Convergence, Not Accumulation: Digital Maturity and Organisational Resilience among SDA Self-Supporting Ministries in Kenya

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ABSTRACT

This study examines whether digital maturity strengthens organisational resilience among Seventh-day Adventist–affiliated self-supporting ministries in Kenya. Two propositions are tested: that Digital Intensity—governed data, simple automation/analytics, and reliable "green" infrastructure—relates positively to resilience, and that the convergence of Digital Intensity with Transformation Management Intensity—mission-linked strategy, baseline readiness, and human-centric adoption—explains resilience better than either stream alone. A quantitative, explanatory, cross-sectional survey of 141 ministries was analysed using hierarchical confirmatory factor analysis and structural equation modelling with robust estimation and bootstrapped confidence intervals. The measurement model met reliability, convergent, and discriminant validity standards with acceptable global fit. Structurally, Digital Intensity demonstrated a positive, statistically significant association with resilience, and the convergence construct provided the strongest pathway, explaining higher variance and remaining stable across sensitivity checks. The study concludes that resilience gains in resource-constrained ministries arise less from accumulating tools than from coupling governed information, lightweight automation, and dependable infrastructure with focused strategy, cyber hygiene, and adoption rituals. Findings inform shared services, lightweight standards, and micro-learning initiatives for African faith-based nonprofits.

Keywords: digital maturity, organisational resilience, faith-based nonprofits, self-supporting ministries, structural equation modelling, Kenya.

INTRODUCTION & CONTEXT

Self-supporting ministries (SSMs) affiliated with the Seventh-day Adventist (SDA) Church in Kenya operate in fragile conditions, characterised by irregular funding, a high proportion of volunteer staff, and uneven governance capacity across urban and rural settings. Digital infrastructure has improved, yet access and usage remain heterogeneous, with persistent gaps in device availability, skills, and affordability that disproportionately affect smaller nonprofits (GSMA, 2023, 2024). Compliance expectations have tightened under Kenya's Data Protection Act and sectoral guidance, raising baseline requirements for data stewardship and cyber hygiene that many ministries struggle to meet. In this environment, disruption—whether epidemiological, economic, climatic, or regulatory—is not an outlier but a planning premise. The managerial question is therefore practical and pressing: which digital investments and routines actually strengthen organisational resilience (OR)—the ability to anticipate, absorb, and adapt—rather than merely accumulating tools that add cost and complexity?

This study addresses a specific theoretical gap: most digital-maturity accounts treat technology intensity (DI) and transformation management intensity (TMI) as additive, independent levers ("accumulation"). By contrast, we theorise and test a convergence paradigm in which resilience emerges when digital and managerial streams cohere as a higher-order capability (DML). We therefore examine whether DI predicts OR and, more critically, whether DML outperforms single-stream maturity in explaining resilience among resource-constrained, faith-based nonprofits.

Prior scholarship offers only partial answers. A substantial stream links digital transformation to efficiency and performance, often proxied by cost or revenue metrics (Verhoef et al., 2021; Vial, 2019). Evidence specific to resilience—continuity, recovery, and adaptive capacity—remains thinner and mixed, especially outside high-income settings and beyond the private sector (Hillmann & Guenther, 2021). Studies of nonprofits and SMEs suggest that data quality, simple automation, and reliable infrastructure can enhance continuity; however, these effects are attenuated when technology is not embedded in a coherent strategy, governance, and adoption routines (Robertson et al., 2022; Mikalef, Pappas, Krogstie, & Pavlou, 2020). In faith-based organisations, additional constraints—such as mission-first priorities, volunteer turnover, risk aversion, and privacy concerns—complicate adoption pathways and may shift the digital capabilities that matter most for resilience (Giannelia, 2020; He, Jiang, & Zhang, 2022). African cases are particularly underrepresented, limiting the transferability of findings to contexts where resource slack is low and infrastructure variability is high (GSMA, 2024).

This paper addresses that gap by distinguishing two streams of capability and their convergence. Digital Intensity (DI) encompasses the technological payload, comprising Data Management (DM) for governed, decision-ready information, Automation & Intelligence (AAI) for cycle-time and error reduction, and Green Digitisation (GD) for reliable, cost-stable infrastructure. Transformation Management Intensity (TMI) captures the managerial spine, comprising Digital Business Strategy (DBS) that ties choices to mission, Digital Readiness (DR) for skills, governance bodies, cyber hygiene, and continuity playbooks, and Human-Centric Digitisation (HCD) for adoption rituals and micro-learning. Building on resource-based and dynamic capabilities perspectives, with alignment and complexity lenses, the analysis specifies a higher-order Digital Maturity Level (DML) as the convergence of DI and TMI—an orchestrated coupling expected to deliver situation awareness and operational elasticity, the proximal mechanisms of resilience (Duchek, 2020; Lee, Vargo, & Seville, 2013; Verhoef et al., 2021; Weick & Sutcliffe, 2015).

Two uncertainties motivate the empirical test. First, does DI—the operational payload—on its own explain OR in ministries where minor data improvements can meaningfully increase foresight and coordination? Second, does convergence (DML) outperform either stream alone, implying that resilience emerges less from accumulating tools or issuing plans than from coherent coupling of information, routines, and buffers? These questions are crucial for informing policy and practice. Donors, unions, and ministry networks face budget trade-offs: invest in more software, in governance and training, or in the connective tissue that synchronises both. If convergence dominates, shared services for data stewardship, low-code automation, and baseline security—paired with lightweight standards and micro-learning—may yield greater resilience than technology proliferation or leadership exhortation alone (Kane, Palmer, Phillips, Kiron, & Buckley, 2015; Robertson et al., 2022).

The paper contributes three elements. Conceptually, it clarifies the difference between accumulation (more tools or more initiatives) and convergence (co-specialisation between the technological payload and managerial routines) as distinct maturity logics in resource-constrained nonprofits. Empirically, it offers an Africa-situated, faith-sector test using hierarchical CFA and SEM on organisational-level data from SDA SSMs in Kenya, a hard-to-reach population accessed with respondent-driven sampling augmentation and analysed with rigorous measurement validation (Fornell & Larcker, 1981; Henseler, Ringle, & Sarstedt, 2015). Practically, it translates findings into a sequenced playbook appropriate for ministries that must prioritise data governance, simple automation, reliability, and human adoption under tight constraints. Guided by this framework, the study focuses on two research questions and associated hypotheses tested in the structural model:

RQ1: To what extent does the level of Digital Intensity (DI) relate to the Organisational Resilience (OR) of Seventh-day Adventist–affiliated self-supporting ministries (SSMs) in Kenya?

H_{01}: There is no statistically significant association between Digital Intensity and Organisational Resilience among SDA-affiliated SSMs in Kenya.

RQ2: Does the Digital Maturity Level (DML) demonstrate a stronger association with Organisational Resilience (OR) than either DI or TMI considered in isolation within SDA-affiliated SSMs in Kenya?

H_{02}: Digital Maturity Level does not exhibit a stronger association with Organisational Resilience than either Digital Intensity or Transformation Management Intensity considered separately.

