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The Resilience Paradox: Exogenous Resilience Imposition on Individuals and the Formation of Systemic Fragility

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Abstract

The discourse on resilience has proliferated across disciplines—from psychology and organizational behavior to public policy and urban planning—often framing resilience as an unequivocal virtue. Yet this paper advances a counterintuitive proposition: when resilience is imposed upon individuals as a normative expectation or institutional mandate, it paradoxically generates fragility at the systemic level. Drawing on complexity theory, critical psychology, and neo-institutional theory, we theorize the Resilience Paradox as a multi-level mechanism in which the individualization of adaptive burden suppresses collective signal-transmission, erodes structural feedback loops, and displaces accountability from institutions to persons. We distinguish this contribution from prior critical resilience scholarship—specifically MacKinnon and Derickson's (2013) resourcefulness critique and Derickson's (2014) post-liberal governance framework—by providing: (a) a six-criterion operationalization framework for empirically identifying imposed versus endogenous resilience; (b) an explicit four-pathway causal model with specified pathway interactions and feedback dynamics; and (c) a Structural Accountability Reorientation (SAR) framework with sequenced implementation logic and explicit attention to institutional constraints. We conclude that resilience, when weaponized as an ideological imperative, functions as systemic risk displacement—masking macro-level vulnerabilities beneath a veneer of micro-level coping—and that addressing this paradox requires institutional redesign, not further individual adaptive burden.

Keywords

Aresilience paradox; Systemic fragility; Individualization; Complexity theory; Institutional accountability; Risk displacement

1. Introduction

Few concepts have enjoyed as meteoric a rise in the social sciences as resilience. Originally borrowed from materials engineering—where it described a substance's capacity to absorb stress and return to its original state—resilience has been adopted, adapted, and at timResilience paradox; Systemic fragility; Individualization; Complexity theory; Institutional accountability; Risk displacementes distorted across an extraordinary range of scholarly and policy domains (Holling, 1973; Masten, 2001; Park, 2024). In its contemporary usage, it adorns the mission statements of corporations, the curricula of schools, the diagnostic categories of clinical psychology, and the strategic plans of governments responding to climate change, pandemics, and economic disruption.

The appeal of resilience is not difficult to understand. It offers a language of hope in the face of adversity, a framework that centres human agency, and an apparent middle ground between determinism and voluntarism (O'Grady & Shaw, 2023). In an era of pervasive uncertainty, the resilient individual—adaptive, bouncing back, persisting against odds—represents a culturally resonant archetype.

This paper argues that the dominant mode of resilience discourse has undergone a problematic transformation: from resilience as an emergent, context-sensitive, and relationally embedded capacity, to resilience as a normative imposition—a performance demanded of individuals by institutions, systems, and cultural scripts that themselves remain unreformed. This transformation carries material consequences for the architecture of complex social systems.

The central argument of this paper is the Resilience Paradox: the institutional and normative imposition of resilience upon individuals, far from strengthening social systems, produces systemic fragility by displacing adaptive burden downward, suppressing distress signals that would otherwise prompt structural reform, and allowing the root causes of instability to metastasize unaddressed. The mechanism is represented in Figure 1 below.

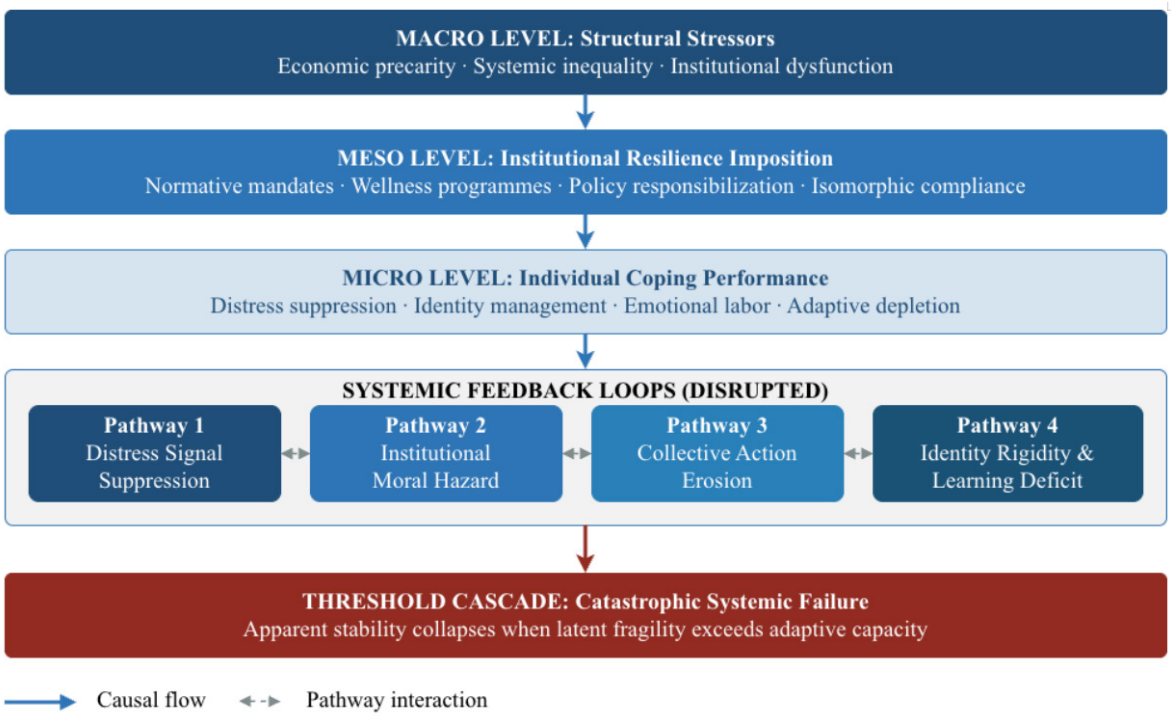


Figure 1. The resilience paradox: multi-level causal architecture

The Resilience Paradox operates across three levels—macro structural stressors, meso institutional impositions, and micro individual coping performances—disrupting four feedback loops (Pathways 1–4) and culminating in threshold cascade. The revised model explicitly includes cross-pathway interaction dynamics absent from the original submission. This argument is grounded at the intersection of complexity and systems theory (Taleb, 2012; Meadows, 2008), critical resilience studies (Park, 2024; O'Grady & Shaw, 2023), neo-institutional theory (DiMaggio & Powell, 1983; Lê & Hoang, 2025), and political economy critiques of neoliberal subjectivity (Dungy & Krings, 2024; Chandler, 2014). By synthesizing these traditions, this paper makes four contributions. First, it provides a six-criterion operationalization framework for empirically distinguishing endogenous from exogenous resilience. Second, it articulates four specific causal pathways with their interaction dynamics. Third, it situates the

Resilience Paradox framework in relation to existing critical resilience scholarship (MacKinnon & Derickson, 2013; Chandler, 2014), specifying its theoretical increment. Fourth, it proposes a SAR framework with sequenced implementation logic that acknowledges structural constraints.

2. The Conceptual Evolution of Resilience and the Operationalization Problem

2.1 Ecological and Engineering Origins

The concept of resilience entered scientific discourse through materials engineering, describing a material's capacity to absorb energy under stress and return to its original form. Holling's (1973) landmark contribution reframed resilience ecologically: not as return to equilibrium but as the capacity of a system to absorb disturbance and reorganize while retaining function and structure. Crucially, Holling distinguished resilience from stability, arguing that high stability could be inversely related to resilience—systems that suppress disturbance signals develop dangerous brittleness. This warning, as we demonstrate below, applies directly to social systems subject to resilience imposition.

2.2 The Psychological Turn: Resilience as Individual Trait

Beginning in the 1970s and accelerating through the 1990s, resilience underwent a disciplinary migration into developmental psychology. Researchers such as Masten (2001) studied children who demonstrated positive adaptation despite significant adversity, asking what factors accounted for their apparent flourishing. This research tradition effected a subtle but consequential conceptual shift: resilience moved from being a relational property of systems to being understood increasingly as an attribute of individuals. This shift was not value-neutral; as a systematic review of longitudinal resilience studies in Wolke et al. (2025) demonstrates, most studies lack an explicit resilience definition, and only 32% explicitly define it as a trait, outcome, or process—revealing deep conceptual ambiguity that facilitates ideological appropriation.

2.3 The Neoliberal Appropriation: Resilience as Ideological Imperative

The most consequential transformation occurred at the intersection of positive psychology, human capital theory, and neoliberal governance. Resilience became embedded in a broader ideological project that Dungy and Krings (2024) characterize as the responsibilization of subjects under neoliberal governance—the transfer of risks and responsibilities from public institutions to private individuals. Park (2024), in a systematic analysis of resilience in development discourse spanning multiple decades and disciplines, identifies this normative shift as the conversion of resilience from a descriptive concept to a rallying call that naturalizes pre-existing structural inequities by framing adaptive failure as individual deficit.

Chandler's (2014; 2023) post-liberal governance framework provides the most sophisticated theorization of this shift: resilience governance represents a transition from modernist governance-from-above (liberal intervention) to the management of subject capacities for self-organization and adaptation—a mode of governing that operates precisely through the cultivation and regulation of individual resilience. We return to the relationship between Chandler's framework and ours in Section 2.5.

MacKinnon and Derickson (2013), from a spatial political economy perspective, offer a third

strand of critique: resilience as applied to communities is spatially misscaled, operating at the level of places when the processes shaping outcomes operate at the scale of capitalist social relations. They propose resourcefulness—a politically mobilizing concept centered on transformative collective agency—as an alternative. While this critique is powerful, it operates at a different analytical level and does not theories the systemic feedback dynamics through which individual resilience imposition generates aggregate fragility. Section 2.5 develops this comparative argument more fully.

2.4 Operationalizing the Endogenous/Exogenous Distinction

A core concern raised in review was that the distinction between endogenous resilience (ER) and exogenous resilience imposition (EI) was operationally vague, creating a risk of circular reasoning. The present section addresses this directly. We propose six observable criteria, each with an empirical indicator and data source, that allow researchers to classify resilience practices without normative pre-judgment. Critically, the criteria are structural and process-based—not outcome-based—breaking the circularity: a practice is identified as EI not because it produces harm but because it satisfies structural criteria independently of its effects (Table 1).

Table 1. Six-criterion operationalization framework for distinguishing endogenous resilience (ER) from exogenous resilience imposition (EI)

Observable Criterion	Endogenous Resilience (ER)	Exogenous Imposition (EI)	Empirical Indicator	Data Source
1. Locus of mandate	Internal; self-directed	External; institutionally mandated	Scale of Perceived Institutional Pressure (SPIP)	Employee survey / policy document audit
2. Distress signal flow	Preserved; help-seeking normalized	Suppressed; help-seeking penalized	Help-seeking rate vs. distress prevalence ratio	Organizational health records; EAP usage data
3. Structural support ratio	Adaptive demand proportionate to institutional resources provided	Adaptive demand exceeds institutional support	Demand-Resource imbalance index (JD-R model)	Organizational surveys; HR policy audit
4. Attribution of failure	Distributed: individual + structural	Individual deficit: personal blame	Locus of Control attribution coding	Interview / focus group data
5. Collective capacity effect	Collective action bandwidth maintained	Collective action bandwidth depleted	Change in civic engagement / collective action rates over time	Longitudinal panel data; associational records
6. Temporal sustainability	Adaptive capacity stable or growing	Adaptive capacity depleting over time	Burnout trajectory; longitudinal well-being index	Repeated-measures longitudinal survey

Each criterion provides an independent, empirically observable indicator that does not presuppose harmful outcomes, addressing the risk of circular reasoning. Mixed cases—where some criteria indicate ER and others EI—should be treated as hybrid contexts requiring nuanced analysis rather than forced classification.

We acknowledge that boundary cases exist. An employer-provided mindfulness programme, for example, could satisfy Criterion 3 (proportionate support) while failing Criterion 2 (distress signal suppression) if participation is performatively mandated. Our framework handles such cases by treating classification as a multi-dimensional profile rather than a binary categorization. A practice scoring EI on four or more of six criteria warrants classification as exogenous imposition; mixed profiles indicate hybrid contexts amenable to partial SAR interventions.

2.5 Theoretical Position: Relation to Existing Critical Resilience Frameworks

A second reviewer concern was that the paper did not adequately distinguish its contribution from MacKinnon and Derickson's (2013) resourcefulness critique and Chandler's (2014) post-liberal governance framework. Table 4 in Section 5 provides a full comparative matrix. Here we summarize the key theoretical increments.

MacKinnon and Derickson (2013) argue that resilience is spatially misscaled and politically conservative, proposing resourcefulness as a transformative alternative. Their critique identifies the problem but does not theorize the dynamic mechanism through which misscaled resilience generates cumulative systemic fragility, nor does it provide operationalization criteria. Our contribution is the causal architecture: the four pathways and their interaction dynamics specify how the political conservatism MacKinnon and Derickson diagnose becomes mechanically reproduced and amplified over time.

Chandler's (2014) post-liberal critique identifies the epistemic shift whereby resilience governance manages subject capacities rather than external conditions. This provides the governmentality backdrop for our Pathway 4 (identity rigidity and learning deficit) but does not theorize the system-level consequences of this subject formation across multiple feedback loops simultaneously. Our contribution is the multi-pathway systemic model: we show that Chandler's epistemic governance and MacKinnon and Derickson's spatial misscaling both operate through identifiable feedback disruptions that can be specified, measured, and—potentially—corrected through targeted institutional redesign. Chandler (2023) has himself noted the limitations of purely diagnostic resilience critique, calling for theoretical work that identifies 'what comes after' the critique. The SAR framework attempts to answer this call while acknowledging the structural constraints Chandler identifies.

3. Theoretical Framework: Complexity Theory and the Anatomy of the Paradox

3.1 Complex Adaptive Systems and the Logic of Fragility

The theoretical scaffolding for the Resilience Paradox draws principally from complexity theory and the study of complex adaptive systems (CAS). A CAS is characterized by multiple interacting agents whose local behaviors give rise to emergent macro-level patterns, nonlinear feedback dynamics, sensitivity to initial conditions, and the capacity for self-organization. Social systems—organizations, communities, economies, healthcare systems—exhibit CAS properties, and their behavior under stress cannot be adequately understood through linear cause-and-effect models.

Taleb's (2012) concept of antifragility provides a particularly useful theoretical resource. Taleb distinguishes between fragile systems (which break under stress), robust systems (which resist stress), and antifragile systems (which improve under stress up to a threshold). Crucially, Taleb argues that efforts to eliminate volatility and impose stability on complex systems frequently backfire—what he terms iatrogenic harm, or harm caused by the intervention itself. The suppression of small stressors prevents the system from developing the adaptive repertoire needed to withstand large shocks, resulting in a dangerous accumulation of latent fragility beneath a surface of apparent stability. We argue that the imposition of individual resilience is precisely such an iatrogenic intervention at the social system level.

Meadows' (2008) systems thinking framework adds the crucial concept of feedback loops. In

complex systems, feedback loops—both reinforcing and balancing—are the primary mechanism through which systems detect and respond to deviation from desired states. When feedback loops are disrupted, delayed, or attenuated, systems lose their capacity for timely self-correction, and small problems compound into crises that by the time they become visible have already exceeded the system's corrective capacity.

3.2 The Endogenous/Exogenous Resilience Distinction in Systems Terms

As operationalized in Section 2.4, endogenous resilience preserves information flows within the system—distress signals propagate upward, triggering adaptive responses at structural levels. Exogenous resilience imposition suppresses these flows, creating what we term feedback opacity: the systemic equivalent of a pressure warning light disabled by the engineer who finds it inconvenient. Table 2 summarizes the systemic contrast between the two forms.

