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Building people-centered dynamic capabilities for sustainability: An exploratory multilevel study of sustainability-driven enterprises in Indonesia

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Abstract: Sustainability-driven enterprises (SDEs) in emerging economies depend on people, meaning committed leaders, engaged employees, and prepared successors, yet sustainable human resource management research has largely examined formal practices in large firms in developed economies. This study asks how SDEs in an emerging economy develop the people-based capabilities that sustainability requires, and how multi-stakeholder (Pentahelix) interactions across micro, meso, and macro levels shape that human capital development. Using an exploratory, multi-stage qualitative design based on the Gioia methodology, we interviewed ten experts spanning government, academia, industry, community, and media in Indonesia, then convened an expert panel to validate the emerging themes. The analysis identifies five reciprocal cross-level flows through which human capital for sustainability is built: top-down, bottom-up, a generative loop, informal social networks, and lateral interactions. Macro-level mandates and market pressures set the capability requirements a workforce must meet. Meso-level mechanisms such as management development programs, leadership schools, learning management systems, and “social bricolage” turn those requirements into training and orchestration routines. Micro-level moral agency, spiritual commitment, and value-internalization rituals such as weekly “Value Talks” keep people engaged and guard against burnout. A generative loop that codifies tacit leadership wisdom into explicit systems offers a way to address the “Legacy Paradox” of founder-dependent missions, and informal networks act as a “system lubricant” for trust-based collaboration. Read together, these findings treat people development as a coevolutionary, multi-actor process, and they offer HR managers and policymakers concrete guidance for cultivating sustainability champions where formal systems are thin.

Keywords: sustainable human resource management; leadership development; succession planning; knowledge management; employee commitment; Pentahelix collaboration; emerging economies

1. Introduction

Sustainability is, before it is anything else, a people problem. No organization senses an environmental pressure, seizes a green opportunity, or rebuilds a routine on its own; it does so through leaders who are committed, employees who take sustainability values as their own, and successors ready to carry the work forward. Human resource management (HRM) scholarship has come to say as much. The field has moved “beyond strategic HRM” toward sustainable HRM, an approach that ties people management to economic, social, and environmental outcomes at once (Kramar, 2014), and that now includes green HRM practices for environmental management (Renwick et al., 2013) and “Common Good” HRM oriented toward the Sustainable Development Goals (Aust et al., 2020). What this literature has mostly examined, however, is formal

practice (recruitment, appraisal, reward systems) inside large firms in developed economies. How the people-related capabilities for sustainability actually come into being, and whether they do so the same way in emerging economies, remains an open question (Kramar, 2014; Ren et al., 2018).

For sustainability-driven enterprises (SDEs) in emerging economies (EE), the question is not academic. Institutional voids, scarce resources, and volatile policy leave these enterprises without the formal HR departments and mature talent systems that developed-economy theory tends to assume (Liedong et al., 2020; Muridzi, 2023). Whether they can attract, develop, motivate, and keep mission-driven people depends instead on improvised, relationship-based, and often informal mechanisms. Dynamic capabilities (DC) theory, the capacity to sense, seize, and reconfigure (Teece, 2007), offers a useful lens on this kind of adaptation, and its microfoundations are explicitly human: managerial cognition, commitment, learning, and the integration of knowledge (Helfat & Peteraf, 2015; Pavlou & El Sawy, 2011). Yet DC research usually keeps capability development inside the firm. It says little about how capabilities are co-produced with outside stakeholders, the constellation of government, academia, industry, community, and media often called the “Pentahelix,” or about how pressures at the institutional, organizational, and individual levels together shape the people side of that development (Dias et al., 2026; Gruchmann et al., 2021; Ortiz-Avram et al., 2024).

This is the gap the study addresses. We lack grounded accounts of how SDEs in emerging economies build people-based dynamic capabilities, from leadership and employee commitment to knowledge continuity and succession, through multilevel, multi-stakeholder interaction. The stakes are practical as much as theoretical. When a mission lives in one person, the founder’s burnout or a leadership change can end it; our informants call this the “Legacy Paradox.” And policymakers who want to cultivate sustainability champions have little evidence about which people-development mechanisms hold up under institutional voids.

Two research questions follow:

RQ1. How do sustainability-driven enterprises in an emerging economy develop the people-based capabilities of sensing, seizing, and reconfiguring that sustainability requires?

RQ2. How do interactions among Pentahelix stakeholders across micro, meso, and macro levels shape human capital development, meaning leadership, commitment, and knowledge continuity, in these enterprises?

In one sentence, the study develops a multilevel account of how people-centered dynamic capabilities for sustainability are built in emerging-economy SDEs. We pursue it through an exploratory, multi-stage qualitative study in Indonesia, using the Gioia methodology with ten Pentahelix experts and a confirmatory validation panel. Indonesia is a revealing place to look: its formal and informal institutions are tightly interwoven, its leadership is culturally and religiously embedded, and its regional disparities reproduce constraints common across emerging markets.

2. Literature review

2.1. Sustainable HRM and human capital in sustainability-driven enterprises

Sustainable HRM extends strategic HRM by holding human resource systems accountable for economic, social, and ecological outcomes together rather than one at a time (Kramar, 2014). Within that stream, green HRM shows how recruitment, training, appraisal, and rewards can be bent toward environmental management (Renwick et al., 2013), and reviews focused on emerging economies press for context-sensitive theorizing rather than the transplant of developed-economy practice bundles (Ren et al., 2018). Common

Good HRM pushes further still, reorienting people management toward societal goals such as the SDGs instead of firm performance alone (Aust et al., 2020), a framing that suits SDEs, whose missions are societal by definition.

In emerging economies, SDEs increasingly write sustainability into their strategies and value chains, drawing on innovation, environmental consciousness, and stakeholder engagement (Phalswal et al., 2024; Wan Mustapa et al., 2022). Knowledge acquisition and sharing strengthen adaptive capacity and underpin durable competitive advantage (Dukhaykh & Alangri, 2026), and digital technologies help turn thin resources into innovation (Alajmi, 2026). But these enterprises work under scarcity, institutional voids, and fast-changing conditions, often with informal or immature structures that cannot support the higher-order routines formal HRM presumes (Añón Higón & Torrent-Sellens, 2025; Mfarrej et al., 2025). How they develop, engage, and retain the people their missions require is exactly what we do not yet understand.

2.2. Dynamic capabilities as people-based capabilities

Dynamic capabilities, meaning the capacity to sense opportunities and threats, seize them, and reconfigure the resource base (Teece, 2007), turn up repeatedly as enablers of sustainability in emerging economies. Studies find that sensing, seizing, reconfiguring, organizational learning, and resilience sit at the core of sustainable enterprise (Dukhaykh & Alangri, 2026; Phalswal et al., 2024); that green dynamic capabilities carry the effect of stakeholder pressure into green innovation (Singh et al., 2022); and that DCs support circular-economy transitions through resource reconfiguration and deeper engagement (Elf et al., 2022; Setyaningrum et al., 2024).

The microfoundations of these capabilities are human. Sensing rests on managerial cognition and attention, seizing on commitment and business-model judgment, reconfiguring on learning, knowledge integration, and leadership (Helfat & Peteraf, 2015; Pavlou & El Sawy, 2011; Teece, 2007). In emerging economies those human microfoundations are badly constrained. Firms often lack the human, financial, and technological resources to build sensing, seizing, and transforming capabilities in the first place (Duong, 2026; Guerrero & Siegel, 2024; Muridzi, 2023), and weak or fragmented institutions block capability building and stall the translation of sustainability aspirations into action (Bengana et al., 2026; Chakravarty, 2022; Kaushal et al., 2026; Zhao et al., 2026). The binding constraint, then, is the people dimension, meaning who senses, who commits, who learns, and who inherits, and that is where this study concentrates.

