Journal of Systems Thinking in Practice
JSTINP, *QUARTERLY*
Homepage: jstinp.um.ac.ir
Online ISSN: 2821-1669, Print ISSN: 2980-9460
Research Article
DOI: 10.22067/JSTINP.2025.94291.1160
JSTINP 2026; Vol. 5, No. 1

A Traceable Integration of Soft Systems Methodology and Theory of Constraints–Thinking Processes for Stakeholder Conflict Resolution and Organisational Alignment

Sasan Sepasi[a], Azim Zarei[a]*

[a]*Faculty of Economics, Management and Administrative Sciences, Semnan University, Semnan, Iran.*

How to cite this article

Sepasi, S. and Zarei, A., 2025. A Traceable Integration of Soft Systems Methodology and Theory of Constraints–Thinking Processes for Stakeholder Conflict Resolution and Organisational Alignment. *Journal of Systems Thinking in Practice*, *5*(1), pp.58 -84. doi: 10.22067/jstinp.2025.94291.1160.

URL: https://jstinp.um.ac.ir/article_47503.html.

ABSTRACT

Through a systemic intervention grounded in critical realism, this study integrates Soft Systems Methodology and the Theory of Constraints-Thinking Processes in a participatory inquiry to achieve stakeholder consensus and to design a conceptual model aligned with strategic objectives. This critical-realist systemic design addresses organisational complexity by acknowledging both socially constructed perceptions and underlying generative mechanisms, fostering actionable understanding in a real-world context. Conducted in a family-run firm within Iran's lubricant supply chain, the study focuses on resolving stakeholder tensions related to performance evaluation and strategic misalignment. Participatory workshops elicited multiple viewpoints and synthesised them using Customers-Actors-Transformation-Weltanschauung-Owners-Environment analysis and Evaporating Clouds, supported by a Current Reality Tree to make causal logic explicit. These dialogues led to a shared root definition and a collaboratively constructed Future Reality Tree—a conceptual artefact designed to clarify performance criteria, realign incentive mechanisms, and strengthen strategic coherence. Rather than pursuing immediate implementation, the study concludes at the conceptual modelling stage, emphasising shared understanding and logical transparency as precursors to sustainable organisational change. Methodologically, it bridges interpretive and analytical paradigms and offers a replicable approach for scholars and practitioners navigating complex socio-technical dilemmas where consensus-building and causal clarity are jointly required.

Keywords

Critical realism; Systemic design; Stakeholder consensus; Strategic alignment; Soft Systems Methodology (SSM); Theory of Constraints-Thinking Processes (TOC-TP).

Article history

Received: 2025-07-07
Revised: 2025-10-23
Accepted: 2025-11-08
Published (Online): 2026-3-20

Number of Figures: 7 **Number of Tables: 4** **Number of Pages: 27** **Number of References: 27**

**Corresponding author*
Email: : a_zarei@semnan.ac.ir

1. Introduction

Contemporary organisations increasingly face complex challenges, marked by diverse stakeholder interests, dynamic market conditions, and intertwined socio-technical systems. Addressing these multifaceted issues often exceeds the capacity of linear, reductionist methodologies, underscoring the need for systemic and participatory approaches that integrate conflicting viewpoints and generate stakeholder consensus (Checkland and Poulter, 2020; Mingers and White, 2010). Soft Systems Methodology (SSM), developed by Checkland (1981), is widely recognized for its interpretive strength in managing ill-defined problems through comprehensive stakeholder engagement. However, despite its capacity to surface diverse perspectives, SSM has limitations in clearly identifying root causes of conflicts or translating qualitative insights into actionable solutions, especially in contexts marked by profound stakeholder disagreements (Mingers and Rosenhead, 2004). Such scenarios demand structured analytical tools capable of explicitly addressing deep systemic conflicts and constraints.

The Theory of Constraints-Thinking Processes (TOC-TP), introduced by Goldratt (1994), provides robust logical tools for systematically identifying and resolving organisational constraints. Core instruments of TOC-TP, notably the Current Reality Tree (CRT), Evaporating Cloud (EC), and Future Reality Tree (FRT), offer clear cause-effect structures and precise conflict resolution mechanisms (Dettmer, 2007). Nonetheless, the purely logical, top-down approach of TOC-TP can be criticized for potentially marginalizing stakeholder perspectives, highlighting the necessity of embedding these logical tools within a participatory framework (Mabin and Davies, 2010; Rahman, 1998).

Acknowledging the complementary strengths and limitations of both methodologies, this paper proposes an integrated systemic approach combining the interpretive richness of SSM with the rigorous logic of TOC-TP. Specifically, we substitute the traditional Rich Pictures of SSM with the CRT to explicitly map complex cause-and-effect relationships, and employ ECs in conjunction with CATWOE (Customers-Actors-Transformation-Worldview-Owners-Environmental constraints) analysis to transparently resolve stakeholder conflicts.

Beyond prior partial integrations, this study renders the SSM–TOC-TP pipeline traceable and auditable by specifying entry and exit criteria at each stage, defining cross-step validity checks (for example, member checks, CRT sufficiency and *and-ellipses*, and FRT negative-branch reservations), and maintaining version-controlled artefacts (UDE register → CRT →

EC/CATWOE → FRT). Together, these features establish an integration audit trail that links raw evidence to each design decision (see Figure 1 and Table 1).

The methodological integration presented here aligns philosophically with critical realism, recognizing organisational phenomena as outcomes shaped by both stakeholder perceptions and deeper systemic mechanisms (Bhaskar, 1979; Mingers, 2014). Furthermore, following Habermas's classification of cognitive interests (Habermas, 1971), our integrated approach effectively balances practical interests (consensus-building and mutual understanding through SSM) with technical interests (structured diagnosis and analytical rigour through TOC-TP). Such methodological pluralism is particularly suited to complex organisational contexts, enabling the creation of conceptual models that enjoy stakeholder legitimacy and logical transparency.

Empirically, this paper demonstrates the utility of our integrated SSM–TOC-TP approach through a detailed case study conducted in a family-owned lubricant supply firm in Iran's competitive B2B market. This company faced escalating internal conflicts regarding performance evaluation, declining market share, and strategic misalignment, intensified by the COVID-19 pandemic. Through iterative participatory workshops involving stakeholders at managerial and operational levels, this study systematically identified core conflicts, articulated root causes, and developed a collaboratively endorsed conceptual model grounded in CRT, EC, and FRT.

We deliberately stop at the conceptual modelling stage to lock in auditable causal logic and stakeholder buy-in before any field execution. The agreed FRT serves as a testable design artefact for the subsequent implementation and empirical validation study.

In sum, this paper contributes a philosophically coherent SSM–TOC-TP integration that combines interpretive participation with auditable causal logic to address complex organisational dilemmas.

2. Literature review

2.1. Soft systems methodology (SSM): Strengths and limitations

SSM, developed through Checkland's action-research programme (Checkland, 1981; Checkland and Scholes, 1990) and later consolidated for practitioners (Checkland and Poulter, 2006), provides a structured interpretive framework for addressing complex, ill-structured organisational problems involving diverse stakeholder viewpoints. Its primary strengths lie in surfacing implicit stakeholder assumptions and building mutual understanding through

iterative, participatory inquiry (Checkland and Poulter, 2006; Mingers and Rosenhead, 2004).

However, critics argue that SSM's iterative, predominantly qualitative, and exploratory nature can delay decisive action or practical implementation, particularly when stakeholder perspectives diverge significantly (Mingers and White, 2010). Furthermore, its reliance on consensus without explicitly structured conflict-resolution mechanisms may exacerbate tensions in scenarios characterized by deep-rooted stakeholder conflicts or entrenched systemic constraints (Checkland and Poulter, 2020). Hence, despite its interpretive strengths, SSM alone may be insufficient in systematically diagnosing root causes or proposing actionable interventions for highly complex situations, indicating a need for complementary analytical tools (Mingers, 2014).

2.2. Theory of constraints-thinking processes (TOC-TP): Capabilities and limitations

Introduced by Goldratt (1994), the TOC-TP offers robust analytical tools designed to systematically identify and resolve core organisational constraints through logical cause-effect analysis. Specifically, tools such as CRT, EC, and FRT help clearly articulate organisational conflicts and solutions (Dettmer, 2007; Kim et al., 2008).

We also grounded our facilitation in applied work from the Iranian industrial context that traces how TOC-TP is put into practice and how production is organized (Sepasi, 2014a), and in an auto-parts case that verifies feasibility under inflationary pressures and tight capacity (Sepasi, 2014b). Without a participatory anchor, though, such tools risk privileging expert logic over stakeholder legitimacy (Mabin and Davies, 2010; Rahman, 1998).

Nevertheless, TOC-TP has been criticized for potentially oversimplifying complex, multi-constraint organisational scenarios by assuming a single dominant constraint (Rahman, 1998). Additionally, the linear logic of TOC-TP diagrams may inadequately capture nonlinear interactions and dynamic feedback loops prevalent in real organisational contexts (Trietsch, 2005). Another notable critique involves TOC-TP's traditionally expert-driven, top-down methodology, which can marginalize stakeholder input and reduce organisational acceptance of proposed solutions (Mabin and Davies, 2010; Nave, 2002).

2.3. Integrating SSM and TOC-TP: Addressing methodological gaps

Our design follows multimethodology principles (e.g., Mingers and Brocklesby, 1997; Jackson, 2019), pairing SSM's participatory sense-making with TOC-TP's causal-logic structuring. We address a persistent traceability gap in reported interventions by making auditable design

choices explicit; the operational detail—entry/exit criteria, cross-step validity checks, and version-controlled artefacts—is specified in the Methods (Section 3.5) and consolidated in the integration map (see Table 1).