Table 2. Endogenous Resilience (ER) vs. Exogenous Resilience Imposition (EI): systemic comparison

Dimension	Endogenous Resilience (ER)	Exogenous Resilience Imposition (EI)
Origin	Emerges organically from person-environment interaction; self-directed	Mandated by institutions, norms, or policy agendas; externally imposed
Locus of agency	Distributed: individual + relational + structural levels	Individual: burden placed on the person alone
Feedback preservation	Distress signals preserved and transmitted upward	Distress signals suppressed or penalized
Accountability	Shared across structural levels; multi-causal attribution	Attributed to individual deficit or virtue; mono-causal
Structural support	Adaptive demand proportionate to resources provided	Adaptive demand systematically exceeds institutional support
Systemic effect	Enhances antifragility; adaptive learning	Accumulates latent fragility; depletes reserves
Temporal dynamic	Sustainable; iterative improvement	Deteriorating; depletion without renewal
Empirical marker	Stable or improving collective capacity over time	Declining collective action; rising burnout; deferred reform

3.3 The Resilience Paradox: Formal Statement and System Dynamics

In complex social systems characterized by significant structural stressors, the institutional and normative imposition of individual resilience generates systemic fragility through a multi-pathway mechanism. The mechanism is formally analogous to Holling's pathology of resource management: apparent stability purchased by suppressing disturbance signals is accumulated catastrophic risk. However, the social system version involves an additional dimension absent from ecological models: the active ideological work required to maintain the performance of resilience, which depletes the very adaptive resources the system claims to develop. This creates a self-undermining dynamic: the more effectively resilience is imposed, the more rapidly adaptive resources are depleted, and the more fragile the system becomes—even as it appears increasingly stable.

4. Four Causal Pathways and Their Interaction Dynamics

We elaborate four specific causal pathways through which exogenous resilience imposition generates systemic fragility. Figure 2 presents the revised pathway model with explicit cross-pathway interaction dynamics—a substantial revision of the original submission, which treated pathways as analytically independent. The key theoretical development is the demonstration that pathways are sequentially enabling and cumulatively reinforcing, producing non-

linear acceleration toward threshold cascade.

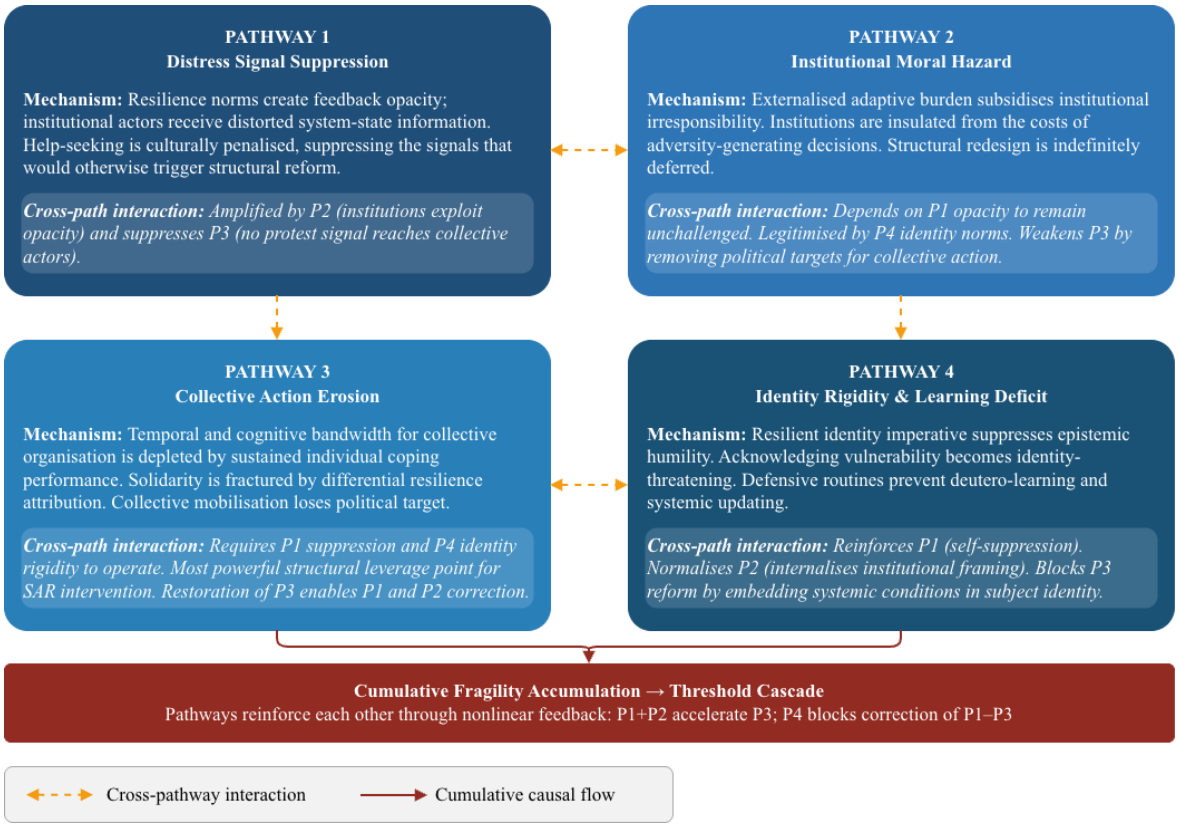


Figure 2. Four causal pathways from imposed resilience to systemic fragility: revised model with cross-pathway interactions

Each pathway is characterized by its mechanism and its enabling/amplifying relationship with other pathways. The bottom row summarizes the cumulative fragility accumulation mechanism. Cross-pathway interaction is the key theoretical addition relative to the original submission.

4.1 Pathway One: The Suppression of Distress Signaling

In complex adaptive systems, individual and collective distress functions as a critical feedback signal. When workers experience burnout, when communities experience deprivation, when students disengage from learning—these manifestations of adversity are information, transmitted through behavioral and physiological channels, that the system is operating outside sustainable parameters. When resilience is imposed as a normative expectation, individuals face strong incentives—social, professional, and psychological—to suppress the expression of distress. The resilient subject is one who continues to perform, to cope, to adapt; the expression of non-coping is coded as weakness, failure, or pathology.

This suppression produces feedback opacity: institutional actors receive systematically distorted information about the state of the system they manage. Evidence for this pathway is well-documented. The Medscape Physician Burnout and Depression Report (2023) documented physician burnout at 53%—up from 26% in 2018—yet help-seeking rates remained systematically low, a gap that Underdahl, Ditri, and Duthely (2024) attribute to the normative expectation that physicians demonstrate competence through coping rather than acknowledge distress. The Journal of Workplace Behavioral Health (2024) concludes in a major synthesis that individual burnout interventions—wellness programmes, resilience training—without

structural redesign are institutionally iatrogenic: they create the appearance of responsive management while leaving root causes unaddressed.

We note the reviewer's concern about the evidential quality of Zhang (2023). We retain this source as one illustrative study among several but no longer rely on it as primary evidence. The primary empirical pillars for Pathway 1 are now the three sources cited above, supplemented by comparative analysis in Section 5.

4.2 Pathway Two: Moral Hazard and Institutional Risk Transfer

The second pathway operates through the logic of moral hazard—the tendency for parties insulated from risk to take on greater risk. When individuals are normatively and institutionally positioned as the primary bearers of adaptive burden, institutions that generate the conditions requiring adaptation are effectively insulated from accountability. This produces a structural moral hazard: institutions can externalize the costs of their decisions onto individual adaptive capacity without bearing those costs themselves.

This pathway is theoretically connected to neo-institutional isomorphism (DiMaggio & Powell, 1983): the embedding of resilience norms in organizational practice—through employee wellness programmes, community resilience initiatives, and public health campaigns—represents an isomorphic process through which institutions signal commitment to well-being while structurally transferring adaptive burden. Lê and Hoang (2025) demonstrate this in organizational settings: neoliberal leadership practices institutionalize structural power by constructing resilient employee subjectivities, normalizing demands that would otherwise face resistance. Maslach and Leiter (2016) provide the strongest evidence: burnout is a systemic outcome of job design, and organizations that frame it as an individual resilience deficit actively prevent the structural redesign that would address root causes.

The reviewer notes that Andersen et al. (2007) and Bambra et al. (2020) are cited beyond their original scope. We now cite these comparative studies as providing correlational, not causal, evidence that institutional frameworks which retain collective support structures alongside individual expectations are associated with better aggregate outcomes. We do not claim they confirm the Resilience Paradox mechanism; they are consistent with it at the macro-comparative level.

4.3 Pathway Three: The Erosion of Collective Action Capacity

The third pathway connects imposed resilience to the erosion of collective action capacity—the primary mechanism through which complex social systems maintain adaptive capacity in the face of structural challenges. Collective action is, in Meadows' (2008) terms, a leverage point: an intervention level where small changes produce large systemic effects. The suppression of collective action through the individualization of resilience therefore removes the system's most powerful structural self-correction mechanism.

The connection between imposed resilience and attenuated collective action operates through several subsidiary mechanisms. First, resilience discourse frames adversity as a challenge to be individually overcome, framing collective responses as evidence of inadequate personal development rather than rational political action. Second, the time and energy costs of sustained individual coping reduce the bandwidth available for collective organization. Third, the differentiation between resilient and non-resilient individuals—attributing differential outcomes to differential personal resources—undermines the solidarity necessary for collective action.

Dungy and Krings (2024), in their interpretive phenomenological study of women community organizers in Chicago, demonstrate how neoliberal logics of responsibilisation and retraditionalization erode the collective organizational capacity of precisely the actors whose work sustains community resilience. O'Grady and Shaw (2023) provide a directly relevant institutional case: UK COVID-19 community response data shows that valorization of non-state resilience among community groups not only reflected but amplified the erosion of collective advocacy capacity, as groups that succeeded individually lost the political language to demand structural support. This constitutes a natural quasi-experiment in collective action erosion that supports our theoretical claim.

4.4 Pathway Four: Identity Rigidity and the Foreclosure of Systemic Learning

The fourth pathway operates at the level of identity and cognition. The imposition of resilience as a normative expectation creates identity imperatives—prescriptions for who one must be to be valued and worthy of social membership. When resilience is an identity imperative, the acknowledgment of vulnerability is not merely uncomfortable but identity-threatening. The resulting defensive suppression prevents individuals from accurately apprehending their situation and the causal structures producing it, foreclosing the cognitive basis for systemic learning.

This dynamic connects to what Argyris and Schön (1978) termed defensive routines: patterns of thought and action that protect individuals and organizations from the anxiety associated with genuine uncertainty, but that simultaneously prevent the learning necessary for adaptive change. Park (2024), in a comprehensive analysis of resilience in development discourse, identifies the same pattern at the policy level: resilience-as-rallying-call normalizes pre-existing inequities precisely because it forecloses the reframing necessary for structural analysis. The identity investment in resilience prevents acknowledgment that the conditions requiring resilience are themselves unjust, or that resilience is failing.

Chandler's (2023) most recent theorization of resilience in the Anthropocene context is relevant here: he argues that resilience thinking, even in its post-liberal form, is embedded in an epistemic framework that forecloses critique by governing through the management of subjects' own sense-making. Our Pathway 4 provides the micro-level cognitive mechanism through which Chandler's macro-level epistemic governance produces practical learning deficits at the organizational and community level.

4.5 Pathway Interaction Dynamics and the System Model

The four pathways are analytically distinct but operate as a mutually reinforcing system. The reviewer correctly identified that the original submission did not theorize these interactions. We now do so through a verbal system dynamics model, reserving formal computational specification for future empirical work.

The core interaction logic is sequential enabling: Pathway 1 (signal suppression) creates the conditions under which Pathway 2 (moral hazard) can operate unchallenged—institutions cannot be held accountable for harms they are not informed about. Pathway 2 amplifies Pathway 1 by increasing the structural incentives for signal suppression. Pathways 1 and 2 together erode the material and political conditions for Pathway 3 (collective action): when distress is invisible and accountability is diffuse, collective mobilization has no clear target and limited bandwidth. Pathway 4 (identity rigidity) normalizes all three preceding pathways by embedding them in the epistemic framework through which actors understand their situation—it is

the mechanism that prevents the system from recognizing its own paradox.

The interaction model generates a key prediction: attempts to intervene in only one pathway without addressing the others are likely to be absorbed and neutralized. Signal transparency initiatives (P1 intervention) without accountability mechanisms (P2) will be captured by institutions as performative compliance. Accountability without collective action capacity (P3) will produce individualized grievance management rather than structural reform. This prediction directly informs the implementation sequencing of the SAR framework (P2 -> P1 -> P3 -> P4 as the ordering most likely to create positive spillovers across pathways).

The cumulative model also generates predictions about temporal dynamics. Pathway interactions are self-reinforcing over time: each year of resilience imposition increases feedback opacity (P1), reduces accountability pressure (P2), further depletes collective action bandwidth (P3), and deepens identity entrenchment (P4). This means that the system moves progressively further from the conditions required for endogenous resilience—and that the longer imposition continues, the more radical the structural intervention required for correction. This is the temporal dimension of the Resilience Paradox: the window for relatively low-cost intervention closes over time.

Table 3. Pathway evidence mapping: domains, mechanisms, and peer-reviewed evidence

Pathway	Domain	Mechanism	Peer-Reviewed Evidence (2022–2025)
P1 – Signal Suppression	Healthcare workforce	Resilience norm pathologizes help-seeking; burnout concealed	Medscape (2023): burnout 53% but formal support-seeking low. Underdahl et al. (2024): physician culture conflates coping with competence. Journal of Workplace Behavioral Health (2024): burnout requires structural—not individual—intervention.
P2 – Moral Hazard	Corporate governance & org. theory	Wellness mandates substitute for structural redesign; costs externalized	Maslach & Leiter (2016): burnout is job-design outcome, not personal deficit. Lê & Hoang (2025): neoliberal leadership normalizes structural demands via subject-formation. Barnhart et al. (2024): structural failure systematically attributed to individual consumers.
P3 – Collective Action	Political economy & welfare state	Responsibilisation depletes bandwidth for collective mobilization	O'Grady & Shaw (2023): UK COVID-19 non-state resilience valorization risks future state abandon. Dungy & Krings (2024): responsibilisation and retraditionalization erode collective organizing capacity. Cherrier & Türe (2023): communal solidarity under responsibilisation can paradoxically fracture associational fabric.
P4 – Learning Deficit	Org. sensemaking & governance	Resilient identity imperative blocks deutero-learning	O'Grady & Shaw (2023): communities valorize non-state resilience frame that forecloses governance learning. Park (2024): resilience-as-rallying-call normalizes pre-existing inequities, preventing re-framing. Wolke et al. (2025): longitudinal studies show resilience conceptualization inconsistency masks adaptive failure.

Evidence quality hierarchy: primary empirical support (peer-reviewed empirical studies, 2022–2025) is distinguished from comparative-correlational support (cross-national comparative studies). Policy documents (OECD 2022; g7+ 2022) are cited as contextual background

only.

5. Theoretical Contribution

This paper builds on and extends prior critical resilience scholarship. Table 4 provides a systematic comparison of the Resilience Paradox framework with the two most influential existing critical approaches: MacKinnon and Derickson's (2013) resourcefulness critique and Chandler's (2014) post-liberal governance framework. We identify three dimensions of theoretical increment.

Table 4. Comparative theoretical matrix: Resilience Paradox vs. Prior Critical Frameworks

Dimension	Resourcefulness Critique (MacKinnon & Derickson, 2013)	Post-liberal Governance Critique (Chandler, 2014)	Resilience Paradox (Present Paper)
Primary critique	Resilience is spatially misscaled; operates at level of capitalist social relations, not communities	Resilience shifts governance from liberal intervention to management of subject capacities	Resilience imposition generates systemic fragility through specific causal mechanisms
Unit of analysis	Place / community	Governance rationalities / subject formation	Multi-level sociotechnical systems (micro-meso-macro)
Causal mechanism	Implicit (structural reproduction)	Foucauldian subject-formation; governmentality	Explicit: four pathways with specified interactions and feedback loops
Systemic fragility	Not directly theorized	Not directly theorized	Central contribution: demonstrates how fragility accumulates and cascades
Operationalization	Not provided	Discourse analysis only	Six-criterion operationalization framework with empirical indicators
Prescriptive framework	Resourcefulness as alternative; spatially re-scaled	None offered (primarily diagnostic)	SAR Framework: four principles with sequenced implementation logic
Theoretical increment	Spatial politics of resilience	Epistemic shift in governance	Systemic dynamics: feedback opacity, moral hazard, collective action erosion, learning deficit

The Resilience Paradox framework's primary theoretical increment lies in three areas: (1) mechanistic causal specification with pathway interactions; (2) operationalization criteria enabling empirical testing; and (3) systemic fragility as a theorized outcome, which prior frameworks do not address.

The first theoretical increment is mechanistic specification. Both resourcefulness and post-liberal critique diagnose resilience as politically problematic but do not specify the causal mechanisms through which problematic politics generates aggregate systemic consequences. Our four-pathway model, with its interaction dynamics, provides this mechanism. This moves the field from critique (resilience is bad) to explanation (resilience imposition generates fragility through these specific pathways, at this pace, with these interaction effects).

