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Original Research Article

Data Informed Decision Intelligence for Working Capital Management in Saudi Industrial Organisations

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Abstract: Industrial firms cannot manage working capital through financing decisions alone. They must also decide when to collect customer payments, purchase inventory and settle suppliers without disrupting production. This critical review explores how decision intelligence informed by data can support those choices in Saudi industrial organisations. It draws on peer reviewed studies published from 2020 to 2025, combining evidence from Saudi Arabia with relevant findings on emerging markets, supply chain finance and explainable analytics. The evidence does not support treating the shortest possible cash conversion cycle as the universal goal. Faster collections and leaner inventories may release cash, but they can also affect service reliability, supplier relationships and profitability. The review finds a more convincing case for combining reliable transaction records, forecasts of likely cash needs and decisions that respect contractual and operating constraints. Gains depend on data quality, stable assumptions and the relative bargaining power of customers and suppliers. We outline a practical governance approach and identify questions for research within Saudi factories. The central contribution is to distinguish what current evidence supports from what still requires testing in local industrial settings.

Keywords: Working Capital Management, Decision Intelligence, Saudi Arabia, Industrial Organisations, Cash Conversion Cycle, Predictive Analytics, Trade Credit, Inventory Optimisation.

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1. INTRODUCTION

Working capital connects the everyday movement of materials, goods, invoices and payments to a manufacturer's ability to fund operations. Even a profitable company can face a cash shortage when receipts arrive after payroll, import payments or supplier bills fall due. Equally, a short cash conversion cycle is not necessarily a sign of good management if it is achieved by risking production delays or weakening key suppliers. Saudi manufacturers therefore need to balance liquidity with reliable operations and contractual commitments. Evidence from Saudi listed manufacturers shows why the individual components of the cycle deserve attention, rather than relying only on an aggregate figure [1-3].

Much of the working capital literature examines how inventory, receivable and payable days relate to company performance. These studies help explain broad patterns, but annual accounting figures rarely show why a particular invoice remains unpaid or whether an essential component can be safely removed from stock. Managers make those decisions with current information about contracts, inventory, credit limits and available financing. This

is where decision intelligence becomes useful: it brings operational records together, estimates what may happen next and supports a choice that a responsible manager can explain and approve.

Throughout this review, we distinguish association from causation. Studies report heterogeneous relationships between cash cycle components and profitability across countries, sectors and corporate strategies [5-12]. Financial constraints and market competition alter feasible policies [6-11], while disruptions may make precautionary inventory and customer support rational [4-16]. These findings make universal claims about maximising payable days or minimising stock analytically weak. A useful framework must explain under which constraints an apparent efficiency gain improves overall economic value.

The review makes four contributions: it clarifies the economic mechanism connecting industrial transactions to liquidity; appraises evidence on contingent working capital performance; evaluates how predictive analytics and explanation can become actionable management controls; and develops a tailored to Saudi Arabia architecture with measurable safeguards. The paper does not claim to report a field experiment, model implementation or newly collected firm data.

1.1 AIM, OBJECTIVES AND REVIEW QUESTIONS

The aim is to critically assess how data informed decision intelligence could improve the allocation and governance of working capital within Saudi industrial organisations without sacrificing operational resilience or partner sustainability.

The objectives are to (i) evaluate evidence on component level working capital and performance relationships; (ii) identify transactional data and predictive methods relevant to receipts, inventory and disbursements; (iii) analyse constraints imposed by industrial supply networks and financing conditions; (iv) construct an explainable, managed with human oversight decision framework; and (v) establish an empirical validation agenda for Saudi firms.

Three questions guide the synthesis. RQ1: Which conditions make working capital efficiency financially beneficial or operationally hazardous? RQ2: How can integrated data and analytical models convert historical cash cycle measures into defensible choices? RQ3: Which governance, evaluation and implementation safeguards are necessary for credible industrial adoption?