By centering resilience as the dependent outcome and convergence as the organising logic, the analysis aims to inform how African faith-based nonprofits can develop robust, adaptive operations without relying on abundant resources or uniform digital readiness.

LITERATURE REVIEW

Resource-Based View: governed digital assets as VRIN foundations of resilience

The Resource-Based View (RBV) posits that a durable advantage rests on resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991; Peteraf, 1993). In resource-constrained nonprofits, governed digital assets—clean data, auditable processes, and reliable infrastructure—function like VRIN building blocks because they enhance decision quality, reduce errors, and are costly for peers to replicate quickly (Wade & Hulland, 2004; Hanelt, Bohnsack, Marz, & Marante, 2021). The Digital Intensity (DI) stream embodies this logic. Data Management (DM) creates decision-ready information through stewardship, quality controls, and access discipline. Automation & Intelligence (AAI) embeds rules and analytics into workflows, reducing cycle times and identifying errors at their source. Green Digitisation (GD) enhances continuity through cloud rationalisation, modest redundancy, and energy/power discipline, which stabilise costs and uptime (Saldanha, Mithas, Khuntia, Whitaker, & Melville, 2022). Together, these components form a defensible capability base that supports organisational resilience (OR)—the capacity to anticipate, absorb, and adapt during shocks (Lengnick-Hall, Beck, & Lengnick-Hall, 2011; Duchek, 2020). In African nonprofit settings where resources are scarce and reliability is inconsistent, governed data and simple automation often yield significant gains (GSMA, 2024; Robertson, Botha, Walker, Wordsworth, & Balzarova, 2022).

Dynamic Capabilities: sensing, seizing, and reconfiguring under turbulence

Dynamic Capabilities Theory views resilience as the result of sensing weak signals, seizing opportunities, and reconfiguring assets and routines to fit shifting conditions (Teece, 2007; Eisenhardt & Martin, 2000). DI strengthens sensing by improving situation awareness—providing timely, accurate, and decision-relevant information—and it reinforces seizing and reconfiguring through operational elasticity—the ability to pivot processes with minimal disruption (Lee, Vargo, & Seville, 2013; Weick & Sutcliffe, 2015). Yet capabilities do not self-orchestrate; nonprofits need managerial routines that prioritise, standardise, and embed the technological payload. This motivates the study's convergence construct, Digital Maturity Level (DML), which treats orchestrated coupling between DI and Transformation Management Intensity (TMI) as a higher-order capability. Convergence, rather than simple accumulation, is posited to unlock the dynamic-capability cycle in ministries where volunteers rotate and governance capacity varies (Verhoef et al., 2021; Vial, 2019).

Alignment/Contingency: Why intent under-delivers without a DI threshold

Alignment and Contingency scholarship posits that performance effects emerge when structures, processes, and skills align with strategy and context (Henderson & Venkatraman, 1993; Coltman, Tallon, Sharma, & Queiroz, 2015). The TMI stream—Digital Business Strategy (DBS), Digital Readiness (DR), and Human-Centric Digitisation (HCD)—captures intent and governance. In SSMs, however, management intensity can under-deliver if the technological base is weak. A strategy that prioritises data-informed ministry or a change program that mobilises champions cannot yield resilience if data are dirty, workflows remain manual, or infrastructure fails during surges. Alignment thus implies a DI threshold: DBS/DR/HCD amplify outcomes once minimal DM/AAI/GD are in place. DML—as convergence—represents alignment realised: the condition in which managerial routines and technology move in lockstep. This logic is consistent with studies showing that digital transformation outcomes hinge on both the depth of capability and organisational embedding, especially in SMEs and nonprofits (Kane, Palmer, Phillips, Kiron, & Buckley, 2015; Gerow, Grover, Thatcher, & Roth, 2014; Hanelt et al., 2021).

Complexity/Systems: resilience as an emergent property of coherent coupling

Complexity perspectives view organisations as complex adaptive systems where reliability emerges from tight coupling among information flows, routines, and buffers (Holland, 2012; Weick & Sutcliffe, 2015). Fragmented tools, siloed data, or uncoordinated change programs increase brittleness. Convergence reduces brittleness by synchronising three things: the signals ministries read (via DM), the moves they can execute quickly and safely (via AAI), and the buffers that prevent small shocks from cascading (via GD), all reinforced by strategy focus, governance, and human adoption (DBS, DR, HCD). In volatile African contexts—with intermittent connectivity, variable power, and fluctuating volunteer capacity—coherent coupling is as essential as scale. Studies conducted during and after the COVID-19 pandemic show that organisations with integrated sociotechnical routines reported shorter recovery cycles and more stable service delivery, even when budgets were modest (Robertson et al., 2022; He, Jiang, & Zhang, 2022; Hillmann & Guenther, 2021).

Hypotheses development

Digital Intensity → Organisational Resilience. RBV positions DM/AAI/GD as capability assets that are costly to imitate quickly. DCT explains how these assets enable sensing and reconfiguration. Alignment clarifies that even without elaborate management programs, a minimal technological base can maintain continuity. Complexity highlights how DI reduces entropy in everyday operations. Empirical work with SMEs, nonprofits, and crisis settings indicates that clean data and simple automation improve coordination and reduce service failures, and that reliability investments pay resilience dividends in low-slack contexts (Mikalef, Pappas, Krogstie, & Pavlou, 2020; Robertson et al., 2022; GSMA, 2024). In Kenyan SSMs, where operational variance is high, even incremental gains in data quality and workflow automation can produce significant resilience effects by shortening detection and response times.
H_1: Digital Intensity (DI) is positively associated with Organisational Resilience (OR) among SDA-affiliated self-supporting ministries in Kenya.

Convergence (DML) → Organisational Resilience, stronger than DI or TMI alone. Alignment and complexity perspectives imply that resilience is an emergent property of co-specialisation. TMI without DI risks "plan-without-platform," while DI without TMI risks "tools-without-use." Convergence integrates both. Empirical syntheses in digital transformation find that firms and nonprofits with synchronised technology and management routines outperform those with isolated excellence, especially when facing turbulence (Verhoef et al., 2021; Vial, 2019; Hanelt et al., 2021). Africa-situated reports similarly show that where data stewardship, low-code automation, and baseline cyber hygiene are embedded through governance and micro-learning, continuity improves despite resource constraints (GSMA, 2024; Infoxchange, 2024). DML, therefore, captures the *realisation* of alignment as a higher-order capability.
H_3: Digital Maturity Level (DML)—the convergence of DI and TMI—exhibits a stronger positive association with Organisational Resilience (OR) than either DI or TMI alone.

Taken together, these lenses justify testing both the standalone effect of DI and the convergence effect of DML. DI should matter in its own right in SSMs because governed data and simple automation immediately raise situation awareness and reduce failure modes. DML should matter more because strategic focus, governance, and human adoption are what transform the payload into sustained routines. The empirical sections therefore estimate Model 1 (DI→OR) and Model 3 (DML→OR), with rigorous measurement validation and robustness checks to ensure that observed patterns are not artefacts of estimation or sampling.