2.3. The multilevel, multi-stakeholder context of capability development

People-based capabilities are not built in isolation. Sustainability work runs across linked micro, meso, and macro levels: individual and firm orientations shape performance at the micro level (Wan Mustapa et al., 2022); industry associations and value-chain intermediaries mediate the uptake of standards and the building of capability at the meso level (de Mello Brandão Vinholis et al., 2021); and national policy, regulation, and institutional quality shape incentives and behavior at the macro level (Rifai et al., 2026). The traffic between levels runs both ways, with meso institutions translating top-down expectations into grassroots practice and back again (Ménard et al., 2022; Ramirez-Gomez et al., 2022).

The Pentahelix model, comprising government, industry, academia, community, and media, names the stakeholder constellation through which this cross-level work happens, and it has been applied widely to co-develop sustainable solutions in tourism, agriculture, environmental governance, and digital ecosystems (Gaol et al., 2026; Mutiarin et al., 2025; Setyo et al., 2025). Structured academic and community involvement improves outcomes and

widens participation (Azwar et al., 2023; Khaenamkhaew et al., 2023), though fragmentation among stakeholders can just as easily limit coordination (Rijal & Saputro, 2024; Susanti et al., 2026). In this study the multilevel perspective and the Pentahelix model are the setting in which people-based capabilities form, not co-equal theories to be fused: one supplies the levels, the other the actors.

2.4. Key emergent mechanisms: Definitions

Several context-specific mechanisms recur in the findings, so we define them here and fix their place in the argument. *Social bricolage* is the mobilization and recombination of whatever resources are at hand, such as community labor, university research, and digital tools, to build a solution under constraint, a pattern well documented in frugal-innovation and resource-orchestration research in emerging markets (da Silva & Trez, 2020; Kusi et al., 2026; Li et al., 2025). *Resource and stakeholder orchestration* is the deliberate structuring, bundling, and leveraging of resources across partners (da Silva & Trez, 2020). *Knowledge codification for succession* is the conversion of a founder's or leader's tacit knowledge into explicit systems such as curricula, manuals, and learning platforms, so a mission survives across generations, a concern at the heart of knowledge management and leadership-pipeline research (Arghode, 2025; Ilea et al., 2024). *Informal social networks*, finally, are the trust-based personal ties that carry information and resources where formal coordination is weak. The in-vivo labels our informants use, such as "generative loop," "Legacy Paradox," and "system lubricant," appear in the findings as instances of these defined mechanisms, not as new constructs of their own.

2.5. The integration gap

Empirical work rarely joins these domains. Stakeholder-engagement research is usually theorized apart from capability or institutional perspectives (Hörner Bussolo et al., 2026; Singhasene & Na-Nan, 2025; Watson et al., 2018); multilevel institutional research seldom reaches down to capability evolution inside firms (Dias et al., 2026; Gruchmann et al., 2021; Liu et al., 2026); and DC studies tend to examine capabilities cut off from the stakeholder and institutional systems around them (Inigo & Albareda, 2019; Ortiz-Avram et al., 2024). The few studies that begin to triangulate the three remain conceptual or confined to a single sector (Dias et al., 2026; Novita et al., 2026; Putri et al., 2025). Seen from an HRM angle, the upshot is a specific blind spot: we do not know how the people side of dynamic capabilities, meaning leadership development, employee commitment, and knowledge continuity, is actually built by SDEs working with Pentahelix stakeholders across levels in an emerging economy. RQ1 and RQ2 target that blind spot.

3. Materials and methods

3.1. Research design

We used an exploratory, multi-stage qualitative design to trace how people-based capabilities for sustainability develop across micro, meso, and macro levels in emerging-economy SDEs. The first stage was a set of open-ended, in-depth, semi-structured interviews, which let first-order, informant-centric concepts surface in the way the Gioia methodology intends for inductive theory building (Magnani & Gioia, 2023). We chose this route because the institutional and environmental tangle of an emerging economy is legible only through rich, situated narratives, not through instruments imported from elsewhere (Hasan et al., 2021; Shahzad & Arslan, 2023). In a second stage, the same ten experts were re-engaged for validation: after the first-stage analysis, each was presented with the emerging second-order themes and aggregate dimensions and asked to test, refine, and confirm them against their own experience. This is a form of member checking, or respondent validation, in which participants assess whether

the researchers' interpretation rings true (Chernova, 2023; Singha & Yogesh, 2024). Using the same informants keeps the validation grounded in the cases that produced the data, but it also carries a risk of confirmation bias, since participants may be inclined to endorse an account built partly from their own words; we treat this openly as a limitation in Section 5.5 and mitigated it by inviting disconfirming feedback and by requiring that a theme survive scrutiny across, rather than within, sectors before it was retained.

Indonesia was chosen for three reasons, each tied to what the study needs to see. First, its formal and informal institutions are interwoven in business and governance (Pratiwi et al., 2025a), so people-management mechanisms cannot be read off formal HR systems. Second, cultural and religious leaders shape organizational and community behavior (Akhda et al., 2019), which makes leadership, values, and commitment, the human microfoundations of capability, unusually visible. Third, regional disparities and infrastructural gaps reproduce constraints common across emerging economies (Widita et al., 2024). The country thus works as a microcosm for bringing institutional turbulence, informality, and cultural embeddedness into capability theorizing, where they are often missing.

3.2. Data collection

Sampling followed the Pentahelix framework so that government, academia, industry, community, and media were all represented. The framework offers a structured way to capture the range of perspectives a multilevel transition involves, and it is widely used for enterprise development in emerging economies (Pratiwi et al., 2025b; Sudiana et al., 2020). Drawing informants from policy institutions, knowledge organizations, communities, media, and business meant the data reflected the institutional diversity that shapes capability development; this kind of triangulation matters because learning, innovation, and sustainability strategy are embedded in cross-sectoral interaction in developing-country settings (Bobbins et al., 2023; Wibeck et al., 2022). **Table 1** presents the respondent profiles.

The first sampling stage was purposive recruitment of stakeholders across sectors, chosen to represent varied competitive environments and sustainability practices, since the nature and microfoundations of dynamic capabilities differ markedly from one level to another (Barcellos et al., 2020; van der Vliet et al., 2020). The second stage returned to these same ten informants as the validation panel rather than recruiting a separate group, so that validation drew on people already immersed in the cases under study. Ten is a defensible number on three counts. Gioia-style validation typically works well with eight to twelve experts, enough heterogeneity to be informative while staying analytically deep and feasible (Piazza et al., 2024; Singha & Yogesh, 2024). A Pentahelix design needs balance, so that government, academia, community, media, and industry carry roughly equal weight (Sudiana et al., 2020; Wisudayati et al., 2020). And a panel of this size could still hold experts with system-level knowledge of the regulatory, financial, and technological factors that matter for capability formation in emerging economies (Gupta et al., 2020), while remaining a manageable, diverse team of the kind that fosters trust and shared interpretation in transition work (Macintyre et al., 2020; Moreno-Serna et al., 2020).

Interviews ran over video conferencing because of COVID-19 constraints. Each was recorded, transcribed in Indonesian, anonymized, and translated into English through back-and-forward translation with bilingual review to preserve semantic and cultural fidelity (Cruz et al., 2022; Ho et al., 2019; Setiawan et al., 2021). The semi-structured protocol invited informants to talk about their sustainability challenges, about capability processes such as sensing, seizing, and transforming, about people-management themes including motivation, culture,

and team development, and about the institutional forces bearing on their behavior (Neri et al., 2021). **Table 2** maps sample questions to their level of analysis and question structure, making the link between interview questions and theoretical constructs explicit. Interviewing continued until we reached theoretical sufficiency (Lim, 2025). In the validation stage, experts reviewed the preliminary coding structure, the second-order themes, and the aggregate dimensions; their feedback tested the plausibility, completeness, and contextual fit of the findings and reshaped the analytical model accordingly (Bryant, 2024; Singha & Yogesh, 2024).