2. REVIEW METHODOLOGY

This article adopts a structured critical integrative review rather than a quantitative meta analysis. The topic crosses corporate finance, accounting, operations, supply chain management and information systems; a common pooled effect size would obscure differing dependent variables, sampling frames and treatments of endogeneity. The evidence window is 2020 to 2025. The review examined available from publishers journal records and indexed abstracts for contributions addressing working capital management, cash conversion, trade credit, financial constraints, industrial planning, supply chain finance and explainable forecasting. Keyword combinations included “working capital” AND “manufacturing” OR “Saudi”, “cash conversion cycle” AND “profitability”, “trade credit” AND “supply chain”, and “forecasting” AND “explainable AI”.

Priority was assigned to peer reviewed articles with identifiable journal metadata and DOI, a clear method, and findings that could inform industrial liquidity decisions. focused on Saudi Arabia articles were prioritised for contextual inference; comparative studies informed boundary conditions; analytics research was included where it addressed a necessary decision mechanism rather than general technological enthusiasm. Commentary, undated promotional material and studies outside the publication window were excluded from the reference set. The reference corpus comprises thirty papers selected for relevance, not a claim of exhaustive coverage of all scholarly databases.

For each source, the review coded setting, observation level, working capital construct, empirical or conceptual design, decision implication, and methodological limitations. Evidence was then organised into six themes: performance contingencies, receivables, inventory, supplier credit, forecasting and governance. Contradictory findings were treated as information about contextual variation rather than averaged away. The resulting claims are predominantly analytical interpretations, and proposed mechanisms are explicitly separated from observed empirical results.

Two limitations follow from this approach. First, publicly visible publisher records do not always provide full model specifications or coefficient tables, so some findings are interpreted at the abstract and methodological summary level. Second, no reproducible database export screening log, formal risk of bias scoring or primary Saudi interview dataset is claimed. A subsequent systematic review could address these weaknesses by preregistering search strings, retaining search exports, independently screening full texts and publishing the extraction matrix.

Table 1: Analytical synthesis dimensions for the selected literature.

Review dimension	Evidence appraisal	Interpretive implication
Saudi relevance	Local industrial and listed firm observations	Contextual anchor; not causal proof
Analytical methods	Panel regressions, surveys, reviews, conceptual models	Avoid pooling incomparable effects
Decision capability	Forecasting, explainability, supply chain finance	Assess actionable mechanism and oversight
Quality concern	Data granularity, confounding, time horizon	Identify transfer and validation limits

3. Working Capital Economics and Contingent Performance

The standard cash conversion cycle is calculated as inventory days plus receivable days minus payable days. This compact identity captures timing but not the commercial value of inventory buffers, the probability of collecting receivables, or the cost of negotiating longer supplier terms. It also aggregates transactions that may differ sharply in currency, customer risk, production criticality and invoice settlement conditions. A decision system should retain component level histories, attach them to customer and product segments, and estimate marginal financial effects rather than reward indiscriminate reductions.

Saudi evidence is relevant but not unambiguous. Kouaib and Bu Haya [1], investigate manufacturers and the role of cash cycle components; Al Barak [2], considers cash holdings, net working capital and profitability; and Tweresh [3], studies listed basic materials companies. Taken together, these studies justify differentiated analysis, but none by itself demonstrates that an supported by artificial intelligence intervention will improve cash generation. Sector coverage, data periods, regression specification and the distinction between accounting returns and cash realised require careful attention before translating an association into managerial policy.

International evidence strengthens this caution. The comparative study of developed and emerging economies [10], reports an inverse overall relationship between the cycle and performance while identifying different component effects. European evidence also indicates nonlinear relationships consistent with an interior optimum rather than a universal shortest cycle [12]. Strategy moderates profitability effects [5], and competitive intensity can influence working capital behaviour [6]. These results imply that decision intelligence should estimate a tailored to the company operating region, continually revised as product mix, financing terms and uncertainty change.