Prior studies have explored partial integrations. For example, Mabin and Davies (2010) embedded ECs within SSM to strengthen conflict resolution. However, a systematic coupling of multiple TOC-TP tools across SSM's phases remains underdeveloped.

This paper addresses that gap through a comprehensive integration of SSM's interpretive, participatory approach with TOC-TP's analytical rigour. The main design moves are:

- Structured identification of Undesirable Effects (UDEs): making UDEs an explicit artefact during SSM's exploratory stage.
- Substituting Rich Pictures with a CRT: mapping cause-and-effect structures to enhance stakeholder comprehension and causal clarity.
- Integrating CATWOE with ECs: combining interpretive boundary work with explicit assumption surfacing for conflict resolution.
- Using a FRT as the conceptual model: producing an actionable, logically coherent transition design endorsed by stakeholders.

Taken together, these moves retain robust participation while adding systematic conflict resolution and auditable logic, thereby addressing well-noted limitations when each methodology is used in isolation (Mingers and White, 2010; Rahman, 1998).

3. Method

3.1. Philosophical orientation

This research adopts a critical realist stance, viewing organisational phenomena as shaped by both stakeholder-constructed meanings and deeper structural mechanisms (Bhaskar, 1979; Mingers, 2014). Critical realism legitimizes methodological pluralism, combining interpretive techniques to surface stakeholder perspectives (SSM) with analytical tools to explore underlying causal structures (TOC-TP).

3.2. Research strategy

We conducted a participatory systemic intervention in a family-owned lubricant supplier facing strategic misalignment and conflicts in performance evaluation. The study explicitly maps Goldratt's four guiding questions ("Why change?", "What to change?", "What to change to?", "How to cause the change?") onto corresponding SSM stages. Our research specifically aimed to achieve stakeholder consensus on the core problem definition and develop a logically coherent conceptual model.

3.3. Researcher stance, reflexivity, and bias mitigation

The lead author acted as an insider-facilitator; to control access-related bias we instituted a documented reflexive and audit trail: (a) reflexive memos after each session (n = 11); (b) member checking of interim CRT/EC/FRT in 4 plenaries with recorded accept/reject notes; (c) paired coding of interview excerpts informing UDEs with a shared codebook (Cohen's $\kappa = 0.78$ after reconciliation across 3 coding rounds); (d) an external logic audit by an independent OR scholar (non-participant, no organisational ties) reviewing sufficiency links and negative-branch reservations; (e) version control for all diagrams (CRT v_1–v_4, FRT v_1–v_3); (f) negative-case analysis to actively surface disconfirming evidence in workshop transcripts; and (g) role separation (facilitation ≠ managerial appraisal) with written informed consent under the organisation's internal research policy. These safeguards separate facilitation from endorsement, preserve critical distance, and leave an auditable trail linking data to each logic link.

3.4. Data generation and stakeholder participation

Empirical materials were generated over four months through three day-long participatory workshops (14 stakeholders across senior management, department heads/line managers, and HR) plus one validation plenary for member-checking the interim CRT/EC/FRT artefacts; nine semi-structured interviews probing fairness, motivation, and strategic alignment; and targeted document analysis of appraisal policies, incentive schemes, and operational lifecycle diagnostics. Real-time group-modelling captured explicit causal assumptions and emergent consensus. Participants were purposively sampled across managerial tiers and functions to maximise diversity and triangulation across workshops, interviews, and documents.

3.5. Method integration

We integrated participatory sense-making with causal-logic analysis in a four-stage flow from SSM problem appreciation to a TOC-TP conceptual design (Figure 1). Interviews and document review first produced a register of Undesirable Effects (UDEs). We then built a CRT and tested it for sufficiency and and-ellipses to identify the core constraint. Next, CATWOE and ECs clarified viewpoints and surfaced assumptions, yielding a shared root definition and a set of validated injections. Finally, we developed a FRT and stress-tested it using negative-branch reservations (NBRs), culminating in a stakeholder-endorsed conceptual model.

The analysis proceeded retroductively—in the critical-realist sense of moving from recurring UDE patterns to hypothesised generative mechanisms (Bhaskar, 1979; Danermark et al., 2019). We then challenged each candidate against disconfirming evidence, counterexamples raised in plenary sessions, and the formal checks already noted—CRT sufficiency and and-ellipses, and FRT negative-branch reservations. Mechanisms were retained only if they improved explanatory coherence across interviews, workshops and documents, and withstood these tests.

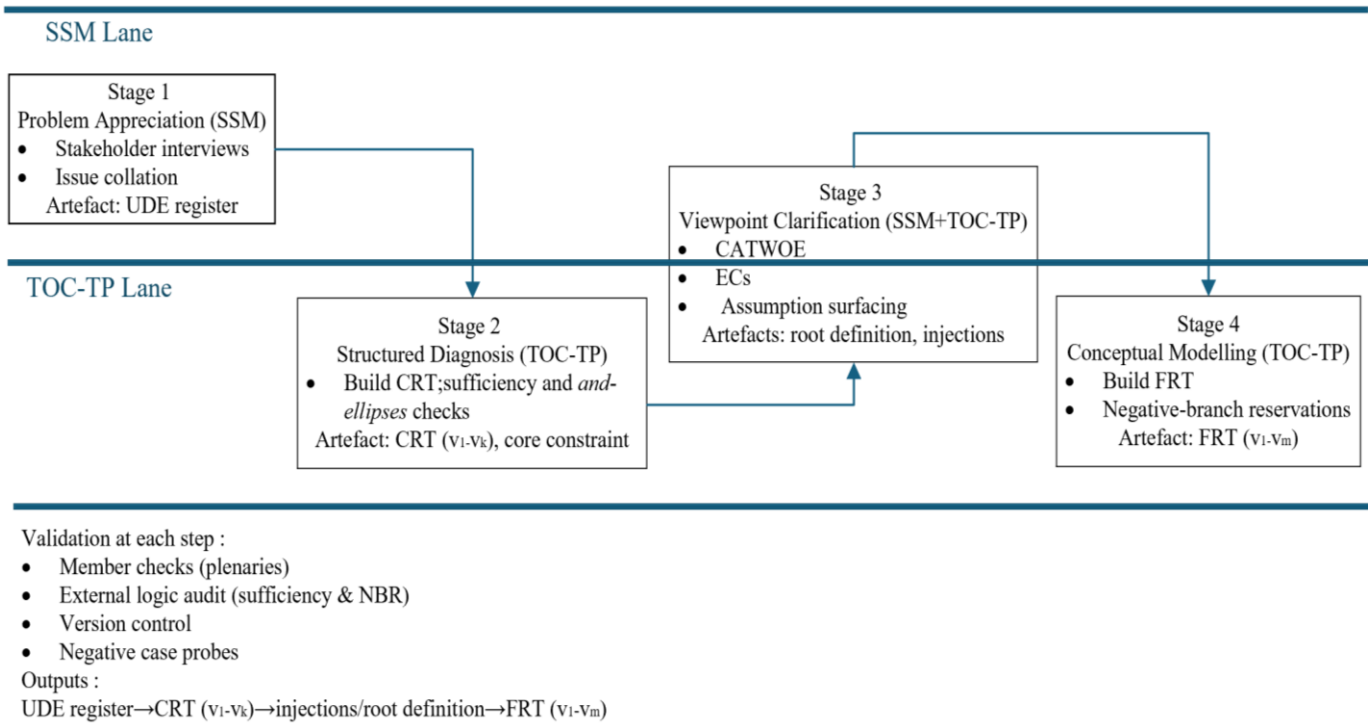

Figure 1. SSM↔TOC-TP integration (swimlane view)

To ensure auditability and control insider bias, each transition in the flow left a traceable record (Table 1): inputs (interview extracts, policies), facilitation activities (CRT/EC/FRT work), validation checks (member checks in plenaries; an external logic audit of sufficiency and NBRs; version control for all diagrams; and negative-case probes), and named artefacts (UDE register → CRT v_1–v_k → injections/root definition → FRT v_1–v_m). This audit trail links raw evidence to each *if–then* claim in the logic trees while preserving critical distance and the contextual advantages of the insider-facilitator stance.

Table 1. Integration map

Step	Purpose	Inputs	Activities/Tools	Validation	Output / Artefacts	Versioning
S_1	Elicit issues (SSM)	Interview notes; policies	Open coding; issue clustering	Member checks (plenaries)	UDE register	—
S_2	Diagnose constraint (TOC-TP)	UDE register	Build CRT; sufficiency and and-ellipses checks	Plenary challenge; negative-case probes*	CRT; core constraint	CRT v_1–v_k
S_3	Surface assumptions and align views (boundary)	CRT root causes	CATWOE + ECs (assumption surfacing)	Assumption testing; negative-case probes*	Root definition; injection set	EC set v_1–v_j
S_4	Design conceptual solution (TOC-TP)	Injections	FRT; negative-branch reservations	Plenary sign-off; external logic audit	Stakeholder-endorsed FRT	FRT v_1–v_m

**Note.* Negative-case probes were applied primarily in S_2–S_3 to seek disconfirming evidence in workshop transcripts.

Together, Figure 1 and Table 1 establish one-to-one traceability from stakeholder data to the endorsed conceptual model; Section 3.6 now addresses trustworthiness and analytical rigour.