3.3. Data analysis

Analysis followed the three-tier structure of the Gioia methodology, moving from first-order codes to second-order themes to aggregate dimensions (Magnani & Gioia, 2023). First-order codes came from line-by-line reading of the transcripts, keeping the informants' own language; a code such as "home visits to see how students live" or "weekly value talks" stayed close to what was said. Through repeated hermeneutic cycles, supported by ATLAS.ti for coding, categorization, and pattern identification, these codes were grouped into second-order themes that name a mechanism rather than an instance, for example "ethnographic sensing" or "value internalization through ritual" (Ariza Ariza, 2020; Soratto et al., 2020). The themes were then collected into three aggregate dimensions corresponding to the micro, meso, and macro levels, and, in a further step of interpretation, into the five cross-level flows reported in Section 4.4. We distinguish these steps deliberately: the first-order codes and second-order themes are grounded in the interview data, whereas the aggregate dimensions and especially the five flows are the authors' theoretical reading of how those themes connect. Theoretical sufficiency, rather than mere data saturation, guided when to stop: interviewing and coding continued until additional accounts produced no new second-order themes and each aggregate dimension was populated by evidence from more than one Pentahelix sector, so that a theme rested on convergence across actors rather than on a single voice (Lim, 2025). ATLAS.ti handled data management and kept an audit trail of how codes moved up the hierarchy, but the interpretive work stayed with the researchers, in keeping with warnings that software and large language models cannot stand in for human sensemaking in qualitative research (Bryant, 2024; Singha & Yogesh, 2024).

Trustworthiness rested on four practices: cross-sectoral triangulation through the Pentahelix sampling, iterative interpretive cycles to build depth, expert validation to sharpen contextual accuracy, and audit trails kept in ATLAS.ti (Calzada, 2020; Salinas-Oñate et al., 2020). These choices kept the study rigorous and grounded, and consistent with the standards for qualitative work in sustainability and capability scholarship.

Table 1. Panel of expert profiles: ten experts from academia, business, communities, government, and media, across industries and diverse geographical areas of operation, with the SDGs each expert's work addresses.

No	Code	Entity type	Institutional context	Position	Qualification	Area	SDGs
1	EE	Private company	ESG consultancy serving companies, mostly mining	Owner & co-founder (male, 50+), consultant/expert	Internationally certified; 20+ years as sustainable-solution provider	Sumatra, Java, Kalimantan	6, 12, 14, 15
2	TH	NGO/private & communities	Community empowering women in urban areas to earn side income through urban farming	Initiator & co-founder (female, 50+), entrepreneur	PhD; 8+ years as sustainability researcher, author, community leader	Bandung City	2, 5, 8, 11, 17

Continued table:

No	Code	Entity type	Institutional context	Position	Qualification	Area	SDGs
3	BR	Government & research entities	National research center providing pure and applied sustainability research	Lead researcher (male, 50+), consultant/expert	PhD (LCA, carbon footprint, product sustainability, bioenergy); 15+ years research coordinator at national research center	Across Indonesia	All (indirect)
4	SB	Academic & media	AACSB-accredited business school empowering business, government, and society	Director of communication & alumni relations (female, 50+), intrapreneur/CSR & PR director	PhD; 12+ years sustainability researcher, author; GRI & NCSR certified; former top management of biotech SOE; media community leader	Across Indonesia	All (indirect)
5	YT	NGO/private & communities	Non-profit in social field and education: capacity building via training, mentoring, coaching, and social campaigns	Initiator & co-founder (female, 30+), entrepreneur/educator	Master's; 10+ years well-being mentor for orphans, community leader & founder	Jakarta & West Java	3, 4, 8, 10, 17
6	AL	Private & communities	Transformation and technology organization accelerating impactful, sustainable innovations	Owner & co-founder (male, 50+), entrepreneur	Master's; 15+ years owner & founder, CEO of sustainopreneur incubators	Across Indonesia	8, 9, 11, 12, 13, 17
7	KP	Public MNC	Sustainability-award-winning coal-mining company committed to more sustainable practice	Learning & development VP (male, 50+), intrapreneur	PhD; 20+ years top management at one of Indonesia's largest coal-mining companies	East Kalimantan	8, 9, 12, 13
8	MK	NGO/private & community	Organized community providing free education for low-income families and empowering side income	Initiator & co-founder (male, 30+), intrapreneur/program manager	Master's; 7+ years sustainability advisor, teacher for low-income family kids, co-founder of socio-preneur community	Jakarta & Bandung	1, 4, 10, 11, 17
9	SD	Academic & research entities	SDG research center supporting government policy on sustainability	Vice director (male, 40+), academic/researcher	PhD; 10+ years vice director of SDG research center, government policy consultant	Across Indonesia	All (indirect)
10	VI	NGO & private	Transparency, accountability, integrity & anti-corruption consultancy	Senior expert & co-founder (female, 40+), entrepreneur/activist	Master's; 12+ years anti-corruption activist, co-founder of consultancy	Across Indonesia	8, 9, 11, 12, 16, 17

Table 2. Sample questions for the expert panels. Core themes remained consistent across interviews, while specific questions were tailored to each expert group's institutional, operational, or community roles, justified because cross-level actors perceive different aspects of the macro, meso, and micro capability system (Roberts, 2020).

Category	Sample questions asked	Level of analysis	Question structure
Personal & organizational history	"Can you describe your daily activities?"; "Tell me about the history and background of your organization"; "How long have you been involved in sustainability?"	Micro & meso	Open-ended
Internal motivations & values	"What is your personal/internal motivation?"; "Was there a specific experience or 'calling' that triggered this path?"; "How do you maintain your mentality during crises?"	Micro	Open-ended / semi-structured
Organizational culture & people	"How do you ensure your team understands the mission and values?"; "How do you manage your people?"; "How do you manage organizational culture?"	Meso	Semi-structured

Continued table:

Category	Sample questions asked	Level of analysis	Question structure
Dynamic capabilities (operations)	“How does the organization sense and seize opportunities and threats?”; “How do you manage the tension between profit and impact?”; “How does your company react to change?”	Meso & macro	Semi-structured
Institutional environment	“What is the role of government support versus regulatory barriers?”; “How do you sense and respond to global trends like ‘Planetary Boundaries’ or ‘LCA’ demands?”; “How do you orchestrate various stakeholders to fill ‘institutional voids’?”	Macro	Semi-structured

3.4. Ethical considerations

Ethical approval was obtained under institutional guidance, informed consent was secured, and all personal identifiers were removed. Our practices followed guidance on interpretation-driven qualitative inquiry in sensitive contexts (Ping Hung Li et al., 2025; Sarangi, 2024). The study was approved by the ethics committee of the School of Business and Management, Institut Teknologi Bandung, dated 22 July 2021.

4. Results

Figure 1 summarizes what the interviews and supporting reports yielded: a map of how Pentahelix actors (academic, business, community, government, and media) interact across the three levels of analysis. It records who does what and sorts those activities into the strategic themes that define each level. Sections 4.1 to 4.3 walk through the pressures and people-development mechanisms level by level. Section 4.4 then draws them into five cross-level flows through which human capital for sustainability is built (RQ2), and Section 4.5 ties those flows back to the sensing, seizing, and reconfiguring of RQ1.

