PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review. Reported in this review: The title identifies the article as a meta-analysis of digital transformation and supply chain resilience. The abstract and Methods section identify the design as a systematic review-based meta-analysis.	Title; Abstract; Section 3.1 Review design and search strategy
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist. Reported in this review: The abstract summarizes the research objective, evidence base, systematic review-based meta-analytic approach, main DT–SCR findings, moderator findings, SCR–performance findings, and implications.	Abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge. Reported in this review: The manuscript explains that prior research has produced accumulated but fragmented evidence on the relationships among digital transformation, supply chain resilience, and firm performance, requiring a systematic review-based meta-analysis.	Section 1 Introduction
Objectives	4	Provide an explicit statement of the objectives or questions the review addresses. Reported in this review: The manuscript examines whether DT is associated with SCR, whether digital capabilities differ from digital technologies in their relationship with SCR, how contextual and conceptual boundary conditions shape the DT–SCR relationship, and how SCR relates to firm performance.	Section 1 Introduction
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. Reported in this review: The review includes peer-reviewed English-language empirical journal articles conducted in firm, organizational, supply chain, or interorganizational supply chain contexts that report usable effect-size and sample-size information for the DT–SCR relationship and/or the SCR–performance relationship. Studies were grouped into the DT–SCR evidence pool and the SCR–performance evidence pool.	Section 3.1 Review design and search strategy; Section 3.2 Study selection and eligibility criteria
Information sources	6	Specify all databases, registers, websites, organizations, reference lists, and other sources searched or consulted. Reported in this review: The review searched Web of Science, Scopus, and ProQuest ABI/INFORM on the ProQuest platform for peer-reviewed English-language journal articles within the 2000-June 2026 search window. The initial search was conducted in May 2025 and the updated search was conducted in June 2026. No study registries, organizational websites, conference proceedings, or author-contact procedures were used as formal information sources.	Section 3.1 Review design and search strategy; Supplementary File 2, Sections 1, 3, and 12
Search strategy	7	Present the full search strategies for all databases, including filters and limits. Reported in this review: The manuscript reports the general search logic and keyword families for digital transformation, supply chain resilience, and firm performance. Full database-specific search strings, field specifications, filters, limits, and the June 2026 search update are provided in Supplementary File 2.	Supplementary File 2: Search strategy, screening criteria, and

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			coding protocol, Sections 2, 3, and 12
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria. Reported in this review: The manuscript describes identification, duplicate removal, title and abstract screening, full-text eligibility assessment, and final inclusion, and reports the flow from identified records to the final included sample.	Section 3.2 Study selection and eligibility criteria; Figure 2
Data collection process	9	Specify the methods used to collect data from reports. Reported in this review: The manuscript describes coding procedures, independent coding by two researchers, discrepancy reconciliation, effect-size extraction, effect-size conversion, reliability correction, and Fisher's z transformation.	Section 3.3 Data extraction and coding; Section 3.4 Effect size computation and statistical analysis
Data items	10a	List and define all outcomes for which data were sought. Reported in this review: The main outcomes are SCR in the DT–SCR evidence pool and firm performance in the SCR–performance evidence pool, with performance coded as operational, financial, market, or overall.	Section 3.3 Data extraction and coding; Section 3.4 Effect size computation and statistical analysis
	10b	List and define all other variables for which data were sought. Reported in this review: The coded variables include bibliographic descriptors, sample descriptors, construct descriptors, moderator variables, and effect-size information, including sample size, country or region, industry context, firm size, firm age, DT type, SCR operationalization, performance type, regional development level, power distance, and individualism–collectivism.	Section 3.3 Data extraction and coding; Section 3.4 Effect size computation and statistical analysis
Study risk of bias assessment	11	Specify methods used to assess risk of bias in included studies. Reported in this review: A separate individual-study risk-of-bias assessment was not conducted. Given that this review synthesizes observational empirical studies in management and supply chain research, study quality and bias concerns were addressed through eligibility restrictions, independent coding, predefined effect-size extraction rules, synthesis-level publication-bias assessment, and leave-one-out sensitivity analysis.	Supplementary File 2, Section 11; Section 3.2 Study selection and eligibility criteria; Section 3.3 Data extraction and coding; Section 3.5 Publication bias and