3.6. Trustworthiness and analytical rigour

Credibility was ensured by validating interim models during participatory workshops and iteratively incorporating stakeholder feedback until consensus was achieved. An explicit audit trail comprising workshop notes, flipcharts, and version-controlled diagrams enhanced dependability. Transferability considerations included clearly specifying the organisational context conditions that influence generalisability.

3.7. Scope and Limitations

The intervention deliberately concluded at the conceptual modelling stage, emphasizing conceptual clarity and stakeholder agreement over immediate practical implementation. While establishing robust foundations for future implementation studies, this delimitation precludes immediate evaluation of behavioural or performance impacts, warranting further research to explore these dimensions.

4. Results

The intervention unfolded through four distinct yet interrelated stages, each aligning a phase of SSM with the corresponding guiding question from the Theory of Constraints-Thinking Processes (TOC-TP). The combination of interpretive exploration and structured analytical

tools facilitated a systematic progression from initial problem identification to the creation of a robust, stakeholder-endorsed conceptual model. Within a family-owned company operating in Iran's lubricant supply chain, specific TOC-TP tools (CRT, EC, and FRT) were integrated into the stages of SSM to explicitly address stakeholder conflicts, achieve consensus, and enhance strategic alignment.

4.1. Stage 1: Unstructured problem situation ("Why change?")

This initial stage focused explicitly on exploring and understanding the complex, ambiguous, and unstructured problem situation faced by stakeholders in the case organisation. Adopting an interpretive stance, open-ended stakeholder dialogues and interviews were conducted to surface diverse perspectives, tensions, and early indications of organisational misalignment (Figure 2).

The key issues identified included substantial delays in quarterly bonus disbursements, resulting in diminished employee morale and motivation. Concurrently, senior managers expressed dissatisfaction with employee performance evaluations, reflecting underlying mistrust and communication gaps. Additionally, external pressures from the competitive B2B lubricant market, intensified by macroeconomic instability and the COVID-19 pandemic, amplified the urgency for organisational change

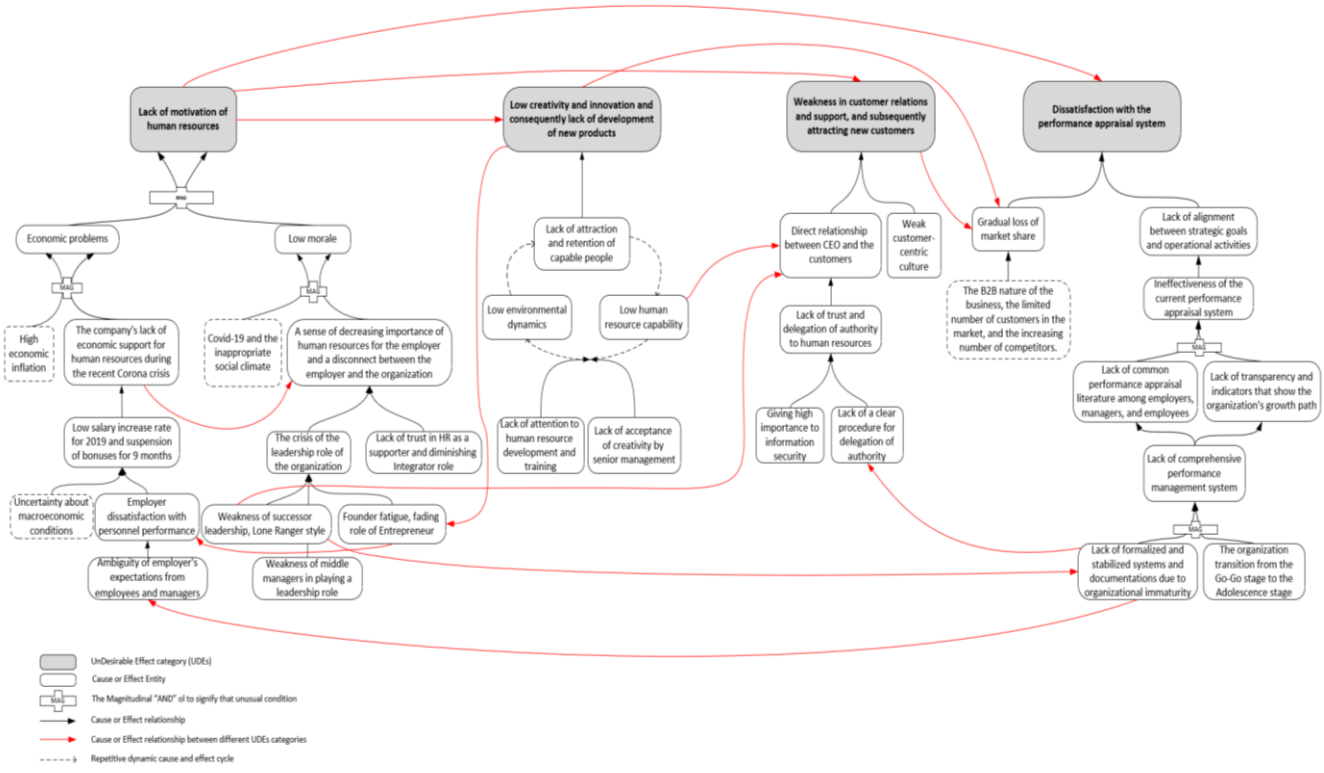

Figure 2. Initial list of undesirable effects (UDEs)

4.2. Stage 2: Structured problem situation—CRT ("What to change?")

To move from unstructured exploration toward structured diagnosis, the traditional Rich Picture used in SSM was replaced by a Current Reality Tree (CRT) from TOC-TP. The CRT explicitly captured logical cause-and-effect relationships among the identified undesirable effects, clarifying how issues such as inconsistent performance appraisal criteria, motivational decline, and misalignment of incentives were interconnected and driven by deeper organisational constraints.

The CRT enabled stakeholders to identify and agree upon performance appraisal systems as the primary organisational constraint, forming the basis for subsequent problem-solving steps. Each causal link within the CRT followed sufficiency-based logic, clearly articulating how multiple conditions jointly produced observed undesirable outcomes.

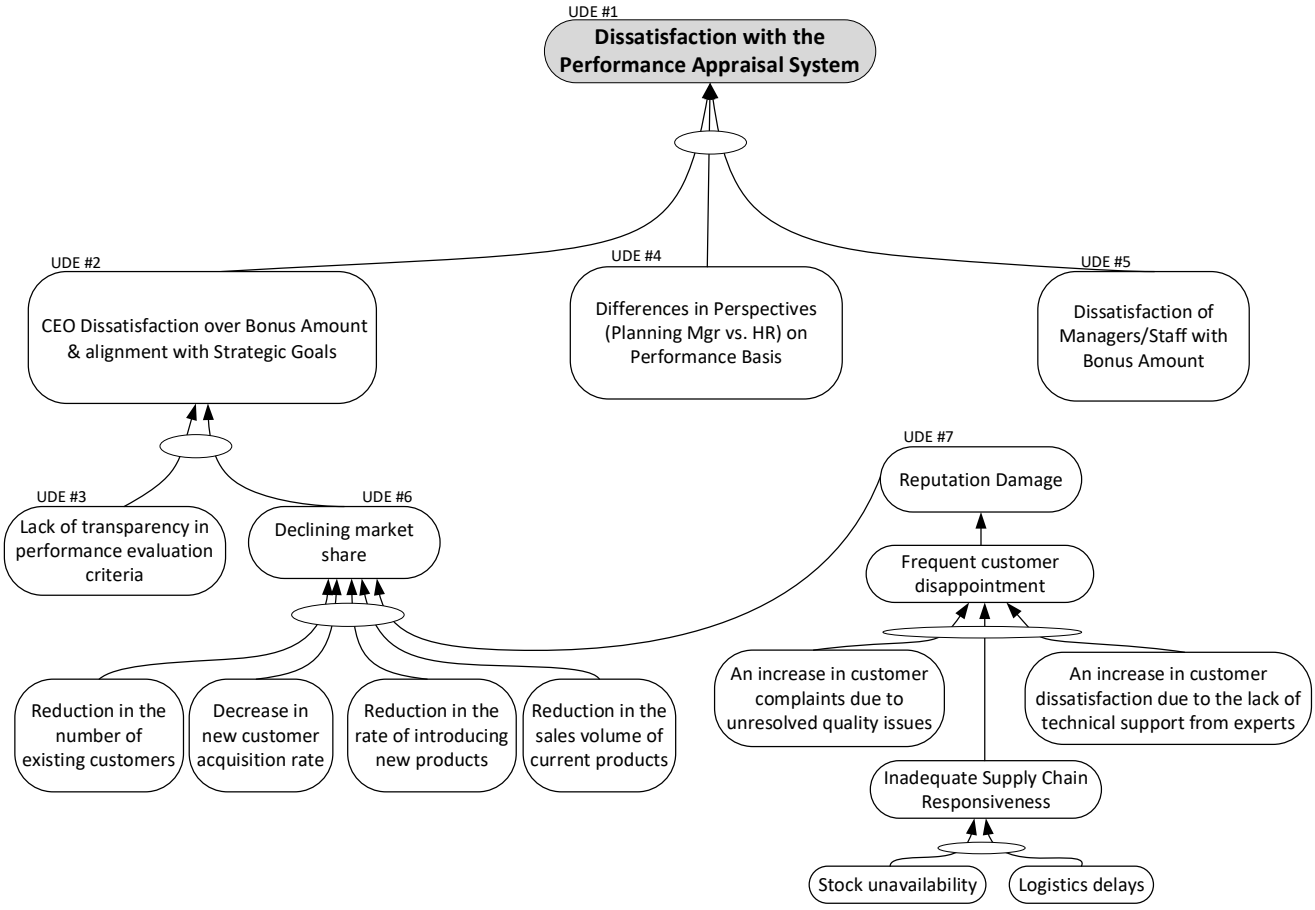

Figure 3. CRT for performance appraisal issues

Figure 3 illustrates the CRT developed to map performance appraisal issues, visually mapping the core UDEs and underscoring how dissatisfaction with appraisal outcomes connects

to broader organisational challenges such as motivational decline, misaligned incentives, and weakened strategic goal attainment.