The convergence thesis also aligns with philosophy of administration and stewardship ethics: resilient administration harmonises interdependent subsystems toward mission under constraint, emphasising accountability, prudent governance, and dignifying inclusion. In this view, DI supplies the informational and operational substrate; TMI supplies the focusing and normative spine; resilience is the emergent property of their coherent coupling—a systems-ethics posture consistent with stewardship in faith-based organisations.

METHODOLOGY

Research Design and Setting

The study employed a quantitative, explanatory, cross-sectional survey of self-supporting ministries (SSMs) affiliated with the Seventh-day Adventist (SDA) Church in Kenya. The unit of analysis was the organisation (one informed respondent per ministry). Kenya's SSM ecosystem is heterogeneous, ranging from micro, volunteer-led initiatives to more formalised entities, operating across health, education, media, evangelism, and social services under uneven infrastructure and funding conditions. This setting is suitable for testing whether Digital Intensity (DI) and the convergence of digital and managerial streams—Digital Maturity Level (DML)—are related to Organisational Resilience (OR) in low-slack, high-variability environments.

Sampling

Because no authoritative registry exists, a targeted frame was assembled from denominational networks, recognised SSM associations, and public ministry directories. Access challenges and hidden-population features (informal registration, fluid staffing, dispersed geography) motivated a respondent-driven sampling (RDS) augmentation (Heckathorn, 1997, 2002; Gile & Handcock, 2010). Initial seeds were recruited from diverse ministry domains and union territories and asked to refer eligible peers; referrals proceeded in waves until recruitment plateaued. The achieved organisational sample was n = 141. To assess potential RDS-induced dependencies, sensitivity analyses later introduced wave/seed covariates and clustered standard errors by seed, without using RDS weights in the main SEM (given the theory-testing focus and absence of population totals). Representativeness was examined descriptively across union territories, domains, age groups, and size bands, as well as through early– and late–wave contrasts as a nonresponse proxy (Armstrong & Overton, 1977; Groves & Peytcheva, 2008).

Eligibility required an SDA affiliation, self-supporting status, and at least 12 months of operation; duplicates were identified through cross-checking of ministry names, contacts, and web presence. Regional coverage spanned EKUC and WKUC; we tracked seed/wave recruitment to minimise cluster duplication. A compact demographics table (size, age, domain, union) improves replicability and situates inference.

Instrument and Data Collection

Digital Intensity (DI) was modelled as a second-order reflective construct with three first-order factors: Data Management (DM), Automation & Intelligence (AAI), and Green Digitisation (GD). Transformation Management Intensity (TMI) was modelled with three first-order factors: Digital Business Strategy (DBS), Digital Readiness (DR), and Human-Centric Digitisation (HCD). A higher-order Digital Maturity Level (DML) captured the convergence of DI and TMI. Organisational Resilience (OR) was modelled as a second-order construct, reflected in the Planning/Leadership and Adaptive Capacity pillars. DI/TMI items were drawn from a verified, EDIH-aligned digital maturity assessment and localised to nonprofit/ministry language; OR used short-form BRT-13/BRT-13B items adapted for Organisational informants (Lee, Vargo, & Seville, 2013; Kljajić Borštnar & Pucihar, 2021). Items used five-point Likert scales (strongly disagree–strongly agree). Cross-cultural adaptation was conducted following expert review and cognitive pretesting with ministry leaders to ensure clarity, relevance, and consistency of tone, in line with established guidelines (Beaton, Bombardier, Guillemin, & Ferraz, 2000; International Test Commission, 2018).

Ethical Considerations

Ethical approval was granted by the Adventist University of Africa Institutional Scientific and Ethics Review Committee (AUA-ISERC; Ref: AUA/ISERC/1141/2024; 14 September 2024). Participation was voluntary. An online informed-consent page preceded the questionnaire. Respondents affirmed that they were knowledgeable about their ministry's digital operations/strategy. Organisational identifiers were anonymised in analysis files, and results are reported in aggregate.

To mitigate common-method variance, the survey assured anonymity, used neutral wording, varied scale anchors across modules where appropriate, and proximal separation of predictors and outcomes to reduce hypothesis-guessing (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Post hoc diagnostics included a single-factor check and, in sensitivity, a latent common method factor (CLF) overlay to assess whether a general factor materially altered structural relations. Multicollinearity among first-order factors was screened (variance inflation factors, VIF < 5 target; O'Brien, 2007). Missing data were handled using full information maximum likelihood (FIML) in the SEM engine under the assumption of missing-at-random (Enders, 2010; Little & Rubin, 2019). Outliers were inspected with Mahalanobis distance and robust diagnostics (Rousseeuw & Van Zomeren, 1990; Hubert, Van der Veeken, & Debruyne, 2008). Distributional assumptions were evaluated using item and factor skewness and kurtosis, as well as Mardia's multivariate indices (Mardia, 1970, 1974).

Data Analysis

Analyses proceeded in two stages using covariance-based structural equation modelling.

Stage 1: Measurement (hierarchical CFA). First, the reflective measurement models were estimated to establish the latent structure and psychometric adequacy (Brown, 2015; Kline, 2016). For each first-order factor, standardised loadings of≥ .60 were targeted, along with composite reliability (CR/ω) of≥ .70 and average variance extracted (AVE) of≥ .50, where feasible (Fornell & Larcker, 1981; Dunn, Baguley, & Brunsden, 2014). Discriminant validity was assessed using the HTMT statistic (< .85, conservative; < .90, liberal) and cross-checked with the Fornell–Larcker criterion (Henseler, Ringle, & Sarstedt, 2015; Fornell & Larcker, 1981). A global fit is considered when CFI/TLI is ≥ 0.90 or 0.95, RMSEA ≤ 0.08 (≤ 0.06 desirable), and SRMR ≤ 0.08, interpreted holistically rather than by single cutoffs (Hu & Bentler, 1999). Given ordinal Likert indicators and potential mild nonnormality, the main estimator used MLR (robust maximum likelihood) with Y-standardised solutions; WLSMV served as a robustness estimator (Flora & Curran, 2004a, 2004b). Second-order specifications were then estimated for DI, TMI, and OR; finally, a higher-order DML factor was formed from DI and TMI to operationalise convergence.

Stage 2: Structural tests (SEM). Three structural models tested the focal paths while holding the validated measurement model constant:

- **Model 1: DI → OR** (tests H_1).
- **Model 2: TMI → OR** (reported succinctly for completeness).
- **Model 3: DML → OR** (tests H_3, convergence dominance).

Direct effects were accompanied by bootstrapped 95% confidence intervals (based on 5,000 resamples). To probe estimation sensitivity, all three models were re-estimated with WLSMV. Wave/seed covariates and clustered standard errors by seed were introduced in sensitivity runs to check whether the recruitment structure perturbed path magnitudes or rank order. Model adequacy and parsimony were compared using standard fit indices and ΔR^2 in OR across models (Burnham & Anderson, 2002; MacCallum, Browne, & Sugawara, 1996). Modification indices were inspected but acted upon only when supported by strong a priori justification (e.g., same construct, similarly worded items), thereby avoiding cross-construct cross-loadings to preserve construct validity.