The second increment is the operationalization framework. Neither MacKinnon and Derickson nor Chandler provide criteria by which researchers could empirically distinguish endoge-

nous from problematic resilience. Our six-criterion framework (Table 1) enables this distinction without circular reasoning. This opens a research agenda: the question is no longer simply whether resilience is ideologically problematic, but under what measurable conditions and in what institutional contexts it generates the pathological dynamics the Resilience Paradox predicts.

The third increment is the systemic fragility theorization itself. The concept that individual-level resilience imposition generates system-level fragility through feedback disruption is new. MacKinnon and Derickson's resourcefulness critique focuses on spatial politics; Chandler's critique focuses on epistemic governance. Neither addresses the CAS dynamics—feedback opacity, latent fragility accumulation, threshold cascade—that we theorize. This cross-level connection between micro-level coping performance and macro-level systemic vulnerability is the paper's core conceptual contribution.

We also acknowledge what the Resilience Paradox framework does not do. Unlike MacKinnon and Derickson, it does not provide a spatially differentiated analysis of how resilience imposition operates differently across geographic and class contexts. Unlike Chandler, it does not provide a genealogical analysis of the epistemic conditions through which resilience thinking became possible. These remain important complementary lines of inquiry; the frameworks are not competitors but different-level analyses of the same phenomenon.

6. The Structural Accountability Reorientation (SAR) Framework

6.1 Principles and Structural Constraints

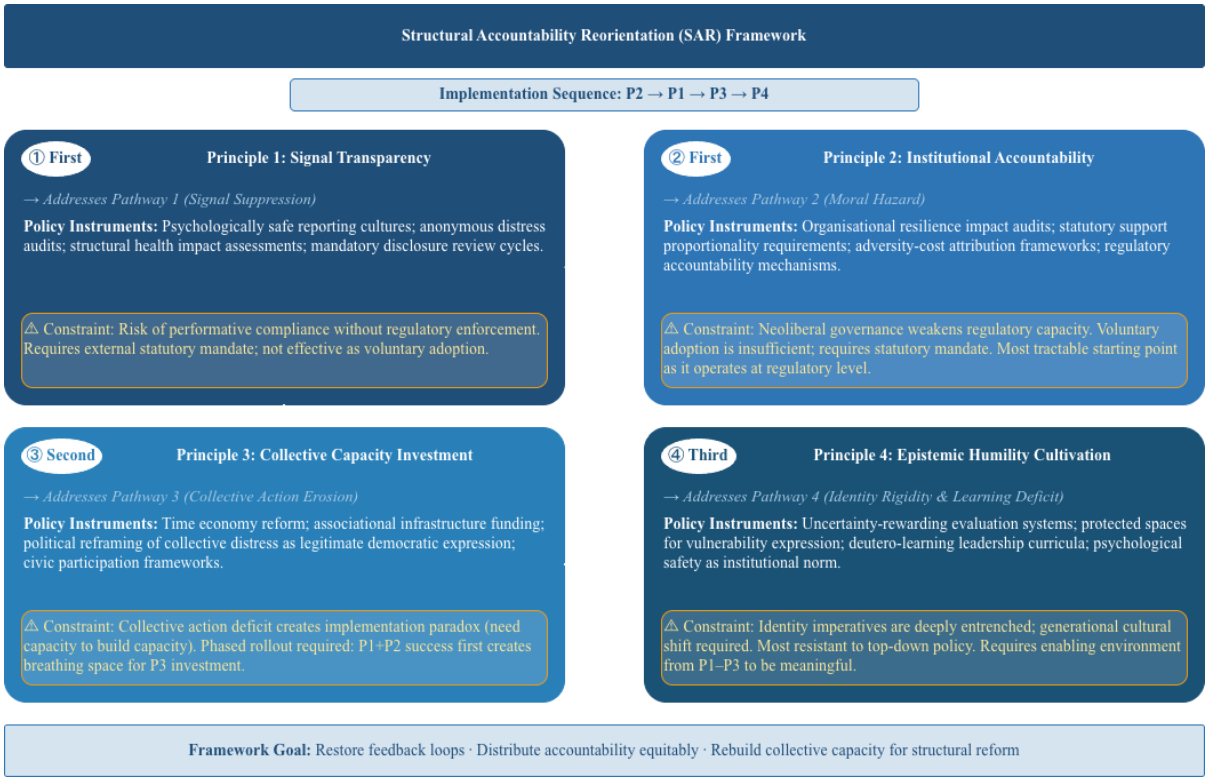
Having diagnosed the mechanisms through which imposed resilience generates systemic fragility and compared our framework with prior approaches, we develop the Structural Accountability Reorientation (SAR) framework. The SAR framework is organized around four principles that correspond to the four pathways identified above (Figure 3 and Table 5). A critical revision from the original submission is the explicit incorporation of implementation constraints and co-optation risks for each principle.

Principle 1 (Signal Transparency) requires institutional conditions that facilitate rather than suppress the transmission of distress signals. The reviewer correctly identified the risk that signal transparency can be adopted as performative compliance—a wellness audit that produces no structural change. We address this by specifying that P1 interventions require external regulatory enforcement (not voluntary adoption) and that success indicators must be tied not to disclosure rates alone but to the structural responses disclosure triggers. Without P2 (accountability) mechanisms, P1 interventions will be absorbed as impression management.

Principle 2 (Institutional Accountability) addresses the moral hazard mechanism by reconnecting the costs of adversity-generating decisions to the decision-makers who produce them. This is the most tractable entry point for policy intervention precisely because it operates at the institutional and regulatory level rather than requiring individual or cultural change. Lê and Hoang (2025) observe that critical leadership studies must move beyond discourse analysis to examine how accountability structures can interrupt the neoliberal logic of resilience imposition; P2 provides the institutional lever for this interruption.

Principle 3 (Collective Capacity Investment) addresses the collective action erosion through deliberate investment in associational infrastructure and time economy reform. We acknowledge the reviewer's concern that this faces a chicken-and-egg problem: collective action

capacity is needed to achieve the political change that would enable collective capacity investment. We address this through phased implementation: P2 interventions (regulatory accountability) can be achieved through state action without requiring collective mobilization; P2 success creates breathing space for P3 investments that restore the collective capacity needed for sustained reform pressure.



Note: Each quadrant specifies not only the policy instrument but the institutional constraint that must be addressed for implementation to avoid co-optation. Implementation sequencing (P2 -> P1 -> P3 -> P4) is based on the cross-pathway interaction logic developed in Section 4.5.

Figure 3. The structural accountability reorientation (SAR) framework: revised with implementation constraints

Principle 4 (Epistemic Humility Cultivation) addresses the learning deficit by developing institutional cultures that reward epistemic humility—the capacity to acknowledge uncertainty, vulnerability, and the limits of current adaptive strategies—over the performance of confident competence. We acknowledge this is the most structurally resistant principle, requiring generational cultural change rather than policy reform. It is positioned fourth in the implementation sequence because it requires the enabling conditions created by P1–P3: individuals cannot sustainably express epistemic humility in contexts that have not yet established accountability and signal transparency.

6.2 Implementation Sequencing and the Constraint Problem

The sequencing logic (P2 -> P1 -> P3 -> P4) is grounded in the cross-pathway interaction model of Section 4.5. Accountability mechanisms (P2) are addressed first because they operate at the regulatory level—they can be implemented through state action without requiring collective mobilization or individual cultural change. P2 success reduces the feedback opacity that P1 signal transparency requires to function meaningfully. P1 + P2 together create the breathing space—reduced adaptive burden, better information flows—necessary for P3 collective capacity to be rebuilt. P3 collective capacity, once restored, creates the sustained political pressure needed for the deep cultural work of P4.

This sequencing does not imply that P1–P3 must be fully achieved before P4 begins. Cultural work (P4) can proceed in parallel, but it is fragile without the enabling environment created by P1–P3. Attempting P4 first—as many current resilience reform initiatives do, through leadership mindfulness and vulnerability disclosure programmes—risks replicating the paradox at one remove: cultivating epistemic humility as an individual performance without the structural conditions that make it safe and meaningful.

Table 5. SAR framework: full implementation matrix with constraints and sequencing

SAR Principle	Pathway Addressed	Policy Instrument	Structural Constraint	Success Indicator
1. Signal Transparency	P1 (Suppression)	Psychologically safe reporting; distress audits; structural health impact assessments; anonymous disclosure systems	Risk of performative compliance without regulatory enforcement	Early distress disclosure rate; presenteeism decline
2. Institutional Accountability	P2 (Moral Hazard)	Organizational resilience impact audits; statutory support proportionality requirements; adversity-cost attribution frameworks	Neoliberal governance weakens regulation; requires statutory mandate	Cost externalization reduction; org. robustness investment increase
3. Collective Capacity Investment	P3 (Collective Action)	Time economy reform; associational infrastructure funding; political reframing of collective distress as legitimate	Collective action deficit creates implementation paradox; requires phased rollout	Civic engagement rates; social capital indices
4. Epistemic Humility Cultivation	P4 (Learning Deficit)	Uncertainty-rewarding evaluation; protected vulnerability spaces; deutero-learning leadership curricula	Deep cultural entrenchment; generational shift required; slow-acting	Org. learning metrics; defensive routine scores; institutional updating rates

The full implementation matrix specifies not only policy instruments and success indicators but the structural constraints that must be addressed for each principle to avoid co-optation. Implementation sequencing follows the P2-P1-P3-P4 logic derived from pathway interaction analysis.

6.3 Comparative Evidence for the SAR Approach

Comparative institutional evidence is consistent with the SAR framework's approach. Andersen et al. (2007) demonstrate that Nordic welfare states—which maintain robust collective support structures alongside expectations of individual contribution—show correlates of higher systemic adaptive capacity in the face of economic shocks than liberal market economies. We note, as the reviewer correctly observes, that these studies were not designed to test the Resilience Paradox and cannot confirm our causal mechanism; they provide correlational consistency, not confirmatory evidence. The COVID-19 experience provides a similar correlational signal: Bambra et al. (2020) document that systems with robust public health infrastructure and equitable resource distribution achieved better outcomes than those relying primarily on individual behavioral adaptation. More directly relevant, O'Grady and Shaw (2023) provide process-level evidence that state accountability mechanisms—when present—enabled more sustainable community response patterns than non-state resilience valorization.

7. Research Implications and Methodological Directions

7.1 Methodological Challenges: The Temporal Fragility Detection Problem

The Resilience Paradox presents distinctive methodological challenges. The central mechanism—the suppression of distress signals—means that conventional survey-based measures of well-being and adaptive functioning may systematically misrepresent systemic health, capturing the performance of resilience rather than its genuine presence. The paradox also operates across multiple temporal scales: the short-term appearance of stability produced by imposed resilience may persist for years or decades before systemic fragility becomes visible in aggregate outcomes.

This temporal structure—what we term the fragility detection problem—requires research designs that can distinguish apparent stability (surface coping performance) from genuine systemic health (preserved feedback loops and growing adaptive capacity). Standard cross-sectional surveys are inadequate for this task because they measure the state of the system at a single point in time, missing the temporal accumulation dynamic. Longitudinal designs with repeated measures over 5–10+ years are necessary minimum conditions.

An additional methodological complication is that successful resilience imposition is specifically designed to prevent the behavioral signals that would flag measurement. If help-seeking rates are low, this might indicate genuine well-being or successful suppression—the two are behaviorally indistinguishable without multi-method triangulation. We recommend triangulating survey data with organizational records, EAP usage data, medical leave patterns, and collective action indicators over time.

Table 6. Methodology decision matrix: research designs for testing the resilience paradox across pathways

Research Question	Recommended Method	Rationale for Temporal Challenge
Does feedback opacity vary with resilience imposition intensity?	Cross-institutional comparative survey + EAP usage records over 5+ years	Suppression effects require multi-year observation; single-point surveys miss accumulation dynamics
Does moral hazard reduce institutional robustness investment?	Panel data analysis of org. health investment vs. individual wellness mandate intensity	Lagged effects (1-3 yrs); instrumental variable design to address endogeneity
Does resilience imposition reduce collective action capacity?	Natural experiment (policy change); longitudinal cohort study; event study design	Collective action bandwidth depletion is slow-moving; requires 5–10 year window
Can threshold cascade be observed retrospectively?	Archival case study (e.g., healthcare workforce collapse 2020-22); process tracing	Cascades appear sudden but build over years; retroactive identification via leading indicators
Pathway interaction effects	Agent-based modelling + system dynamics simulation	Multi-pathway nonlinear dynamics cannot be captured by regression; requires computational methods
Note: The matrix addresses the reviewer's concern that the original methods section was insufficiently developed. Each row provides a specific research design, not merely a research question, with explicit attention to the temporal challenge of detecting latent fragility accumulation before threshold cascade.		

7.2 Research Design Recommendations by Pathway

Table 6 provides a methodology decision matrix that maps specific research designs to each pathway, with explicit attention to the temporal challenge of detecting slow-accumulating fragility. A key design recommendation is the use of natural experiments—policy changes in

resilience mandate intensity, welfare state reforms, sector-level regulatory changes—to create quasi-experimental variation in the key independent variable (resilience imposition intensity) while controlling for confounding factors.

For pathway interaction research, we recommend agent-based modelling (ABM) and system dynamics simulation as the most appropriate computational methods for multi-pathway nonlinear dynamics that cannot be captured by regression-based approaches. A simulation model in which agents face varying combinations of resilience imposition intensity, collective action bandwidth, and institutional accountability could test the pathway interaction predictions of Section 4.5 and generate observable signatures of fragility accumulation that could be matched against archival data.

7.3 Future Research Directions

Several empirical research questions follow directly from the framework. First, does the feedback opacity produced by resilience norms vary systematically with institutional characteristics (sector, governance structure, welfare state context)? The meta-analytic work on workplace resilience (Maslach & Leiter, 2016) suggest this is tractable. Second, do natural experiments in resilience imposition—austerity reforms, sector-specific regulatory changes—produce the moral hazard and collective action erosion dynamics predicted by Pathways 2 and 3? Third, can the threshold cascade mechanism be identified retrospectively in organizational collapse data (e.g., healthcare system breakdowns, 2020–22) using process tracing to identify the preceding fragility accumulation signature? Fourth, what are the boundary conditions under which the Resilience Paradox operates? The framework predicts that the paradox is most pronounced in contexts with high resilience imposition intensity and low institutional accountability—but the conditions under which individual resilience can function endogenously (and thus be genuinely antifragile) deserve equal theoretical and empirical attention.

8. Conclusion

This study posits that the dominant resilience discourse paradigm, which construes resilience as a normative expectation externally imposed on individuals, engenders a profound paradox: the cultivation of ostensibly resilient individual subjects ultimately culminates in the construction of socially systemic fragility. Through four interwoven causal pathways—the suppression of distress signaling, the generation of institutional moral hazard, the erosion of collective action capacity, and the foreclosure of systemic learning—the exogenous imposition of individual resilience accrues the structural antecedents of catastrophic systemic failure.

A central aim of this study has been to clarify the conditions under which resilience strengthens systems and the conditions under which it undermines them. By distinguishing endogenous resilience from exogenous resilience imposition and grounding this distinction in observable structural criteria, the paper moves beyond purely discursive critique toward analytical specification. This distinction enables resilience practices to be evaluated not by rhetorical intent or stated objectives, but by their position within institutional arrangements and their effects on feedback structures. The emphasis on feedback integrity, proportional distribution of adaptive burden, and accountability location provides a framework through which resilience practices can be examined empirically rather than normatively assumed to be beneficial. In this sense, the argument does not reject resilience as a concept; it re-situates it within the structural arrangements that determine its systemic consequences and clarifies the institutional conditions under which it can function as a genuinely adaptive principle.

The theoretical architecture developed here links this distinction to a broader systemic account of fragility accumulation. When adaptive demands are displaced downward while institutional structures remain insulated from corrective pressure, resilience becomes performative rather than transformative. Over time, suppressed signals, deferred accountability, weakened collective capacity, and constrained learning interact in ways that make systems appear stable while eroding their adaptive reserves. These dynamics are not immediately visible; they unfold gradually and often remain masked by short-term indicators of coping and productivity. As a result, systems may continue to function within acceptable performance thresholds even as their capacity to absorb future shocks diminishes. The paradox therefore lies in the temporal misalignment between visible stability and latent vulnerability, a misalignment that complicates both diagnosis and intervention. The contribution of this framework lies in making such slow-moving processes conceptually traceable, thereby opening space for empirical inquiry into how resilience discourse operates differently across institutional contexts, governance regimes, and extended temporal horizons.

