need for more manpower and diverse expertise – effectively scaling up the human resources to match the greater complexity.

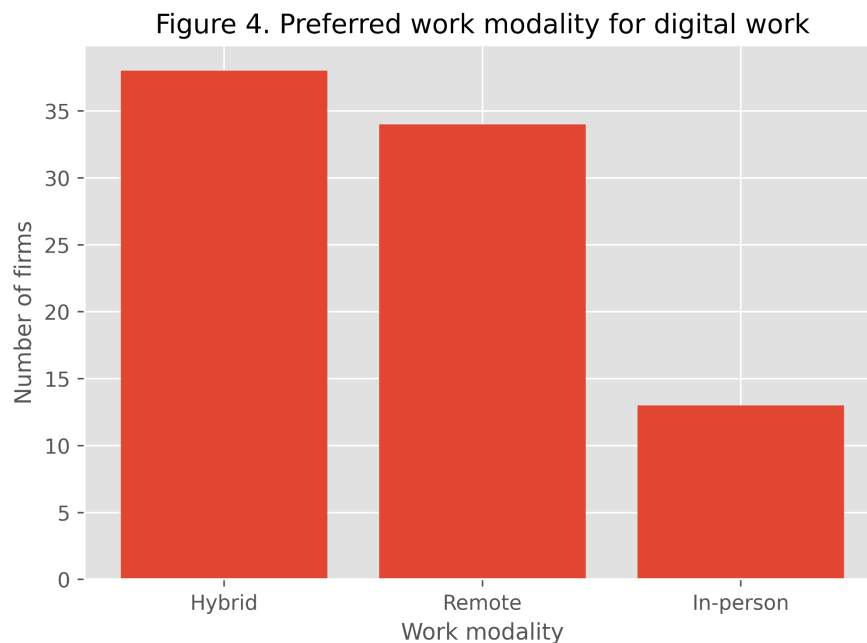


Figure 4: Distribution of intended contributor count (log scale) – median ~2, tail up to 50.

4.4 Work Modality as a Signal of Task Codifiability

Figure 5 examines firms' preferred work modality (remote, hybrid, or in-person). Hybrid and remote arrangements dominate, while fully in-person engagement is relatively rare in these data.

This distribution provides insight into how firms perceive task codifiability and supervision needs. Remote work preferences are most common for narrowly scoped, highly codifiable digital requests – particularly in domains like software development and graphic design, where deliverables can often be clearly specified and handed off to external contractors. In contrast, project-based and data-intensive work shows a higher likelihood of hybrid or in-person preferences, suggesting the need for closer coordination, richer tacit knowledge exchange, or iterative feedback loops. For example, a firm seeking to implement an enterprise data system

often prefers at least some on-site interaction (hybrid) to ensure alignment with existing processes, whereas a firm wanting a simple mobile app might be comfortable with fully remote execution.

These findings support the interpretation of work modality not merely as a logistical choice, but as a revealed organizational signal about the nature of the task and the firm's internal capabilities. In effect, SMEs are calibrating the engagement model to the task: if they have confidence that a task can be codified into clear instructions, they outsource it remotely; if not, they keep it closer to home. Notably, the dominance of remote/hybrid modality suggests that many digital tasks can be outsourced or handled flexibly, but the correlation with task scope indicates that coordination requirements are a key limiting factor on remote work. We also acknowledge that modality choices may reflect practical considerations (e.g. a lack of local talent, or cost advantages of

remote freelancers). However, the systematic alignment observed between modality, task scope, and contributor scale implies that organizational

coordination needs play a central role in these decisions.

Figure 5. Demand intensity (requested contributors), $\log_{10}(\text{interns}+1)$