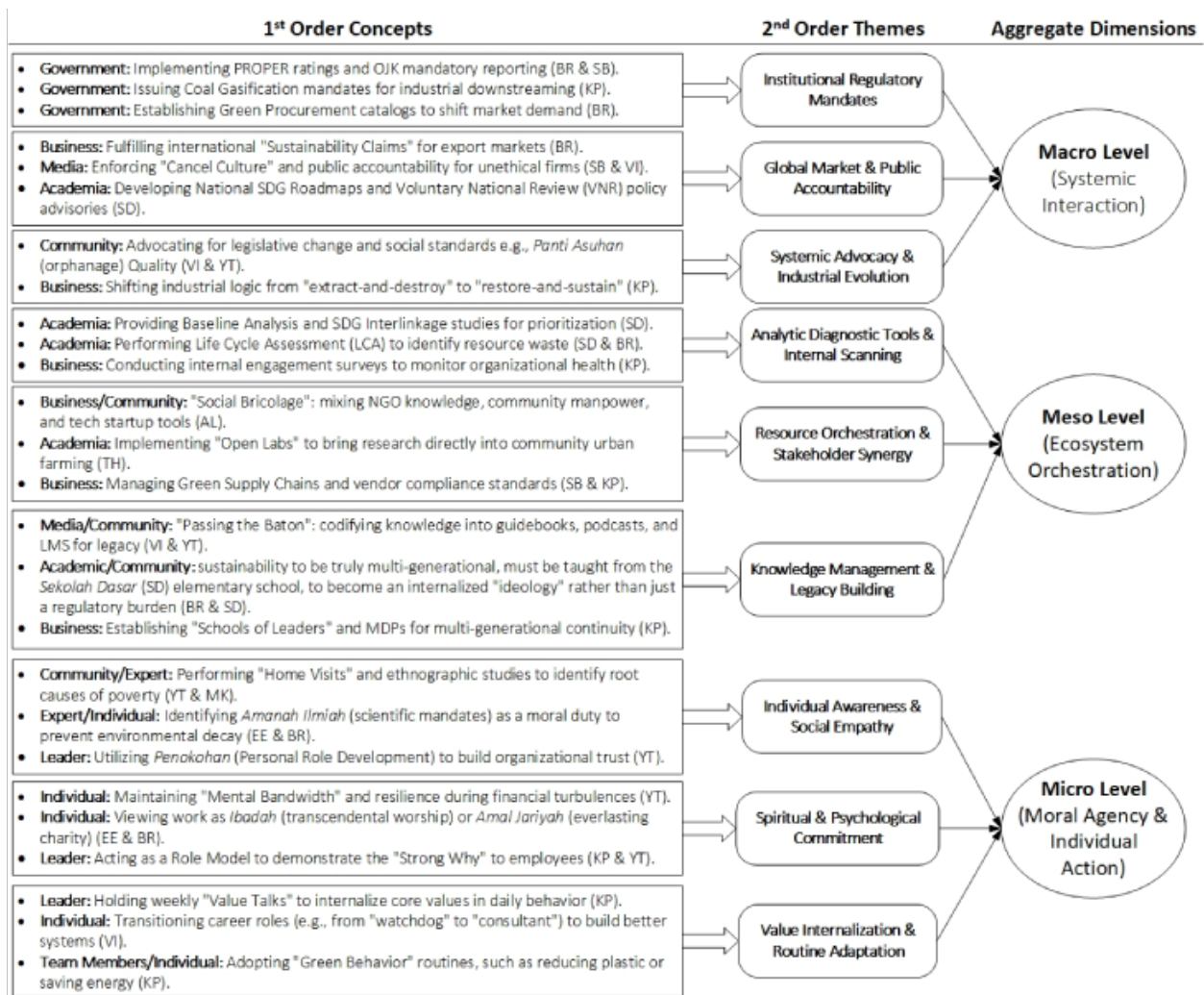


Figure 1. Map of how Pentahelix actors interact across the three levels of analysis (macro, meso, and micro), extracted from the interview transcripts following the Gioia methodology.

4.1. Macro level: Systemic pressures defining workforce capability requirements

Macro-level interaction is where sustainability initiatives are scaled. In emerging economies that means bridging institutional voids, prompting innovation, and reconciling formal regulation with informal local wisdom and social norms (Pratiwi et al., 2025b). Alongside government mandates and market pressure, this study found three further forces at work: public accountability enforcement, systemic advocacy, and industrial evolution. Each of them lands, at the organizational level, as a demand on people: new competencies, new reporting skills, a new leadership mindset.

4.1.1. Institutional and regulatory mandates

Regulatory mandates set the "rules of the game" that government entities use to drive a sustainability transition through the ecosystem (BR). In Indonesia the most influential of these is the PROPER rating system, together with the mandatory sustainability reports of publicly listed companies, which must show that corporate strategy aligns with national SDG targets (BR, SB & SD). In high-impact sectors such as extractive industries, the government requires firms to move past raw extraction toward value-added processes, producing cleaner energy through coal gasification while securing domestic supply, and carrying out mandatory land reclamation and post-mining restoration (KP). A newer mandate is green procurement, where a green catalog obliges vendors to adopt sustainable practices if they want government contracts, shifting the ecosystem

from a regulatory “push” to a market-based “pull” (BR). Every one of these mandates carries a human-capital requirement behind it: someone has to run the assessments, write the reports, and manage the restoration, and those skills have to be built, not merely demanded.

4.1.2. Global market and public accountability

Global markets and public accountability pull enterprises past mere legal compliance, and they become the main catalyst for transition when regulation alone is not enough. A researcher (BR) observes that for many Indonesian firms the primary driver is not domestic awareness but the demands of international buyers: Indonesian commodities carry a “handicap” in global trade unless they come with environmental or sustainability claims covering social and economic parameters (BR). Accountability can also be enforced through public sentiment. A media community leader (SB) points to “cancel culture” as a way of holding firms to account: “public trust will increase for the corporations that truly show compassion, empathy, and run their business ethically” (SB). And a researcher who works on SDG public policy (SD) notes that large, globally oriented companies feel “peer pressure” from their partners to align with the SDGs even where domestic regulation lags.

4.1.3. Systemic advocacy and industrial evolution

Systemic advocacy and industrial evolution are the strategic efforts Pentahelix actors make to reshape the institutional landscape and the mindset of whole industries. A foundation leader (YT) works at the macro level to establish national standards protecting marginalized groups; she plans to move into a legislative role to advocate for orphanage quality standards and a national orphanage database. A large coal-mining enterprise (KP) is remaking its own identity around “modern mining,” aiming to “not only mine...but restore, drive the economy, and foster independence” (KP). It is an identity shift that its workforce, in the end, has to carry.

4.2. Meso level: Orchestration, training systems, and knowledge continuity

The meso level sits between national policy and the individual enterprise, and it is where broad strategy becomes something a firm can act on. Its work depends on multiple stakeholders leveraging each other’s expertise, resources, and networks (Ciasullo et al., 2026; Moshawih et al., 2025). Three interactions stood out: analytic diagnostics and internal scanning, resource orchestration and stakeholder synergy, and knowledge management and legacy building. In HRM terms, this is the layer where external pressure turns into training programs, engagement surveys, and succession systems.

4.2.1. Analytic diagnostic tools and internal scanning

Diagnostic tools and internal scanning connect high-level policy to what an organization actually does, translating abstract goals into measurable data that can guide priorities, risks, and coordination along the value chain. A researcher from academia (SD) builds a “business-as-usual” projection for 2030 from historical data, then uses it to tell governments and firms whether they are on track for their SDG targets or need something more radical. Lifecycle assessment (LCA) tracks the environmental footprint of a commodity across its life (BR); it is now a central criterion in PROPER ratings and is increasingly demanded by international buyers verifying sustainability claims for commodities such as palm oil (BR).

Large enterprises scan their people as well as their products. KP surveys the “pride and commitment” of its employees every two years, a read on whether the sustainability mission has taken hold in the workforce, and runs weekly “Value Talks” in which managers discuss core company values, such as environmental care, with their teams to keep the culture aligned with the mission (KP).

4.2.2. Resource orchestration and stakeholder synergy

Resource orchestration and stakeholder alignment are the operational bridge from policy to routine, built through collaborative networks and integrated value chains. Their signature move is the strategic mobilization of scattered resources, which practitioners call *social bricolage* (AL). AL, a tech startup and community leader, likens it to *kain perca*, a patchwork: an enterprise stitches together university research, a local community workforce, and digital tools into a working system without large capital. The same alignment appears when universities treat communities as “open labs,” carrying research such as maggot-based waste processing straight into marginalized neighborhoods for urban-farming solutions (TH). Large enterprises find synergy in their supply chains, requiring contractors to meet demanding safety, environmental, and anti-bribery standards so the whole ecosystem stays sound (KP & VI).