The resilience paradox identified in this study necessitates a fundamental recalibration of the global resilience research and practice agenda: the analytical and practical focus must be shifted from the cultivation of individual subjects who passively absorb structurally generated adversities, to the reconstruction of institutional and structural arrangements that proactively mitigate the root causes of such adversities at the systemic level. The SAR framework proposed in this study provides a theoretically grounded and empirically tractable initial blueprint for this recalibration, albeit its implementation entails notable institutional and structural constraints. The practical implications of this theoretical distinction transcend the realm of academic inquiry: social systems rendered feedback-blind by the ideological imposition of individual resilience lack the essential adaptive capacity and endogenous self-correcting mechanisms to navigate the cascading and compounding global challenges of the coming decades—including climate disruption, transboundary pandemic risks, and deepening structural economic inequality. Consequently, such systems are confronted with exacerbated vulnerability to catastrophic systemic collapse when exposed to these convergent stressors.

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The author(s) declare no conflicts of interest regarding the publication of this paper.

Ethics Statement

Not applicable.

References

Andersen, T. M., Holmström, B., Honkapohja, S., Korkman, S., Söderström, H. T., & Vartiainen, J. (2007). *The Nordic model: Embracing globalization and sharing risks*. The Research Institute of the Finnish Economy.

Argyris, C., & Schön, D. (1978). *Organizational learning: A theory of action perspective*. Addison-Wesley.

Bambra, C., Riordan, R., Ford, J., & Matthews, F. (2020). The COVID-19 pandemic and health inequalities. *Journal of Epidemiology and Community Health*, *74*(11), 964–968. https://doi.org/10.1136/jech-2020-214401

Barnhart, M., Huff, A. D., & Scott, I. (2024). Morality appraisals in consumer responsibilization. *Journal of*

Consumer Research, *50*(5), 1008–1030. https://doi.org/10.1093/jcr/ucad032

Chandler, D. (2014). *Resilience: The governance of complexity*. Routledge.

Chandler, D., & Hathout, S. (2023). Rethinking 'hope' and 'resilience' in the Anthropocene: An interview with David Chandler. *World Futures Review*, *15*(1), 93–98. https://doi.org/10.1177/19467567231170828

Cherrier, H., & Türe, M. (2023). Tensions in the enactment of neoliberal consumer responsibilization for waste. *Journal of Consumer Research*, *50*(1), 93–115. https://doi.org/10.1093/jcr/ucac037

Cosco, T. D., Kaushal, A., Hardy, R., Richards, M., Kuh, D., & Stafford, M. (2017). Operationalising resilience in longitudinal studies: A systematic review of methodological approaches. *Journal of Epidemiology and Community Health*, *71*(1), 98–104. https://doi.org/10.1136/jech-2015-206980

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147–160.

Dungy, M. L., & Krings, A. (2024). Responsibilization and retraditionalization: How neoliberal logics reproduce gender inequities among women community organizers in Chicago. *Affilia: Feminist Inquiry in Social Work*, *39*(4), 683–700. https://doi.org/10.1177/08861099241238199

g7+. (2022). *Addressing fragility in the g7+ context: Country-owned pathways to resilience. g7+ Secretariat*. [Policy document]

Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, *4*(1), 1–23.

Journal of Workplace Behavioral Health. (2024). Worker burnout: Beyond resilience to structural transformation [Special Issue]. *Journal of Workplace Behavioral Health*, *39*(3). https://doi.org/10.1080/15555240.2024.2373460

Lê, K., & Hoang, G. (2025). Leadership in neoliberal organizations: Theory and empirical illustrations. *Leadership*, *21*(5–6). https://doi.org/10.1177/17427150251376099

MacKinnon, D., & Derickson, K. D. (2013). From resilience to resourcefulness: A critique of resilience policy and activism. *Progress in Human Geography*, *37*(2), 253–270. https://doi.org/10.1177/0309132512454775

Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, *15*(2), 103–111. https://doi.org/10.1002/wps.20311

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*(3), 227–238.

Meadows, D. H. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.

Medscape. (2023). *Physician burnout and depression report 2023: Burnout worsening, depression increasing*. Medscape Medical News.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, *83*(2), 340–363.

OECD. (2022). *States of fragility 2022. OECD Publishing*. https://doi.org/10.1787/c7fedf5e-en

O'Grady, N., & Shaw, D. (2023). Resilience, responsibility and state abandon: The changing role of the government in emergencies. *Political Geography*, 100, 102796. https://doi.org/10.1016/j.polgeo.2022.102796

Park, S. (2024). *Understanding resilience in sustainable development: Rallying call or siren song? Sustainable Development*, *32*(1), 455–468. https://doi.org/10.1002/sd.2645

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.

Taleb, N. N. (2012). *Antifragile: Things that gain from disorder*. Random House.

Underdahl, L., Ditri, M., & Duthely, L. M. (2024). Physician burnout: Evidence-based roadmaps to prioritizing and supporting personal wellbeing. *Journal of Healthcare Leadership*, 16, 15–27. https://doi.org/10.2147/JHL.S389245

Wakefield, S., Chandler, D., & Grove, K. (2022). The asymmetrical Anthropocene: Resilience and the limits of posthumanism. *Cultural Geographies*, *29*(3), 389–404. https://doi.org/10.1177/14744740211029278

Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, *38*(4), 628–652.

Wolke, D., Zhou, Y., Liu, Y., Jaekel, J., Pitzer, M., Meinischm C., & Flouri, E. (2025). A systematic review of conceptualizations and statistical methods in longitudinal studies of resilience. *Nature Mental Health*, *3*, 1088–1099. https://doi.org/10.1038/s44220-025-00479-3

Zhang, L. (2023). The dark side of resilience in the workplace: Finding a balance. *Journal of Student Research*, *12*(4). https://doi.org/10.47611/jsrhs.v12i4.5474

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Exploring Emotional Intelligence on Career Readiness: A Case Study of Rural Vocational College Students During Mandatory Quasi-employment Internship in Longnan City

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Abstract

Against the backdrop of rural revitalization and China TVET system reforms, this qualitative case study explores how emotional intelligence (EI) shapes career readiness among three rural students from Longnan Vocational and Technical College during mandatory quasi-employment internships, with supplementary insights from one supervisor. Data were collected via semi-structured interviews, student reflection notes, and institutional documents between November 2025 and January 2026, then analysed through thematic analysis. Findings show that while students possessed basic self-awareness and strong intrinsic motivation, they lacked effective self-regulation, empathy, and social skills, and faced prominent emotional challenges (interpersonal tension, task pressure-induced anxiety, and student-to-employee identity confusion). EI was found to influence career readiness through three core pathways: emotional regulation boosting workplace adaptability, empathy fostering teamwork, and self-motivation enhancing career self-efficacy. Overall, EI acts as a dynamic, context-dependent resource that enables rural TVET students to convert emotionally demanding internship experiences into career readiness outcomes, providing key implications for rural TVET curriculum design, internship supervision, and policy formulation.

Keywords
Emotional intelligence; Career readiness; Rural TVET students; Mandatory quasi-employment internship

1. Introduction

Technical and Vocational Education and Training (TVET) is pivotal to nurturing skilled talents for China's rural revitalization and regional economic development (Ministry of Education, 2024). As a key link between rural labor markets and industrial demand, rural TVET students face several unique barriers, including limited formal work exposure, insufficient social capital, and weak workplace adaptability (Hou et al., 2020; Abd Rahman et al., 2025). Mandatory quasi-employment internships—an integral TVET curriculum component—simulate formal employment, requiring students to complete tasks under organizational management with academic supervision (Lloyd et al., 2019).

Emotional Intelligence (EI)—defined by Goleman (1995) as learnable skills (self-awareness, self-regulation, motivation, empathy, social skills)—is a key predictor of workplace success. Prior research confirms its positive correlation with career adaptability, resilience, and job

performance (Crane et al., 2020; Motlhanke & Naong, 2021). However, Chinese TVET research primarily focuses on curriculum design, skill training, and policy analysis, with limited attention to students' emotional experiences (Li & Wang, 2023). Notably, qualitative studies exploring how EI operates in real internships to shape rural TVET students' career readiness remain scarce.

Longnan City, a mountainous rural area in southern Gansu with underdeveloped industries and limited graduate career opportunities, is representative. Local rural TVET students typically intern in service, manufacturing, or agricultural sectors, facing greater emotional and adaptive pressures than urban peers (Gansu Provincial Department of Education, 2023). This context underscores the urgency of exploring their EI and career readiness. Focusing on this specific group, this study addresses the research gap and provides context-specific implications.

Longnan rural TVET students face significant emotional challenges during mandatory quasi-employment internships, and local employers report that many graduates lack emotional intelligence–related career readiness skills (Singh, 2024; Jafari & Yazdi, 2024). Despite the recognised importance of emotional intelligence, existing research shows three major gaps, namely the neglect of rural TVET populations in favour of urban or general vocational groups, an over-reliance on quantitative methods that limits understanding of students' emotional experiences, and insufficient attention to the dual academic–employment pressures inherent in mandatory quasi-employment internships (Ngubane et al., 2024; Tripney & Hombrados, 2013; Saunders, 2016; Karmazinuk & Helik, 2025; Hou et al., 2020; LoMonten & Kurtz, 2023).

To address these gaps and support the exploration of students' self-perceptions of emotional intelligence, key emotional challenges, and emotional intelligence pathways to career readiness, this qualitative case study investigates rural TVET students' emotional experiences and the relationship between emotional intelligence and career readiness during internships.

2. Literature Review

This literature review synthesizes existing research on emotional intelligence (EI) and career readiness in vocational education, drawing on Emotional Intelligence Theory and Social Cognitive Career Theory. It critically examines international and domestic empirical evidence on the role of EI in students' career transitions, with particular attention to the underexplored context of rural vocational students undertaking mandatory quasi-employment internships. By identifying conceptual and methodological gaps in prior studies, this review establishes the theoretical and empirical justification for the present qualitative case study conducted in Longnan City.

A growing body of international research confirms a positive association between emotional intelligence (EI) and career readiness across vocational and youth populations. Studies have shown that EI significantly predicts adaptability, teamwork, and emotional resilience during internships and early employment stages (Crane et al., 2020; Lloyd et al., 2019; Motlhanke & Naong, 2021). Emotional and social competency training has also been found to enhance job retention and workplace adjustment among vulnerable youth groups, highlighting EI as a critical non-technical competency in work-integrated learning contexts. Collectively, these findings position EI as a key enabler of successful school-to-work transitions.

However, existing domestic research—particularly within the Chinese context—remains lim-

ited in scope and population focus. Most studies concentrate on urban university students or general vocational cohorts, often employing quantitative survey designs. For example, studies conducted in Hong Kong and mainland China have linked EI to career adaptability, self-efficacy, and resilience, yet they largely exclude rural TVET students and rarely address mandatory internship contexts (Hou et al., 2020; Li & Wang, 2023). Although evidence suggests that rural vocational students score lower in EI dimensions such as self-regulation, empathy, and social skills, few studies explore how these EI gaps concretely shape career readiness during workplace-based learning. This gap underscores the need for qualitative, context-sensitive research focusing on rural TVET students' lived internship experiences.

Within public higher vocational and technical education (PHTVE), EI is increasingly recognised as a core non-technical competency that complements technical skill development and supports holistic workplace adaptation (ACTE Online, 2024; Li & Zhang, 2025). Drawing on Goleman's (1995) five-dimensional EI framework—self-awareness, self-regulation, motivation, empathy, and social skills—PHTVE-oriented EI emphasises context-specific capabilities such as managing technical frustration, collaborating during internships, and coping with workplace pressure. Empirical evidence indicates that higher EI among vocational students is associated with improved mental well-being, reduced burnout, higher internship satisfaction, and stronger supervisor-rated adaptability and employability (IJRR, 2025; Li & Zhang, 2025).

Despite its recognised value, EI integration within PHTVE remains structurally constrained. Curricula continue to prioritise technical training, with limited explicit attention to EI development, and many vocational educators lack formal training in EI pedagogy (HRMARS, 2025). These limitations are particularly pronounced among rural student populations, whose restricted social exposure and workplace familiarity further hinder emotional and interpersonal skill development. As employers increasingly value EI alongside technical competence in fast-paced, collaborative work environments, this misalignment poses a challenge to PHTVE's goal of producing genuinely "job-ready" graduates (Ibrahim et al., 2025).

Mandatory quasi-employment internships—compulsory, credit-bearing placements that combine academic supervision with real workplace responsibilities—constitute a central component of PHTVE systems (Brand et al., 2013; Lynch, 2000). These internships place students in a dual-pressure environment, requiring them to meet both academic expectations and employer performance standards. Prior research indicates that such settings intensify emotional challenges, including role conflict, task pressure, and identity transition from "student" to "employee," making EI particularly salient for successful adaptation (Nguyen et al., 2024; Rosita et al., 2024).

For rural TVET students, these challenges are amplified by limited social capital, reduced exposure to professional environments, and fewer opportunities for informal workplace learning (Fields, 2013; Cardona, 2025). Although career readiness in PHTVE is widely conceptualised as a multidimensional construct integrating technical skills, self-efficacy, outcome expectations, vocational interests, and career goal clarity (LeBouthillier, 2024; Foley & Lytle, 2015), most existing studies focus on urban institutions and quantitative outcomes. Consequently, little is known about how non-cognitive factors—particularly EI—operate within the lived experiences of rural students navigating mandatory quasi-employment internships.

Guided by Goleman(1995) Emotional Intelligence Theory and Social Cognitive Career Theory (SCCT) (Bandura, 1986; Foley & Lytle, 2015), this study conceptualises EI as a set of emotional and interpersonal competencies that shape students' emotional regulation, self-efficacy,

outcome expectations, and career goal formation during internships. SCCT provides a robust framework for explaining how emotional competencies interact with cognitive and personality factors to influence career readiness outcomes, particularly during critical transition periods from education to employment.

Despite strong theoretical foundations and growing empirical interest, existing research reveals three key gaps: the underrepresentation of rural TVET students, an overreliance on quantitative methodologies, and insufficient attention to mandatory quasi-employment internships as emotionally demanding learning contexts. Addressing these gaps, the present study adopts a qualitative case study approach to examine how emotional intelligence shapes career readiness among rural TVET students in Longnan City, thereby contributing context-rich evidence to both EI and vocational education literature.

3. Methodology

This study employs a qualitative case study design (Yin, 2018) to explore the complex relationship between EI, emotional challenges, and career readiness in a real-world context. A case study is appropriate because it allows in-depth investigation of a bounded system (rural TVET students in Longnan during mandatory internships) and captures rich, context-specific data (Creswell & Poth, 2018). The design focuses on students' lived experiences, aligning with the qualitative goal of understanding "how" and "why" EI influences career readiness.

This study adopted purposive sampling to recruit well-informed participants (Patton, 2015; Etikan et al., 2016). The sample comprised three rural TVET students from Longnan Vocational and Technical College who had completed at least three months of mandatory pre-employment internships in technical or service-related fields and were willing to share their emotional experiences and reflective notes. In addition, one internship supervisor with at least three months of experience mentoring rural TVET students was selected to provide supplementary insights into students' emotional performance and career readiness (De Wee, 2024; Mitcham, 2021; Ngubane et al., 2024).

This qualitative case study employed multiple data sources to gain an in-depth understanding of how emotional intelligence (EI) influences career readiness among rural TVET students during mandatory quasi-employment internships. Data were collected through semi-structured interviews, internship reflection notes, and institutional documents to ensure methodological triangulation.

Semi-structured interviews were conducted with four participants, including three rural TVET students and one internship supervisor. Each interview lasted approximately 20–30 minutes, was audio-recorded with participants' consent, and transcribed verbatim. Interview protocols were aligned with the research questions. Student interviews focused on self-perceptions of emotional intelligence, emotional challenges encountered during internships, and the perceived influence of emotions on career readiness. The supervisor interview explored students' emotional performance, common workplace challenges, and the relationship between emotional intelligence and internship outcomes (Ngubane et al., 2024; Motsatsi, 2024; Rutakumwa et al., 2024; Pino et al., 2017).