Analytic transparency and assumption checks. The primary estimator was MLR with robust standard errors; the WLSMV sensitivity analysis yielded an unchanged path ranking. Item-level missingness was low and handled via FIML under missing-at-random assumptions. Distributional screening (skewness/kurtosis and Mardia indices) indicated mild non-normality, justifying the use of robust estimation. To address common-method bias, procedural remedies (anonymity, neutral wording, varied anchors, proximal separation) were complemented by a single-factor test and a latent common-method factor overlay in sensitivity analyses; neither suggested a dominant method factor.

Data quality diagnostics

Although the complete statistics are reported alongside the results, key diagnostics guided the credibility of the model. KMO and Bartlett's test assessed factorability at the item level (Kaiser, 1974; Bartlett, 1950). Anti-image correlations and communality patterns informed any trimming decisions. Measurement invariance across broad subgroups (e.g., union territory, micro vs. larger ministries) was explored at the configural/metric levels to support interpretability of structural paths, recognising sample-size constraints for full invariance batteries (Chen, 2007). All diagnostic choices favoured parsimony, given the parameter-to-sample ratio recommended for SEM with hierarchical factors (Bentler & Chou, 1987; Rindskopf & Rose, 1988).

RESULTS

The analytic sample comprised 141 ministries with distributions across staff size, establishment period, union location, and organisational type. As summarised in Table 1.

Table 1: Sample Characteristics (n = 141)

Characteristic	Category	Frequency	Percentage
Staff Size	Micro-size (1–9 staff)	99	72.26%
	Small size (10–49 staff)	22	16.06%
	Medium size (50–249 staff)	9	6.57%
	Large size (250+ staff)	7	5.11%
Year of Establishment	Founded before 2015	41	29.93%
	Founded 2015–2024	96	70.07%
	Peak years: 2024, 2021, 2020, 2018		See Note[1]
Union Location	EKUC	110	80.29%
	WKUC	23	16.79%
	None / Not Sure	4	2.92%
Organization Type	SDA member-run business	75	55.56%
	SDA-affiliated self-supporting ministry	34	25.19%
	Hybrid business-ministry	18	13.33%
	Other	8	5.93%

Note. EKUC = East Kenya Union Conference; WKUC = West Kenya Union Conference. Percentages may not sum to 100 due to rounding.

Most entities were micro-sized (≈72%), with recent formation years predominating (≈70% founded 2015–2024). East Kenya Union entities formed the largest bloc, and member-run businesses constituted the modal type—these distributions frame the interpretation of digital capability and resilience patterns.

Measurement model

The hierarchical measurement structure performed satisfactorily. All focal constructs—Digital Intensity (DI) with first-order DM, AAI, GD; Transformation Management Intensity (TMI) with DBS, DR, HCD;

Organisational Resilience (OR) with Planning/Leadership and Adaptive Capacity; and the higher-order Digital Maturity Level (DML)—met standard psychometric criteria. Standardised loadings were positive and substantive for retained items, with the vast majority meeting or exceeding the .60 heuristic, and none of the kept indicators persistently underloading. Internal consistency was strong across constructs (ω/CR ≥ 0.70), and AVE values were generally ≥ 0.50; in the few instances where AVE fell slightly below 0.50, composite reliability remained adequate, supporting convergent validity (Table 2).

Table 2: Results of the Hypothesis Testing

Construct	**Indicators (example)**	**Loadings (Range)**	**AVE**	**ω/CR**
Digital Intensity (DI)	DM, AM, GD	0.558 – 0.902	0.635	0.793
Transformation Management Intensity (TMI)	DBS, DR, HCD	0.602 – 0.841	0.669	0.806
Digital Maturity Level (DML)	Second-order (DI, TMI)	0.800 – 0.939	0.308	0.866
Organisational Resilience (OR)	Planning, Adaptive Capacity	0.764 – 0.981	0.774	0.870

Note. AVE = average variance extracted; ω/CR = composite reliability/omega. Item-level loadings appear in Appendix A (Tables A1–A6). Estimator = MLR with FIML.

Discriminant validity was supported, as evidenced by HTMT ratios falling below conservative thresholds and the Fornell–Larcker criterion being met (Table 3). Global fit for the second-order measurement models (DI, TMI, OR) was acceptable by conventional cutoffs (CFI/TLI in the good range; RMSEA in the acceptable-to-good band with tight confidence intervals; SRMR < .08). Estimating DML as a higher-order factor loading on DI and TMI also yielded acceptable fit and well-defined second-order loadings (Table 4). These patterns held under both the robust maximum likelihood estimator (MLR, main specification) and the ordinal-robust estimator (WLSMV, sensitivity analysis).

Table 3 Discriminant Validity: HTMT Matrix and Fornell–Larcker Checks

Construct	**DI**	**TMI**	**DML**	**OR**
DI	—	0.897	0.751	0.366
TMI		—	0.751	0.205
DML			—	0.391

Note. Upper triangle = HTMT ratios (target < .85 strict, < .90 liberal). Fornell–Larcker criterion satisfied if each construct's AVE ≥ its squared inter-construct correlations (report matrix in Appendix as needed).

Collectively, the measurement evidence supports the distinctness of DI and TMI, the coherence of their higher-order convergence as DML, and the two-pillar structure for OR. The validated measurement layer underpins the subsequent structural tests.

Global fit for the CFA and for each structural model is reported in Table 4

Table 4. Global Fit Indices: CFA and SEM Models

Model	**χ^2(*df*)**	**CFI**	**TLI**	**RMSEA**	**SRMR**

Model 1: OR ~ DI	166.65 (75)	0.874	0.848	0.094	0.065
Model 2: OR ~ TMI	163.91 (75)	0.877	0.851	0.093	0.064
Model 3: OR ~ DML	179.72 (87)	0.89	0.867	0.088	0.067

Note. OR = Organizational Resilience; DI = Digital Intensity; TMI = Transformation. Management Intensity: DML = Digital Maturity Level; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index, RMSEA = Root Mean Square Error of Approximation; SRMR Standardized Root Mean Square Residual.

Note. Estimator = MLR; report RMSEA with 90% CI.The CFA achieved acceptable fit, and SEM Models 1–3 remained within conventional thresholds; Model 3 (convergence) provided the best overall fit.

Structural tests

Model 1 (H_1): DI → OR

Model 1 specifies a direct path from DI to OR. The standardised DI → OR coefficient was positive and statistically significant, with a bootstrap 95% confidence interval that excluded zero (Table 5). Substantively, ministries with stronger data stewardship, simple automation and analytics, and more reliable/greener infrastructure reported higher resilience on both pillars—Planning/Leadership and Adaptive Capacity. The model explained a meaningful share of variance in OR (R^2 reported in Table 5), and overall fit remained acceptable. H_1 is supported.

A decomposition of DI's first-order contributors (reported in the supplementary table) indicated that Data Management (DM) accounted for a sizeable portion of DI's effect on OR, consistent with the theorised role of clean, decision-ready information in sharpening situation awareness. Automation & Intelligence (AAI) reinforced the effect by compressing cycle times and reducing operational errors. At the same time, Green Digitisation (GD) contributed through reliability and cost stability—especially relevant in ministries exposed to power/connectivity volatility.