4.2.3. Knowledge management and legacy building

Knowledge management and legacy building are what turn one person’s passion into a system that can run without them, the bridge from micro to macro. The point is to keep a mission from being “person-dependent” and to lodge it instead in the organization’s DNA. VI and YT both digitized their expertise: YT turns her webinars into learning-management-system (LMS) modules so the knowledge stays systemic, and VI runs an “Anti-Corruption Academy” as a dedicated LMS for transferring integrity-based knowledge. As a large enterprise, KP runs a Management Development Program and a “KP School of Leaders” to close competency gaps and secure a “smooth transition from the old generation to the new,” a “passing the baton” mechanism that prepares the next generation of leaders to carry the mission without the founder standing over them. Two experts add that if sustainability is to be genuinely multi-generational, it has to be taught from *Sekolah Dasar* (elementary school), so it becomes an internalized “ideology” rather than a regulatory burden (BR & SD).

4.3. Micro level: Moral agency, commitment, and value internalization

At the micro level, where actors negotiate, collaborate, and improvise, the fate of a sustainability initiative is often decided, shaped by cultural norms, informal networks, and the constraints people work under (Jamwal et al., 2025; Sholehah et al., 2024). Three themes made up the micro-level aggregate dimension: individual awareness and social empathy, spiritual and psychological commitment, and value internalization and routine adaptation. Between them they describe how mission-driven people are formed, kept motivated, and retained.

4.3.1. Individual awareness and social empathy as drivers

MK, a community leader who provides free education, says the urgency of his mission only hit him after he made “home visits” to see how his students actually lived: “I have to see it...from there I felt even more enthusiastic. It turned out what we were doing was indeed needed by these families.” For many experts the obligation is tied to their expertise. EE feels a duty to fix environmental problems because water quality is his field: “if it is not from the experts, it will be destroyed...We are entrusted with this knowledge; we must carry it out.” YT moved from community leader to business leader, changing career paths and committing to continuous learning so her *penokohan* (personal role development) keeps pace with the industry, building legitimacy by acting as a role model.

4.3.2. Spiritual and psychological commitment

Keeping a mission alive, YT explains, takes a “strong why,” because it is lead-by-example energy that makes team members stay; when a leader’s “mental bandwidth” wobbles or they lose sight of their own motivation, the mission fails.

For EE, AL, and BR, the ideas of *ibadah* (worship) and *amal jariyah* (everlasting charity) are the transcendental motivations that drive SDE leaders, translating religious value into moral agency and action. Two practitioners insist the leader must first “live” sustainability to earn legitimacy inside the team: the founder’s identity and personal commitment are the mission’s “human face,” and they are what build trust with stakeholders and beneficiaries (TH, KP & YT).

4.3.3. Value internalization and routine adaptation

At the micro level, sustainability turns on an inward shift from awareness to action: value internalization, making the beliefs one’s own, and routine adaptation, making them daily habit. KP holds weekly “Value Talks” where managers walk their teams through the seven core company values, so a value like “care for the environment” keeps getting discussed and absorbed. VI, an anti-corruption consultant, changed her professional routine from a confrontational watchdog stance to a consultative, system-building one, writing rigorous SOPs and protocols to keep everyone on the right ethical path. At its plainest, routine adaptation is “green behavior” in the office, such as saving energy or cutting plastic-bottle use, which, hard as it can be to enforce, works as a standing reminder of the mission (KP).

4.4. Five cross-level flows of human capital development

Sections 4.1 to 4.3 reported what happens at each level as themes grounded directly in the interviews. This section takes an interpretive step: rather than re-listing those themes, it reads them relationally to show how the levels connect, and in doing so moves from the empirical findings to the authors’ theoretical synthesis. That synthesis is a set of five reciprocal flows across levels, shown in **Figure 2**: top-down, bottom-up, a generative loop, informal social networks, and lateral interaction. Each is a distinct pathway by which an SDE’s people-based capabilities are formed and renewed.

Figure 2 also distinguishes three kinds of actor at the micro level, a distinction that emerged inductively from the coding rather than being imposed in advance. *Leaders* (L) are the founders and senior figures who set direction and manage others; *Team members* (TM) are the staff and volunteers they manage; and *Experts* (E) are individuals whose specialized knowledge, such as water quality or anti-corruption practice, gives them influence independent of a managerial role. The residual category *Individuals* (I) denotes any person in general. The distinction is analytically useful because the three carry different mechanisms: leaders supply the “strong why” and legitimacy, team members are the site of value internalization and retention, and experts are a source of moral agency and informal sensing that crosses organizational boundaries. Keeping them separate lets the framework show, for instance, that succession (a leader-to-leader problem) and engagement (a leader-to-team-member problem) are distinct people challenges rather than one undifferentiated “human factor.”

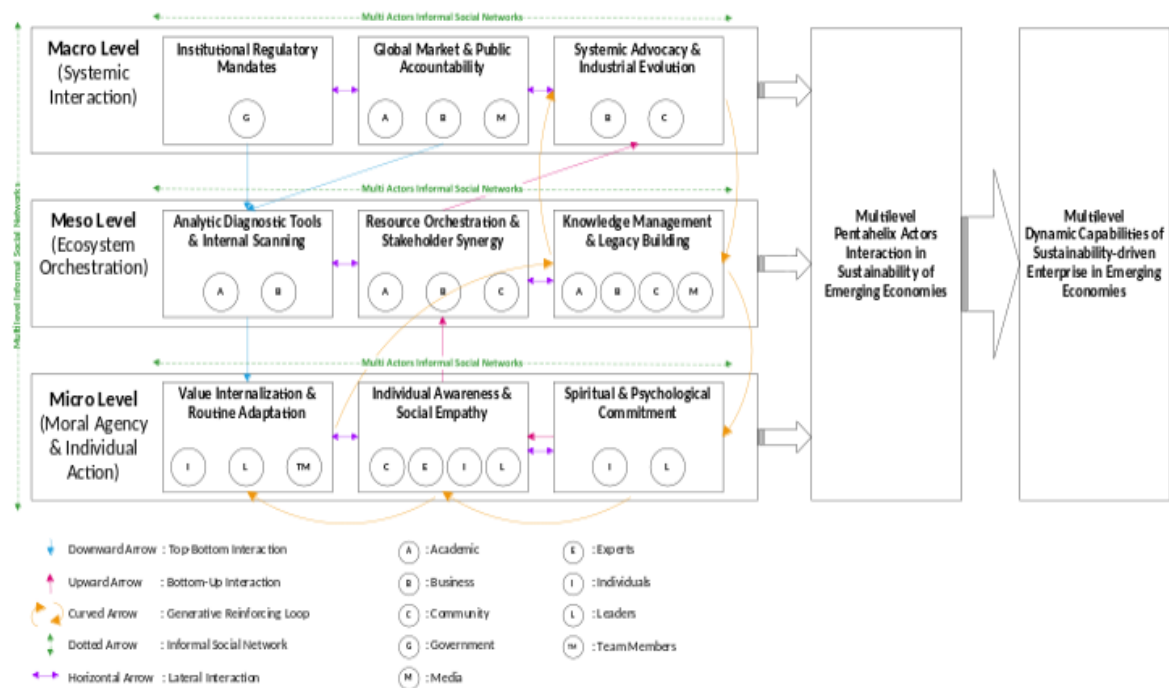


Figure 2. Conceptual framework of multilevel people-centered dynamic capabilities of SDEs in emerging economies. Notes: at the micro level, this study distinguishes Leaders (L), who manage Team Members (TM); Experts (E), people with specialized knowledge; and Individuals (I), any person in general.