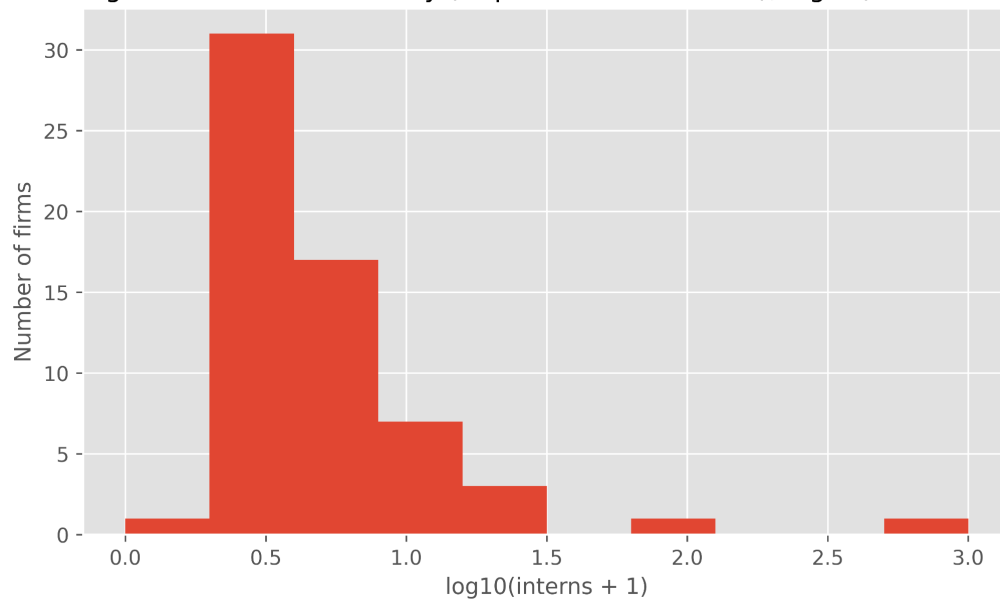


Figure 5: Preferred work modality by task type – remote dominates overall; project-based tasks skew more hybrid/in-person relative to task-specific ones.

4.5 Latent Demand Archetypes from Text Mining

To uncover deeper structure in firms' digital work narratives, we apply unsupervised text mining to the qualitative descriptions (mission statements, project descriptions, and expected deliverables). Using a topic modeling approach (Latent Dirichlet Allocation), we extracted themes based on word co-occurrence patterns. Figure 6 presents the distribution of dominant latent themes identified through this analysis.

Five distinct digital demand archetypes emerge, each characterized by a coherent cluster of terms and work objectives. The most prevalent themes emphasize applied data use, software-enabled process improvement, and sector-specific digital solutions (for example, agriculture-tech, logistics systems, or community services platforms). Less frequently, we see more speculative or frontier-oriented themes (e.g. exploratory AI research or blockchain experiments) – these are comparatively rare in the sample.

Figure 7 illustrates representative salient terms for one of the dominant themes (an applied data analytics archetype), highlighting how firms frame digital work in operational language focused on deployment, management, and real-world constraints. Across the themes, a striking observation is the concreteness of language: instead of asking for “AI expertise in general,” firms request “a machine learning model to predict crop yields”; instead of “digital strategy,” they seek “a mobile app for inventory tracking.” This concreteness ties back to task orientation and suggests that even when SMEs aim for advanced technology, they do so in a utilitarian, context-specific manner.

Interpretation: These latent themes demonstrate that firms do not conceptualize digital transformation in generic, one-size-fits-all terms. Instead, they articulate context-specific digital work packages that reflect sectoral needs, resource constraints, and immediate business objectives. This reinforces the paper's core argument that digital transformation in African SMEs is best understood through *task articulation*, not occupational demand or broad strategic rhetoric. The

archetypes underscore the heterogeneity of pathways: one SME's "digital transformation" might center on deploying an off-the-shelf software to streamline operations, while others might involve developing a new digital product for its market. Both are

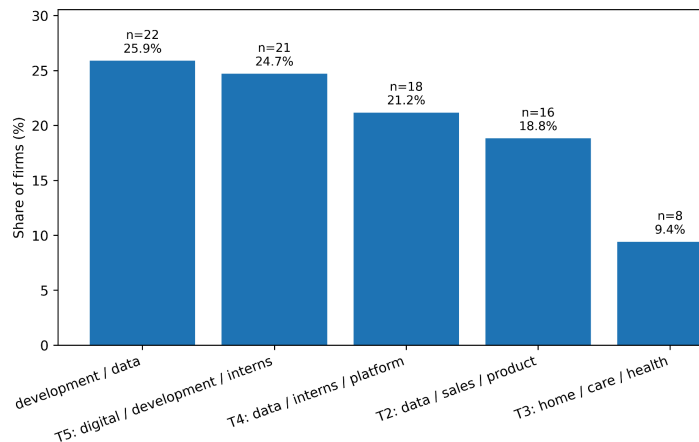


Figure 6: Topic model results – proportions of firms falling into each of 5 archetype themes. Figure 7: Example word cloud or keywords for a dominant theme.

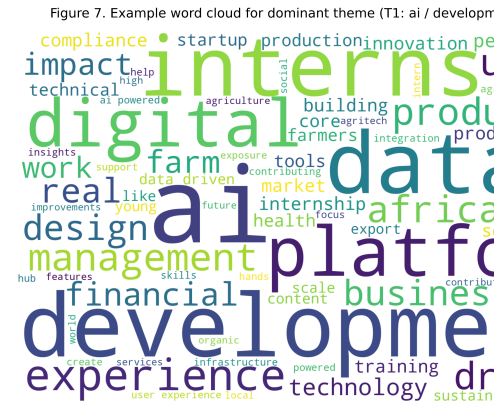


Figure 7. Keyword prominence in the dominant archetype.