Financially constrained companies face a particularly acute tradeoff. Evidence from MENA markets [11], associates constraints with aggressive working capital policies, yet an aggressive stance may simply reflect insufficient access to funds rather than superior optimisation. Crisis studies show that external shocks lengthen cycles or change liquidity preferences [4-14]. Managerial assessment should therefore distinguish efficient asset turnover from forced contraction that transfers fragility to customers, workers or suppliers.

Another challenge is seasonality. Year end inventory, receivables and payables may not represent normal operational exposure, especially where major industrial projects are invoiced on milestones. Ratios constructed from year end balances can be distorted by unusual shipments, plant shutdowns or temporary collection campaigns. Average daily balances, cohort level invoice observations and reconciled transaction histories can reveal whether reported improvement reflects true efficiency or timing effects. Segmenting contractual receivables from disputed or retention balances is particularly important when the legal right to payment differs from the date of invoice creation.

3.1 Receivables: Credit Decisions with Customer Context

Receivables intelligence begins before the invoice becomes overdue. Credit decisions must combine payment history, contractual conditions, disputed invoices, concentration exposure, customer solvency and the economic margin of future orders. Ageing buckets alone are inadequate because a delayed payment arising from a documented acceptance dispute differs from deterioration in a buyer's capacity to pay. A segmented model can estimate time until payment distributions and the probability of disputes, then propose collection sequencing proportionate to risk and commercial importance.

Explainability is essential when a model recommends reducing a credit limit or escalating a collection. Reviews of explainable finance systems document the importance of interpretability for accountability and traceability [19, 20]. Within industrial credit control, a recommended intervention should display its underlying evidence, uncertainty bounds, predicted cash timing and expected customer relationship cost. Commercial managers may then override it with a recorded

reason, allowing later assessment of whether expert judgement adds value or introduces persistent bias.

Trade credit is reciprocal. The capacity to press for earlier receipts depends on the buyer's alternative suppliers, bargaining power and operational dependence. Research on supply network power [27], and managerial ability [29], highlights how financing arrangements are negotiated within relationships rather than set by finance teams in isolation. Thus an effective receivables policy should distinguish strategic accounts, persistent late payers and customers experiencing temporary related to shipments disputes, and it should explicitly estimate the cost of losing orders.

A useful model for prioritising collections should separate expected cash acceleration from expected accounting recovery. For example, contacting a customer already scheduled to pay tomorrow may improve a headline successful contact rate without changing liquidity. The treatment effect of an intervention is the difference between the cash date under action and the counterfactual date without action. Estimating that effect requires historical outreach logs, natural variation in collection intensity or ethically designed experiments. A likelihood of paying score alone cannot establish the incremental value of calling, offering discounts or suspending credit.

3.2 Inventory: Service Reliability versus Cash Release

Inventory is simultaneously a liquidity commitment and a protection against production interruption. A high stock balance can result from obsolete items, long import lead times, batch production economics or rational buffers for critical components. The same inventory days ratio can therefore indicate waste in one product line and necessary resilience in another. Decision intelligence should combine material requirements planning, warehouse movements, bills of materials, supplier variability, demand forecasts and stockout consequences at item and location level.

Artificial intelligence demand forecasting research shows that model selection depends on data volume, dimensionality and the required forecast horizon [21]. For industrial organisations, probabilistic forecasts are often more useful than a single predicted demand figure, because procurement decisions must trade holding costs against lost production and emergency sourcing. Models should be benchmarked against seasonal baselines, inspected for abrupt demand shifts and supplemented with engineering insight when planned shutdowns, commissioning events or contract awards dominate historical patterns.

External supply risks can justify greater working capital rather than less. Recent evidence links increased supply chain risk to higher net working capital allocations [16], while crisis comparisons distinguish resilient firms by their management of cycle components [17]. A practical decision rule would therefore distinguish ordinary consumables from long lead critical to safety inputs. Cash released by reducing a noncritical surplus is not equivalent to cash released by eliminating the sole spare part that prevents an extended production shutdown.