4.4.1. Top-down flow: From institutional mandates to firm-level routines

For established enterprises, the transition is usually triggered at the macro level by regulatory mandates (BR, SB, & SD). The main drivers are the Ministry of Environment's PROPER ratings, which grade firms from "Black" (non-compliant) to "Gold" (environmental excellence), and OJK-mandated sustainability reporting (BR, SB, & SD), backed by global market accountability where international buyers demand verified sustainability claims (BR). At the meso level, diagnostic tools translate that pressure: research centers act as scientific intermediaries, supplying baseline analyses, tagging, and SDG interlinkage studies that help organizations spend limited resources wisely (SD). The flow reaches the micro level as routine adaptation, where mandates become part of daily life through weekly "Value Talks," green office habits, and ethical standard operating procedures (KP & VI). Put in HRM terms, regulation ends up as competence: a mandate cascades into training content, engagement rituals, and codes of conduct.

4.4.2. Bottom-up flow: From individual moral agency to systemic advocacy

A second flow runs the other way. It begins at the micro level in individual awareness and social empathy (MK & YT), as practitioners trace the roots of social or environmental decay, such as educational gaps affecting orphans, through ground-level sensing and "home visits" (MK & YT). Deep spiritual and psychological commitment anchors that awareness; leaders read their work as *ibadah* (worship) or an *amanah ilmiah* (scientific mandate), and that gives them the "mental bandwidth" to hold on through financial turbulence (YT, EE, & TH). At the meso level they scale the work through social bricolage, mixing university research, community labor, and digital tools (TH & AL). Once a local model proves itself, it climbs to the macro level as systemic advocacy and industrial evolution (KP & YT): successful actors use the evidence to lobby for national quality standards, as with orphanages, or to push an industry-wide shift such as coal gasification (KP, VI, & YT).

4.4.3. The generative loop: Mission continuity and legacy building

The data reveal a generative loop built to defeat the “Legacy Paradox,” the danger that a mission drifts or dies when a founder burns out or leadership turns over (MK & YT). The loop reconfigures knowledge for continuity through three mechanisms. Knowledge management systems codify tacit leadership wisdom into explicit assets: LMS platforms, podcasts, books such as *Buku Saling Bukan Silang* (VI & YT). Succession training, in the form of “Schools of Leaders” and management development programs, hands the baton to a new generation (KP & MK). And a reinforcement loop feeds those outputs back into the training of recruits at the micro level, so sustainability values settle into the enterprise’s permanent DNA (KP & YT). What the current generation produces, its proven models and codified values, becomes the raw material for the next, and the industry drifts toward a “beyond compliance” culture (SB & KP).

4.4.4. Informal social networks as “system lubricant”

Informal social networks work as a “system lubricant,” letting SDEs cross institutional voids and gather resources through trust rather than procedure (EE, TH, BR, MK, AL, and VI). Where formal coordination is weak or slow, these networks carry the information and assets that formal systems miss (TH, AL, & SD).

At the micro level, the informal network anchors values and steadies people. Leaders sense informally, through “home visits” and ethnographic immersion, to find the root of a community’s struggle and define the enterprise’s “strong why” (TH, MK & YT). They also lean on informal gatherings, *nongkrong* (hanging out) or “eating porridge together late at night,” to talk through serious missions and fold ethics into daily habit (MK); those rituals build the “mental bandwidth” people need to persist when the money is slow or absent (MK & YT).

At the meso level, informal ties bridge the gaps between Pentahelix actors. SDEs practice social bricolage sourced through friends and former colleagues (TH, YT, & AL); trust lets a “spontaneous order” emerge in which large opportunities, such as supply contracts and research grants, get shared among peers without formal hierarchy (AL & SD); and word about grants (from Bank Indonesia, for instance) or access to scarce data travels by word of mouth and personal recommendation inside academic and professional circles (EE, TH, & SD).

At the macro level, informal networks route around institutional resistance. Leaders use personal branding and *pergaulan* (socializing) to reach government stakeholders, sometimes through an unplanned meeting with a mayor, and lobby for change through what one calls “advocacy of the heart” (TH). Industry peers and the media wield “cancel culture” as an informal sensing tool, watching firm ethics and revoking the social license of bad actors (SB & SD). And informal mentoring and storytelling pass tacit wisdom to the next generation, defusing the “founder’s time bomb” so the mission survives as cultural inheritance (VI, YT & KP).

4.4.5. Lateral interaction

Lateral interaction looks different at each level. At the macro level it runs on benchmarking and social license: PROPER creates a competitive field where firms copy the “beyond compliance” wins of their peers (BR), while global market pressure and “cancel culture” force industrial evolution across a sector (SD & SB). At the meso level it is collaboration and codification: LCA lets organizations sense where resources are most needed, which they then seize through social bricolage that connects academia, business, and community sideways (SD & AL), with knowledge management systems capturing these “spontaneous orders” as permanent legacy (AL & YT). At the micro level it is ritual and shared purpose: awareness sparked by “home visits” is reinforced laterally by spiritual

commitments such as *amal jariyah* (YT & EE), and internalized values become shared team routines through “Value Talks” and bonding rituals like *nongkrong*, building the collective “mental bandwidth” a social mission demands (MK & KP).

5. Discussion

5.1. Answering the research questions

On RQ1, the SDEs in this study build sensing, seizing, and reconfiguring capabilities mainly through their people. Sensing comes partly from mandated diagnostics such as PROPER and LCA, but just as much from ethnographic immersion, home visits, and word of mouth in informal networks. Seizing runs on leaders’ moral and spiritual commitment and on the social bricolage that moves people and knowledge across helix boundaries. Reconfiguring happens when tacit wisdom is codified into training systems, such as LMS modules, leadership schools, and management development programs, and when value-internalization rituals turn belief into routine. On RQ2, human capital development turned out to be co-produced and cross-level. The five flows describe how macro pressures set capability requirements, meso mechanisms translate them into development systems, and micro commitments supply the motivational energy, with Pentahelix actors lending legitimacy, knowledge, and resources at each turn.

5.2. Theoretical contributions

5.2.1. Extending sustainable HRM to emerging-economy SDEs

Sustainable HRM research has mostly studied formal practice bundles, such as green recruitment, training, and appraisal, in large firms in developed economies (Kramar, 2014; Ren et al., 2018; Renwick et al., 2013). This study extends it on three fronts. First, in resource-constrained SDEs the equivalents of those formal practices are often informal and culturally embedded: *nongkrong* bonding rituals do the work of engagement programs, spiritual framings of work such as *ibadah* and *amal jariyah* stand in for incentive systems, and “Value Talks” serve as continuous, values-based performance dialogue. Second, people development here is an ecosystem activity. Universities, communities, media, and government co-produce the training content, legitimacy, and role models that a firm cannot supply alone, giving Common Good HRM’s societal orientation (Aust et al., 2020) an empirical grounding in an emerging economy. Third, the study connects sustainable HRM to succession: the generative loop names knowledge codification and leadership pipelines (Arghode, 2025; Ilea et al., 2024) as the mechanism by which sustainability values can outlast their founders, which is what the Legacy Paradox threatens. Taken together, these three fronts extend sustainable HRM on its own terms. They specify how five core HR functions operate in SDEs where formal systems are thin: employee development happens through value-internalization rituals and belonging rather than formal training catalogs; leadership development runs through “Schools of Leaders” and founder modeling; knowledge management works by codifying tacit wisdom into learning platforms; succession is enacted as a “passing of the baton” backed by that codified knowledge; and values-based HR practice is carried by spiritual and moral framings of work rather than incentive design. This gives the sustainable-HRM literature a set of concrete, emerging-economy mechanisms for the very practices, employee development, leadership development, knowledge management, succession, and values-based HR, that it has mostly studied through formal instruments in large developed-economy firms.