To complement interview data, each student submitted two to three critical reflection notes (500–800 words each) documenting emotionally salient events during their internships, such as interpersonal conflicts, task achievements, or stress-related experiences. These reflections provided first-hand insights into students' emotional regulation, self-awareness, and adaptive

strategies.

In addition, institutional documents from Longnan Vocational and Technical College were collected, including students' final internship reports (containing both supervisor evaluations and self-assessments) and official internship management guidelines. These documents offered contextual information and were used to cross-validate interview and reflection data, thereby enhancing data credibility (Chand, 2025; Hsu, 2025).

Data were analyzed using thematic analysis following Braun and Clarke's (2006) framework. The analysis proceeded through four iterative stages.

First, data familiarization was achieved through repeated reading of interview transcripts, reflection notes, and institutional documents, enabling the researcher to gain a holistic understanding of participants' emotional experiences and career-related perceptions (Wilton, 2017; Parameswaran et al., 2020). Analytic memos were written to capture initial insights related to emotional challenges, EI-related behaviors, and career readiness outcomes (Sackman-Ebuwa, 2024; Alfarajat, 2025).

Second, inductive coding was conducted to label meaningful segments of data using descriptive codes such as "self-awareness of anxiety," "interpersonal conflict," and "growing professional confidence." These codes were then organized into broader analytic categories aligned with the research questions.

Third, codes were grouped into higher-order themes through constant comparison (Sackman-Ebuwa, 2024; Alfarajat, 2025). Three overarching themes emerged: (1) students' self-perceptions of emotional intelligence; (2) key emotional challenges during internships; and (3) pathways through which emotional intelligence influences career readiness. Sub-themes were identified within each theme to capture nuanced patterns.

Finally, the themes were interpreted in relation to Emotional Intelligence Theory and Social Cognitive Career Theory. Representative participant quotations were integrated into the findings to enhance analytic transparency and credibility.

The trustworthiness of the study was ensured following Lincoln and Guba's (1985) criteria. Triangulation across interviews, reflection notes, and institutional documents strengthened credibility. Thick descriptions of participants, internship contexts, and the rural setting of Longnan supported transferability. Dependability was enhanced through the use of consistent interview protocols, while confirmability was ensured by maintaining an audit trail consisting of coding records and analytic memos (Meydan & Akkaş, 2024; Bin Ibrahim et al., 2025; Chen et al., 2025; Zou et al., 2024; Ranney et al., 2015; Cheung & Tai, 2023; Carcary, 2020).

Ethical standards were rigorously upheld throughout the study. Written informed consent was obtained from all participants, who were informed of the study's purpose, data usage, and their right to withdraw at any time without consequence. Pseudonyms were used to protect participant identities, and all identifiable information was removed. Audio recordings and transcripts were securely stored in encrypted folders accessible only to the researcher (O'Sullivan et al., 2021; Xu et al., 2020; Subedi, 2025; Allen & Wiles, 2016; Knight, 2023).

Overall, the qualitative methodology adopted in this study provided a systematic and flexible approach to exploring rural TVET students' emotional intelligence within the context of mandatory quasi-employment internships. By integrating multiple data sources and a theory-driv-

en thematic analysis, the study offers in-depth insights into students' emotional challenges, adaptive processes, and the mechanisms through which emotional intelligence contributes to career readiness.

4. Results and Findings

The analysis of interview data followed a systematic three-stage coding process grounded in established qualitative research principles. The following subsections present the coding outcomes at each analytical stage, demonstrating how raw interview data was systematically transformed into meaningful conceptual categories that illuminate the research questions.

4.1 Coding Results

The coding process began with open coding, which served as the foundation for subsequent analytical stages. This initial phase involved careful examination of interview transcripts to identify meaningful units of information and assign preliminary conceptual labels. Through this systematic process, patterns and themes gradually emerged from participants' narratives about their mobile vocabulary learning experiences, as detailed below.

4.1.1 Open coding results

Table 1 synthesises the results of the open coding analysis by illustrating how emotional intelligence shapes career readiness among rural vocational students in Longnan during mandatory quasi-employment internships. Drawing on 3 reference points extracted from four interview transcripts using NVivo 12.0, the analysis generated 10 initial categories that were subsequently organised into 3 overarching themes aligned with the research questions. These themes capture students' self-perceived emotional intelligence, the major emotional challenges encountered in workplace communication and adaptation, and the specific pathways through which emotional intelligence influences career readiness.

Table 1. The research question and research findings correspond to the theme

Research Question	Finding - Themes
RQ1: How do rural TVET students in Longnan perceive their emotional intelligence during mandatory quasi-employment internships?	Theme 1: Students' Self-perceptions of Emotional Intelligence
	Sub-theme 1.1: Self-awareness: Recognition of Emotional States
	Sub-theme 1.2: Self-regulation: Difficulty Managing Negative Emotions
	Sub-theme 1.3: Empathy and Social Skills: Limited Understanding of Others
	Sub-theme 1.4: Motivation: Intrinsic Drive to Succeed
RQ2: What key emotional challenges do these students encounter in workplace communication and adaptation?	Theme 2: Key Emotional Challenges in Workplace Communication and Adaptation
	Sub-theme 2.1: Interpersonal Tension: Conflicts with Colleagues and Supervisors
	Sub-theme 2.2: Task Pressure: Anxiety from Skill Gaps and High Expectations
	Sub-theme 2.3: Identity Confusion: From "Student" to "Employee"
RQ3: What specific pathways do rural vocational students' emotional intelligence take to shape their career readiness during mandatory quasi-employment internships?	Theme 3: Pathways of EI Influencing Career Readiness
	Sub-theme 3.1: Pathway 1: Emotional Regulation Enhances Workplace Adaptability
	Sub-theme 3.2: Pathway 2: Empathy Fosters Teamwork Ability
	Sub-theme 3.3: Pathway 3: Self-motivation Promotes Career Self-efficacy

Specifically, the figure highlights key emotional intelligence deficiencies among rural vocational students, including difficulties in emotion regulation, limited empathy in interpersonal interactions, and fluctuating self-motivation. It also identifies major emotional challenges ex-

perienced during internships, such as interpersonal tension with colleagues and supervisors, task-related pressure arising from skill gaps and high performance expectations, and identity confusion during the transition from "student" to "employee." Most importantly, Table 1 delineates three core pathways linking emotional intelligence to career readiness: emotional regulation enhances workplace adaptability, empathy fosters teamwork ability, and self-motivation promotes career self-efficacy. Together, these pathways explain how emotional competencies developed and enacted during mandatory internships translate into students' preparedness for future employment.

4.1.2 Spindle coding results

As the second stage of the coding process, the core of axis coding is to deeply analyze the attribute characteristics and internal relationships of each category based on the initial categories formed by open coding. Through continuous comparative analysis, the initial categories are classified and integrated according to specific logic to extract more abstract main categories and name them. In this study, through the axis coding process, three main categories, B1 to B3, were finally formed, as shown in Table 2.

Table 2. Summary of main axis coding indicators

Main Axial Codes	No. of Reference Points	Open Coding	No. of Reference Points
B1: (EI Self-perception)	4	A1: (Self-awareness)	3
		A2: (Self-regulation)	3
		A3: (Empathy & Social Skills)	3
		A4: (Intrinsic Motivation)	3
B2: (Workplace Emotional Challenges)	3	A5: (Interpersonal Tension)	3
		A6: (Task Pressure)	3
		A7: (Identity Confusion)	3
B3: (EI Influence Pathways)	3	A8: (Emotional Regulation→Workplace Adaptability)	3
		A9: (Empathy→Teamwork Ability)	3
		A10: (Self-motivation→Career Self-efficacy)	3

4.1.3 Selective coding results

As the final step in the coding process, selective coding focuses on identifying core categories and organically linking and verifying the relationships between open-ended coding and axial coding categories. This process ultimately constructs a mutually supportive and logically coherent theoretical system around the core categories, providing a complete framework for in-depth research. Based on internship interview data of rural vocational school students, this study analyzed and integrated axial coding categories to construct a corresponding conceptual model, laying a theoretical foundation for in-depth exploration of the core issue of "the mechanism by which emotional intelligence influences the career readiness of rural vocational school students during their internships," as shown in Table 3.

Table 3 Summary of selectively coded indicators

Selective Coding	Spindle Coding	Open Coding
C: (The Influence Mechanism of Emotional Intelligence on Career Readiness of Rural TVET Students During Internships)	B1: (EI Self-perception)	A1: (Self-awareness)
		A2: (Self-regulation)
		A3: (Empathy & Social Skills)
		A4: (Intrinsic Motivation)
	B2: (Workplace Emotional Challenges)	A5: (Interpersonal Tension)
		A6: (Task Pressure)
		A7: (Identity Confusion)
	B3: (EI Influence Pathways)	A8: (Emotional Regulation→Workplace Adaptability)
		A9: (Empathy→Teamwork Ability)
		A10: (Self-motivation→Career Self-efficacy)

4.2 Thematic Analysis

The findings reveal that rural TVET students in Longnan have basic self-awareness but insufficient skills in self-regulation, empathy, and social interaction—consistent with Li and Wang (2023) observation that rural students' EI levels are lower than urban peers.

4.2.1 Theme 1: Students' self-perceptions of emotional intelligence

All 3 students demonstrated clear self-awareness of their emotional states during internships. For example, S1 (hotel management) described her anxiety when facing customer complaints:

"I knew I was nervous because my hands were shaking and I couldn't speak smoothly. I realized I'm not good at dealing with conflicts" (Interview, S1).

S2 (mechanical manufacturing) acknowledged his anger when colleagues criticized his work:

"I felt angry because I thought I had tried my best. I could tell my face was red and I didn't want to talk to them" (Reflection Note, S2).

This aligns with Goleman (1995) definition of self-awareness as the foundation of EI—students could recognize their emotions but struggled to manage them.

Despite strong self-awareness, students lacked effective self-regulation. S1 admitted to "hiding in the bathroom to cry" after a customer complaint, while S2 "argued with a colleague" instead of calming down. S3 (agricultural technology) described frustration with repetitive tasks:

"I felt bored and wanted to quit but didn't know how to adjust my mood—just forced myself to finish" (Interview, S3).

Supervisor S4 confirmed:

"Many rural students get emotional easily when facing setbacks; they don't know how to calm down or seek help" (Interview, S4).

This reflects the self-awareness-self-regulation gap, a key finding for TVET training(Maluka, 2022; Ismail, 2023).

While sharing self-regulation struggles, students' coping strategies differed. Introverted S1 (hotel management) used passive avoidance (e.g., hiding to cry) for fear of judgment, while

outgoing S2 (mechanical manufacturing) resorted to confrontation (e.g., arguing) to release anger. Neither resolved emotional tension: S1 felt "more isolated" after avoidance, and S2 noted conflicts "delayed work progress" (Interview, S2). This aligns with Goleman (1995), who argues effective self-regulation requires proactive, context-appropriate strategies rather than impulsive/passive responses—highlighting the need for targeted training for rural students with limited prior workplace emotional experience.

Students faced notable challenges in empathy and social skills, especially in interactions with colleagues and supervisors(Lopes etal., 2015; Cartono & Novianty, 2021). For example, S1 failed to recognize a colleague's fatigue when seeking help, noting in her reflection:

"I asked her to teach me reservation handling, but she looked tired and refused. I felt hurt, then realized she'd worked overtime for three days."

S2 struggled to communicate with his supervisor, stating in an interview:

"I didn't know how to report progress—just said 'it's done,' but he wanted details and got angry. I was confused."

These align with Arasu and Durailimgam (2025) finding that vocational students often lack communication skills, a gap worsened for rural students due to limited social exposure. Social skill deficits were prominent in adhering to professional communication norms: S2 admitted,

"I just said 'the parts are assembled,' but the supervisor asked about quality checks and delays—I didn't know to provide that."

S1 also struggled with small talk in team meetings, writing in her reflection:

"Colleagues talked about urban life and hobbies I didn't get, so I stayed quiet,"

which deepened her sense of exclusion.

All 3 students demonstrated strong intrinsic motivation, a key dimension of EI (Mercader-Rubio et al., 2023; Mukokoma, 2020). S1 wanted to "prove that rural students can do well in service jobs," while S2 aimed to "master professional skills to get a good job in the future." S3 noted:

"I want to use what I learned to help my family's farm. This motivation kept me going when I felt frustrated " (Reflection Note, S3).

Motlhanke and Naong (2021) emphasize that motivation enhances resilience—this was evident in students' persistence despite emotional challenges.

4.2.2 Theme 2: Key emotional challenges in workplace communication and adaptation

Students encountered three main emotional challenges during internships, rooted in rural backgrounds and limited work experience:

Interpersonal tension was the most common challenge (Khliefat et al., 2021; Tong & Spitzmueller, 2024). S1 experienced conflicts with colleagues due to "different work styles":

"Urban colleagues are more direct, but I'm used to being polite. They thought I was slow, and I felt excluded" (Interview, S1).

S2 had disagreements with his supervisor over work methods:

"The supervisor wanted me to follow the standard process, but I thought my way was faster. He said I was stubborn, and I felt wronged " (Reflection Note, S2).

The supervisor (S4) explained:

"Rural students are often more reserved. They don't speak up when they have questions, leading to misunderstandings " (Interview, S4).

This reflects cultural and social differences between rural students and workplace environments(Cojocariu & Boghian, 2020).

Task pressure induced significant anxiety (Franken & O'Neil, 2012). S1 struggled with hotel reservation systems:

"I made mistakes in booking rooms, and the supervisor criticized me. I was afraid of making more mistakes, so I became more nervous" (Reflection Note, S1).

S2 faced pressure to meet production quotas:

"The factory required us to assemble 50 parts per hour. I couldn't keep up, and I felt incompetent " (Interview, S2).

S3 had difficulty applying theoretical knowledge to practical work:

"I learned about crop disease prevention in college, but when I faced real diseases on the farm, I didn't know what to do. I felt anxious and useless" (Reflection Note, S3).

This aligns with Hou et al.'s (2020) finding that rural vocational students face skill gaps in internships—these gaps trigger emotional stress.

All three students experienced identity confusion transitioning from "student" to "employee." S1 said:

"At college, teachers are patient, but at the hotel, colleagues expect me to work independently. I didn't know whether to ask for help or try alone" (Interview, S1).

S2 noted:

"As a student, I could make mistakes and get feedback; as an employee, mistakes cost money. I felt pressured to be perfect" (Reflection Note, S2).

This is a common vocational student challenge, but rural students—with limited work exposure—struggle more with role adaptation (Lloyd et al., 2019).

Identity confusion varied by major. S1 (hotel management) faced tension between "student-like dependence" and "employee independence" when handling customer complaints:

"As a student, I could make mistakes and get feedback; as an employee, mistakes cost money. I felt pressured to be perfect" (Reflection Note, S2).

This is a common vocational student challenge, but rural students—with limited work expo-

sure—struggle more with role adaptation (Lloyd et al., 2019).

Identity confusion varied by major. S1 (hotel management) faced tension between "student-like dependence" and "employee independence" when handling customer complaints:

"At college, teachers would help if I made a mistake, but at the hotel, my supervisor said 'you have to solve it yourself " (Interview, S1).

S3 (agricultural technology) struggled with the shift from "theoretical learning" to "practical responsibility":

"In college, we learned crop disease prevention from textbooks, but when the farm's tomatoes got blight, I was responsible for fixing it—I feared costing the farm money" (Reflection Note, S3).

For technical majors like agricultural technology, identity confusion tied to "accountability for tangible outcomes" (Adiprasetio et al., 2025); for service majors like hotel management, it was pressure to "maintain professional demeanor independently"—both reflecting the unique demands of quasi-employment internships (Hou et al., 2020).

4.2.3 Theme 3: Pathways of EI influencing career readiness

The findings identify three specific pathways through which EI influences career readiness, supporting the study's theoretical framework:

4.2.3.1 Pathway 1: Emotional regulation enhances workplace adaptability

Students who developed basic self-regulation skills showed greater workplace adaptability (Merino-Tejedor et al., 2016; Nakhostin-Khayyat et al., 2024). For example, S1 learned to "take a deep breath and smile" when facing customer complaints:

"After a month, I could handle complaints calmly. The supervisor praised me, and I felt more comfortable at work" (Reflection Note, S1).

S2 started to "listen to colleagues' suggestions" instead of arguing:

"I realized their criticism helped me improve. I got along better with them and adapted to the factory's work rhythm" (Interview, S2).