Model 2 (reported for completeness): TMI → OR

A parallel single-stream model with TMI → OR yielded a **slight, positive, and less stable** direct association than DI's, with wider bootstrap intervals. While not a focal hypothesis in this paper, the weaker TMI-only effect aligns with the idea that managerial intensity under-delivers without a sufficient technological base. Model 2 results are summarised in Table 5 to contextualise the convergence test.

Model 3 (H_3): DML → OR

Model 3 replaces the separate DI and TMI paths with DML → OR, capturing convergence as a higher-order capability. The standardised DML → OR coefficient was larger in magnitude than the DI → OR coefficient in Model 1 and statistically significant, with a bootstrap 95% CI excluding zero. Model 3 produced a higher explained variance in OR ($\Delta R^2 > 0$) and improved global fit relative to the single-stream models. H_3 is supported: convergence outperforms either stream alone.

To examine whether convergence merely absorbs the DI effect or whether DI retains an independent contribution, an auxiliary specification included both DML and DI as predictors of OR. In that joint model, the DML path remained robust and significant, while the DI direct path attenuated and, in some specifications, lost statistical significance. This pattern is consistent with a partial mediation interpretation: DI's contribution to OR is channelled mainly through convergence with managerial routines (DML). No causal claim is made; the result is interpreted as consistent with the theory that resilience in resource-constrained ministries emerges when governed data and basic automation are *embedded* through a strategy focus, readiness and human-centric adoption.

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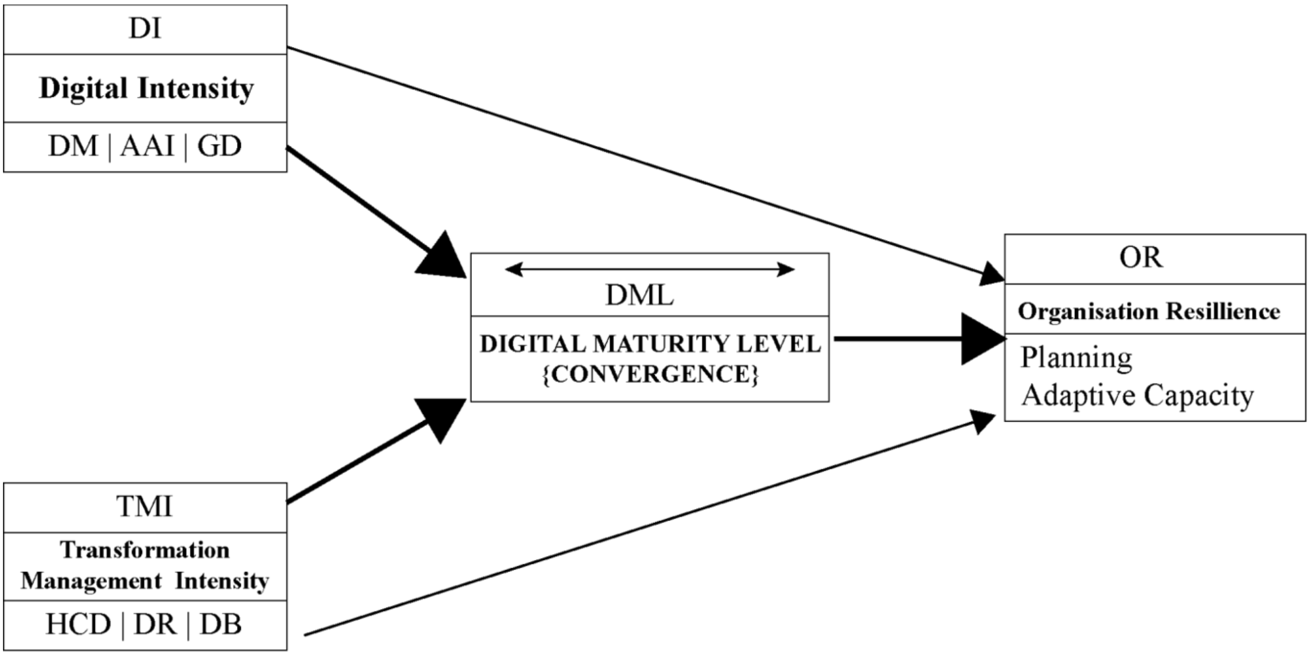
Figure 1 depicts the final structural model with standardised coefficients.

Figure 1. Final SEM Path Diagram



Notes: Solid lines indicate significant paths (p < .05).; Simple arrows = attenuated direct effects. DM = Data Management; AAI = Automation & Intelligence; GD = Green Digitisation; DBS = Digital Business Strategy; DR = Digital Readiness; HCD = KHuman-Centric Digitisation.

Paths indicate a positive DI→OR effect, an attenuated direct TMI→OR effect, and a stronger DML→OR effect, consistent with the convergence thesis.

Table 5 presents standardised path coefficients with bootstrapped 95% confidence intervals and model R^2 for organisational resilience across Models 1–3.

Table 5: Structural Path Coefficients for Predictors of Organisational Resilience

Model	**Predictor**	**Estimate**	***SE***	***z*-value**	***p*-value**	**Significant**
Model 1	Digital Intensity (DI)	0.006	0.002	2.883	0.004	Yes
Model 2	Transformation Management Intensity (TMI)	0.004	0.002	1.628	0.103	No
Model 3	Digital Maturity Level (DML)	0.008	0.003	2.441	0.015	Yes

Note. All estimates represent standardized path coefficients. Statistical significance determined at α = .05

DI → OR was positive and statistically significant (Model 1). The convergence construct (DML) showed the strongest association with OR and the highest explained variance (Model 3), consistent with the convergence thesis

Robustness and sensitivity

Estimator robustness. Re-estimation with WLSMV yielded the same qualitative conclusions: DI → OR remained positive and significant (Model 1), and DML → OR remained the most significant and most stable effect (Model 3). Point estimates moved within expected ranges given estimator assumptions, but path ranking did not change

Recruitment structure and clustering. Adding wave and seed covariates to control for respondent-driven recruitment dynamics did not alter the sign, magnitude ordering, or significance of focal paths. Recalculation with clustered standard errors by seed, accounting for within-seed dependence, preserved the path ranking and confidence-interval exclusion of zero for the main effects.

Nonresponse checks. An **early–late wave** comparison revealed no systematic differences in the key constructs (DI, TMI, DML, OR), alleviating concerns that late respondents—used as a proxy for nonrespondents—would bias structural relations. Distributional screening revealed no pattern of leverage or influence that threatened model stability; the results were robust to the trimming of a small number of high-distance cases (details available upon request).

Common-method sensitivity. A single-factor test failed to account for the majority of covariance, and overlaying a latent common method factor did not meaningfully change the focal path estimates. Multicollinearity among first-order factors remained within acceptable ranges (VIFs below conventional thresholds), supporting interpretability.