5.2.2. Humanizing dynamic capabilities in emerging economies

DC research in sustainability has been criticized as fragmented and overly linear, rarely examining configurational dynamics or firm-and-ecosystem co-evolution (Duong, 2026), and emerging-economy settings are said to require

capabilities that compensate for institutional fragmentation and volatile policy (Kaushal et al., 2026). By showing that sensing, seizing, and reconfiguring in SDEs are carried out through moral agency, commitment, rituals, and codified learning, this study puts qualitative flesh on the microfoundational claim that capabilities rest on human cognition and commitment (Helfat & Peteraf, 2015; Teece, 2007), and it does so in a context where formal structures cannot be taken for granted. It also answers the call for integrated models linking dynamic capabilities, sustainability practice, and external collaboration (Putri et al., 2025; Rashed et al., 2026) by locating capability development in Pentahelix interaction rather than inside the firm.

5.2.3. Adding agency to multilevel and multi-stakeholder frameworks

Multilevel transitions research is often descriptive, dwelling on inertia and underspecifying the agency behind sustainability transitions in emerging economies (Andersen & Geels, 2023; Grandin & Sareen, 2020); recent work calls for actor-oriented extensions that explain how transition agency forms under socio-economic embeddedness (Luo & Xu, 2026). Pentahelix and multi-stakeholder research, for its part, illuminates collaboration but rarely reaches capability formation (Iriani et al., 2026; Pratiwi et al., 2025a; Rijal & Saputro, 2024), even as broader multi-stakeholder platforms emerge in adjacent fields (Elia et al., 2020; Polese et al., 2021). The five flows supply the missing mechanism at the level of people. They say who carries agency (leaders, experts, individuals), what moves across levels (mandates, evidence, codified knowledge, trust), and how continuity is secured (the generative loop). SDE development thus reads as a coevolutionary process: multilevel pressures shape capability needs, dynamic capabilities enable strategic response, and Pentahelix interactions provide the resources, governance, and legitimacy needed to scale (cf. Truong et al., 2026).

5.2.4. Contributions to emerging-economy studies

Environmental dynamism, institutional voids, resource scarcity, and fragmented governance are the defining features of emerging economies (Bengana et al., 2026; V. Sharma & Sharma, 2026). The integrated framework offers a context-sensitive account of how enterprises mobilize cross-actor resources despite those voids, build capabilities suited to volatility, and align micro-level innovation with meso networks and macro policy. In doing so it marks boundary conditions for developed-economy sustainability and HRM theories and sharpens their relevance to emerging markets.

5.3. Practical implications for HR and business managers

An SDE manager has to absorb global market pressure and public accountability at the macro level, orchestrate resources, stakeholders, and continuity at the meso level, and hold the line between mission commitment and burnout at the micro level. **Figure 3** sets out a working framework for doing so: a way to cross institutional voids, hold the tension between profit and impact, and move past compliance toward systemic change (EE, BR & SD).

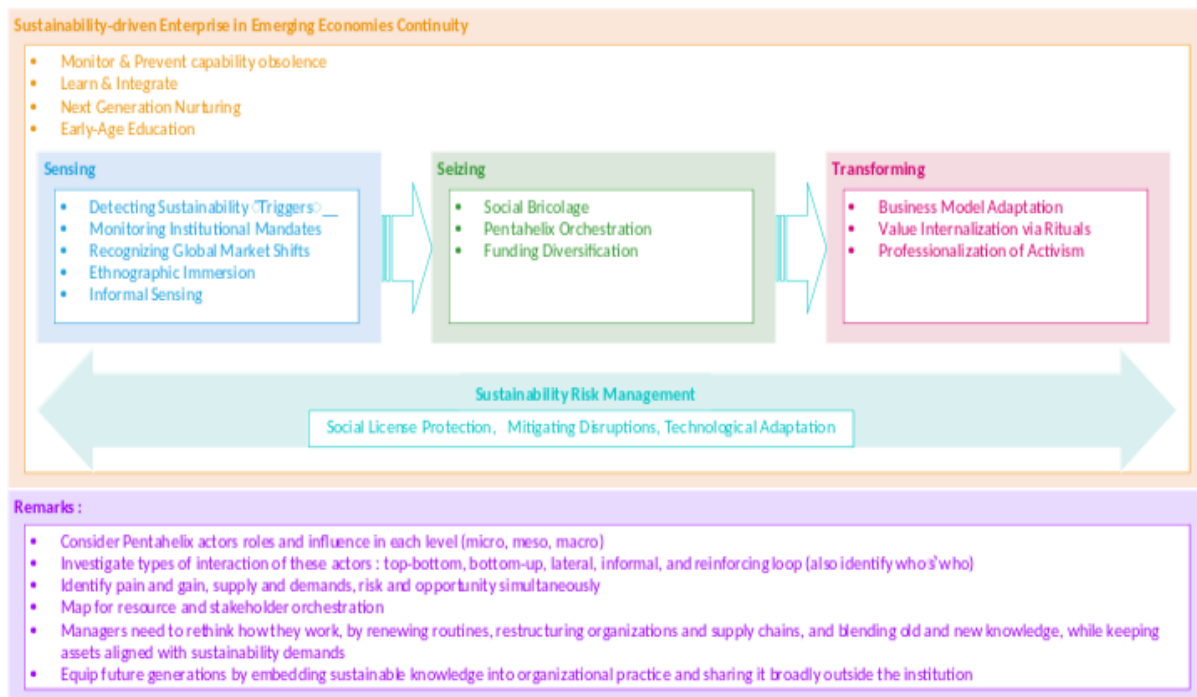


Figure 3. Multilevel people-centered dynamic capabilities framework for business managers.

Sensing. Managers should read opportunity and risk together, tracking customer needs, regulatory and technological shifts, and their own environmental awareness (Akter et al., 2024; Massari et al., 2025; Phalswal et al., 2024), and starting with a map of stakeholders, their roles, their formal and informal ties, and their influence. In this study, sensing meant:

- catching the “triggers” for sustainability, which in Indonesia come from top-down mandates, ground-level sensing, and informal and lateral interaction alike (SD, BR, & SB);
- monitoring institutional mandates such as the PROPER rating system and OJK-mandated sustainability reporting (BR & SB);
- reading global market shifts, especially international buyers’ demand for verified sustainability claims (BR);
- ethnographic immersion: “home visits” that reveal the root of a social problem, such as poverty-driven education gaps (MK & YT);
- informal sensing, catching opportunities through social networks and word of mouth where formal data run out (EE & SD).

Seizing. Having mapped the terrain, managers seize by mobilizing resources, designing the right business model, forming partnerships, investing in frugal innovation, and building sustainability into structures and incentives (Bechtel et al., 2023; Phalswal et al., 2024; Saeedikiya et al., 2024). This study points to rapid mobilization of internal and external resources (MK & BR) through:

- social bricolage: patchworking university research, community labor, and personal ties to prove a circular model works (TH & AL);
- Pentahelix orchestration: “connecting the hubs” across government, academia, and community to scale local pilots into business units (YT, TH & AL);
- funding diversification: opening “five taps” (donations, CSR, business partnerships, event fundraising, and new business lines such as selling “blended tea” or professional training) so investment in people can continue (MK, YT, & TH).

Transforming. Managers should renew their mindsets, routines, organization, and supply chains, folding in new knowledge while keeping assets aligned with sustainability demands (Chen, 2026; Khan et al., 2021; Massari et al., 2025; Phalswal et al., 2024; R. R. Sharma, 2025). Here that meant:

- business-model adaptation: holding the tension between commercial and social logics, for instance by turning a grant-dependent community into a foundation with a professional training arm or a commercial agriculture unit (EE, YT & TH);
- values internalization through ritual: “Value Talks” and weekly discussions of core ethics that make values lived routine rather than reported policy (KP);
- professionalization of activism: trading reactive “fire-fighting” for proactive “environmental excellence” and “beyond compliance” (SB & KP).

Risk management. Beyond the three capabilities, managers have to handle the downside of rapid change and ethical dilemmas (SD & BR):

- social license protection: turning down lucrative but unethical projects that would “becek” (stain) the firm’s reputation and its license to operate (VI);
- mitigating disruption: managing volunteer turnover and abrupt policy shifts by building resilient systems and the “mental bandwidth” that informal bonding creates (MK & YT);
- technological adaptation: staying ahead of obsolescence, for example by developing digital-forensics capability or adopting LMS platforms to keep pace with the industry (YT & VI).