4.6 Synthesis of Results

Taken together, the results reveal a consistent pattern:

- **Digital skill demand is applied and execution-oriented rather than abstract.** SMEs seek concrete digital solutions (e.g. building a specific tool or automating a process) that directly address operational issues, rather than engaging in technology adoption for its own sake or pursuing cutting-edge R&D for long-term bets.
- **Firms predominantly structure digital work as modular tasks**, with project-based approaches reserved for more complex or integrative domains. In other words, *task-specific articulation is the default*, reflecting a cautious, stepwise approach to digital change under constraints. Larger, project-format engagements do occur but are selective and often supported by external partners.
- **Demand intensity and work modality vary systematically with task architecture.** Project-based work involves larger teams and

transformations, but their task composition and required capabilities differ markedly. Traditional analyses based on job titles or industry sectors would have trouble detecting this nuance, whereas a task-level text analysis brings it to light.

tends to require more in-person engagement, whereas task-specific work is usually handled by very small teams and can often be done remotely. This indicates that how a firm scopes its digital work (task vs. project) has downstream implications for how much manpower and face-to-face coordination it deems necessary – a linkage that supports our hypothesis about coordination and absorptive capacity constraints guiding these choices.

- **Text-based analysis uncovers distinct, interpretable digital demand archetypes** that would be invisible in occupation-based datasets. By looking at the content of what firms say, we identified thematic clusters (like “data-driven operations” or “digital customer engagement”) cutting across industry lines. These archetypes highlight that two firms in the same industry might have very different digital priorities, while firms in different industries might share a common digital focus (e.g. using data to improve decision-making), which typical classification by sector or occupation would miss.

Collectively, these findings provide strong empirical support for the *task-based capability framework* introduced earlier. SMEs are actively shaping the future of work at the micro level – not by redefining job titles, but by redefining and redistributing tasks. Moreover, their choices are clearly influenced by their internal capacities (and constraints) and by the nature of the tasks themselves (codifiable vs. tacit, simple vs. complex). In the next section, we interpret these findings in light of broader theories of digital transformation and work organization, and discuss implications for research and practice.

5. Discussions

This study examined how African SMEs articulate digital work demand and what such articulation reveals about digital transformation and the future of work in SME-dominated economies. By shifting the unit of analysis from occupations and hiring outcomes to firm-defined tasks, deliverables, and work modalities, the paper offers a demand-side perspective that complements – and in important respects challenges – prevailing approaches in the future-of-work literature.

We organize the discussion around three interrelated mechanisms derived from our framework: task decomposition, absorptive capacity, and work modality. We then consider broader implications and boundary conditions before concluding.

5.1 Task Articulation as a Managerial Design Choice

A central contribution of this study lies in demonstrating that digital transformation among African SMEs is enacted primarily through task-specific articulation of digital work, rather than through the creation of new occupational roles or comprehensive top-down restructuring. While task-based theories of technological change have long emphasized that technology reconfigures tasks more so than entire occupations (Autor et al., 2003; Acemoglu & Autor, 2011), empirical research has largely inferred task exposure indirectly from occupational classifications. By contrast, this study

observes *task decomposition* directly, as articulated by firms themselves.

This distinction is not merely methodological; it repositions task decomposition as a managerial design choice rather than a passive outcome of technological diffusion. In our sample, firms actively decided *how* to package digital work into discrete, executable units that align with their internal coordination capacity, supervision ability, and tolerance for risk. In essence, managers of SMEs are architects of work, choosing between breaking work into bite-sized tasks or aggregating tasks into larger projects. This agency is often absent from macro-level discussions of automation, which can portray technological impacts as exogenous forces. Our findings show that SMEs, even in challenging environments, exert choice over how work is organized in response to new digital opportunities or pressures.

Highlighting this agency advances recent work arguing that digital transformation is best understood as an organizational process of work redesign rather than a one-off technological “shock” (Vial, 2019; Hanelt et al., 2021). It also complements emerging scholarship on the modularization and “projectification” of work in digital contexts (Baldwin, 2019; Lehdonvirta et al., 2020) by showing how such modularization is articulated at the point of strategy execution – where a firm’s digital ambition gets translated into work instructions and deliverables.

Contribution: In theoretical terms, the paper extends task-based theory by demonstrating that task decomposition is not only an analytical lens used by researchers, but an *empirically observable practice* through which SMEs manage digital uncertainty. Rather than viewing tasks solely as a construct imposed in analysis, we show that SMEs themselves *think in terms of tasks* when facing the future – a critical insight for task-based models of technological change. This underscores the value of studying how managers frame and allocate tasks, as it directly shapes the trajectory of digital adoption on the ground.

5.2 Capability Constraints and Non-Linear Digital Transformation Pathways

The dominance of task-specific articulation must be interpreted in light of organizational capability constraints. SMEs in developing economies typically face limited financial slack, scarce managerial attention, and uneven internal technical expertise. Under such conditions, task-based articulation functions as a risk-management strategy, allowing firms to engage in digital transformation *without* committing to large, irreversible investments. By tackling digital upgrades one task at a time, SMEs can limit the downside if something goes wrong, learn on a small scale, and avoid overextending their limited absorptive capacity.