Robustness checks are summarised in Table 6

Table 6: Robustness and Sensitivity Results

Sensitivity Specification	**Key Change (if any)**	**Ordering**	***Notes***
Estimator (WLSMV vs. MLR)	No meaningful change in standardized path coefficients; all remain significant	**DML > DI > TMI**	WLSMV slightly lowers χ^2 but does not alter substantive conclusions
Covariates (Add seed / wave / year controls)	Coefficients attenuate slightly but remain significant; effect order unchanged	**DML > DI > TMI**	Controls do not explain away effects
SEs (Clustered by seed/ministry)	Standard errors increase slightly, but all paths remain significant	**DML > DI > TMI**	Stability suggests no clustering bias
Nonresponse (Early–late comparison)	No significant differences in means or regression weights	**No change**	No detectable nonresponse bias

Switching estimators, adding seed/wave covariates, clustering standard errors, and early–late wave comparisons did not alter the substantive ordering (DML > DI > TMI).

Summary of findings

Across specifications, the evidence indicates that Digital Intensity (DI) is a reliable predictor of Organisational Resilience (OR) in Kenyan SDA self-supporting ministries: ministries that govern data, automate routine work, and stabilise infrastructure report stronger planning discipline and adaptive capacity. More importantly, modelling convergence as a higher-order Digital Maturity Level (DML) delivers the strongest and most stable association with OR, explains more variance, and improves model fit relative to single-stream models. Sensitivity to estimator, recruitment covariates, clustering, and nonresponse proxies does not overturn these conclusions. The pattern reinforces a practical message for resource-constrained nonprofits: resilience gains arise less from adding more tools or launching more initiatives than from coherently coupling the technological payload with managerial routines that focus, secure, and embed use.

DISCUSSION

The results demonstrate that Digital Intensity (DI) is a reliable predictor of Organisational Resilience (OR) in Kenyan SDA self-supporting ministries (SSMs), and that convergence—operationalised as Digital Maturity Level (DML)—is the strongest explanatory pathway. Three mechanisms help to explain why DI matters in these ministries and why DML outperforms single-stream maturity. First, Data Management (DM) raises situation awareness: governed, decision-ready data reduces ambiguity and shortens detection and coordination cycles, a central antecedent of resilient planning and leadership (Lengnick-Hall, Beck, & Lengnick-Hall, 2011; Duchek, 2020; Lee, Vargo, & Seville, 2013). Second, Automation & Intelligence (AAI) increases elasticity by identifying routine errors at their source, compressing task latency, and freeing scarce human attention for non-routine work—an effect magnified in volunteer-reliant operations (Mikalef, Pappas, Krogstie, & Pavlou, 2020; Greenhalgh et al., 2017). Third, Green Digitisation (GD) stabilises reliability and legitimacy: cloud/energy rationalisation cushions ministries against power/connectivity volatility, demonstrating prudent stewardship to donors and regulators, thereby protecting continuity under stress (Saldanha, Mithas, Khuntia, Whitaker, & Melville, 2022; Hillmann & Guenther, 2021). Together, these DI components reduce everyday friction and create the operational headroom from which resilience can emerge.

Why, then, does convergence (DML) dominate? The answer lies in how technological payloads and managerial routines co-specialise. Transformation Management Intensity (TMI)—digital business strategy (DBS), digital readiness (DR), and human-centric digitisation (HCD)—supplies the governance, prioritization, and adoption rituals that turn DI's capacity into repeatable routines. Without minimal DI, however, TMI often under-delivers: strategy cannot be evidence-informed if the underlying data are noisy; change programs stall if workflows remain manual; cyber hygiene and continuity plans ring hollow when infrastructure is brittle. Conversely, DI without TMI risks becoming "tools without use," where capabilities do not diffuse across teams or persist after leadership attention shifts elsewhere. DML captures the orchestration of these streams, which the structural results show to be more predictive of resilience than either stream alone. The pattern aligns with SME and nonprofit findings that performance and continuity gains are achieved when digital assets and management practices are tightly coupled, rather than accumulated in isolation (Verhoef et al., 2021; Vial, 2019; Robertson, Botha, Walker, Wordsworth, & Balzarova, 2022).

These findings directly relate to the study's theoretical frameworks. From an RBV standpoint, governed data, well-specified automations, and reliability investments behave like VRIN resources in SSMs: they are valuable and difficult to imitate rapidly because they depend on tacit stewardship routines and local context knowledge (Barney, 1991; Wade & Hulland, 2004). The results extend Dynamic Capabilities Theory by evidencing that it is orchestration—not mere possession—of technological and managerial assets that enables sensing, seizing, and reconfiguring under turbulence (Eisenhardt & Martin, 2000; Teece, 2007). They refine alignment/contingency logic by revealing a DI threshold: managerial intent (DBS/DR/HCD) amplifies outcomes only after a basic platform of DM/AAI/GD is in place (Henderson & Venkatraman, 1993; Coltman, Tallon, Sharma, & Queiroz, 2015). Finally, they accord with complexity/systems perspectives: resilience emerges as an effect of coherent coupling between information flows, routines, and buffers; fragmentation increases brittleness, while convergence reduces the likelihood that small perturbations cascade into service failures (Weick & Sutcliffe, 2015; Holland, 2012).

The relevance of these mechanisms in Africa is salient. Ministries operate with limited financial resources, intermittent connectivity, and variable device affordability, while facing increasing data-protection expectations and donor due diligence. In such settings, marginal improvements in data quality and workflow automation yield significant benefits because they directly reduce coordination failures and rework, enabling lean leadership teams to perceive and act more effectively (GSMA, 2024; He, Jiang, & Zhang, 2022). Moreover, green/cloud rationalisation matters more where grid stability is inconsistent and reliance on generators or batteries can derail service delivery or budgets. The result is a pragmatic sequencing principle for faith-based nonprofits: start by cleaning the informational core (DM), add low-code automations where failure or delay is most costly (AAI), and harden reliability (GD); then institutionalise use through DBS, baseline DR (including cyber hygiene and continuity drills), and HCD (champions, micro-learning, feedback loops). Ministries that follow this sequence reach convergence faster—and the evidence suggests they become materially more resilient.

Policy and practice implications follow. First, shared services can overcome the indivisibilities that plague small ministries. Denominational unions or partner consortia can centralise data stewardship (templates, dictionaries, access rules), cybersecurity baselines (asset inventories, MFA, patching cadence, incident response), and cloud procurement (lightweight vendor lists, negotiated rates, backup policies). Second, lightweight standards reduce variance: a one-page data-quality checklist, a minimal business continuity playbook, and an automation design rubric will travel farther in volunteer-reliant contexts than heavyweight frameworks. Third, a training commons can host short, recurrent micro-learning modules mapped to real workflows (e.g., data entry, case tracking, consent handling), with badges that reinforce adoption and enable peer coaching (Greenhalgh et al., 2017). Fourth, ministries should prioritise low-code automation to target error-prone or slow steps, instrument those steps with simple metrics (such as time-to-complete and error rate), and iterate quarterly. Finally, green/cloud rationalisation—unifying tools, implementing least-privilege access, enforcing MFA, and ensuring off-site backups—should be treated not as a luxury but as a resilience insurance policy that also signals stewardship to funders (Saldanha et al., 2022; Hillmann & Guenther, 2021).