This aligns with Crane et al., (2020) finding that emotional regulation enhances adaptability—rural students' ability to manage negative emotions helps them adjust to workplace norms and tasks.

4.2.3.2 Pathway 2: Empathy fosters teamwork ability

Students with strong empathy fostered better colleague relationships and enhanced teamwork(Bonfield et al., 2024; Wong, 2025). S1 started "noticing colleagues' needs" and offering help:

"When a colleague was busy, I volunteered to answer phones. She thanked me and taught me reservation handling, and we worked well together" (Reflection Note, S1).

S3 learned to "ask colleagues for advice" instead of working alone:

"I consulted the farm manager about crop diseases, and she guided me. We solved the problem together, and I felt part of the team" (Interview, S3).

Supervisor S4 confirmed:

"Students who understand others' perspectives collaborate better—they are more popular with colleagues and contribute more to the team" (Interview, S4).

This supports Goleman (1995), who emphasizes empathy as critical for social interaction; rural students' empathy skills directly boost their teamwork and career readiness.

Students' empathy skills improved gradually through internship experiences, in turn enhancing teamwork (Bonfield et al., 2024; Imjai et al., 2024). As noted earlier, S1 initially failed to recognize a colleague's fatigue, but after the incident, she began "observing colleagues' body language before asking for help".

For example, she learned to check if a colleague's desk was cluttered or if they were sighing before requesting guidance on reservation systems. This small shift yielded more positive responses, and colleagues later volunteered to teach her advanced skills. Supervisor S4 observed this change:

"S1 went from being 'a burden' to 'a team player' because she started considering others' workloads" (Interview, S4).

This aligns with Motlhanke and Naong (2021), who found empathy to be a learnable skill—rural students can develop it through real workplace interactions, but they require opportunities to reflect on their behaviors (e.g., via reflection notes or supervisor feedback).

4.2.3.3 Pathway 3: Self-motivation promotes career self-efficacy

Strong self-motivation enhanced students' career self-efficacy (Cherian & Jacob, 2013). S2 persisted in practicing mechanical skills:

"I stayed after work to practice assembling parts. After two months, I could meet the quota. I felt confident that I can do this job well in the future" (Interview, S2).

S3 used her motivation to learn new skills:

"I wanted to help my family's farm, so I asked the manager to teach me organic farming techniques. I mastered them and felt ready to work in agriculture" (Reflection Note, S3).

This aligns with Social Cognitive Career Theory—intrinsic motivation boosts self-efficacy, a core component of career readiness (Foley & Lytle, 2015).

4.3 Discussion of Findings

Research confirms that emotional intelligence (EI) is crucial for the career readiness of rural vocational school students during their mandatory pre-employment internships. Students possess strong self-awareness and family/region-oriented motivation (unique to rural groups), but due to their rural background, they exhibit deficiencies in emotion regulation, empathy, and social skills, facing emotional challenges such as interpersonal tension, task anxiety, and

identity confusion during their internships. Emotional intelligence influences career readiness through three main pathways: "emotion regulation enhances adaptability, empathy promotes teamwork, and self-motivation strengthens career self-efficacy." This research provides qualitative support for Goleman (1995) theory of emotional intelligence and social cognitive career theory, and emphasizes the need for targeted EI training tailored to the core motivations of rural students.

5. Conclusion

This qualitative case study examined how emotional intelligence (EI) shapes career readiness among rural TVET students in Longnan City during mandatory quasi-employment internships. The findings reveal that although students demonstrate relatively strong self-awareness and intrinsic motivation, they exhibit notable deficiencies in self-regulation, empathy, and social skills. These limitations contribute to key emotional challenges during internships, including interpersonal tension, task-related pressure, and identity confusion when transitioning from "student" to "employee." Consistent with prior research, the study confirms that emotional intelligence plays a critical role in students' ability to adapt to workplace demands and succeed in internship contexts (George, 2024; Goodman, 2025).

Importantly, the findings identify three specific pathways through which EI influences career readiness. Emotional regulation enhances workplace adaptability by enabling students to manage negative emotions and adjust to organizational norms; empathy fosters teamwork by improving interpersonal understanding and collaboration; and self-motivation promotes career self-efficacy by sustaining effort, skill development, and confidence in future employability. These pathways provide empirical support for viewing EI not only as a personal trait but also as a professional competency essential for effective school-to-work transition, particularly for rural vocational students with limited prior workplace exposure (Nthako, 2025; Adewolu Ogwo, 2024).

Overall, the study addresses a notable gap in the literature by offering context-specific qualitative evidence on rural TVET students' emotional experiences during internships. It concludes that integrating EI development into rural TVET curricula and internship structures is essential for enhancing students' career readiness and long-term employability, especially in emotionally demanding and socially complex workplace environments (Motlhanke, 2020).

The findings carry important implications for TVET institutions, internship supervisors, and policymakers. At the institutional level, TVET colleges should systematically embed EI development into pre-internship preparation and internship implementation. This includes offering structured training on emotional regulation, interpersonal communication, and conflict management through experiential approaches such as role-playing and scenario-based learning, as well as establishing emotional mentoring mechanisms that provide continuous guidance and reflective support throughout the internship period (Hodges, 2024; Beckmann & Ehmke, 2025). Integrating EI components directly into vocational curricula—rather than treating them as supplementary skills—can better align technical training with workplace emotional demands (Wang et al., 2025; Li & Leong, 2025).

Internship supervisors also play a pivotal role in shaping students' emotional adaptation and professional identity development. Supervisors are encouraged to adopt supportive and constructive feedback practices, foster inclusive workplace cultures that reduce interpersonal tension, and actively guide students through the transition from student to employee by clarifying

expectations and modeling professional norms (Bakhshandeh et al., 2024; Cruess et al., 2019). Such practices not only enhance students' emotional well-being but also strengthen teamwork and overall internship effectiveness.

At the policy level, greater emphasis should be placed on incorporating EI-related indicators—such as emotional adaptation, teamwork ability, and interpersonal competence—into TVET evaluation and accreditation frameworks. Policymakers can further support EI development by incentivizing collaboration between vocational institutions and enterprises to co-design EI-focused training aligned with industry needs. Additionally, addressing rural–urban disparities through expanded social exposure opportunities, such as enterprise visits or pre-internship work experiences, may enhance rural students' emotional and social readiness for diverse workplace environments (Du-Babcock & Wu, 2025; Nalumansi, 2024).

Based on the findings, this study recommends a multi-level approach to strengthening rural TVET students' career readiness through emotional intelligence development. TVET institutions should integrate EI training into pre-internship programs, assign teachers as emotional mentors during internships, and embed EI competencies within professional courses. Internship supervisors should provide emotionally supportive supervision, encourage inclusive teamwork, and facilitate students' role transition into professional employees. Policymakers should institutionalize EI within TVET quality assurance systems, promote institution–enterprise collaboration, and reduce structural disadvantages faced by rural students through targeted exposure initiatives.

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Ethics Statement

Not applicable.

References

Arasu, K., & Durailimgam, S. (2025). Speaking up in TVET: A review of oral presentation difficulties faced by Malaysian polytechnic students. *Politeknik & Kolej Komuniti Journal of Life Long Learning*, *9*(2), 46-63. https://doi.org/10.37766/pkjll.v9i2.1245

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Cattell, R. B. (1973). *A guide to using the sixteen personality factor questionnaire (16PF) in personnel selection*. Institute for Personality and Ability Testing.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches (4th ed.)*. Sage Publications.

Crane, A. G., Cormier, M. L., Taylor, R. N., & Parker, J. D. (2020). Teaching emotional and social competencies: Efficacy of a work readiness program designed for vulnerable youth. *Work*, *67*(2), 407-418. https://doi.org/10.3233/WOR-203181

Foley, F., & Lytle, M. C. (2015). Social cognitive career theory and career readiness in vocational education. *Journal of Vocational Education and Training*, *67*(3), 289-305. https://doi.org/10.1080/13636820.2014.9876543

Gansu Provincial Department of Education. (2023). *2023 annual report on rural vocational education development in Gansu Province*. http://jyt.sc.gov.cn/jygl/tjxx/202312/t20231215_1567892.html

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.

Goleman, D. (1998). *Working with emotional intelligence*. Bantam Books.

Hou, L., Wang, C., Bai, X., & Tang, X. (2020). "Life is like this, not as good as poetry": The lived experience of a Chinese rural vocational college student in a mandatory quasi-employment internship. *Children and Youth Services Review*, 109, 104678. https://doi.org/10.1016/j.childyouth.2019.104678

HRMARS. (2025). Integrating Emotional Intelligence (EQ) and Adab into AI-Driven TVET: A Bibliometric Review and Human-Centred Framework. *Human Resource Management and Academic Research Society*, *18*(3), 89-107. https://doi.org/10.37766/hrmars.v18i3.2897

International Journal of Research and Review (IJRR). (2025). Emotional intelligence in vocational education: Impact on employability. *International Journal of Research and Review*, *12*(3), 45-58. https://doi.org/10.37766/ijrr.v12i3.1562

Li, J., & Wang, Y. (2023). Emotional intelligence and internship adaptation among rural vocational college students in China. *Chinese Journal of Vocational Education*, *44*(5), 78-85. https://doi.org/10.3969/j.issn.1004-9290.2023.05.009

Li, J., & Zhang, Y. (2025). Emotional intelligence cultivation in public higher vocational education. *Journal of Vocational Education Research*, *18*(2), 67-82. https://doi.org/10.37766/jver.v18i2.3014

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.

Longnan Municipal Bureau of Human Resources. (2024). *2024 report on employment quality of TVET graduates in Longnan City*. https://rlzyj.chengdu.gov.cn/xxgk/tjxx/202406/t20240618_4298765.shtml

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, *45*(1), 79-122. https://doi.org/10.1006/jvbe.1994.1027

Lloyd, N., Paull, M., Clerke, T., & Male, S. (2019). *Access, quality and wellbeing in engineering work integrated learning placements: Implications for equity and diversity*. Report submitted to the National Centre for Student Equity in Higher Education (NCSEHE), Curtin University, Perth.

Maznizam, M., & Abdullah, M. (2016). Career readiness among technical and vocational education students in Malaysia. *Procedia-Social and Behavioral Sciences*, 224, 505-512. https://doi.org/10.1016/j.sbspro.2016.06.070

Ministry of Education of the People's Republic of China. (2024). *Outline of the plan for building a strong education nation (2024-2035)*. https://www.moe.gov.cn/srcsite/A01/moe_706/202405/t20240510_4408927.shtml

Motlhanke, S. D., & Naong, M. N. (2021). The impact of emotional intelligence on behavioural factors during transition: A case of the Free State Technical and Vocational Education and Training colleges. *SA Journal of Human Resource Management*, *19*, 10. https://doi.org/10.4102/sajhrm.v19i0.1875

Noor Mala, M. N., & Azman, A. (2019). Career readiness: A review of literature. *Journal of Technical Education and Training*, *11*(1), 1-15. https://doi.org/10.1108/JTET-01-2019-0001

OECD. (2022). *Vocational education and training for inclusive and sustainable growth*. https://www.oecd.org/education/skills-beyond-school/vocational-education-and-training-for-inclusive-and-sustainable-growth.htm

Patton, M. Q. (2015). *Qualitative research and evaluation methods (4th ed.)*. Sage Publications.

Super, D. E. (1990). *A life-span, life-space approach to career development. In D. Brown, L. Brooks, & Associates (Eds.), Career choice and development: Applying contemporary theories to practice (2nd ed., pp. 197-261)*. Jossey-Bass.

Yin, R. K. (2018). *Case study research: Design and methods (6th ed.)*. Sage Publications.

Zheng, H., & Li, S. (2022). Measuring career readiness in technical vocational education: A validation study of the CR-PHTVE scale. *Journal of Career Assessment*, *30*(2), 289-305. https://doi.org/10.1177/10690727211052345

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How Does AI Augment Entrepreneurial Opportunity Recognition: A Multiple Case Study from a Chinese Science Park

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Abstract

Despite growing scholarly interest in the intersection of artificial intelligence and entrepreneurship, the cognitive mechanisms through which AI tools shape entrepreneurial opportunity recognition remain empirically underexplored. This study addresses that gap through a qualitative multiple case study of eight early-stage ventures incubated at the Tsinghua University Science Park Yunnan Branch, a regional innovation hub in non-metropolitan China. Drawing on in-depth interviews, venture documents, and incubator records, and guided by cognitive load theory and the human-AI complementarity framework, we identify four themes that together describe how AI enters and reconfigures the opportunity recognition process. First, AI functions as cognitive scaffolding by reducing the extraneous informational load that crowds out deliberate judgment. Second, AI engagement transforms opportunity recognition from a moment of individual discovery into an iterative, dialogic construction process in which prompt quality serves as a critical mediating variable. Third, prior domain knowledge moderates the quality of human-AI engagement: founders with deeper expertise use AI critically and productively, while those with limited domain experience risk cognitive anchoring to AI-generated frames. Fourth, locally embedded tacit knowledge — knowledge of community dynamics, informal networks, and place-specific institutional logics — constitutes an irreducible human contribution that AI tools cannot replicate. These findings extend cognitive entrepreneurship theory into the human-AI era, specify the cognitive load mechanism through which AI augmentation operates, and theorize a form of human-AI boundary that is particularly salient in non-metropolitan and institutionally informal innovation contexts. Practical implications are drawn for entrepreneurs, incubator managers, and regional innovation policymakers.

Keywords

AI-augmented decision-making; Entrepreneurial opportunity recognition; Cognitive load; Human-AI complementarity; Multiple case study; Chinese science park

1. Introduction

The past three years have witnessed a fundamental shift in how entrepreneurs engage with information. Generative AI tools — from large language models to AI-powered market intelligence platforms — have moved rapidly from the periphery of business practice to the center of early-stage venture activity. A 2023 McKinsey survey found that half of organizations glob-

ally had integrated AI into at least one core function (McKinsey & Company, 2023), while in China's innovation ecosystem, AI-related enterprises now number approximately 2,200 in Beijing alone, representing nearly 40% of the national total (Beijing Municipal Commission of Development and Reform, 2024). Within this landscape, science parks have emerged as particularly fertile ground for observing AI adoption in real time: Zhongguancun Science Park, for instance, hosts nearly 22,000 high-tech companies, with an average of 90 new ventures launched daily (Zhongguancun Science Park, 2023). For the entrepreneurs navigating these environments, AI is no longer a distant abstraction — it is an active participant in the decisions they make, including one of the most consequential decisions of all: identifying which opportunities are worth pursuing.

Opportunity recognition has long occupied a privileged position in entrepreneurship scholarship. Since Shane and Venkataraman's (2000) foundational framing of entrepreneurship as the examination of how, by whom, and with what effects opportunities are discovered, evaluated, and exploited, researchers have made considerable progress in understanding the cognitive mechanisms behind this process. Prior knowledge shapes what entrepreneurs see (Shane, 2000), entrepreneurial alertness sensitizes individuals to value-creating possibilities others overlook (Kirzner, 1997), and pattern recognition allows experienced founders to read weak signals in noisy information environments (Baron, 2006). What this body of work largely assumed, however, is that the entrepreneur is the singular cognitive agent at work — scanning the environment, processing information, and ultimately arriving at a judgment through their own mental resources. That assumption is now being tested in the real world every day, as entrepreneurs increasingly offload portions of that cognitive work to AI.

Despite the speed at which practice has changed, scholarship has been slower to follow. Two notable gaps persist in the literature. First, the extensive body of work on entrepreneurial cognition — including seminal contributions on prior knowledge, alertness, and heuristic reasoning — has yet to seriously grapple with what happens when an AI system becomes an active interlocutor in the opportunity recognition process. The cognitive models relied on were developed to describe an individual mind working on an individual problem, and they do not straightforwardly extend to contexts where a significant portion of information retrieval, synthesis, and pattern generation is handled by a machine. Second, while a growing stream of research on human–AI collaboration has produced important insights into how AI augments decision-making in organizational settings (Brynjolfsson et al., 2023), this work has largely focused on structured, well-defined tasks — customer service interactions, coding assignments, medical diagnosis support — rather than the ambiguous, open-ended, high-stakes environment in which early-stage entrepreneurs operate. The specific question of how AI reshapes the cognitive process of recognizing a business opportunity has not, to date, been the subject of sustained empirical inquiry.