In constructing the CRT, each cause-effect relationship is expressed using an if–then statement, underscoring sufficiency-based logic (Dettmer, 2007; Goldratt, 1994). When multiple causes must coexist to produce a single undesirable effect, they are visually joined by an ellipse—often referred to as an "and-ellipse"—indicating that all contributing factors must be present for the outcome to occur (Cox and Schleier, 2010). This approach not only highlights individual root causes but also shows how distinct conditions collectively produce the same undesirable outcomes.

The resulting CRT illustrates how these dissatisfaction-related UDEs cluster around core systemic shortcomings in the definition, measurement, and reward of performance. For instance, the diagram highlights misalignments between managerial expectations and actual appraisals, gaps in the communication of performance standards, and the absence of transparent, consistent bonus mechanisms. By disclosing these interdependencies, the CRT offers a robust foundation for subsequent problem-solving stages: it ensures that any proposed interventions will target the critical leverage points rather than merely treating symptoms (Dettmer, 2007; Goldratt, 1994).

Through this structured CRT analysis, Stage 2 pinpointed the performance appraisal system as the central predicament of the case organisation, with cascading effects on employee motivation, managerial trust, and alignment with strategic goals. In Stage 3, the analysis will shift to integrating ECs with Checkland's CATWOE framework. By systematically exploring stakeholder assumptions and potential resolutions, the next phase aims to build on the CRT's findings and forge consensus on root definitions and actionable improvements.

4.3. *Stage 3: Root definition—integration of CATWOE and ECs ("What to change?")*

Stage 3 aims to clearly define the core problem by systematically exploring and clarifying the differing stakeholder viewpoints and the underlying conflicts previously identified. To accomplish this, two complementary analytical tools are integrated:

- CATWOE (from SSM)
- ECs (from Theory of Constraints-Thinking Process (TOC))

CATWOE is an analytical tool designed to structure and understand complex problems by capturing stakeholder views in a structured, comprehensive way. It involves examining the following elements explicitly from stakeholders' perspectives:

- Customers (C): Who directly benefits or suffers from the current situation?
- Actors (A): Who is responsible for implementing potential changes?
- Transformation (T): What change is required—from the current problematic state to a desirable future state?
- Worldview (W): What underlying beliefs or assumptions influence stakeholders' perceptions and actions?
- Owners (O): Who holds the authority to approve changes?
- Environment (E): What external constraints or conditions influence potential solutions?

During structured discussions, stakeholders systematically considered each CATWOE element to ensure a balanced and comprehensive view of key organisational challenges, particularly regarding performance evaluation and human resource management issues.

The EC is a structured, logical tool from TOC specifically designed to identify and articulate organisational conflicts clearly. It visually represents opposing positions, highlights hidden assumptions behind each position, and ultimately helps stakeholders clearly see why conflicts arise.

- A typical EC structure includes:
- Objective: The overall goal or purpose that stakeholders seek to achieve.
- Requirements: Two necessary conditions to achieve the objective.
- Prerequisites: Conflicting actions or positions believed necessary to fulfil each requirement.
- Underlying Assumptions: The deep-seated beliefs explaining why stakeholders maintain their conflicting positions.

At this stage, the primary goal is not to propose specific solutions (termed "injections" in TOC-

TP), but rather to clearly expose and document conflicts and underlying assumptions, thereby laying the groundwork for consensus-building and solution development in subsequent stages.

A representative EC analysed in this study (Figure 4) captures a conflict around managing human resources, specifically between the company founder and the second-generation leadership:

- Objective: Exploring new creative human resources while effectively utilizing existing employees.
- Requirement #1: Retain current human resources.
- Prerequisite #1: Commitment to organisational values (entrepreneurship, livelihood, human resource retention).
- Founder's Assumption: Even employees performing poorly should be retained due to our values and the high costs associated with finding replacements.
- Requirement #2: Recruit capable and creative human resources.
- Prerequisite #2: To remain competitive, the organisation needs highly skilled and innovative employees.

- Second-generation Assumption: Organisational stagnation is largely due to poor employee performance, culture, and lack of innovation. Retaining low-performing employees undermines competitive success.

This explicit conflict arises from fundamentally different assumptions:

- The founder values loyalty, stability, and retention even at the expense of performance.
- The second-generation leadership prioritizes performance, innovation, and competitiveness, even if it means replacing current employees.

At this stage, this EC analysis does not attempt to resolve the conflict but clearly identifies and documents opposing assumptions, thereby enabling stakeholders to discuss the roots of their disagreements openly and explicitly.

While the EC diagrams help surface and clarify the underlying assumptions behind stakeholder conflicts, they do so by focusing on one key dilemma at a time. In contrast, the CATWOE framework offers a broader, more holistic view by systematically capturing the roles, worldviews, and contextual constraints of all major stakeholders involved. Together, these tools complement one another: EC exposes the hidden tensions that hinder agreement, while CATWOE structures those tensions into a coherent understanding of what change is needed, who is involved, and what environmental realities shape possible interventions. To consolidate insights from both tools and link them directly to the Undesirable Effects (UDEs) identified in Stage 2, the following table presents an integrated analysis that maps each major issue to its corresponding CATWOE components.

 DOI: 10.22067/JSTINP.2025.94291.1160

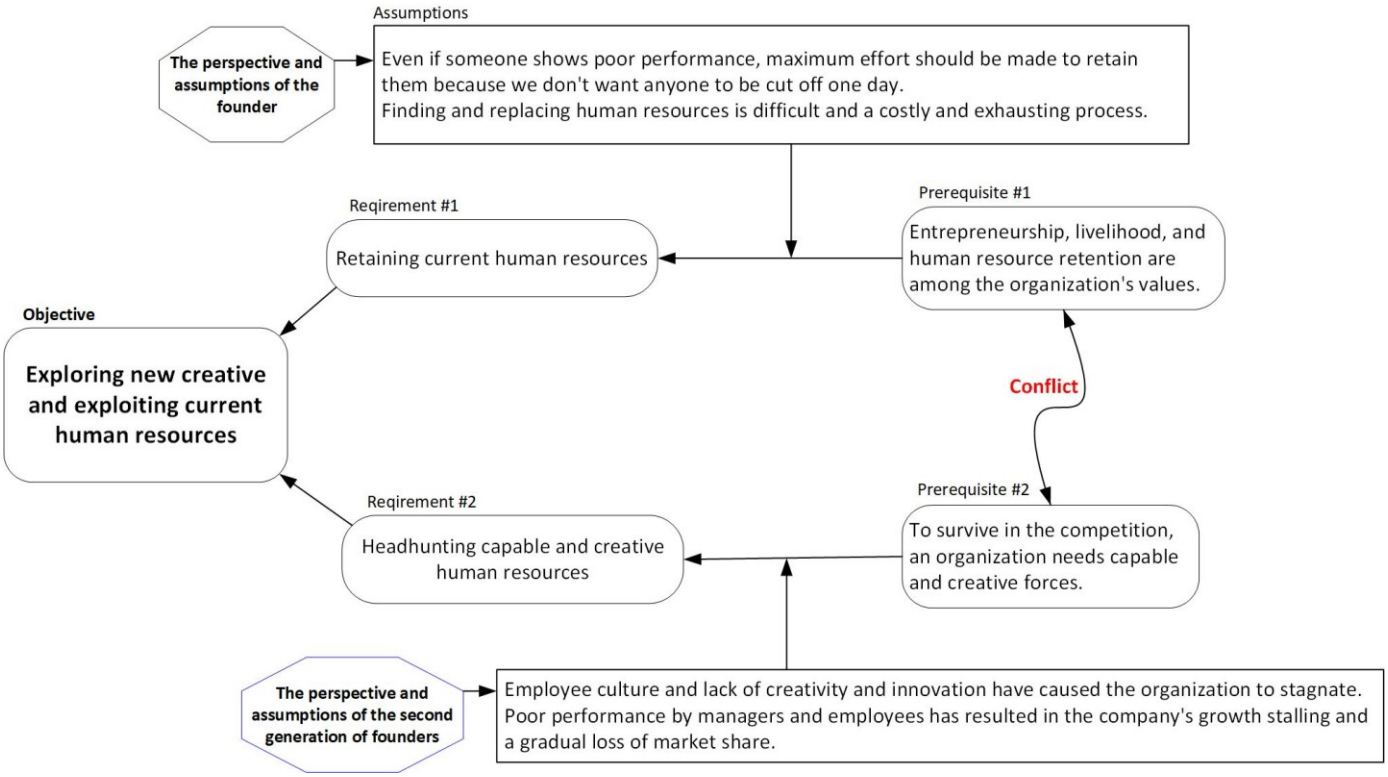

Figure 4. EC Example—Conflict in human resource management

To systematically consolidate insights from CATWOE analysis and ECs, a comprehensive analytical framework that combines the UDEs identified in Stage 2 with the CATWOE dimensions is presented in Table 2.