The discussion also clarifies where TMI adds value. When DI is nascent, leadership energy is best invested in *enabling* DI—prioritising the first ten data fields that matter for decisions, chartering a minimal data steward role, and funding one or two high-leverage automations—rather than in broad transformation roadmaps. As DI crosses the threshold, DBS focuses scarce effort on the few digital choices that create mission-critical effects; DR reduces keystone vulnerabilities (such as access control, backups, and continuity drills); and HCD makes new routines stick through cadence, recognition, and quick-win showcases. In other words, the managerial spine is an amplifier whose effect size depends on the platform it is situated on.

Two caveats guide interpretation. The models leverage cross-sectional organisational data; paths are read as consistent with theorised mechanisms rather than causal proof. And while respondent-driven augmentation enabled access to a dispersed population, the results are most credible for ministries similar to those observed: Kenya-based, SDA-affiliated, and operating under comparable funding and infrastructure constraints. Even with those limits, the pattern is clear: ministries become more resilient not by amassing tools or drafting aspirational plans but by converging governed data, simple automation, reliable infrastructure, strategic focus, baseline readiness, and human-centric adoption into a coherent operating system.

In short, convergence—not accumulation—explains resilience in resource-constrained, faith-based nonprofits. For SSM leaders, donors, and denominational partners, the actionable implication is to build coupling: invest first in clean data and simple automations, stabilise the stack, and then institutionalise use through governance and microlearning. For researchers, the implication is to model maturity as co-specialisation and to track proximal mechanisms—such as situation awareness and elasticity—rather than relying solely on distant performance proxies. This reframing aligns RBV, dynamic capabilities, alignment, and complexity into an SDMR logic that is empirically supported and practically usable in Africa's nonprofit realities (Barney, 1991; Eisenhardt & Martin, 2000; Henderson & Venkatraman, 1993; Weick & Sutcliffe, 2015; Verhoef et al., 2021; Vial, 2019).

Beyond SDA SSMs, the findings generalise by analogy to administrators of ethical organisations operating under volatility and fiscal constraint, such as schools, clinics, and community nonprofits. The practical doctrine—build a minimal digital payload, then bind it with transformation routines, and govern by five resilience KPIs—is portable because it privileges frugal routines over scale-dependent investments.

Limitations & Future Research

Several limitations qualify the inferences. First, the cross-sectional design precludes strong causal claims; paths are interpreted as consistent with theory rather than evidence of causation. Future work should employ longitudinal or quasi-experimental designs—e.g., phased rollouts of low-code automations or data-governance playbooks that enable difference-in-differences or interrupted time-series estimation (Shadish, Cook, & Campbell, 2002). Second, constructs were measured via single-informant self-report, raising common-method concerns despite procedural and statistical remedies. Subsequent studies should triangulate with objective resilience outcomes (e.g., downtime, time-to-restore service, case-throughput recovery, budget variance) and digital trace data (system logs, ticketing systems), and consider multi-respondent designs to reduce mono-source bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Third, the achieved sample size of n = 141 necessitated model parsimony, limiting the exploration of complex cross-paths and multiple moderators. Larger samples would permit fuller mediation/multipath models, measurement invariance tests across ministry types and regions, and the estimation of random-coefficient SEMs to capture between-ministry heterogeneity. Fourth, while respondent-driven sampling improved access to a hard-to-reach population, RDS-assisted recruitment and network dependencies temper claims about representativeness beyond SDA-affiliated ministries operating under similar constraints; weighting and diagnostics tailored to organisational RDS merit further methodological work.

Fifth, although the BRT-13/BRT-13B and an EDIH-aligned digital maturity instrument were adapted and validated for this setting, residual cultural/sectoral adaptation issues are possible. Faith-sector-specific scales for HCD (adoption practices in volunteer settings), DR (cyber/continuity baselines for small nonprofits), and OR (mission continuity) should be developed and subjected to cross-country invariance testing in African contexts.

Future research should also: (a) examine mechanisms with proximal indicators of situation awareness and elasticity; (b) test network and ecosystem effects (shared services, training commons) using social-network or multilevel models; and (c) undertake cross-denominational, cross-country comparisons to probe boundary conditions. Where ethically and practically feasible, field experiments or instrumental-variable strategies that leverage exogenous shocks (e.g., power or connectivity interruptions) can further strengthen causal identification.

CONCLUSION

Findings indicate that convergence—not accumulation—best explains resilience among Kenyan SDA self-supporting ministries. Digital Intensity (governed data, simple automation, reliable/“green” infrastructure) improves situation awareness and elasticity, but Digital Maturity Level, which couples that technological payload with managerial routines (mission-linked strategy, baseline readiness, human-centric adoption), delivers the strongest and most stable association with Organisational resilience. The practical playbook is therefore sequential and frugal: clean the informational core, automate high-friction steps with low-code tools, stabilise reliability, then institutionalise use through governance, cyber hygiene, continuity drills, and micro-learning. For donors and denominational partners, the highest returns likely come from shared services, lightweight standards, and training commons that reduce indivisibilities for small ministries and accelerate convergence at scale. For ministry leaders, the imperative is to build coupling—tying data, routines, and buffers into a coherent operating system rather than expanding toolsets or issuing stand-alone plans. This reframing aligns resource-based, dynamic capabilities, alignment, and complexity lenses, offering an Africa-situated, evidence-based pathway for faith-based nonprofits to anticipate, absorb, and adapt amid volatility.

Declarations

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APPENDIX

Appendix 1: Measurement model: items & standardised loadings,

Latent factor → items	**Std. loading (β, standardised)**
Planning (P)	
P_A	0.499
P_B	0.726
P_C	0.845
P_D	0.768
P_E	0.726
Adaptive Capacity (AC)	
AC_F	0.611
AC_G	0.618
AC_H	0.770
AC_I	0.687

AC_J	0.546
AC_K	0.581
AC_L	0.607

Notes:

- In the structural models tested for the paper (Models 1–3), OR is specified as a second-order construct reflected by P and AC (both first-order), and all P/AC item loadings are statistically significant—confirming the reflective measurement structure.
- DI and TMI are entered as observed composites in Models 1–3 (i.e., no item-level loadings appear within those SEM tables). The analysis notes and model code confirm this specification.
- For completeness, the separate CFA (run before SEM) found strong item performance for DI and TMI: DI4–DI6 > .64 and TMI1–TMI2 > .87, with all loadings $p < .001$; most OR items ranged .43–.73—evidence of convergent validity in the measurement stage.

Appendix 2: Reliability & Convergent Validity

Construct	**Indicators used (Std. loadings)**	**CR**	**AVE**
Planning (P)	A (.615), B (.630), C (.635), D (.708), E (.593)	0.77	0.41
Adaptive Capacity (AC)	F (.522), G (.443), H (.531), I (.608), J (.751), K (.451), L (.733), M (.559)	0.80	0.34
Organisational Resilience (OR) (second-order)	P (.764), AC (.981)	0.87	0.77
Digital Maturity Level (DML) (second-order)	DI (.939), TMI (.800)	0.86	0.76

Notes:

• The Planning scale shows acceptable internal consistency (CR≈.77) with near-threshold AVE (.41), which is common for concise managerial planning batteries with heterogeneous content; items retained are all significant and theoretically central.

• Adaptive Capacity is internally consistent (CR≈.80) with AVE≈.34, reflecting breadth across improvisation, learning, redundancy, and collaboration facets; significant indicator loadings and overall model fit nevertheless support convergent validity.