Inventory decision intelligence must also recognise the distinction between physical and financial availability. Goods in transit, held for quality checks items, consignment stock and materials reserved for committed orders can appear in financial inventories but cannot serve unrestricted production demand. Warehouse master data should therefore represent usable availability, shelf life, batch constraints and required quality release. Forecast errors should be measured at the level where replenishment is actually decided, not only at aggregate product family level, where opposing errors may cancel and create a misleading impression of forecasting competence.

3.3 Payables and Supply Chain Financing

Extending payable days releases cash temporarily, but the apparent benefit can be offset by higher purchase prices, withheld supplies, reduced discounts or supplier financing distress. The feasibility of extended terms also depends on bargaining positions along multiple tier supply networks [27]. During the pandemic, firms increased their reliance on trade credit when conventional financing became more costly or constrained [22], that response illustrates its countercyclical utility but should not be treated as evidence that delayed payments are permanently inexpensive.

Supply chain finance provides alternatives to unilateral payment extension. Research on supplier segmentation proposes evaluating payment risk before selecting financing instruments [26], while models of risk of default contagion demonstrate how combined trade credit and bank finance can alter losses across connected firms [23-28]. Accordingly, supplier decisions need a joint view of purchase criticality, partner liquidity, cost of external credit, settlement discounts and exposure concentration. The objective is not simply to maximise the buyer's payable period but to sustain affordable financing for the transaction network.

Alternative data can refine supplier assessment. Evidence that disclosed online sales information affects trade credit access [25], suggests that operational transparency may change financing terms. Nevertheless, the relevance of digital transaction signals differs across manufacturers, and the use of external supplier information raises provenance, privacy and bias questions. Decision rules should disclose which signals are verified, how recently they were updated and whether the supplier can challenge inaccurate classifications.

Financing alternatives should be compared on an economically consistent basis. A supplier discount for early payment has an implicit annualised return, while a longer payment term may impose a price premium or jeopardise allocation during shortages. Treasury can compare the present value of alternative settlements with bank facility charges, counterparty credit risk and the strategic importance of supply. Where a supplier financing programme permits earlier supplier receipt without immediate buyer payment, fees and contractual risk allocation should be disclosed. Treating nominal payable days extension as a costless benefit would obscure these consequential tradeoffs.

4. From Descriptive Dashboards to Decision Intelligence

What distinguishes decision intelligence is not a more elaborate dashboard. It is a controlled link from a detected problem to a feasible action and a measurable result. A consolidated data layer can connect ERP general ledgers, order management, warehouse events, bank transactions and customer service records using consistent entity identifiers and timestamps. Data quality tests should detect duplicates, delayed postings, unallocated receipts, inconsistent payment terms, mismatched inventory units and missing purchase order references before analytic outputs influence cash decisions.

Above the data layer, descriptive metrics reveal where cash is committed; diagnostic analysis separates structural from temporary causes; predictive models estimate timing and volatility; and constrained optimisation evaluates policy alternatives. A receivables forecast, for example, may improve imminent cash visibility, but an action recommendation must also account for customers' contractual rights and potential sales attrition. Similarly, a predicted inventory surplus does not justify disposal unless replenishment lead times and service obligations have been tested.

Explainability and oversight are operational requirements, not presentation extras. The literature on explainable financial AI [19, 20], suggests that stakeholders must understand a model's rationale and limits. Each proposed action should include the predicted cash impact, scenario range, binding constraints, major explanatory variables, decision owner and approval status. Performance monitoring should compare realised results with predictions and escalate model drift rather than silently retrain a system that governs economically consequential decisions.

A workable objective is adjusted for risk cash release subject to operational safeguards. One conceptual formulation maximises expected financing savings plus realised discount benefits minus stockout loss, credit loss, supplier disruption and implementation costs. Constraints include minimum service levels, credit policies, vendor continuity, legal settlement terms and liquidity buffers. This formulation is a proposal for future empirical validation; no optimisation exercise or Saudi individual transaction calibration was performed in this review.