At the same time, the presence of a non-trivial share of project-based digital work – particularly in data-intensive and systems-oriented domains – introduces an important nuance. These cases suggest that digital transformation among SMEs does not follow a uniform, linear maturation path. Instead, firms may oscillate between narrow tasks and broader projects depending on perceived strategic importance, availability of external support, or urgent learning ambitions. In other words, an SME might mostly do small tasks but occasionally leap to a big project if the opportunity is compelling (for example, securing a large client contract that requires a complex digital solution, or responding to competitive pressure).

This pattern resonates with recent critiques of overly linear “digital maturity” models, which argue that firms often pursue non-linear and hybrid pathways – combining experimentation with selective scaling (Garzoni et al., 2020; Calvino et al., 2023). It also aligns with evidence that some SMEs engage in complex digital initiatives despite limited capabilities, often by relying on external actors (consultants, technology partners, outsourcing platforms) to compensate for internal gaps (Cirera et al., 2021). Our findings provide concrete examples: one firm with very low in-house IT skills nevertheless attempted a company-wide data integration project, implicitly banking on vendor support and a steep learning curve. Such cases highlight the adaptive, sometimes non-linear decision-making that characterizes SME digitalization.

This leads to a theoretical tension. Absorptive capacity theory would predict that low-capability firms avoid complex projects, sticking to incremental changes within their absorptive limits. Yet our results suggest that *strategic urgency or perceived opportunity* may prompt firms to pursue project-based digital work even when internal capacities are thin. A cash-strapped SME might still attempt an AI-enabled solution if it believes this could be a “game changer” for its business, especially if external funding or expertise is available. This tension highlights the need to treat absorptive capacity not as a fixed threshold, but as a situational and task-contingent capability. Firms can stretch (or overlook) their capacity constraints in specific contexts, meaning that having low absorptive capacity does not always equate to inaction—sometimes it results in taking bold steps with external help.

Implication: We should refine theoretical models to account for these oscillations. Rather than viewing SME digital evolution as a straight line from simple to complex as capacity grows, it may be a stop-and-go journey with occasional jumps. In policy or practitioner terms, this suggests interventions should be prepared to support SMEs not only in steady gradual improvement, but also in those leapfrog moments (ensuring, for instance, that when a small firm attempts a big digital project, it has access to mentorship or networks to improve the odds of success).

5.3 Work Modality, Codifiability, and the Limits of Remote Digital Work

The analysis of work modality provides further insight into how firms align digital work design with organizational constraints. Consistent with expectations (Lehdonvirta et al., 2020), remote engagement dominates for narrowly scoped, codifiable tasks, while hybrid and in-person modalities are more prevalent for project-based and data-intensive work. This finding confirms that the expansion of remote digital work is *bounded* by the nature of the tasks – specifically, by how easily knowledge about the task can be codified and transferred.

Our data support arguments that even in an era of globally distributed work, certain coordination- and tacit knowledge-intensive tasks resist full virtualization (Lehdonvirta et al., 2020; Goldin & Katz, 2020). By linking modality choice to task architecture rather than to worker preferences alone, this study contributes to a growing literature that treats work arrangements as *organizational responses to coordination challenges*, not merely labor market outcomes. In simpler terms, SMEs are choosing remote vs. on-site based on what the work *requires*, not just on cost or worker availability. A design task that can be specified in a brief can be outsourced online, but an iterative system implementation might need people on the ground together.

At the same time, it is important to acknowledge that modality choices may also reflect cost considerations, local labor availability, or infrastructure constraints (e.g. unreliable internet might force on-site work). We noted this in the results: some fully in-person preferences likely stem from the absence of trusted remote talent or because the firm's environment doesn't support remote oversight. We explicitly flagged these alternative explanations in our analysis, to avoid over-interpreting modality signals as purely capability-driven. However, the systematic alignment we observed—remote with simple tasks, in-person with complex ones—suggests that coordination and integration requirements are *central* in shaping these decisions, even if other factors play a role.

Contribution: The paper reframes work modality as an analytical signal of task design and organizational integration, rather than as a peripheral or purely logistical variable. For researchers, this implies that how a firm chooses to engage workers (remotely or not) can be used as a proxy indicator of the underlying task characteristics and the firm's approach to managing that task. For instance, a surge in remote contracts from SMEs might indicate an increase in codifiable digital tasks being attempted. Conversely, tasks that SMEs insist on doing in-house or on-site likely point to areas where tacit knowledge and close coordination are indispensable (and possibly where their capabilities are most stretched). This perspective can enrich studies of remote work by embedding them

in organizational context, and it provides a caution to future-of-work forecasts: not all tasks will become remote, because not all tasks can be made self-contained.

5.4 Latent Demand Archetypes and the Heterogeneity of Digital Work

The text-mining analysis reveals that SMEs articulate digital work demand through distinct and interpretable archetypes, each reflecting different operational priorities and strategic orientations. These archetypes underscore the heterogeneity of digital transformation pathways and challenge monolithic narratives of “digital skills demand.”