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			sensitivity analyses; Section 4.1 Publication bias and sensitivity analyses; Table 2
Effect measures	12	Specify the effect measures used in the synthesis. Reported in this review: Pearson's r is used as the common effect-size metric, and effect sizes are transformed using Fisher's z for meta-analytic synthesis.	Section 3.4 Effect size computation and statistical analysis
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis. Reported in this review: Studies were assigned to the DT–SCR synthesis and/or the SCR–performance synthesis according to whether they reported usable associations for each relationship.	Section 3.2 Study selection and eligibility criteria; Section 3.4 Effect size computation and statistical analysis
	13b	Describe methods required to prepare the data for synthesis. Reported in this review: Reported statistics were converted into a common Pearson's r metric where necessary, reliability corrections were applied, and correlations were transformed using Fisher's z for meta-analysis.	Section 3.4 Effect size computation and statistical analysis
	13c	Describe methods used to tabulate or visually display results. Reported in this review: The review presents study selection through Figure 2 and reports synthesis results in tables summarizing effect sizes, confidence intervals, heterogeneity statistics, publication-bias tests, and moderator comparisons.	Figure 2; Section 4 Results; Tables 2-5
	13d	Describe methods used to synthesize results and justify the choice of model. Reported in this review: The manuscript uses random-effects meta-analysis, reports heterogeneity statistics including Cochran Q and I^2, uses CMA 3.0, and tests subgroup differences with Qb.	Section 3.4 Effect size computation and statistical analysis
	13e	Describe methods used to explore possible causes of heterogeneity. Reported in this review: The manuscript examines moderators including DT type, firm size, firm age, industry sector, country development level, cultural context, SCR operationalization, and performance type.	Section 3.4 Effect size computation and statistical analysis; Section 4.2; Section 4.3; Tables 3-5
	13f	Describe sensitivity analyses conducted to assess robustness of the synthesized results. Reported in this	Supplementary

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		review: Leave-one-out sensitivity analyses were conducted for the two main syntheses by removing one study at a time and re-estimating the pooled effect under the random-effects model.	File 2, Section 10; 4.1 Publication bias and sensitivity analyses
Reporting bias assessment	14	Describe methods used to assess risk of bias due to missing results. Reported in this review: Publication bias is assessed using Egger's test and Rosenthal's fail-safe N.	Section 3.5 Publication bias and sensitivity analyses; 4.1 Publication bias and sensitivity analyses; Table 1
Certainty assessment	15	Describe methods used to assess certainty or confidence in the body of evidence. Reported in this review: A formal certainty-of-evidence assessment, such as GRADE, was not conducted. Evidence consistency and robustness were instead evaluated through random-effects synthesis, confidence intervals, heterogeneity statistics, subgroup analyses, publication-bias assessment, and leave-one-out sensitivity analysis.	Supplementary File 2, Section 11; Sections 3.5, 4.1, 4.2, and 4.3
RESULTS			
Study selection	16a	Describe the results of the search and selection process. Reported in this review: The manuscript reports 4,479 records identified from databases, 2,292 duplicate records removed before screening, 2,187 records screened, 1,764 records excluded after title-and-abstract screening, 423 full-text studies assessed for eligibility, 223 full-text studies excluded, and 200 unique studies included. Among these, 124 studies contributed to the DT-SCR evidence pool, 104 contributed to the SCR-performance evidence pool, and 28 contributed to both pools.	Section 3.2 Study selection and eligibility criteria; Figure 2; Supplementary File 2, Section 4
	16b	Cite studies that appeared to meet inclusion criteria but were excluded and explain why. Reported in this review: Excluded records and full-text reports are summarized by screening stage and main exclusion reason in the PRISMA flow diagram and the study-selection text. Studies excluded at the full-text stage were not individually cited.	Section 3.2 Study selection and eligibility criteria; Figure 2; Supplementary File 2, Sections 4 and 5
Study characteristics	17	Cite each included study and present its characteristics. Reported in this review: The manuscript describes coded study characteristics, and Supplementary File 3 reports coding results for the 200 unique included studies, including studies contributing to the DT-SCR meta-analysis and the SCR-performance meta-analysis, together with the reference list of included studies.	Section 3.3 Data extraction and coding; Supplementary File 3: Coding

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			results and included studies list
Risk of bias in studies	18	Present assessments of risk of bias for each included study. Reported in this review: A separate individual-study risk-of-bias assessment was not conducted. Publication bias and small-study effects were assessed at the synthesis level.	Supplementary File 2, Section 11; 4.1 Publication bias and sensitivity analyses; Table 1
Results of individual studies	19	Present effect estimates and precision for each study. Reported in this review: Study-level coding information and included-study references are provided in Supplementary File 3. The data that support the findings are derived from published articles and are documented through the supplementary coding materials.	Supplementary File 3: Coding results and included studies list; Data Availability Statement
Results of syntheses	20a	Summarize the characteristics and risk of bias among contributing studies for each synthesis. Reported in this review: The manuscript summarizes the evidence-pool sizes, coded study characteristics, and synthesis-level publication-bias results. Supplementary File 3 reports study characteristics for the DT-SCR and SCR-performance evidence pools. A separate individual-study risk-of-bias assessment was not conducted.	Section 4.1 Publication bias and sensitivity analyses; Tables 2-5; Supplementary File 3: Coding results and included studies list
	20b	Present results of all statistical syntheses conducted. Reported in this review: The manuscript reports the overall DT–SCR association, subgroup results for digital capabilities and digital technologies, moderator results, and the overall SCR–performance association with confidence intervals and heterogeneity statistics.	Section 4.2 Digital transformation and supply chain resilience; Section 4.3 Supply chain resilience and firm performance; Tables 3-5
	20c	Present results of investigations of possible causes of heterogeneity. Reported in this review: The manuscript	Section 4.2.1 Main