Table 2. Integration of CATWOE elements with undesirable effects (UDEs)

#	Undesirable effect (UDE)	Customer (C) primary beneficiaries or victims	Actor (A) who must act	Required transformation (T) from ➔ to	World-view (W) core belief driving action	Owner (O) ultimate authority	Environment (E)
1	Widespread dissatisfaction with the performance appraisal system	Employees, line managers, CEO who depend on fair evaluations	HR department; line supervisors	From ad-hoc, inconsistent ratings to a transparent, internally consistent appraisal framework	A credible appraisal process is pivotal for motivation and organisational trust	Chief Executive Officer (sets HR policy)	Intensifying B2B competition demands efficiency and accountability
2	CEO dissatisfaction over bonus alignment with strategic goals	Whole organisation (mis-aligned incentives weaken competitiveness)	Strategic-planning office; HR	From purely behavioural targets to appraisal and reward metrics tightly linked to long-term strategy	Performance management should be a primary lever for executing strategy	Planning Manager (monitors alignment)	Niche B2B market with rapid tech shifts, needing integrated HR–strategy tools
3	Lack of transparency in performance criteria	Employees seeking clarity on what constitutes “good performance”	HR Department, performance appraisal designers	From vague or contradictory performance metrics to explicit,	Visibility into performance standards increases trust and helps employees align	Founder and second-generation successors	Cultural norms favour hierarchical control; multiple stakeholders push

#	Undesirable effect (UDE)	Customer (C) primary beneficiaries or victims	Actor (A) who must act	Required transformation (T) from ➔ to	World-view (W) core belief driving action	Owner (O) ultimate authority	Environment (E)
				measurable indicators linked to strategic objectives	behaviour with organisational goals		for clarity yet fear losing flexibility
4	Divergent views between the Planning Manager and HR Manager on the evaluation basis	Employees suffering from mixed signals	Planning Manager and HR Manager	From dual, conflicting measurement logics to a single, integrated set of strategic + behavioural indicators	Strategic goals must converge with human resource practices; conflicting assumptions hamper synergy	Deputy CEO (2nd-generation leadership)	Organisational immaturity (limited documentation) vs. drive for standardization
5	Dissatisfaction of managers/ staff with bonus amounts	Staff whose income depends on predictable incentives	HR and Finance units	From sporadic, opaque pay-outs to a metrics-driven, predictable reward mechanism	Monetary rewards must reflect real effort and strategic contribution—uncertainty erodes morale	CEO + senior leadership team	Macroeconomic volatility (inflation, post-COVID cost pressures)
6	Declining market share in a competitive B2B arena	The organisation as a whole (leadership, shareholders, employees)	Sales, Marketing, R&D, Strategic Planning	From sporadic or misaligned marketing/product strategies to a dynamic, customer-centred approach that reverses market-share losses	Survival requires fast adaptation to customer needs and a clear competitive advantage	CEO and executive team	The dynamic B2B market is facing macroeconomic uncertainties and intensifying competition, requiring agile innovation and responsiveness
7	Damage to the employer / corporate reputation	Clients, existing partners, potential recruits, the brand's public image	HR, Corporate Communications, Senior Executives	From a tarnished or ambiguous brand to a transparent, reliable reputation that attracts customers and talent	Reputation is a critical intangible asset; quality and integrity must be visible and verifiable	CEO and the brand/communications team	High social-media scrutiny, talent war, stakeholders' rising expectations for transparency

This structured representation clarifies which stakeholders are affected, who has authority to initiate change, and precisely what transformations are necessary—explicitly linking stakeholder worldviews to underlying conflicts outlined by ECs.

Four primary ECs emerged, capturing conflicts over centralized versus delegated managerial control, standardized versus flexible bonus structures, qualitative versus quantitative evaluation criteria, and performance-focused versus development-oriented appraisals. Each EC explicitly revealed underlying assumptions, facilitating structured stakeholder dialogues that ultimately produced a single agreed-upon root definition:

"To institutionalize a transparent, auditable performance-and-rewards system by using a dual-criteria (approximately 80/20) rubric, version-controlled indicators, and participatory

review, so that improvements in measured performance credibly reflect organisational value rather than score maximization."

This agreed-upon definition sets the stage for developing comprehensive, logical, and acceptable solutions in the subsequent stage (Stage 4: Conceptual Modelling), where explicit solutions ("injections") will be developed to directly address these documented conflicts.

Stage 3 systematically integrates CATWOE analysis with ECs to elicit and organize stakeholder perspectives in a structured manner. This combined approach facilitates the formulation of well-founded root definitions that serve as a foundation for coherent and collectively endorsed transformations in the subsequent stage.

4.4. Stage 4: Conceptual modelling—FRT ("What to change to?")

Stage 4 corresponds explicitly to the conceptual-modelling phase of SSM, in which the collaboratively agreed-upon root definition from Stage 3 is Operationalized into a systemic conceptual model (Checkland and Poulter, 2020). Traditionally, SSM utilizes abstract activity models; however, our integrated approach employs the FRT from the TOC-TP. This selection was deliberate, as the FRT combines the participatory engagement of SSM with TOC-TP's rigorous cause-effect logic, ensuring conceptual clarity, logical coherence, and stakeholder acceptance.

The FRT (Figure 7) is a structured cause-and-effect diagram that explicitly maps a set of clearly defined interventions, known as "injections," through intermediate effects (IEs) toward desirable effects (DEs). Each intervention was directly derived from stakeholder-agreed solutions formulated during the EC analyses in Stage 3. The FRT systematically addresses each undesirable effect (UDE) identified previously in the CRT, clearly illustrating how these interventions resolve the core organisational tensions (Dettmer, 2007).

Among several ECs developed in Stage 3, two critical ECs were unanimously identified by stakeholders as capturing fundamental conflicts within the organisation's performance management system:

- EC-Bonus Fairness (Figure 5): This cloud clarified tensions between employees, who considered quarterly bonuses as an integral part of their compensation, and the CEO, who emphasized performance-contingent and financially viable bonuses. Four specific injections were collaboratively proposed:
    - Realignment of salary bands to industry benchmarks.
    - Explicit formula-driven bonus distributions linked directly to measurable KPIs.
    - Transparent quarterly communication of strategic targets.

  - Institutionalization of performance evaluation linked to organisational objectives.
- EC-Performance Appraisal Transparency (Figure 6): This cloud addressed conflicts between qualitative and quantitative appraisal methodologies advocated by HR and the Planning Manager, respectively. Stakeholders agreed on two injections:
  - Implementation of a dual-criteria appraisal system (80% quantitative, 20% qualitative).
  - Co-creation and explicit publication of the KPI rubric through participatory workshops.

These EC analyses played a dual role: they surfaced underlying assumptions fuelling stakeholder disagreements and concurrently provided candidate injections validated collectively for further analysis in Stage 4