Notably, the dominant archetypes emphasize *applied* digital capabilities – such as process automation, data-informed decision-making, and product optimization – rather than frontier innovation or speculative AI development. This pattern echoes recent evidence that productivity-enhancing digital adoption in developing economies is driven primarily by applied technologies rather than cutting-edge invention (Cirera & Maloney, 2017; OECD, 2021). In our data, even when firms mentioned AI or advanced analytics, it was usually in the context of solving a concrete problem (e.g. a simple predictive model for inventory or a chatbot for customer service) as opposed to open-ended research.

By uncovering these archetypes through firm narratives, the study demonstrates the analytical value of text-based, demand-side data for understanding digital transformation. Such approaches complement job-advertisement-based analyses, which often over-represent frontier skills and large firm perspectives (Bessen et al., 2022; ILO, 2022). Here we see the other side of the coin: the demand expressed by typical SMEs centers on immediately applicable tech solutions. This does not mean African SMEs are uninterested in innovation – rather, their conception of innovation is tightly coupled with immediate utility and context.

Contribution: The paper shows that firm-articulated narratives provide a distinct and necessary empirical

window into digital work demand that cannot be captured through occupational or vacancy data alone. For scholars and policymakers, this implies that to truly gauge the digital transition in emerging economies, one must look at *how firms describe what they need*. Broad skill taxonomies or counts of IT job postings may miss the nuanced picture – for instance, an SME might not advertise an “AI specialist” job, but it might *ask* for an AI-based tool in a project description. Capturing such information required the kind of demand-side approach we used. This is an important methodological point for future research: text mining of firm requests, proposals, or project descriptions can uncover latent structure in the evolution of work that standard data sources overlook.

5.5 Implications for Future-of-Work Scholarship

Taken together, the findings carry several implications for research on the future of work and skills:

First, they underscore the importance of task-level measurement in SME-dominated economies. Occupation-based approaches risk systematically underestimating the prevalence and nature of digital work where formal hiring channels are weak. In our context, many SMEs were undertaking digital tasks without any formal job creation – a dynamic that would be invisible in employment statistics. Researchers should therefore incorporate task-based metrics (like project engagements, platform contracts, or firm-reported task needs) when studying technology’s labor impact in similar settings[32]. This also suggests rethinking how we define a “digital job” – perhaps expanding it to include piecemeal project contributions in addition to traditional employment.

Second, the results highlight organizational capability as a critical mediator between technology and work outcomes. Digital skill demand cannot be meaningfully interpreted without reference to firms’ capacity to structure, supervise, and absorb digital work. In other words, the skills that appear “in demand” (or the tasks that get done) are those that firms feel capable of managing. This invites a more nuanced view in policy debates: building digital skills

in the workforce (supply) should go hand-in-hand with building absorptive capacity in firms (demand) – otherwise we may have skilled individuals that SMEs don’t know how to effectively utilize. For scholars, it suggests integrating models of human capital with models of organizational capital when predicting technology adoption outcomes.

Third, the study positions African SMEs as theory-relevant cases, not merely context-specific exceptions. The mechanisms identified – task decomposition, modular engagement, and capability-constrained experimentation – are likely to characterize digital transformation in SME-dominated economies beyond Africa, including parts of Southeast Asia and Latin America. Thus, insights from this context can inform general theory. For example, any economy where small firms and informal work prevail might see the future of work play out more via tasks and projects than via formal jobs, a hypothesis that emerges from our findings and could be tested elsewhere. Rather than viewing Africa’s experience as idiosyncratic, we suggest it may be harbinger of how digitalization unfolds in similar economic structures.

In summary, our work invites a reorientation of future-of-work research to better account for work design choices at the firm level and the capability constraints shaping those choices. It also demonstrates the value of novel data sources that capture demand articulation more directly. By addressing these angles, researchers can build more inclusive and accurate models of the evolving world of work.

5.6 Boundary Conditions and Future Research

Despite its contributions, this study has clear boundary conditions. The findings are bounded by the characteristics of firms that are sufficiently digitally engaged to articulate digital work needs. SMEs that have no digital engagement at all (i.e. those not even contemplating a digital task or project) fall outside the scope of our data and analysis. This is an intentional boundary: by design, our lens captures the *revealed demand* of firms seeking digital solutions. Firms unable or unwilling to articulate any digital work demand remain invisible in this approach. Future

research could explicitly compare such digitally engaged vs. non-engaged SMEs to examine how digital articulation emerges over time and what barriers keep some firms from even formulating digital projects. For instance, a longitudinal study might track a cohort of SMEs from being non-digital to eventually articulating digital tasks, identifying triggers for that transition.