A recommended architecture should also distinguish rules that represent mandatory constraints from estimates that are statistically uncertain. An approved customer credit limit or a legally agreed settlement date is not merely another predictive feature. Such constraints should be tested before actions are generated, whereas forecasts should retain confidence intervals and support scenario comparison. This separation makes it easier to audit failures: incorrect source records require data correction, unstable predictions require model remediation, and unacceptable policy tradeoffs require management decisions rather than hidden adjustments to algorithmic weights.

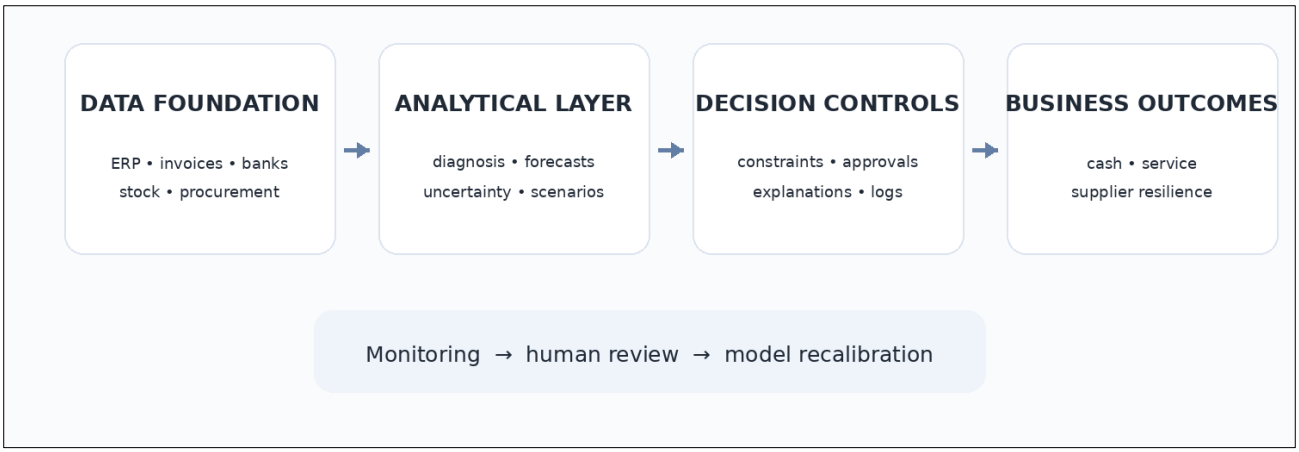


Figure 1: Proposed architecture; conceptual synthesis rather than tested model

Table 2: Proposed decision outputs and control checks

Decision domain	Key inputs	Model output	Safeguard
Customer collections	Invoice status; disputes; terms	Payment timing; prioritised action	Credit policy approval
Inventory	Demand; lead times; criticality	Stock risk and reorder scenarios	Minimum service level
Supplier settlement	Terms; discounts; supply risk	Financing comparison	Partner continuity
Treasury forecast	Receipts; payments; facilities	Liquidity range and shortfall risk	Stress test and sign off

4.1 Forecast Design, Uncertainty and Model Evaluation

Industrial cash forecasting is vulnerable to data leakage if the model uses events, such as cash allocation adjustments, which became known only after the forecast origin. A robust study should preserve the historical information set, use rolling origin validation and evaluate multiple horizons such as one, four and thirteen weeks. Relevant metrics include weighted absolute percentage error where denominators are stable, scaled absolute errors, interval coverage and liquidity shortage detection. Predictive performance should also be compared with simple baselines rather than presented in isolation.