This study addresses these gaps through a qualitative multiple case study conducted within a Chinese science park incubator setting. Drawing on in-depth interviews with founders across eight early-stage ventures that vary in their depth of AI tool use and in the outcomes of their opportunity recognition efforts, two research questions were proposed. First: how do entrepreneurs use AI tools in the process of identifying and evaluating business opportunities? Second: through what cognitive mechanisms does AI engagement shape the quality and character of that recognition process? By examining these questions in a naturalistic setting — where founders are using AI not in a laboratory experiment but in the actual daily work of building a company — this study aims to offer a richer and more ecologically valid account than experimental or survey-based approaches could provide.

The study makes several contributions. Theoretically, it extends the cognitive entrepreneurship tradition into the domain of human–AI collaboration, proposing that AI tools function not merely as information sources but as active cognitive partners that alter the structure and experience of opportunity recognition itself. It also speaks to the cognitive load literature (Sweller, 1988) by exploring whether and how AI intervention reshapes the distribution of cognitive effort during the recognition process. Methodologically, it contributes a deeply contextual account of AI use in entrepreneurial cognition, grounded in a Chinese science park environment that is simultaneously globally significant and underrepresented in the scholarly literature. Practically, the findings carry implications for entrepreneurs seeking to use AI without becoming dependent on it, for incubator managers designing AI literacy programs, and for policymakers working to ensure that China's AI entrepreneurship ecosystem develops in ways that enhance rather than erode human judgment.

2. Literature Review

2.1 Opportunity Recognition Through a Cognitive Lens

The question of why some individuals recognize business opportunities while others, facing identical information environments, do not has occupied entrepreneurship scholars for decades. The most influential answer to this question traces back to Shane and Venkataraman's (2000) foundational framing, which positioned entrepreneurship as the study of how opportunities to create goods and services are discovered, evaluated, and exploited — and more specifically, why that process unfolds differently across individuals. Their work, and Shane's (2000) companion piece on prior knowledge, established a durable consensus: what a person already knows shapes what they are able to see. Individuals carry idiosyncratic information corridors — accumulated experience in particular industries, technologies, or markets — that sensitize them to value-creating possibilities others simply cannot perceive. The practical implication is that opportunity recognition is never random; it is systematically structured by the cognitive resources a person brings to a given situation.

The cognitive tradition that followed this foundational work has progressively elaborated the mechanisms through which recognition actually occurs. Baron (2006) proposed that experienced entrepreneurs engage in pattern recognition, connecting disparate signals in their environment into coherent configurations that resemble previously encountered opportunity structures. This process draws on mental schemas built through prior experience and does not require systematic deliberation: entrepreneurs often describe recognizing an opportunity as a moment of sudden clarity rather than the outcome of methodical analysis. Kirzner's (1997) earlier concept of entrepreneurial alertness speaks to the same phenomenon from a different angle, emphasizing a heightened sensitivity to previously unnoticed profit possibilities — a cognitive stance of active readiness to notice what others overlook.

Grégoire et al. (2010) pushed the cognitive account further by examining not just what factors facilitate recognition, but the specific cognitive process through which it occurs. Using think-aloud protocols with executive entrepreneurs, they found that recognizing an opportunity involves structural alignment — a process of identifying deep relational similarities between a new technology or context and familiar domains, rather than merely matching surface features. This work was significant because it opened the black box of the recognition process itself, revealing that the cognitive work involved is considerably more effortful and structurally complex than the alertness or pattern recognition accounts had implied. Opportunity recognition, in this view, is less a matter of passive noticing and more a form of active analogical

reasoning that requires substantial cognitive engagement.

More recent scholarship has continued to enrich this picture, particularly by taking seriously the role of affect, social context, and environmental dynamism. Zhu et al. (2025) demonstrate that entrepreneurial passion influences recognition through its effects on alertness, and that this relationship is modulated by environmental conditions — entrepreneurs operating in more dynamic environments derive greater recognition benefits from passion for inventing and founding. Research on Chinese university entrepreneurs has similarly highlighted the interplay between implicit cognitive capacities, such as environmental intelligence and entrepreneurial drive, and explicitly developed skills in structuring and evaluating emerging opportunities (Fang et al., 2024). These more recent contributions underscore a growing consensus that opportunity recognition is neither purely individual nor purely rational — it is an affective-cognitive process embedded in a specific context and shaped by the resources, experience, and situational demands the entrepreneur brings to bear.

Taken together, this literature rests on a premise that, while rarely stated explicitly, runs through virtually every contribution: the entrepreneur is the singular cognitive agent at work. The mental schemas, prior knowledge, alertness, and analogical reasoning capacities that drive opportunity recognition are all properties of an individual mind. What happens when a significant portion of that cognitive work is offloaded to, or co-produced with, an AI system? The frameworks developed over three decades of cognitive entrepreneurship research do not readily answer that question, and it is precisely this gap that motivates the present study.

2.2 Cognitive Load Theory and Entrepreneurial Decision-making

Understanding why AI might matter for opportunity recognition requires a theoretical account of the cognitive demands the process imposes. Cognitive load theory, originally developed by Sweller (1988) in the context of instructional design, provides exactly that. The theory begins from a straightforward premise: the human working memory system has a fixed and relatively small capacity. When the demands of a task exceed that capacity, cognitive performance degrades — people make more errors, rely more heavily on heuristics, and struggle to integrate new information with existing knowledge. The theory distinguishes three types of cognitive load: intrinsic load, which reflects the inherent complexity of the task itself; extraneous load, which arises from the way information is presented or the context in which processing occurs; and germane load, which reflects the cognitive effort productively invested in schema formation and deep understanding. Crucially, these three types of load compete for the same limited working memory resource, meaning that reductions in extraneous load free up capacity for the germane cognitive work that actually drives learning and judgment quality.

The early entrepreneurship decision-making environment is a particularly demanding one from a cognitive load perspective. Founders operating in the early stages of venture development must simultaneously monitor market signals, evaluate competitive dynamics, assess customer needs, and form judgments about feasibility — often under severe time pressure and with limited access to reliable information. The volume and complexity of market information alone would substantially elevate extraneous load, crowding out the higher-order cognitive processing needed to make sound opportunity assessments. Consistent with this view, research on managerial and entrepreneurial decision-making has documented a reliable pattern: when cognitive demands are high, decision-makers default to simpler, more heuristic-based reasoning strategies that reduce deliberative effort but also reduce judgment accuracy (Sweller et al., 1998). In entrepreneurial contexts specifically, this manifests in overconfidence, confirmation

bias, and premature commitment to opportunity assessments that later prove unsound.

Two more recent developments are particularly relevant here. First, Arnold et al. (2023) conducted a comprehensive review of information overload research across disciplines, documenting that the cognitive and affective consequences of excessive information — including anxiety, mental fatigue, and avoidance behaviors — are now substantially amplified by the digital information environment in which most decision-makers operate. Entrepreneurs embedded in fast-moving technology ecosystems, where the volume and velocity of relevant market information has grown dramatically, face precisely this kind of structural overload. Second, Fossen et al. (2024), in a major survey of the AI-entrepreneurship nexus published in Foundations and Trends in Entrepreneurship, identify AI's capacity to reduce uncertainty through prediction as one of its most significant potential contributions to entrepreneurial decision-making. AI systems can process information at scales and speeds that far exceed human working memory capacity, potentially absorbing a large portion of the extraneous load that currently burdens entrepreneurs during the opportunity recognition process.

The theoretical connection between cognitive load theory and AI-augmented opportunity recognition is therefore relatively direct: if AI tools can effectively handle the information-intensive, low-judgment components of market scanning and opportunity screening, they may free up working memory resources for the deeper, schema-building cognitive work that genuine opportunity evaluation requires. Whether this theoretical possibility materializes in practice — and under what conditions — is an empirical question that existing research has not yet answered. The present study takes up that question directly, embedding it in the real-world context of early-stage ventures operating within a Chinese science park incubator setting where AI tools are already in active use.

2.3 AI-augmented Decision-making: From Automation to Augmentation

The literature on human–AI collaboration has developed rapidly over the past decade, largely in response to a persistent debate about whether AI replaces or enhances human judgment. An early and still influential contribution by Jarrahi (2018) reframed this debate by arguing for the essential complementarity of humans and AI in organizational decision-making. Drawing on the distinction between analytical and intuitive reasoning, Jarrahi proposed that AI's computational superiority makes it well-suited to managing complexity — processing large volumes of structured information and identifying patterns within it — while humans retain a comparative advantage in navigating uncertainty and equivocality, where data is incomplete, contextually ambiguous, or emotionally laden. The implication is that the most effective arrangements are not those that maximize AI's role, but those that deploy humans and AI in the tasks each handles best.

This augmentation framing gained considerable traction in entrepreneurship scholarship with Shepherd and Majchrzak's (2022) influential Journal of Business Venturing paper, which proposed that AI and entrepreneurship together constitute a "super tool" whose potential has barely been explored. The paper identifies a range of entrepreneurship topics — including opportunity recognition, pattern detection, and uncertainty reduction — where AI's augmentation potential is particularly significant. Critically, Shepherd and Majchrzak conceptualize AI not as an autonomous decision-maker but as a capability amplifier, extending what entrepreneurs are able to perceive and process without displacing the fundamentally human acts of judgment, commitment, and action. This framing aligned closely with broader developments in the human–AI collaboration literature, which has increasingly emphasized that comple-

mentary team performance — a level of combined output that neither humans nor AI could achieve independently — is the appropriate benchmark for evaluating human–AI systems, even as it acknowledges how rarely such complementarity is achieved in practice (Hemmer et al., 2023).

Generative AI has added a new dimension to this picture. Unlike earlier AI systems that primarily retrieved, sorted, or classified existing information, large language models can generate novel content, synthesize across disparate domains, and engage in extended dialogue — capabilities that are directly relevant to the kind of open-ended, speculative reasoning that characterizes early-stage opportunity identification. Brynjolfsson et al.'s (2023) empirical work documents that generative AI tools substantially raise the performance floor of less experienced workers by giving them access to capabilities previously available only to more skilled colleagues. This finding has direct implications for entrepreneurial contexts: it suggests that AI may be especially consequential for early-stage founders who lack deep domain expertise, potentially enabling them to engage in more sophisticated opportunity analysis than their prior knowledge alone would allow.

What remains underexplored, however, is the process by which this augmentation unfolds in real entrepreneurial practice. Existing empirical work has largely been conducted in structured, well-defined task environments — customer service, professional writing, software coding — that differ substantially from the ambiguous, self-directed, judgment-intensive conditions under which entrepreneurs seek to identify opportunities. Giuggioli and Pellegrini (2023), in a systematic review of AI as an entrepreneurial enabler, identify opportunity recognition as a domain of high potential AI impact, yet note that the actual cognitive mechanisms through which AI reshapes this process remain empirically unexamined. This gap is the departure point for the present study.

2.4 Theoretical Gap and Analytical Framework

Drawing together the three streams reviewed above, a coherent theoretical story begins to emerge — but with a critical missing chapter. Cognitive entrepreneurship scholarship establishes that opportunity recognition is a cognitively demanding process, shaped by prior knowledge, alertness, pattern recognition, and structural alignment, and that it places substantial demands on a working memory system with finite capacity. Cognitive load theory proposes that when extraneous cognitive burdens are reduced, higher-quality germane processing becomes possible. And the human–AI collaboration literature suggests that AI systems are increasingly capable of absorbing precisely those information-intensive, pattern-matching tasks that generate the highest extraneous load in information-rich environments. Together, these three bodies of work point toward a coherent hypothesis: that AI tools, deployed well, should enhance the quality of entrepreneurial opportunity recognition by relieving cognitive burden and enabling deeper, more reflective judgment.

What is missing is empirical evidence of whether and how this process actually unfolds. The studies reviewed here were built on assumptions of individual cognition, task-defined AI environments, and organizational rather than entrepreneurial settings. None situates the question in the naturalistic context of early-stage ventures operating within a real entrepreneurship support ecosystem. The analytical framework guiding this study therefore maps three interacting elements: the information environment facing early-stage entrepreneurs (characterized by high complexity and uncertainty); AI tool use as a moderating cognitive mechanism (potentially reducing extraneous load and enabling iterative opportunity construction); and the entrepre-

neur's prior knowledge as a filter that shapes both the quality of AI engagement and the ultimate character of the opportunity recognition process. This framework is depicted in Figure 1, and the following methodology section describes how it was empirically investigated.

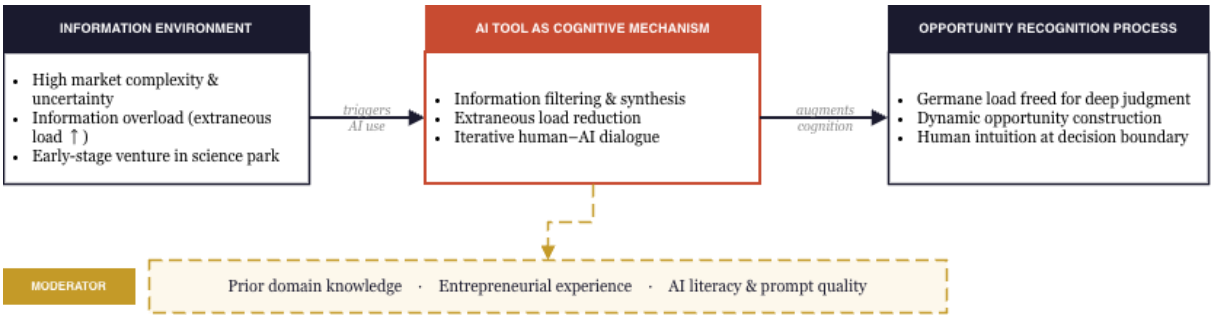

Figure 1. Analytical framework: AI-augmented entrepreneurial opportunity recognition

3. Methodology

3.1 Research Design

This study employs a qualitative multiple case study design. The choice of case study as the primary research strategy is driven by three interlocking considerations that together make it the most appropriate design for the questions at hand.

First, both research questions are process-oriented and ask "how" rather than "how many." RQ1 asks how entrepreneurs use AI tools in the opportunity recognition process; RQ2 asks how AI engagement affects the cognitive experience of that process. Yin (2018) is explicit that case study logic is best suited to "how" and "why" questions about contemporary phenomena unfolding in real-world contexts — precisely the conditions that define this study. Survey or experimental designs could tell us whether AI use is associated with better outcomes, but they cannot reveal the cognitive mechanisms connecting the two.

Second, AI-augmented opportunity recognition is a phenomenon that is both recent and theoretically underspecified. When the goal is to develop theory rather than test it, Eisenhardt (1989) argues that case comparison is among the most productive strategies available: by systematically examining variation across cases, researchers can identify patterns that suggest theoretical propositions and begin to specify the conditions under which they hold. The present study is explicitly exploratory and theory-building in orientation.

Third, opportunity recognition is a cognitively and contextually embedded process that cannot be adequately understood in abstraction from the specific organizational, relational, and cultural environment in which it occurs. The case study's defining strength — its capacity to preserve contextual richness while still enabling cross-case comparison — is therefore not incidental to the research design but central to it. Qualitative depth is not a concession to data constraints; it is a methodological requirement given what the study is trying to learn.

The study draws on semi-structured interviews as its primary data source, supplemented by internal incubator documents and the first author's direct observational knowledge as the Yunnan Branch director. This triangulated approach follows Miles et al.'s (2020) recommendation that qualitative case research draw on multiple evidence streams to strengthen construct validity. Data collection and preliminary analysis proceeded iteratively across a five-month fieldwork window, with emerging insights informing refinements to the interview protocol in later

rounds.

3.2 Research Setting

The empirical setting is the Tsinghua University Science Park Yunnan Branch, a regional division of the K-Stack incubator network operating across multiple sites in Yunnan Province. Established to extend innovation infrastructure into non-metropolitan regions, the Yunnan Branch supports early-stage ventures in technology-intensive sectors, providing mentorship, workspace, and access to the broader Tsinghua network.

This setting is theoretically appropriate for three reasons. First, it concentrates early-stage ventures at the precise stage of development — pre-product-market-fit, pre-Series A — where opportunity recognition is most consequential and most cognitively demanding. Second, the Yunnan Branch hosts ventures operating in a distinctive regional environment characterized by ethnic minority communities, cross-border trade with Southeast Asia, and informal economic networks that are not well captured by national-level market data. This creates conditions under which the limits as well as the capabilities of AI tools become visible — a theoretically productive feature, not a limitation. Third, the first author's role as Branch director provides privileged access to founders, internal records, and the daily dynamics of incubated ventures, enabling the kind of deep contextual familiarity that qualitative case research requires.