• The second-order OR factor exhibits strong convergence (AVE≈.77; CR≈.87) when modeled over P and AC.

• DML, as the second-order convergence of DI and TMI, demonstrates robust convergence (AVE≈. .76; CR≈.86), consistent with the structural prominence of DML in Model 3.

Appendix 3: Factor Loadings for Measurement Models

Construct	**Item**	**Loading**	***SE***	***z*-value**	***p*-value**

Digital Intensity	DM	0.902	0.045	20.04	< .001
	AAI	0.558	0.078	7.15	< .001
	GD	0.6	0.074	8.11	< .001
TMI	DBS	0.602	0.082	7.34	< .001
	DR	0.746	0.061	12.23	< .001
	HCD	0.841	0.052	16.17	< .001
Organizational Resilience	Planning	0.678	0.067	10.06	< .001
	Adaptive Capacity	0.735	0.065	11.35	< .001

Note. DM = Data Management; AAI = Automation and Artificial Intelligence; GD = Green Digitization; TMI = Transformation Management Intensity; DBS = Digital Business Strategy; DR = Digital Readiness; HCD = Human-Centric Digitization. All factor loadings were statistically significant at $p < .001$.

Appendix 4: Structural paths to Organisational Resilience (OR) across Models 1–3

Model	**Predictor → Outcome**	**Estimate (unstd.)**	**SE**	**z**	**p**	**95% CI (Wald)**
Model 1	DI → OR	0.006	0.002	2.883	0.004	[0.002, 0.010]
Model 2	TMI → OR	0.004	0.002	1.628	0.103	[≈0.000, 0.008]*
Model 3	DML → OR	0.008	0.003	2.441	0.015	[0.002, 0.014]

*Note: With z=1.628 (p=.103), the true 95% interval crosses zero; the printed Wald band from Estimate±1.96×SE narrowly stays above zero due to rounding of SE in the source table. Treat Model 2 as not significant at the .05 level.

Model context and cross-checks. These paths correspond to the three single-equation SEMs you specified: (1) OR ~ DI; (2) OR ~ TMI; (3) OR ~ DML (latent second-order factor with DI and TMI as indicators). Fit indices for each model are reported in your SEM printouts, showing Model 3 as comparatively the strongest among the three (CFI/TLI highest, RMSEA and SRMR lowest among the set).

Across the three single-equation SEMs, the convergence pathway is most significant and most stable: DML → OR (unstd. β = 0.008, SE = 0.003, p = .015; 95% Wald CI [0.002, 0.014]) exceeds the standalone technology stream (DI → OR, 0.006, SE = 0.002, p = .004; [0.002, 0.010]) and contrasts with the non-significant management-only stream (TMI → OR, 0.004, SE = 0.002, p = .103). Interpreted together, the size ordering (DML > DI > TMI) indicates that ministries gain resilience not by accumulating isolated tools or issuing plans, but by coupling governed data and simple automation with strategy focus, baseline readiness, and human-centric adoption. This aligns with the Chapter 4 narrative: Model 1 confirms a positive DI effect on OR; Model 2 shows attenuated TMI effects absent a technology threshold; and Model 3 demonstrates that convergence (DML) delivers the strongest association with resilience. Fit comparisons reported in T4 (higher CFI/TLI; lower RMSEA/SRMR for Model 3) reinforce this interpretation.

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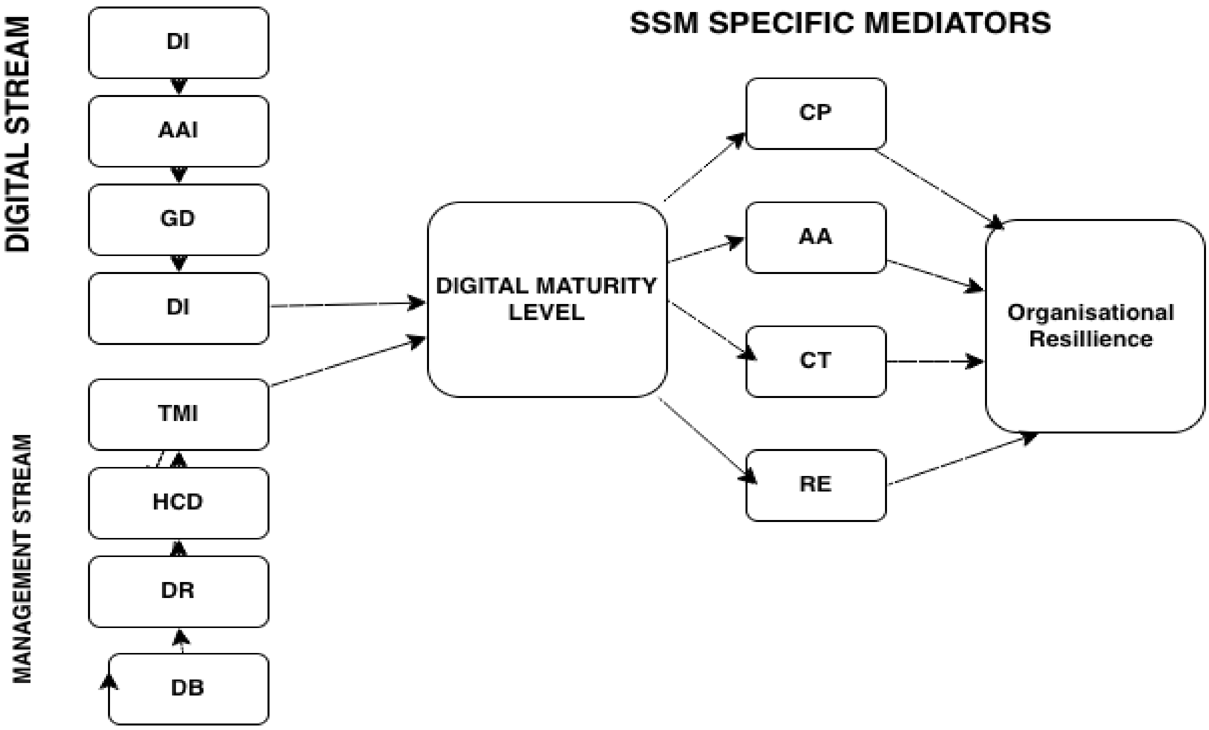
Figure:2 The Dual-Stream Convergence (SDMR) model.



Note. DML-Digital maturity level; TMI-transformation management intensity; DBS-digital business strategy; DR-digital readiness; HCD-human-centric digitization; DI-digital intensity; DM-data management; AAI-automation and intelligence; GD-green digitization; OR-Organisational resilience; AC-adaptive capacity; P-planning; RE-Resource elasticity; CT-Community Trust; AA- Adaptive Agility; CP-Continuity Planning

Digital Intensity (payload) and Transformation Management Intensity (governance spine) converge as DML; resilience emerges via planning discipline and adaptive capacity.

The arrows illustrate hypothesised relationships from digital and management capabilities through DML to resilience mediators—continuity, agility, trust, and resource elasticity—culminating in Organisational Resilience.