Forecast uncertainty must shape decisions. A deterministic projection may show adequate cash at month end while concealing a severe within the month funding shortfall. Quantile forecasts and stress scenarios should estimate low cash outcomes under delayed customer acceptance, input price increases, supplier interruption and reduced credit facilities. Crisis liquidity research [7], and observed changes in working capital behaviour during disruptions [4-14], reinforce the need to design around tail exposures not only expected values.

Model evaluation should proceed beyond forecasting accuracy. A pilot must compare decisions made with and without recommendations, adjusting for changing product mix and demand. Relevant outcomes include bank borrowing costs, overdue receivables, bad debt amounts written off, inventory obsolescence, production stoppages and supplier complaints. An analytically accurate system that worsens customer retention or increases emergency procurement expenses fails the business objective despite impressive prediction statistics.

When validating a cash forecast, researchers must explicitly account for the aggregation hierarchy. Individual invoice forecasts need not sum to calibrated portfolio forecasts when errors are correlated by customer, industry or payment calendar. Reconciliation methods should preserve consistent totals between entity, business unit and group treasury levels.

5. Saudi Industrial Implementation and Governance

Saudi industrial organisations may differ in scale, export exposure, access to bank facilities, dependence on imported machinery and procurement arrangements. The focused on Saudi Arabia empirical contributions [1-3], provide motivation for local validation but cannot establish a single best policy across petrochemicals, food production, building materials and diversified manufacturing. Implementation should therefore begin with a individual transaction diagnostic and

identify the material drivers of liquidity in each plant, division and customer segment.

The first stage is a controlled data foundation: reconcile balances between ERP subledgers and bank receipts, establish stable customer and supplier identifiers, and document who can amend payment terms. The second stage adds transparent dashboards and baseline forecasts. The third stage introduces constrained recommendations for narrowly defined cases, such as invoice escalation or noncritical inventory replenishment. Only after accuracy, fairness and actual cash benefit have been assessed should decision support extend to automatic release of actions.

Governance should allocate accountability across treasury, finance operations, purchasing, sales, manufacturing and information security. Finance owns liquidity tolerance and capital cost assumptions; operations owns production continuity thresholds; procurement owns supplier terms; sales validates customer sensitivities; and an independent control function tests evidence quality. A recommendation log should retain model version, data timestamp, forecast range, override reason and realised impact. This provides an auditable basis for improving the process without portraying the algorithm as an autonomous authority.

Investment appraisal should compare implementation cost against genuinely incremental cash savings. Reducing gross receivables may merely shift payments across reporting dates; reducing inventory may create subsequent expediting costs. Benefits should be measured through sustained cash release, lower financing costs and adjusted for risk operating performance over several cycles. A negative pilot result would be informative, especially if it identifies weak data lineage or operational constraints that defeat apparently attractive financial actions.

Sector specific operating cycles also affect adoption priorities. A large volume food manufacturer may focus on receivables ageing and perishable inventory, whereas a capital intensive equipment producer may face milestone billing, long component lead times and concentrated customers. A chemical manufacturer may confront continuous process shutdown costs and imported feedstock exposure. These are plausible operational distinctions, not results estimated from the present reference corpus. They illustrate why implementation templates should be configurable and why any claim of a national optimum would require representative industry segment evidence.

6. DISCUSSION: RESOLVING TENSIONS IN THE EVIDENCE

The available evidence points to a central proposition: there is no independent of context minimum working capital requirement. Firm performance associations, nonlinear optima and strategic moderation [5-12], are compatible when managers face distinct service costs, demand fluctuations and funding constraints. A short cycle can be beneficial when it removes avoidable delays; it can be detrimental when it substitutes short term accounting gains for supplier reliability. Decision intelligence is valuable only to the extent that it identifies which circumstance applies.

A second distinction concerns analytical sophistication and the quality of decisions. Highly complex models can overfit exceptional transaction histories, obscure commercial priorities and encourage automation bias. In contrast, a relatively simple forecast integrated with timely invoice dispute resolution may produce larger benefits because it changes an actionable operational process. The proposed framework therefore requires escalating complexity only where benchmark evidence shows a meaningful improvement in adjusted for risk outcomes.