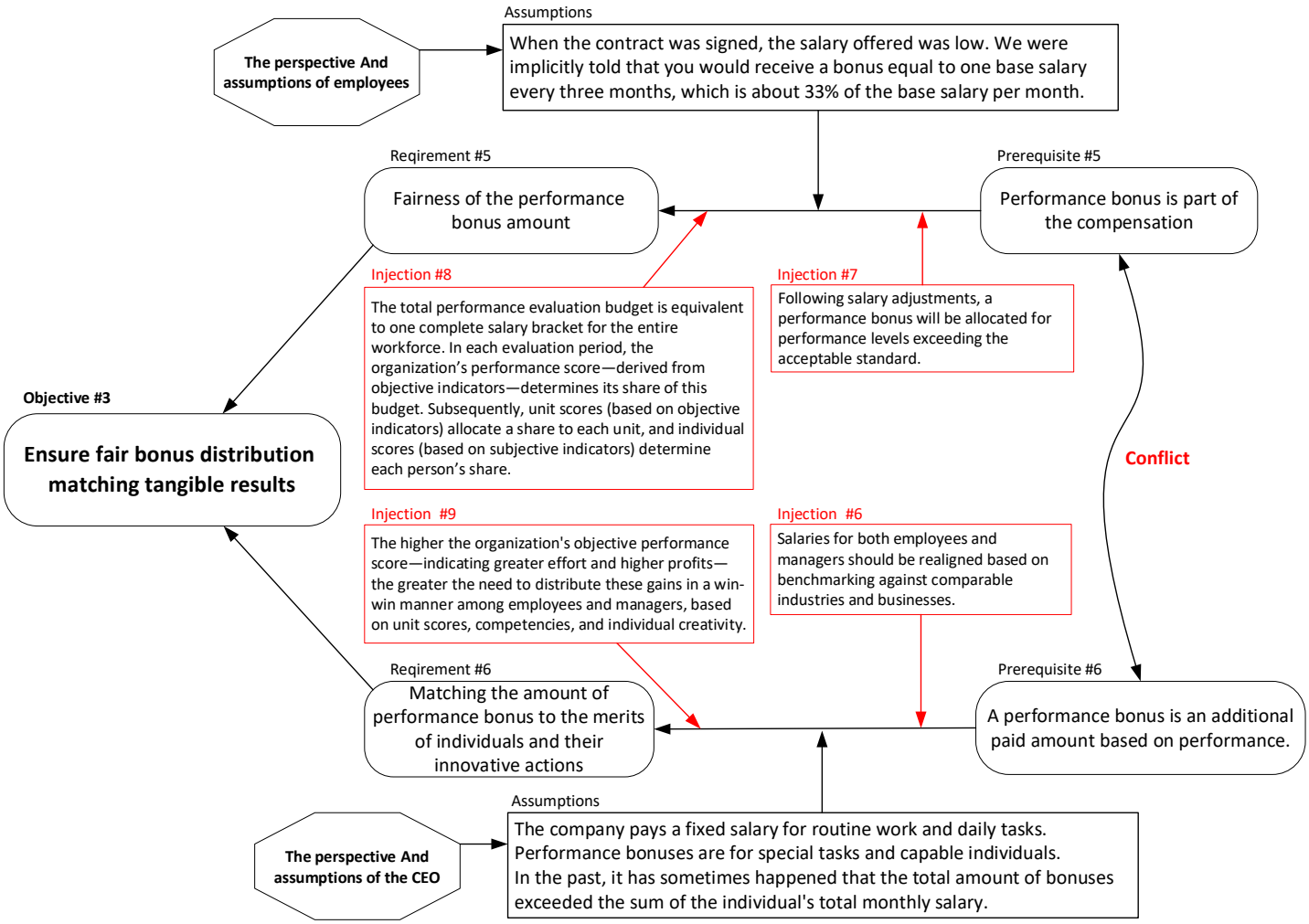

Figure 5. Bonus fairness EC

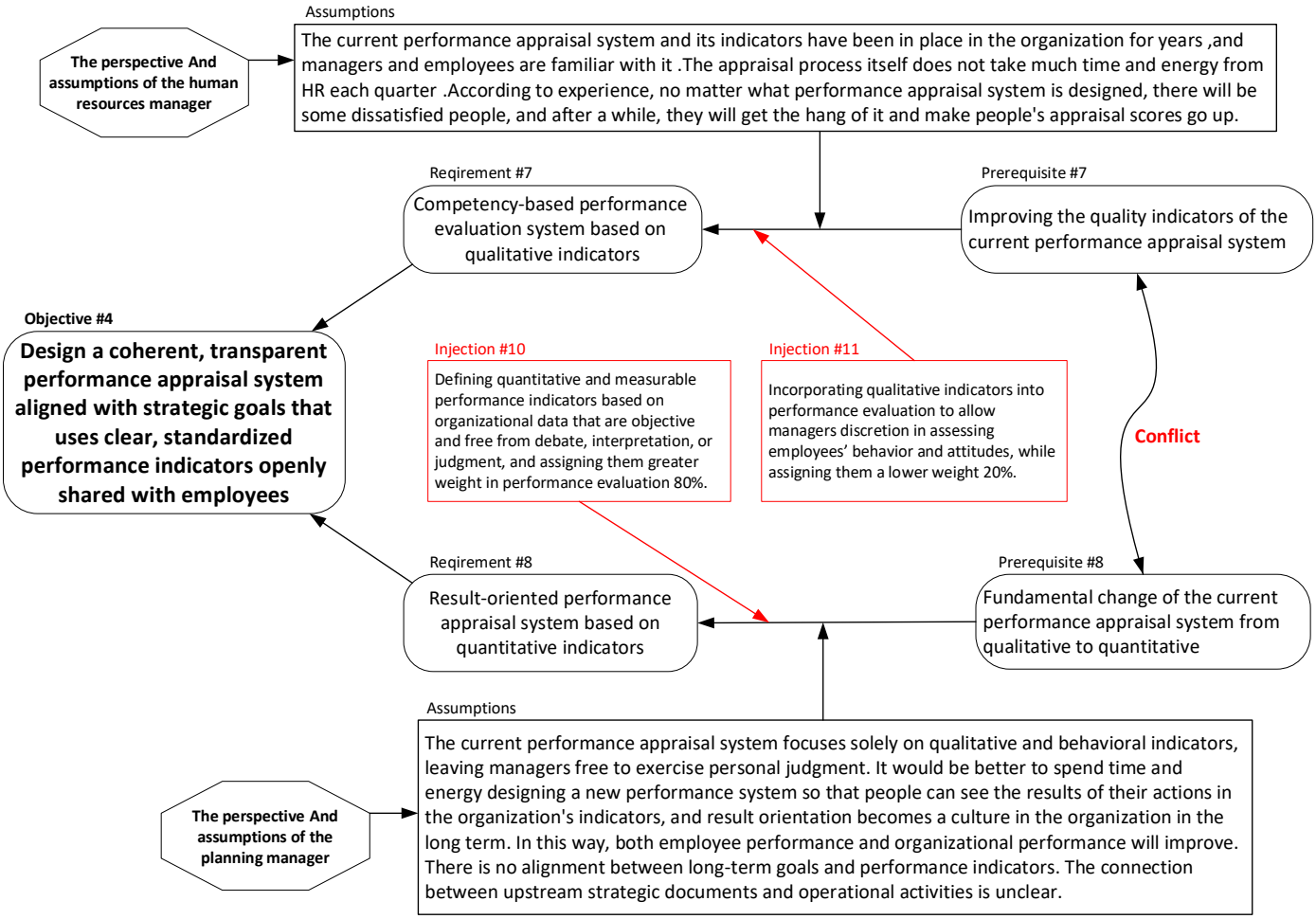

Figure 6. Performance appraisal transparency cloud (EC)

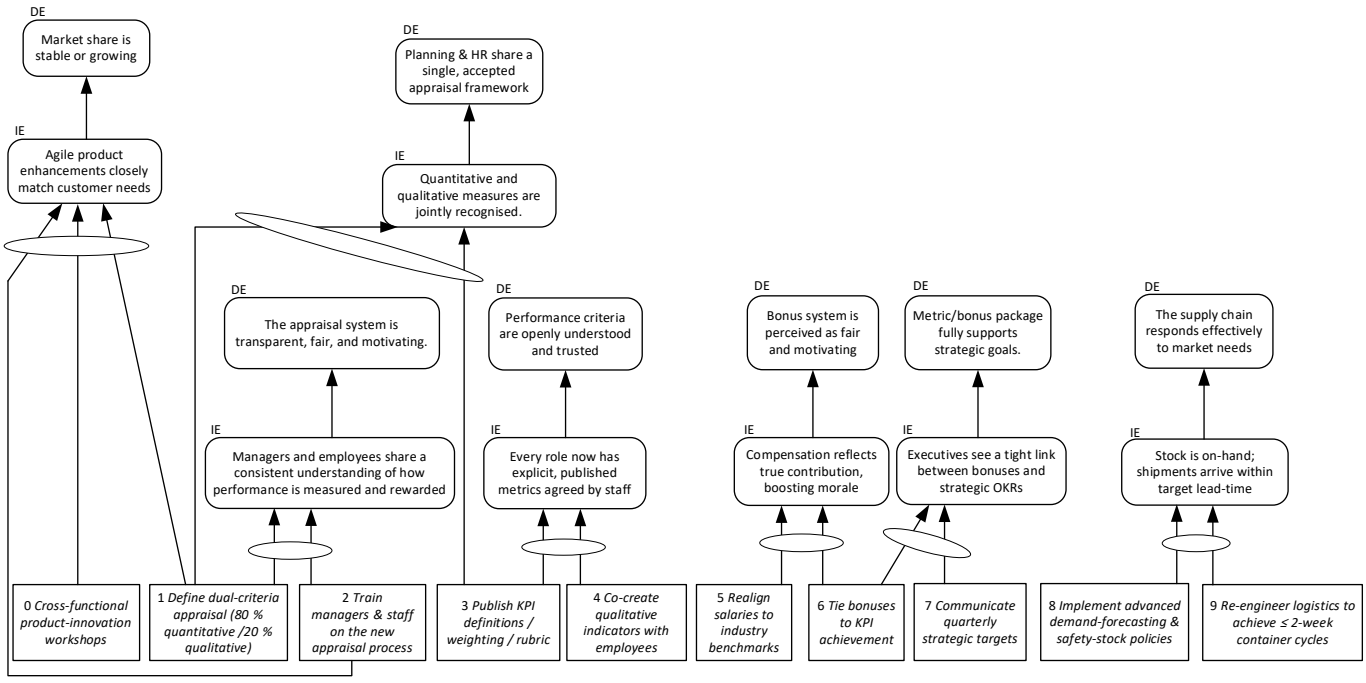

Figure 7. FRT

The injections agreed upon during the EC workshops constitute the foundational layer of the Future Reality Tree (Figure 7). Successive layers connect these injections, via rigorously validated intermediate effects, to the desirable effects that express the organisation's strategic intent. Each causal link was scrutinized and accepted in plenary sessions, giving the organisation a single, stakeholder-owned conceptual model that is both internally coherent and empirically testable in the next phase of work.

5. Discussion

5.1. Philosophical implications of SSM–TOC integration

The integration of SSM and TOC-TP rests on complementary epistemological positions and yields a robust multi-paradigm approach. SSM is fundamentally interpretivist, emphasising stakeholder perceptions, negotiated meanings and iterative dialogue in order to explore complexity (Checkland and Poulter, 2020; Mingers and White, 2010). By contrast, TOC-TP brings analytical rigour through explicit cause-effect reasoning to diagnose constraints and articulate structured responses (Dettmer, 2007; Goldratt, 1994).

This combination aligns with Habermas's account of cognitive interests (Habermas, 1971). SSM primarily serves the practical interest by promoting shared understanding and stakeholder agreement, whereas TOC-TP addresses the technical interest through disciplined causal analysis and problem structuring. Taken together, the approach couples interpretive flexibility with analytical rigour, which is essential for problems that are at once socio-political and systemic.