Another boundary relates to temporal dynamics. Our data are essentially cross-sectional – a one-time snapshot of intended digital work articulation, rather than realized execution or long-term impact. We do not observe what happened after a firm articulated a need: Did the project succeed? Did the firm learn and articulate more ambitious tasks next time? These questions remain open. While a cross-sectional approach is appropriate for studying demand formation and work design at a point in time, it cannot capture how digital work practices evolve within firms. Future studies could link articulated tasks to subsequent implementation, learning trajectories, or firm performance outcomes using longitudinal or mixed-method designs. For example, one could follow up on the SMEs in this dataset a year later to see which tasks were completed, which translated into permanent capabilities, or how the business outcomes were affected. This would help validate and enrich our inference that task articulation is a stepping stone in digital transformation.

A related limitation involves measurement and interpretation. Classifying digital domains and task orientations involved some interpretive judgment, despite the use of systematic coding procedures and checks. Different coders might draw domain boundaries somewhat differently, or firms might have used buzzwords inconsistently. We mitigated this via clear coding guidelines and robustness tests, but the possibility of misclassification exists. Future work could strengthen measurement by triangulating firm-articulated task data with alternative demand-side sources, such as procurement records (to see what digital services firms actually buy), gig-platform data (to see tasks SMEs outsource), or even direct observation of SME digital projects in action. Additionally, qualitative research could complement

our findings: interviews with SME managers about why they chose task vs. project approaches would provide richer explanations and could uncover factors not apparent in written descriptions.

Finally, a note on external validity: although our empirical focus is on African SMEs, we have argued that the mechanisms identified are not unique to Africa. They likely apply in any context where small firms dominate and formal employment is only one channel for work. Nonetheless, cultural, institutional, or infrastructural differences across regions could mediate these dynamics. Future research should test the generalizability of these mechanisms across regions and varying institutional environments. For instance, one could conduct a similar study in Southeast Asia or Eastern Europe to see if SMEs there also use task-based articulation in similar ways, or if differences in education systems and digital ecosystems lead to different patterns. Such comparative work would refine the scope conditions of our theoretical framework.

In summary, while our study sheds light on previously underexplored aspects of digital work demand, it should be interpreted within the above boundaries. Recognizing what we did not capture is as important as emphasizing what we did. This transparency not only tempers the claims but also provides a roadmap for future inquiry into this vital subject.

Conclusion and Limitations

6.1 Conclusion

This paper has reframed digital transformation and the future of work as processes that unfold through firm-level task articulation and work design, rather than solely through changes in formal occupations. By examining how African SMEs define, scope, and structure digital work under constraint, we provide a conceptually grounded and empirically novel perspective on digitalization in contexts where traditional labor market signals (like job titles or vacancy counts) are weak or incomplete.

Our findings demonstrate that digital transformation among African SMEs is enacted primarily through task-level decomposition of work, not through the creation of new job roles or broad organizational overhauls. Firms translate digital ambition into modular, execution-oriented work packages that align with their internal coordination capacity, supervision ability, and risk tolerance. In our sample, task-specific articulation dominates, while project-based digital work emerges selectively in domains requiring deeper integration, learning, or system-level coordination.

Crucially, the analysis shows that task articulation is not merely an analytical abstraction imposed by researchers, but an observable organizational practice through which firms actively manage uncertainty and capability constraints. Work modality choices reinforce this interpretation, functioning as signals of task codifiability and integration requirements rather than as purely logistical or cost-driven preferences. The prevalence of remote and hybrid work for well-defined tasks indicates SMEs are leveraging global talent networks when feasible, but the pivot to in-person for complex projects highlights an inherent limit: certain collaborative processes resist full virtualization given current capabilities.

By uncovering distinct latent archetypes of digital work demand through text-based analysis, the paper further highlights the heterogeneity of digital transformation pathways. These archetypes reveal that, in SME-dominated economies, the future of work is shaped less by the emergence of brand-new “digital occupations” than by firms’ capacity to design, decompose, and sequence digital tasks in ways that are feasible under constraint. In other words, it is the work design choices – how tasks are sliced and bundled – that define the trajectory of digital adoption, more so than hiring a certain profile or establishing a dedicated department.

Taken together, the study demonstrates that the future of work in such contexts is fundamentally a question of work design, not simply skill supply or occupational forecasting. In contrast to occupation- and vacancy-based approaches that dominate much of the literature, this paper shows that understanding

digital transformation requires direct attention to *how firms themselves define digital work* at the point where strategy becomes execution. This perspective can inform both theory and practice: theories of technological change should incorporate managerial design decisions as a key lever, and practitioners (including those promoting SME digitalization) should focus on enabling firms to better articulate and manage digital tasks, not just on training individuals in isolation.

6.2 Limitations and Directions for Future Research

The findings should be interpreted in light of several boundary conditions and limitations:

Conceptual scope. The analysis intentionally focuses on SMEs that are *sufficiently digitally engaged* to articulate concrete digital work needs. Firms with no digital engagement (those not even considering any digital task or project) fall outside the scope of the research question and are not represented in our data. This boundary means our conclusions apply to the population of “digitally active” SMEs and do not speak to those completely left behind by digitalization. Future research could explicitly include non-engaged SMEs to explore how and why some firms remain unable to articulate digital work demand, and what might catalyze their entry into the digital economy.