To keep all of this going, managers should watch for capability obsolescence, sustain their learning, integrating, and coordinating routines (Pavlou & El Sawy, 2011), and prepare the next generation by institutionalizing the stewardship of useful knowledge, nurturing new leaders inside the organization (Arghode, 2025; Dongyang et al., 2025; Ilea et al., 2024; Saksono et al., 2025) and supporting experiential, interdisciplinary sustainability education from an early age so pro-sustainability attitudes take root for the long run (Arief et al., 2022; Hasriyanti et al., 2025; Noh & Martin, 2025).

Key takeaways for HR practitioners. For an HR manager in a sustainability-driven enterprise, five practices follow directly from the findings. First, treat leadership development as mission insurance: build a “School of Leaders” or management development program early, because the study shows that missions dependent on a single founder are the ones most at risk. Second, make succession a knowledge task, not only a hiring task: codify what your best people know into learning-management modules, playbooks, and stories before they leave, since this is how the enterprises here kept a mission alive across a leadership change. Third, design engagement around meaning rather than pay: in resource-constrained settings, retention rested on a “strong why,” value-internalization rituals such as regular values conversations, and belonging built through informal ties, all of which HR can deliberately cultivate. Fourth, recruit and develop for moral agency and boundary-spanning, not credentials alone, because the people who sensed opportunities and mobilized outside resources were those with commitment and networks rather than the most formally qualified. Fifth, measure the culture, not just the outputs: periodic “pride and commitment” or values surveys tell HR whether the sustainability mission has actually been internalized. In short, in an SDE the HR function is less an administrator of policies than the steward of the leadership pipeline, the knowledge base, and the commitment on which the enterprise’s dynamic capabilities depend.

5.4. Implications for policymakers

The data show government, as policymaker, still working mostly at the macro level, through regulations, policies, and green procurement (**Figure 2**). Indonesian

evidence bears out the limits of that stance. Although the state provides financial assistance, capacity building, and promotion of sustainable practice, implementation stalls at the micro level over operational problems, resource constraints, and weak integration of digital and innovation policy (Wijatmoko et al., 2025; Yelfiarita et al., 2025); meso-level initiatives for SMEs suffer from poor coordination, overlapping programs, and misaligned policy (Koesrianti & Tanega, 2024; Yelfiarita et al., 2025); and even the macro role is undercut by enforcement gaps, fiscal constraints, and institutional fragmentation (Apriliyanti & Nugraha, 2025).

Several responses follow. At the macro level, national policymakers should consolidate and enforce environmental and sustainability laws that work in practice, not only on paper (Pelengkahu & Satria, 2023), by tightening inter-ministerial coordination, cascading regulation, and matching it to local government capacity (Salomo & Rahmayanti, 2023); greater institutional transparency helps credibility and policy calibration (Kamil & Karlsson-Vinkhuyzen, 2023), and expanding renewable-energy investment is a proven macro driver of sustainable growth (Handoko et al., 2023). At the meso level, they should build innovation ecosystems through regulatory simplification, technology-licensing frameworks, and infrastructure, above all for SMEs (Ardana et al., 2021). At the micro level, financial-literacy programs should reach sustainability-driven SMEs to improve access to capital and the reading of risk (Kurniasari et al., 2025); the adoption of digital tools should be supported, especially in traditional sectors (Annisa et al., 2024); and grants, training, and incubators can scale innovation capability (Games, 2019). Most distinctively, and this is where the people lens bites, local policymakers should actively identify, empower, and reward sustainability-driven experts, leaders, and communities at the micro level (see Section 4.3). Given institutionalized support and room to grow, these people can be nurtured into sustainability champions who serve as role models for the generations that follow.

5.5. Limitations and future research

The study has limits, and they set the boundaries within which its claims should be read. Most fundamentally, this is an exploratory, single-country qualitative study built on ten expert informants, so its contribution is a set of grounded, transferable propositions about mechanisms, not a tested or generalizable theory. The five flows and the people-centered reading of dynamic capabilities are offered as an analytic framework to be examined elsewhere, not as established regularities, and claims such as the generative loop's role in addressing the "Legacy Paradox" hold, on this evidence, for the kind of mission-driven, resource-constrained, founder-led enterprises studied here rather than for firms in general.

Three specific limitations qualify the findings. First, the informant base is small. Ten experts suit a Gioia design and were chosen for balance and system-level knowledge across the Pentahelix, but a sample this size cannot represent the diversity of Indonesian SDEs, and themes voiced by one or two informants, however vivid, carry less evidential weight than those that recurred across sectors; readers should weigh the findings accordingly. Second, the same ten experts served as both interviewees and the validation panel. Member checking of this kind strengthens interpretive credibility, but because participants were, in part, assessing an account built from their own words, it risks confirmation bias; we mitigated this by inviting disconfirming feedback and retaining only themes that converged across sectors, yet an independent validation panel would have been a stronger test and is a clear improvement for future work. Third, the context itself bounds the results: Indonesia's religiously and culturally embedded leadership makes mechanisms such as *ibadah*-driven

commitment especially visible, and whether these mechanisms operate, or operate differently, in more secular or differently institutionalized emerging economies is an open empirical question.

Each limitation points to a next step. Multi-country comparison across emerging economies would separate the universal from the context-specific and test whether the commitment mechanisms travel. Longitudinal case studies that follow, say, a cohort through a “School of Leaders” would capture how capability and talent actually develop over time, which a cross-sectional design cannot. And future quantitative work could operationalize the five flows and test their relative weight on SDE performance and on employee outcomes such as retention, engagement, and successor readiness.

6. Conclusion

This study asked how sustainability-driven enterprises in an emerging economy build the people-based capabilities their missions require, and how Pentahelix interactions across levels shape that human capital development. The answer is that people development in SDEs is a coevolutionary, multi-actor process. Macro pressures set the capability requirements; meso mechanisms such as diagnostics, orchestration, training systems, and knowledge codification turn them into routine; and micro-level moral agency, spiritual commitment, and value-internalization rituals supply and sustain the energy behind them. Five reciprocal flows hold the levels together, namely top-down, bottom-up, the generative loop, informal social networks, and lateral interaction, and the generative loop offers a way to address the Legacy Paradox, converting a founder’s wisdom into a system that can outlive them. These claims are grounded in an exploratory study of ten experts in one country and are best read as transferable propositions for similar mission-driven, resource-constrained enterprises rather than as settled findings. By putting human resource development at the center of sustainability capability building, the study joins three literatures that rarely meet, sustainable HRM, dynamic capabilities, and multi-stakeholder collaboration, and gives practitioners and policymakers concrete mechanisms for cultivating the people on whom any sustainability transition finally rests.

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Ethics statement: All participants provided written or recorded informed consent before participating in the study. Participants were informed of the study objectives, procedures, potential risks, and benefits; participation was voluntary, and participants could withdraw at any time without consequences. The study was approved by the ethics committee of the School of Business & Management, Institut Teknologi Bandung, dated 22 July 2021.

Data availability statement: The data supporting the findings of this study are available on request from the corresponding author. The data are not publicly available due to restrictions protecting the privacy of research participants.

Generative AI use: This study employed AI-based tools as supportive instruments. NotebookLM was used to extract information from interview

transcripts, identify key themes, and perform cross-comparisons; all outputs were verified against the original transcripts to ensure accuracy and minimize bias. Leapspace was used to search for recent and relevant literature; retrieved sources were re-read and cross-checked against the original publications. AI assistance was additionally used for language editing and manuscript restructuring. Critical evaluation, analysis, and interpretation remained the sole responsibility of the authors.

Conflict of interest: The authors declare that they have no affiliations with or involvement in any organization or entity with any financial interest in the subject matter or materials discussed in this manuscript.

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