Ontologically, the integration is anchored in critical realism, which posits a stratified reality comprising the empirical, the actual, and the real (Bhaskar, 1979; Mingers, 2014). In our reading, SSM foregrounds experienced phenomena and negotiated meaning that sit within the empirical and actual, while TOC-TP emphasises causal explanation oriented to underlying mechanisms associated with the real (Goldratt, 1994; Dettmer, 2007). We use this mapping heuristically to guide artefact selection rather than as a categorical partition of critical-realist domains.

This positioning reconciles subjective stakeholder experience with disciplined causal-logic analysis and recognises the multidimensional character of organisational phenomena (Jackson, 2019; Mingers and Brocklesby, 1997). Methodologically, the integration enacts pluralism. SSM secures participatory engagement, rich problem appreciation, and iterative consensus building, while TOC-TP provides the logic-tree toolset—CRT, EC, and FRT—to identify constraints,

resolve conflicts, and design targeted injections. Making the boundary shifts between interpretive dialogue and analytic reasoning explicit reduces paradigm friction and strengthens both theoretical coherence and practical applicability.

Boundary critique in the sense of Ulrich is embedded across the work by documenting who is affected, who decides, and which indicators enter evaluation rubrics, with contested inclusions surfaced and negotiated transparently (Ulrich, 2001). Situated within complex-adaptive and design-science sensibilities, the integration remains flexible in dynamic conditions while preserving traceability of rationale (Jackson, 2019).

From a design-science perspective, the study exemplifies action-oriented inquiry. SSM contributes context-sensitive, stakeholder-informed problem definitions, and TOC-TP translates these into logically coherent proposed interventions that are appraised for sufficiency and for negative-branch robustness prior to any field execution. In this way, the integration advances organisational design science by offering a theoretically coherent and practice-ready framework for systemic intervention (Van Aken, 2004; Baskerville et al., 2009).

5.2. Practical implications and critical reflections

The present study addressed critical organisational issues of fragmented stakeholder understanding, declining strategic coherence, and systemic constraints through an integrated methodological approach combining SSM with the TOC-TP. By explicitly aligning interpretive and analytical paradigms, our approach successfully facilitated structured stakeholder dialogues, conflict resolution, and conceptual clarity within a family-owned lubricant supply firm facing pronounced organisational complexity.

A central contribution of this research lies in its explicit demonstration of methodological pluralism (Jackson, 2019; Mingers, 2000), bridging traditionally separate interpretive and functionalist paradigms. This integration not only responds to calls within systems thinking literature to overcome paradigm exclusivity but also clearly illustrates practical complementarities between SSM and TOC-TP methodologies. Specifically, while SSM effectively surfaced multiple stakeholder perspectives and fostered consensus-building dialogues, TOC-TP provided precise analytical tools (CRT, EC, FRT) that explicitly addressed deeper systemic constraints and facilitated logical clarity.

Significantly, Stage 3 emerged as a critical juncture in our intervention process, combining CATWOE and EC to clarify and resolve underlying stakeholder conflicts. By explicitly articulating conflicting assumptions, stakeholders were able to transparently negotiate and

agree upon a clear, shared root definition, significantly enhancing organisational legitimacy and acceptance. This consensus provided the necessary foundation for effective conceptual modelling in Stage 4, which translated negotiated agreements into structured FRTs, offering stakeholders a logically coherent pathway toward strategic alignment and operational improvement.

Another noteworthy aspect of our intervention strategy was the explicit decision to conclude the intervention at the conceptual modelling stage, emphasizing the critical importance of achieving comprehensive stakeholder buy-in and conceptual clarity before attempting practical implementation. This strategic delimitation clearly positions the present study within the boundaries of design-oriented systemic inquiry (Van Aken, 2004; Baskerville et al., 2009), explicitly emphasizing the rigorous formulation of robust conceptual frameworks as a necessary precursor to sustainable organisational change.

Our methodological approach also holds significant practical implications. Organisations facing complex, socio-technical challenges involving multiple stakeholder conflicts can greatly benefit from systematically integrating interpretive participatory dialogues with structured analytical tools. This integration not only promotes a richer understanding and greater stakeholder legitimacy but also yields clearer, more actionable strategies for organisational improvement. Therefore, the proposed integrated approach offers valuable guidance for practitioners and researchers navigating similar complex organisational environments.

5.2.1. On non-linearity and context

TOC-TP logic trees privilege sufficiency chains, whereas real organisations feature feedback, delays, and path dependence. Our CRT/FRT captured conjunctions via *and-ellipses* and screened for negative branches, yet we did not quantify feedback strengths. Context also matters: cultural and governance patterns can shift causal salience; in our family-owned Iranian case, founder–successor dynamics may amplify assumptions around loyalty and control. A follow-on study will pair the validated FRT with complementary systemic formalisms (e.g., system-dynamics stock–flow models or Viable System Model (VSM) diagnostics) to stress-test robustness under feedback, delays, and varying cultural priors (see also Section 6, Limitations).

5.2.2. Practitioner translation and implementation roadmap

To translate the stakeholder-endorsed Future Reality Tree into practice without overstating implementation, we set out a concise, audit-ready roadmap (Table 3) for the Performance and

Rewards branch (Injections 1–4, 6–7, plus salary benchmarking [5]), with explicit ownership, validation checks, and metrics. The Operations, Supply Chain, and Product branch (Track B; Injections 0, 8–9) is defined as a separate stream and mapped in Table 4 to preserve one-to-one traceability from the FRT to execution artefacts.

Table 3. Implementation roadmap — track A (Performance and Rewards)

Milestone	Time frame	Owner(s)	Key activities	Deliverables	Validation / Controls	Metrics
M0 – Governance setup	4–6 wks	Owner: CEO (or delegate); Sponsor: COO/HR; Independent Facilitator; Cross-functional Design Cell	Charter scope; risk register; ethics/data plan; comms cadence	Project charter; risk log; ethics/data note	Role separation (facilitation ≠ appraisal); stakeholder sign-off	—
M1 – KPI rubric and baseline	3–4 wks	HR + Line heads	Co-create approximately 80/20 quantitative/qualitative rubric; train raters; baseline	Published rubric; training records; baseline sheet	Inter-rater reliability (κ/ICC); version control	Lead: rubric coverage %, comprehension quiz score
M2 – Incentive alignment (pilot)	4–6 wks	HR + Finance + 2 pilot depts	Bonus formula and thresholds; communicate quarterly strategic targets; run one pilot cycle	Payout worksheet; FAQ; comms brief	NBR review; gaming detection (variance spikes)	Lead: on-time evaluation % · Lag: bonus satisfaction index
M2b – Compensation benchmarking (parallel)	3–5 wks (parallel)	HR + Finance	Salary realignment to market benchmarks	Benchmark report; adjustment plan	Equity/fairness audit	Lag: voluntary turnover %
M3 – Review and rollout decision	2–3 wks	Steering group	Review NBR observations; update injections; formal sign-off for rollout	Revised injections; rollout decision note	External logic audit (sufficiency/NBR)	Complaint rate; sales margin %

As a domain exemplar, our prior work on the Strategic Alignment Framework (SAF)—integrating Objectives and Key Results (OKRs), Critical Success Factors (CSFs), and financial metrics—demonstrates how Track A (Performance and Rewards) can be operationalized in practice. We cite the data-driven articulation of SAF to support practitioner translation of the roadmap (Sepasi, 2024) and a companion, process-focused study that details execution design—workflows, roles and handoffs, escalation rules, and in-process controls (Sepasi, Tabatabaei Rafiei, and Madandar, 2024). These citations are provided solely to guide

implementation and should not be read as methodological validation of the SSM–TOC-TP integration.

Table 4 maps each FRT injection to the corresponding milestone(s) in Table 3, marking Track A as Operationalized and Track B as specified for subsequent implementation.

Table 4. FRT → Roadmap traceability

FRT branch	Injection ID	Injection (label)	Track	Milestone(s) in Table 3	Status
Performance and Rewards	1	Dual-criteria appraisal (approximately 80/20)	Track A	M1	Operationalized
Performance and Rewards	2	Train managers and staff on the new process	Track A	M1	Operationalized
Performance and Rewards	3	Publish KPI metrics/weights/rubric	Track A	M1	Operationalized
Performance and Rewards	4	Co-create qualitative indicators with employees	Track A	M1	Operationalized
Performance and Rewards	5	Salary realignment to market benchmarks	Track A	M2b	Operationalized (parallel)
Performance and Rewards	6	Tie bonuses to KPI achievement	Track A	M2	Operationalized
Performance and Rewards	7	Communicate quarterly strategic targets	Track A	M2	Operationalized
Ops/SCM and Product	0	Cross-functional product-innovation workshops	Track B	PRD-1	Specified for subsequent track
Ops/SCM and Product	8	Demand-forecasting and safety-stock policy	Track B	SC-1	Specified for subsequent track
Ops/SCM and Product	9	Logistics re-engineering to ≤2-week cycles	Track B	SC-2	Specified for subsequent track

Together, Table 3 and Table 4 provide a traceable, auditable bridge from the FRT (Section 4.4) to execution, consistent with our bounded scope; empirical testing of Track A and staged implementation of Track B follow in subsequent work.

Although field outcomes are outside our bounded scope, pre-implementation evidence comprises stakeholder sign-off on the FRT, documented member-checks across four plenaries, and an independent external logic audit (see Sections 3.3 and 3.5).

6. Conclusion

This study explicitly concludes at the conceptual modelling stage, emphasizing the critical role of stakeholder consensus and logical coherence prior to practical implementation. Although the question of "How to cause the change?" lies beyond the current research scope, the work establishes a robust foundation for future studies and real-world applications. A complementary question worth future exploration is "How to measure and sustain the change?"—specifically,

how to embed continuous improvement and progress-monitoring processes within the SSM–TOC framework.