Empirical scope. The data are cross-sectional and capture *intended* digital work articulation, rather than realized execution or outcomes. We observed what firms say they plan or want to do, but not whether or how those plans were implemented. While this snapshot is appropriate for studying demand formation and work design, it cannot reveal the success, failure, or iterative change of those digital initiatives. Future studies could link the tasks articulated by firms to subsequent implementation, learning trajectories, or firm performance using longitudinal designs. For example, do SMEs that articulate more ambitious projects ultimately perform better, or do they face higher failure rates? Answering such questions would deepen understanding of the consequences of task-based vs. project-based approaches.

Measurement considerations. Classification of digital domains and task orientation in our study involved interpretive judgment, despite systematic coding procedures and robustness checks. There is a degree of subjectivity in deciding what counts as, say, a “data analytics” task or when a set of tasks becomes a “project.” We attempted to mitigate bias through coder training and double-coding a subset of entries, but some misclassification may persist. Future work could strengthen measurement by triangulating our data with other sources. For instance, one could compare the tasks firms articulated with any contracts or procurements they issued (to see if they actually hired for those tasks), or use surveys to validate whether the categories we coded resonate with the firms’ own views. Incorporating qualitative methods, such as interviews asking firms to clarify their task descriptions, would also help validate and refine the coding schema.

External validity. Although our empirical focus is on African SMEs, the mechanisms identified – task decomposition, modular engagement, and absorptive-capacity-constrained digital work – are likely to characterize digital transformation in SME-dominated economies beyond Africa (e.g. in parts of South Asia, Southeast Asia, or Latin America). However, the extent and expression of these mechanisms might vary with different institutional environments, education systems, or technological infrastructures. Future research should test the generalizability of these findings across regions and contexts. This could involve comparative studies or applying the same methodology in other developing economies. Confirmation of similar patterns would strengthen the argument that task-centric digital transformation is a widespread phenomenon, while any differences observed could yield insight into how context moderates the process (for instance, perhaps SMEs in countries with more robust digital freelancer markets articulate tasks even more frequently, or maybe stronger SME support systems lead to more project articulations by boosting capability).

By acknowledging these limitations, we aim to provide a clear basis for future scholarly inquiry. Despite the constraints, the study offers a novel

window into the demand side of digital transformation. Addressing the above gaps will further illuminate how small firms around the world are navigating the future of work – one task at a time.

6.3 Final Contribution

In closing, this paper contributes to the literature by reframing digital transformation and the future of work as processes driven by firm-level task articulation and work design, rather than by occupational change alone. By foregrounding how SMEs define, scope, and structure digital work under constraint, the study provides a conceptually grounded and empirically novel framework for understanding digital transformation in contexts where traditional labor market signals are weak or incomplete.

In doing so, it positions African SMEs not as peripheral examples, but as analytically central settings for theorizing the future of work in an increasingly digital and SME-driven global economy. The task-based capability perspective developed here invites researchers and practitioners alike to pay closer attention to the micro-level of work — to the tasks, projects, and day-to-day collaborations through which digital change actually happens. It is at this granular level that the grand narratives about automation and AI intersect with the lived reality of firms and workers. Understanding that reality is crucial if we are to fully grasp, and responsibly shape, the future of work.

References

- Acemoglu, D., & Autor, D. (2011). Skills, tasks and technologies: Implications for employment and earnings. In D. Card & O. Ashenfelter (Eds.), *Handbook of Labor Economics* (Vol. 4, pp. 1043–1171). Elsevier. [https://doi.org/10.1016/S0169-7218\(11\)02410-5](https://doi.org/10.1016/S0169-7218(11)02410-5)
- Acemoglu, D., Autor, D., Hazell, J., & Restrepo, P. (2022). Artificial intelligence and jobs: Evidence from online vacancies. *Journal of Labor Economics*, 40(S1), S293–S340. <https://doi.org/10.1086/718327>