The studies also reveal a mismatch in timescales. Corporate finance studies commonly observe annual or quarterly associations, whereas industrial interventions affect invoice and stock movements hour by hour. Transferring over the long run average coefficients into daily operating rules without recalibration would be inappropriate. Local transaction histories, using unseen data trials and counterfactual evaluation are needed to bridge this gap, while executive oversight must recognise that observed associations need not imply causal treatment effects.

Finally, working capital policy is relational. Supplier liquidity, customer trust and production stability constrain what can be achieved by a focal company. Studies on trade credit networks, counterparty risk and bargaining [23-28], suggest that optimisation performed solely from the buyer's perspective may move risk elsewhere in the industrial ecosystem. This creates a reason for scenario models that measure both direct cash effects and the resilience of economically important partners.

The appropriate unit of performance is an important unresolved question. A finance division may appear successful when group cash balances rise, even as a factory incurs shortages or a small supplier pays more for emergency borrowing. A holistic evaluation should specify whether it

maximises shareholder value, focal firm operating resilience or broader supply chain welfare. These objectives can conflict. Researchers should identify whose costs are counted and report distributional effects rather than declaring success solely because a central treasury metric improved.

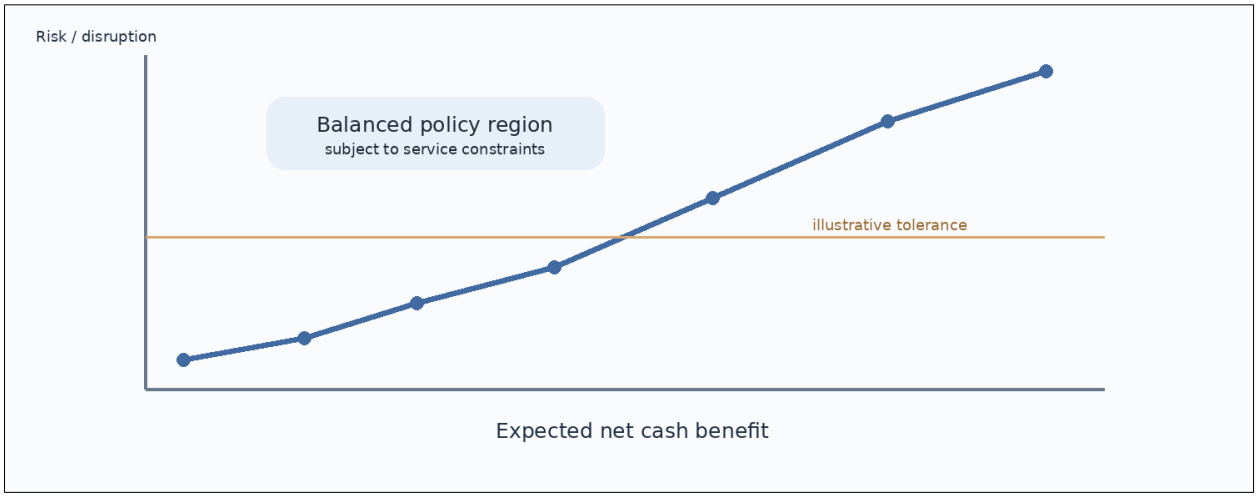


Figure 2: Conceptual balance of risk and benefit tradeoff; schematic only, not estimated data

7. RESEARCH GAPS AND FUTURE AGENDA

First, Saudi individual transaction evidence remains limited compared with the volume of international company year studies. Future research should assemble anonymised multiple industry datasets containing invoice dates, receipts, purchase order changes, stock movements and financing costs. Such datasets would permit direct comparisons between based on financial ratios performance monitoring and individual event forecasts, while testing whether model gains vary with organisation size, industrial industry segment or imported input dependence.