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		reports subgroup and moderator comparisons for DT type, firm size, firm age, industry sector, country development level, cultural dimensions, SCR operationalization, and performance type.	effect and DT dimensions; Section 4.2.2 Moderator analyses; Section 4.3 Supply chain resilience and firm performance; Tables 3-5
	20d	Present results of sensitivity analyses conducted to assess the robustness of the synthesized results. Reported in this review: Leave-one-out sensitivity analyses showed that the pooled DT-SCR estimates ranged from r = 0.594 to r = 0.603 after removing one study at a time. The pooled SCR-performance estimates ranged from r = 0.584 to r = 0.597. These stable ranges indicate that the two main findings were not driven by any single study.	Supplementary File 2, Section 10; Section 4.1 Publication bias and sensitivity analyses
Reporting biases	21	Present assessments of risk of bias due to missing results. Reported in this review: The manuscript reports publication bias assessment using Egger's test and Rosenthal's fail-safe N.	Section 4.1 Publication bias and sensitivity analyses; Table 2
Certainty of evidence	22	Present assessments of certainty or confidence in the body of evidence. Reported in this review: A formal certainty-of-evidence assessment, such as GRADE, was not conducted. Evidence consistency is reflected in the reported random-effects estimates, confidence intervals, heterogeneity statistics, subgroup analyses, publication-bias assessment, and leave-one-out sensitivity analyses.	Supplementary File 2, Section 11; Sections 4.1, 4.2, and 4.3
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence. Reported in this review: The discussion interprets the overall DT–SCR relationship, the stronger role of digital capabilities, contextual boundary conditions, and the SCR–performance relationship.	Section 5 Conclusions and Discussion; Section 5.1 Conclusions; Section 5.2 Theoretical Implications
	23b	Discuss limitations of the evidence included in the review. Reported in this review: The manuscript discusses limitations related to the rapidly developing DT evidence base, heterogeneous DT and SCR operationalizations, aggregation across industries and regions, and the need for more fine-grained future	Section 5.4 Limitations and future research

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		research.	
	23c	Discuss limitations of the review processes used. Reported in this review: The manuscript notes that systematic reviews and meta-analyses rely on published empirical evidence and may lag behind fast-moving technological developments; it also discusses construct heterogeneity and aggregation across industries, regions, and institutional settings.	Section 5.4 Limitations and future research
	23d	Discuss implications of the results for practice, policy, and future research. Reported in this review: The manuscript discusses theoretical implications, practical implications, limitations, and future research directions for resilience-oriented digital transformation in supply chain management.	Section 5.2 Theoretical Implications; Section 5.3 Practical Implications; Section 5.4 Limitations and future research
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information or state that the review was not registered. Reported in this review: The review was not registered. Detailed search, screening, coding, effect-size extraction, and synthesis procedures are documented in Supplementary File 2.	Supplementary File 2: Search strategy, screening criteria, and coding protocol
	24b	Indicate where the review protocol can be accessed or state that a protocol was not prepared. Reported in this review: No separate publicly registered protocol is available. The operational search strategy, screening criteria, coding protocol, effect-size extraction rules, and synthesis procedures are provided in Supplementary File 2.	Supplementary File 2: Search strategy, screening criteria, and coding protocol
	24c	Describe amendments to information provided at registration or in the protocol. Reported in this review: Not applicable because the review was not registered and no public protocol amendments are reported.	Not applicable
Support	25	Describe sources of financial or non-financial support. Reported in this review: The manuscript states that the research received no external funding.	Funding
Competing interests	26	Declare competing interests of review authors. Reported in this review: The authors declare no conflict of interest.	Conflicts of Interest
Availability of data, code and other materials	27	Report availability of data, code, and other materials. Reported in this review: The data that support the findings are derived from published articles. Supplementary File 1 provides the PRISMA 2020 checklist; Supplementary File 2 provides the search strategy, screening criteria, coding protocol, effect-size extraction rules, and synthesis procedures; Supplementary File 3 provides the coding results and included studies list;	Data Availability Statement; Supplementary Materials

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		and Supplementary File 4 provides the PRISMA-S checklist for reporting literature searches.	

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