- Acemoglu, D., & Restrepo, P. (2020). Robots and jobs: Evidence from US labor markets. *Journal of Political Economy*, 128(6), 2188–2244. <https://doi.org/10.1086/705716>
- Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives*, 29(3), 3–30. <https://doi.org/10.1257/jep.29.3.3>
- Autor, D. H., Levy, F., & Murnane, R. J. (2003). The skill content of recent technological change: An empirical exploration. *Quarterly Journal of Economics*, 118(4), 1279–1333. <https://doi.org/10.1162/003355303322552801>
- Baldwin, C. Y. (2019). The value of coordination: Knowledge networks and the division of labor in modular systems. *Organization Science*, 30(2), 355–377. <https://doi.org/10.1287/orsc.2018.1210>
- Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences*, 117(30), 17656–17666. <https://doi.org/10.1073/pnas.2006991117>
- Bessen, J. E., Goos, M., Salomons, A., & Van den Berge, W. (2022). Automation: A guide for policymakers. *Economic Policy*, 37(109), 9–48. <https://doi.org/10.1093/epolic/eiab027>
- Calvino, F., Criscuolo, C., Gal, P. N., & Verlhac, R. (2023). Declining business dynamism: Structural and policy determinants. *Journal of Economic Perspectives*, 37(1), 57–82. <https://doi.org/10.1257/jep.37.1.57>
- Carnevale, A. P., & Smith, N. (2020). *Workplace Basics: The Competencies Employers Want*. Georgetown University Center on Education and the Workforce. (https://cew.georgetown.edu/wp-content/uploads/2020/09/WorkplaceBasics_-pdf)
- Cirera, X., & Maloney, W. F. (2017). *The innovation paradox: Developing-country capabilities and the unrealized promise of technological catch-up*. World Bank. <https://doi.org/10.1596/978-1-4648-1160-9>
- Cirera, X., Comin, D., Cruz, M., & Lee, K.-M. (2021). Technology within firms: What explains the adoption lag in developing countries? *Research Policy*, 50(3), 104151. <https://doi.org/10.1016/j.respol.2020.104151>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2307/2393553>
- Dabić, M., Obradović, T., Vlačić, B., & Gonçalves, R. (2023). A configurational approach to new product development performance: The role of open innovation, digital transformation and absorptive capacity. *Technological Forecasting and Social Change*, 194, 122720. <https://doi.org/10.1016/j.techfore.2023.122720>
- Deming, D. J., & Noray, K. (2020). Earnings dynamics, changing job skills, and STEM careers. *Quarterly Journal of Economics*, 135(4), 1965–2005. <https://doi.org/10.1093/qje/qjaa021>
- Garzoni, A., De Turi, I., Secundo, G., & Del Vecchio, P. (2020). Fostering digital transformation of SMEs: A four-level approach. *Management Decision*, 58(8), 1543–1562. <https://doi.org/10.1108/MD-07-2019-0939>
- Goldin, C., & Katz, L. F. (2020). *The race between education and technology*. Harvard University Press.
- Hanelt, A., Bohnsack, R., Marz, D., & Marante, C. A. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>
- Hershbein, B., & Kahn, L. B. (2018). Do recessions accelerate routine-biased technological change? Evidence from vacancy postings. *American Economic Review*, 108(7), 1737–1772. <https://doi.org/10.1257/aer.20161570>
- Hjort, J., & Poulsen, J. (2019). The arrival of fast internet and employment in Africa. *American*

- Economic Review*, 109(3), 1032–1079.
<https://doi.org/10.1257/aer.20161385>
- International Labour Organization. (2022). *World Employment and Social Outlook: Trends 2022*. ILO.
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833–863.
<https://doi.org/10.5465/AMR.2006.22527456>
- Lehdonvirta, V., Kässi, O., Hjorth, I., Barnard, H., & Graham, M. (2020). Online labour markets and the dynamics of work. *Research Policy*, 49(5), 103942.
<https://doi.org/10.1016/j.respol.2019.103951>
- OECD. (2021). *The digital transformation of SMEs*. OECD Publishing.
<https://doi.org/10.1787/bdb9256a-en>
- Page, J., & Shimeles, A. (2015). Aid, employment and poverty reduction in Africa. *African Development Review*, 27(S1), 17–30.
<https://doi.org/10.1111/1467-8268.12136>
- Pellegrino, G., Piva, M., & Vivarelli, M. (2020). Absorptive capacity, managerial practices and the adoption of advanced manufacturing technologies in SMEs. [Working Paper].
- Ricciardi, F., Zardini, A., & Rossignoli, C. (2023). Managerial attention and absorptive capacity in SME digital transformation. [Working Paper].
- Sangwa, S., Ngobi, D., Ekosse, E., & Mutabazi, P. (2025). AI governance in African higher education: Status, challenges, and a future-proof policy framework. *Artificial Intelligence and Education*, 1(1), 2054.
<https://doi.org/10.62617/aie2054>
- Tortora, D., Chierici, R., Briamonte, M. F., & Tiscini, R. (2021). ‘I digitize so I exist’: Searching for critical capabilities affecting firms’ digital innovation. *Journal of Business Research*, 129, 193–204.
<https://doi.org/10.1016/j.jbusres.2021.02.048>
- Verhoef, P. C., Broekhuizen, T. L. J., Bart, Y., Bhattacharya, A., Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901.
<https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28(2), 118–144.
<https://doi.org/10.1016/j.jsis.2019.01.003>
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: A process model of strategic renewal. *Long Range Planning*, 52(3), 326–349.
<https://doi.org/10.1016/j.lrp.2018.12.001>
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185–203.
<https://doi.org/10.5465/amr.2002.6587995>