Second, causal evaluation of decision support is needed. A practical design would introduce recommendations to comparable customer portfolios, plants or product families in staggered phases, provided assignment and governance safeguards are documented. Difference in differences estimates or carefully matched controls could examine actual cash release and unintended consequences. Researchers should report compliance with model recommendations, override patterns and treatment contamination, rather than equating software deployment with effective use.

Third, researchers should quantify the economic value of uncertainty. Forecast studies frequently prioritise point accuracy, whereas the most damaging industrial outcomes concern extreme cash shortfalls or material stockouts. Evaluation should measure calibrated prediction intervals, expected shortfall, service level breaches and the costs of false alarms. Fourth, finance and supply chain scholars should jointly assess whether optimisation improves the resilience of smaller suppliers rather than simply transferring financing burdens to them.

Fifth, explainability warrants behavioural testing. A visually persuasive explanation may increase user confidence without increasing correctness. Controlled experiments with finance and procurement personnel should evaluate whether explanations improve error detection, appropriate overrides and the consistency of documented decisions. These research directions transform decision intelligence from a technological aspiration into a set of falsifiable propositions.

Another research priority concerns concept drift and institutional change. Forecast relationships may shift after a major customer contract, a pricing policy revision, a new factory opening or a change in credit availability. Models validated on tranquil periods could perform poorly exactly when liquidity management is most valuable. Studies should predefine drift indicators, review thresholds, recalibration windows and rollback procedures. Reporting only the strongest retrospective test result risks overstating readiness for operational use, especially where data quality is uneven across business units.

8. Practical and Policy Implications

For chief financial officers, the immediate implication is to replace uniform cycle reduction targets with a portfolio of segment level decisions. Targets should recognise expected cash benefits, financing costs, operational constraints and uncertainty. For treasury teams, rolling cash forecasts should incorporate bank settlement timing and material contract milestones. For operations

teams, replenishment decisions should measure both holding costs and downtime exposure. For procurement, supplier financing alternatives should be evaluated against their across the network consequences.

For technology leaders, implementation success depends on transaction reconciliations, reproducible model inputs, documented forecast origins and safe escalation paths. Interfaces should communicate uncertainty in ordinary financial terms; executives should be able to ask which invoices or parts created a recommendation. A dashboard without accountable action owners or documented realised benefits should not be described as decision intelligence.

For industrial development stakeholders and finance providers, the relevant opportunity lies in stronger information standards and responsible financing mechanisms rather than mandatory adoption of a particular algorithm. Consistent digital invoices, reliable supplier identifiers and interoperable transaction records can reduce information asymmetry. Based on evidence financing products may then support cash conversion without indiscriminately extending settlement terms across vulnerable supply partners.

9. LIMITATIONS

This review relies on a purposively selected, identified by DOI literature set and available from publishers source information. It is not a census of relevant publications, and no pooled estimates or formal risk of bias scores are offered. Differences in national institutions, accounting definitions and study designs limit the direct applicability of international findings. The framework remains conceptual because confidential company transaction histories were not available for testing. No predictive accuracy, cash release or return on investment estimate is asserted for Saudi organisations.

A further limitation concerns the difference between conceptual recommendations and proven effects. The proposed decisions and safeguards have not been tested on confidential transaction records from Saudi manufacturers, so any claims about financial savings must remain provisional.

10. CONCLUSION

Better working capital decisions begin with a practical question: how can an industrial company release cash without undermining the operations and relationships on which future cash depends? The literature suggests that the answer differs by sector, customer mix, supplier conditions and access to finance. A rigid target for shortening the cash conversion cycle is therefore insufficient. For Saudi manufacturers, a more credible approach combines accurate transaction records, forecasts that acknowledge uncertainty, clear operating constraints and management oversight. The outcome should be measured in financing costs, continuity of production, customer experience and supplier stability. Further local studies need to establish whether this approach performs better than established treasury and inventory practices before wider automation can be recommended.

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