Through a detailed empirical case study conducted in a mid-sized enterprise within Iran's lubricant industry, this research has demonstrated both the practical value and theoretical strength inherent in combining SSM with the TOC-TP, explicitly grounded in a critical realist philosophical stance. Specifically, we illustrated how rigorous analytical reasoning, combined with structured stakeholder engagement and dialogue, can systematically untangle complex organisational issues, leading to meaningful consensus and conceptual clarity.

A key outcome of this integrated intervention was the collaborative development and validation of a FRT—a clearly articulated, logically rigorous conceptual model endorsed by stakeholders. This model explicitly addressed challenges surrounding performance appraisal, strategic misalignment, and motivational conflicts within the organisation. The deliberate decision to pause the intervention at this conceptual stage underscores our argument that sustainable organisational change fundamentally requires robust consensus-building processes and transparent logical foundations prior to practical implementation.

The research significantly enriches the literature on systemic interventions by showcasing a viable methodological pathway for integrating interpretive and analytical paradigms in organisational contexts characterized by complexity and competing stakeholder interests. From a theoretical perspective, the study clearly illustrates the feasibility, advantages, and philosophical coherence of methodological pluralism, particularly highlighting how interpretive (SSM) and analytical (TOC-TP) methodologies can complement one another when addressing intricate organisational dilemmas.

Nevertheless, recognizing the inherent limitations imposed by the conceptual focus, this study explicitly excludes empirical implementation and practical evaluation. Therefore, there remain important opportunities for extending this research in several specific directions:

- Practical Implementation and Validation: Empirical testing and validation of the interventions identified in the FRT will be essential for evaluating their operational effectiveness, stakeholder acceptance, and real-world strategic impact over time.
- Longitudinal Studies: Examining the long-term sustainability and adaptability of the conceptual model will provide critical insights into how organisations can continuously realign their activities and strategies to respond effectively to evolving stakeholder expectations and market conditions.
- Integration with Additional Methodologies: Future research could beneficially explore the incorporation of other complementary systemic or analytical approaches—such as System Dynamics for quantifying feedback loops, or Complexity Theory for

addressing emergent properties—to enhance the model's robustness in confronting increasingly complex organisational challenges.

In conclusion, by thoughtfully integrating interpretive dialogue with rigorous analytical reasoning within a coherent philosophical framework, this research provides a robust theoretical contribution and a valuable practical approach for addressing complex organisational problems. Extending these initial conceptual findings through empirical implementation and broader contextual studies promises substantial advancements in both the theory and practice of systemic organisational interventions.

This study concludes at the conceptual modelling stage and does not proceed to practical implementation. While the systemic intervention generated a logically coherent and stakeholder-endorsed FRT, the model's operational effectiveness and long-term impact remain untested. Additionally, the case context—a mid-sized, family-run company in Iran's lubricant sector—may limit the generalizability of the findings across industries or cultural settings.

The dual role of the lead researcher as an insider-facilitator, although beneficial for contextual access and stakeholder engagement, may have introduced interpretive bias despite efforts at reflexivity and triangulation. Furthermore, the focus on a single case study limits the statistical generalizability of the results, although the aim of this qualitative research was analytical generalization and conceptual insight.

Future research is encouraged to empirically implement and evaluate the proposed interventions across different organisational settings, possibly using comparative case designs. Moreover, integrating additional systemic approaches, such as System Dynamics or the Viable System Model, could further enhance analytical depth and broaden the scope of participatory modelling in resolving complex organisational dilemmas.

Disclosure statement

The lead author was previously employed as Planning Manager in the case organisation but has no current affiliation or financial relationship with the company. The authors declare no competing interests—financial or non-financial—related to the content of this manuscript.

Abbreviations

CSF— Critical Success Factors
CRT — Current Reality Tree
EC — Evaporating Cloud
FRT — Future Reality Tree
KPI — Key Performance Indicator
NBR — Negative-Branch Reservation

OKR— Objectives and Key Results
SAF— Strategic Alignment Framework
SSM — Soft Systems Methodology
TOC-TP — Theory of Constraints–Thinking Processes
UDE — Undesirable Effect
VSM—Viable System Model

References

Baskerville, R., Pries-Heje, J. and Venable, J., 2009. Soft design science methodology. In*: Proceedings of the 4th International Conference on Design Science Research in Information Systems and Technology* (DESRIST 2009).

Bhaskar, R., 1979. *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences*. Routledge, London.

Checkland, P., 1981. *Systems thinking, systems practice*. Wiley.

Checkland, P., Poulter, J., 2006. *Learning for Action: A Short Definitive Account of Soft Systems Methodology and Its Use for Practitioners, Teachers and Students*. John Wiley and Sons, Chichester.

Checkland, P., Poulter, J., 2020. Soft systems methodology. In: Reynolds M, Holwell S (eds). *Systems Approaches to Making Change: A Practical Guide*. 2nd ed. Springer, London, pp. 201–253. https://doi.org/10.1007/978-1-4471-7472-1_5.

Checkland, P., Scholes, J., 1990. *Soft Systems Methodology in Action*. John Wiley and Sons, Chichester.

Danermark, B., Ekström, M. and Karlsson, JC., 2019. *Explaining Society: Critical Realism in the Social Sciences*. 2nd ed. Routledge, London.

Dettmer, HW., 2007. *The Logical Thinking Process: A Systems Approach to Complex Problem Solving*. ASQ Quality Press, Milwaukee, WI.

Goldratt, EM., 1994. *It's Not Luck*. North River Press, Great Barrington, MA.

Habermas, J., 1971. *Knowledge and Human Interests*. (Shapiro JJ, trans.). Beacon Press, Boston, MA.

Jackson, MC., 2019. *Critical Systems Thinking and the Management of Complexity*. John Wiley and Sons, Chichester.

Kim, S., Mabin, VJ. and Davies, J., 2008. The theory of constraints thinking processes: Retrospect and prospect. *International Journal of Operations and Production Management*, *28*(2), pp.155–184. https://doi.org/10.1108/01443570810846883.

Mabin, VJ. and Davies, J., 2010. The TOC thinking processes: Their nature and use – reflections and consolidation. In: Cox JF III, Schleier JG Jr (eds). *Theory of Constraints Handbook*. McGraw-Hill, New York, pp. 631–669.

Mingers, J. and Brocklesby, J., 1997. Multimethodology: Towards a framework for mixing methodologies. *Omega, 25*(5), pp.489–509. https://doi.org/10.1016/S0305-0483(97)00018-2.

Mingers, J. and Rosenhead, J., 2004. Problem structuring methods in action. *European Journal of Operational Research*, *152*(3), pp.530–554. https://doi.org/10.1016/S0377-2217(03)00056-0.

Mingers, J. and White, L., 2010. A review of the recent contribution of systems thinking to operational research and management science. *European Journal of Operational Research*, *207*(3), pp.1147–1161. https://doi.org/10.1016/j.ejor.2009.12.019.

Mingers, J., 2000. The contribution of critical realism as an underpinning philosophy for OR/MS and systems. *Journal of the Operational Research Society*, *51*(11), pp.1256–1270. https://doi.org/10.1057/palgrave.jors.2601033.

Mingers, J., 2014. *Systems Thinking, Critical Realism and Philosophy: A Confluence of Ideas*. Routledge, London.

Nave, D., 2002. How to compare Six Sigma, Lean and the Theory of Constraints. *Quality Progress*, *35*(3), pp.73–78.

Rahman, S-u., 1998. Theory of constraints: A review of the philosophy and its applications. *International Journal of Operations and Production Management*, 18(4), pp.336–355. https://doi.org/10.1108/01443579810199720.

Sepasi, S., 2014a. *Production organizing by Theory of Constraints approach (Implementation of TOC Thinking Process in Production Systems).* Simorgh, Mashhad, pp. 113-120 [In Persian].

Sepasi, S., 2014b. Implementation of the Theory of Constraints in Iranian industries as an alternative to Japanese production methods: A case study of an auto-parts manufacturing company. Paper presented at *The Third Annual National Conference on Modern Management Sciences*, Gorgan, Iran. [In Persian].

Sepasi, S., 2024. Strategic Alignment Framework (SAF): A Data-Driven Approach to Aligning Mission, Vision, and Financial Metrics with OKRs and CSFs. *Open Journal of Business and Management*, *12*, pp.366-387. https://doi.org/10.4236/ojbm.2024.121024.

Sepasi, S., Tabatabaei Rafiei, S. H., and Madandar, B., 2024. Optimizing Business Processes through SAF: A New Frontier in Performance Management. *Research Annals of Industrial and Systems Engineering*, *1*(1), pp.21-33. https://doi.org/10.22105/raise.v1i1.32.

Trietsch, D., 2005. Why a critical path by any other name would smell less sweet? Towards a holistic approach to PERT/CPM. *Project Management Journal*, *36*(1), pp.27–36. https://doi.org/10.1177/875697280503600104.

Ulrich, W., 2001. The quest for competence in systemic research and practice. *Systems Research and Behavioral Science* ,18(1), pp.3–28. https://doi.org/10.1002/sres.366.

Van Aken, JE., 2004. Management research based on the paradigm of the design sciences: The quest for field-tested and grounded technological rules. *Journal of Management Studies*, 41(2), pp.219–246. https://doi.org/10.1111/j.1467-6486.2004.00430.x.