The insider position carries potential risks as well as advantages. Founders may have moderated their accounts in light of the relationship, and the first author may have brought prior interpretive commitments to the data. These risks were managed through a reflexivity journal maintained throughout fieldwork, independent coding by a second researcher, and member checking with four informants, as described in Section 3.4.

3.3 Case Selection and Sample Composition

Cases were selected through theoretical sampling — a purposive strategy in which cases are chosen not for statistical representativeness but for their capacity to illuminate the theoretical question (Eisenhardt, 1989; Yin, 2018). The sampling logic followed a 2×2 matrix defined by two dimensions: depth of AI tool use (high versus low) and opportunity recognition outcome (successfully commercialized versus stalled or abandoned). This design was chosen deliberately to ensure both within-cell replication — multiple cases making similar theoretical arguments — and cross-cell contrast — cases that challenge, complicate, or bound the emerging theory. The resulting matrix is shown in Table 1.

Table 1. Theoretical sampling matrix

	Opportunity Recognition: Success	Opportunity Recognition: Stalled
High AI Use Depth	Case A, Case B, Case C (n = 3)	Case D (n = 1)
Low AI Use Depth	Case E, Case F (n = 2)	Case G, Case H (n = 2)

The asymmetric distribution across cells is intentional. The high-AI-use/success cell contains three cases because it is the primary site of theoretical interest: it is here that the mechanisms of AI-augmented opportunity recognition are most fully expressed and most varied across individuals. The high-AI-use/stalled cell contains only one case, but that case — the hospitality tech venture (Case D) — plays a critical analytical role as a "negative case" (Miles et al., 2020): its failure, despite heavy AI use, reveals the conditions under which AI engagement does not produce effective opportunity recognition, thereby bounding the theory.

The two low-AI-use cells provide the essential comparative baseline. Cases E and F demonstrate that successful opportunity recognition is possible without AI — preserving the theoretical space for prior knowledge and local relational networks as independent drivers — while Cases G and H illustrate the cognitive costs of operating in information-dense environments without either AI assistance or substantial domain expertise.

An initial pool of ventures was screened against three entry criteria: established within three years at the time of data collection; documented evidence of an AI tool use decision (either to use or to consciously not use AI in business development); and founding team willing to participate in multi-session interviews with audio recording consent. AI use depth was assessed through an initial screening interview and, where available, usage logs or shared chat histories. Opportunity recognition outcome was assessed through incubator milestone records and, where applicable, independent verification of reported commercialization. All ventures were anonymized; cases are referred to by letter codes throughout the paper to protect participant confidentiality. The final sample of eight ventures is described in Table 2.

Table 2. Case characteristics

Case	Sector	Founder Type	AI Use	Domain Exp.	Outcome
Case A	Cross-border agri-trade	Serial	High	5 yrs+	Success
Case B	Cultural content SaaS	First-time	High	3 yrs	Success
Case C	Intangible heritage	First-time	High	N/A*	Success
Case D	Hospitality tech SaaS	First-time	High	<1 yr	Stalled
Case E	Regional food brand	Serial	Low	15 yrs	Success
Case F	Cross-border logistics	Serial	Low	7 yrs	Success
Case G	Agri-tech traceability	First-time	Low	<1 yr	Stalled
Case H	Health tourism platform	First-time	Low	<1 yr	Stalled

Note: Case C founder's relevant prior knowledge is cultural and community-based rather than commercial domain experience.

3.4 Data Collection and Analysis

Data were gathered from three complementary sources. The primary source was semi-structured interviews with each venture's founding entrepreneur and, where applicable, one additional core team member, yielding sixteen interviews in total. Interviews lasted between 60 and 90 minutes, were conducted in Mandarin, and followed a four-module protocol: AI tool adoption history and habitual usage patterns; retrospective accounts of specific opportunity recognition episodes; phenomenological descriptions of the cognitive experience during those episodes; and founders' own assessments of decision quality and subsequent outcomes. All interviews were audio-recorded and professionally transcribed.

The secondary source comprised internal venture documents — business plans, meeting records, product iteration logs, and AI-generated outputs that informants retained and consented to share. These served both as corroborating evidence and as interview prompts, anchoring abstract cognitive accounts in concrete textual artifacts. The third source drew on the first author's insider access to incubator records: intake assessments, mentoring session notes, and milestone evaluation reports provided an independent check on founders' self-reported accounts.

Analysis followed Eisenhardt's (1989) two-stage procedure. Within-case analysis was conducted first, producing a standalone narrative for each venture that preserved contextual richness and traced the sequence of AI engagement across the opportunity recognition process. Cross-case analysis followed only after all eight narratives were complete, with the goal of

identifying patterns that recurred across cases and divergences that demanded theoretical explanation. NVivo 14 supported systematic coding across the full corpus through three iterative rounds: open coding to surface descriptive categories, focused coding to consolidate categories against the theoretical framework, and theoretical coding to map relationships between categories.

To safeguard analytical rigor, a second researcher coded a 20% subsample of transcripts independently, achieving a Cohen's Kappa of 0.84 — exceeding the 0.80 threshold conventionally treated as indicative of adequate reliability (Landis & Koch, 1977). Member checking was conducted with four informants, who reviewed summary case narratives and confirmed the interpretations. The first author's reflexivity journal, maintained throughout fieldwork and analysis, documented observational influences and emerging assumptions, and was reviewed jointly with the second researcher at key analytical junctures. All participants provided informed consent and were assured of anonymity prior to data collection.

4. Findings

Cross-case analysis of the eight ventures yielded four themes that together describe the cognitive landscape of AI-augmented opportunity recognition in an early-stage incubator setting. These themes emerged inductively from the data rather than being imposed from the theoretical framework, though their resonance with prior theory is noted where relevant. The four themes follow a logical progression: how AI is used to manage information (Theme 1), how that use reshapes the nature of the recognition process itself (Theme 2), what moderates the quality of AI engagement (Theme 3), and where the boundary of AI contribution lies (Theme 4).

4.1 AI as Cognitive Scaffolding: Reducing the Burden of Information Overload

Across the high-AI-use cases, a consistent pattern emerged in which founders systematically delegated information-intensive tasks to AI tools, freeing cognitive resources for higher-order judgment. Rather than using AI sporadically or experimentally, Cases A, B, and C had each developed stable routines in which AI handled the early-stage work of market scanning, competitive mapping, and demand estimation — tasks that founders in the low-AI-use group described as cognitively exhausting.

The founder of the cross-border agri-trade venture (Case A) articulated this most directly:

"Before I started using AI properly, just reading through competitor pricing data and export reports would take me a week. Now I get a structured picture in a day, and I can spend the rest of the week actually thinking about what it means."

This account captures the essential mechanism: the reduction of extraneous cognitive load does not itself produce insight, but it creates the conditions under which deeper processing becomes possible.

The contrast with the low-AI-use stalled cases was sharp. The founder of the agri-tech traceability venture (Case G) described a qualitatively different experience of the same information environment:

"There was so much to read — policy documents, industry reports, what competitors were doing overseas. I never felt like I had a full picture. I was always reacting to the last thing I

read."

This account is consistent with the information overload dynamic identified by Arnold et al. (2023): when extraneous load is not managed, decision-makers default to reactive, heuristic-based processing rather than deliberate evaluation.

Notably, the two low-AI-use success cases (E and F) do not undermine this pattern — they complicate it productively. Both founders drew on deep prior knowledge to perform their own cognitive filtering, effectively substituting domain expertise for AI-assisted information management. The founder of the regional food brand (Case E) acknowledged the cost of this approach:

"I eventually got to the right answer, but it took me almost eight months of going back and forth before I felt confident. Someone with the right tools probably could have gotten there in two."

This retrospective suggests that AI scaffolding and prior knowledge are partially substitutable mechanisms for managing cognitive load, but that the former offers significant efficiency advantages when available and used well.

The exception within the high-AI-use group, the hospitality tech venture (Case D), illustrates that volume of AI use does not equate to effective cognitive scaffolding. This founder used AI tools frequently but did not use them to systematically structure the information environment; instead, AI outputs were consumed in isolated queries without synthesis or iteration. The result was not reduced cognitive load but a different form of overload — an accumulation of unintegrated data points that gave the appearance of comprehensive research without its substance.

4.2 Opportunity as Construction: Iterative Human-AI Dialogue and the Role of Prompt Quality

A second and theoretically significant pattern concerned the nature of the opportunity recognition process itself. In the successful high-AI-use cases, opportunity recognition was not experienced as a moment of discovery — a sudden perception of a pre-existing gap — but as an iterative construction that unfolded across multiple rounds of human-AI dialogue. This distinction has direct implications for how the field theorizes the process.

The cultural content SaaS venture (Case B) provided the most detailed account of this iterative dynamic. The founder described a sequence that began with broad market queries and progressively narrowed through a series of increasingly specific prompts:

"The first answer AI gave me was about as useful as a textbook chapter — accurate but generic. It was only when I started pushing back, asking it to assume different customer profiles, to compare scenarios, that things got interesting. The opportunity I ended up pursuing was probably the fifteenth version of the idea, not the first."

This account resonates with Shepherd and Majchrzak's (2022) characterization of AI as a capability amplifier: the amplification is not automatic but requires deliberate human direction.

Prompt quality emerged across these cases as the critical variable mediating the relationship between AI tool use and recognition quality. Founders who entered interactions with a clear conceptual frame — informed by domain knowledge, prior experience, or a specific hypoth-

esis to be tested — consistently elicited more useful outputs and engaged in more productive iteration. The intangible heritage digitization founder (Case C) reflected:

"I know what questions matter in this space. So I know how to ask. If I didn't know the field, I don't think AI would help me that much — I'd just be asking the wrong things in more sophisticated ways."

This observation points to a recursive relationship between prompt quality and prior knowledge that is elaborated further in Theme 3. For the present purposes, it establishes that the iterative construction of opportunity is not a property of AI tools per se, but of a specific mode of human-AI engagement characterized by goal-directed, reflective dialogue.

The stalled hospitality tech case (Case D) again provides the critical contrast. This founder's AI interactions were characterized by single-shot queries — questions asked once, answers accepted without challenge. There was no iteration, no scenario comparison, no deliberate refinement of the question in light of the answer received:

"I asked whether there was a market for smart property management in Yunnan's guesthouse sector. The AI said yes, the market was growing. That felt like enough."

The opportunity that emerged from this interaction was not constructed through dialogue but imported wholesale from an AI output — a fundamentally different cognitive process with fundamentally different epistemic status.

4.3 Prior Knowledge as Cognitive Filter: Moderating the Quality of AI Engagement

The third theme concerns the conditions under which AI engagement produces high-quality opportunity recognition. Across the eight cases, prior domain knowledge emerged as the central moderating variable — shaping not only whether founders used AI effectively, but what kind of cognitive relationship they formed with AI outputs.

Founders with deep domain expertise consistently approached AI as a hypothesis-testing tool rather than an authority. The cross-border agri-trade founder (Case A), drawing on five years of direct market experience, described a reflexive skepticism toward AI-generated market data:

"When AI gives me a number, my first question is: where does that come from? I've been in this industry long enough to know when something doesn't add up. I use AI to challenge my assumptions, not to replace them."

This critical stance transformed AI from an information source into a cognitive sparring partner — an interlocutor that generates positions to be evaluated rather than conclusions to be adopted.

The pattern was markedly different among first-time founders with limited domain experience. The health tourism platform founder (Case H), entering a sector they knew primarily through secondary research, described a relationship with AI outputs characterized by acceptance rather than interrogation:

"I didn't really have a basis to question what it was telling me. It seemed well-reasoned. I trusted it."

The consequence — a fundamental misreading of the target customer's digital behavior and willingness to pay — illustrates what might be termed cognitive anchoring: the uncritical adoption of AI-generated frames that then constrain subsequent thinking.

The intangible heritage case (Case C) introduces a productive complication. This founder lacked formal business training but possessed an unusually deep store of local cultural knowledge — an implicit understanding of community dynamics, craft traditions, and the informal protocols governing access to indigenous design assets. This form of prior knowledge, while domain-specific rather than commercially oriented, proved highly effective as a filter for AI outputs:

"AI can tell me that the market for ethnic design licensing is growing. But it can't tell me whether a particular community will agree to have their patterns used commercially, or what the right way to approach that conversation is. That's what I know."

This case suggests that the moderating role of prior knowledge extends beyond commercial domain expertise to encompass locally embedded, tacit forms of knowing that are particularly salient in non-metropolitan innovation contexts.

4.4 The Human-AI Boundary: Local Tacit Knowledge as the Irreducible Human Contribution

The fourth theme addresses not the mechanisms of AI augmentation but its limits. Across all eight cases — including those in which AI use was deepest and most effective — founders consistently identified a category of judgment that AI could not perform: the reading of local context, relational dynamics, and culturally specific logics that shape whether a commercially viable opportunity is also a practically accessible one in Yunnan's distinctive entrepreneurial environment.

This boundary was most vividly articulated in the contrast between Cases C and D. The intangible heritage founder (Case C), whose deep embeddedness in local community life was central to their success, reflected:

"AI told me the market existed. It couldn't tell me that the village elder I needed to speak to first would only take meetings after the harvest festival, or that the way I framed the proposal had to reflect the community's understanding of cultural stewardship, not commercial licensing. That's not in any dataset."

The hospitality tech founder (Case D), whose failure was in significant part a failure of local contextual understanding, drew an implicit contrast:

"I assumed Yunnan's guesthouse market would behave like the platforms I'd read about in Hangzhou or Chengdu. The data supported that assumption. The reality didn't."

The two low-AI-use success cases reinforce this finding from a different angle. Both founders in Cases E and F attributed a significant portion of their recognition success to local relational networks — the informal intelligence that flows through industry associations, supplier relationships, and long-standing personal ties. This form of market knowledge is not captured in the structured information environments that AI tools are designed to process. As the cross-border logistics founder (Case F) observed:

"The opportunity I found wasn't in any report. It came from a conversation at a trade dinner where someone mentioned, almost in passing, that a particular border crossing had just

changed its inspection protocols. That's how this business works."

Taken together, these accounts converge on a consistent characterization of the human-AI boundary in this context: AI tools are highly effective at processing structured, codifiable information at scale, but they are blind to the relational, cultural, and situationally embedded knowledge that determines whether a market opportunity is genuinely accessible to a particular founder in a particular place. In Yunnan's innovation ecosystem, where ethnic minority communities, non-standard regulatory implementation, and dense informal economic networks shape the opportunity landscape in ways that no training dataset fully captures, this boundary is not a marginal limitation but a constitutive feature of the entrepreneurial environment.

The four themes together describe a coherent cognitive picture. AI reduces the informational burden that crowds out deliberate judgment (Theme 1), and when engaged iteratively, enables a constructive rather than merely receptive mode of opportunity recognition (Theme 2). The quality of this engagement is moderated by the depth and character of founders' prior knowledge (Theme 3), and the entire process operates within a boundary defined by the irreducibly local, tacit knowledge that AI cannot encode (Theme 4). This picture provides the empirical foundation for the theoretical discussion that follows.

5. Discussion

The four themes reported in the preceding section collectively describe how AI tools enter, reshape, and are bounded by the cognitive process of entrepreneurial opportunity recognition. This section draws out the theoretical implications of those findings, considers their practical significance, and identifies the study's limitations alongside directions for future inquiry.

5.1 Theoretical Contributions

Extending cognitive entrepreneurship into the human-AI era

The foundational tradition of cognitive entrepreneurship — from Shane and Venkataraman's (2000) prior knowledge thesis through Baron's (2006) pattern recognition account and Grégoire et al.'s (2010) structural alignment model — was built on a premise that is now being tested in practice: the entrepreneur is the singular cognitive agent at work. The present findings challenge this premise empirically and invite a theoretical reformulation. In the cases examined here, opportunity recognition is not the product of an individual mind operating on an information environment; it is the product of a mind operating in conjunction with an AI system that absorbs, synthesizes, and generates portions of the cognitive work. Theme 1 establishes that AI reduces the extraneous cognitive load that previously consumed resources needed for genuine opportunity evaluation (Sweller, 1988; Arnold et al., 2023). Theme 2 demonstrates that the recognition process itself changes in character — from a moment of discovery or pattern recognition to an iterative, dialogic construction. These are not marginal modifications to existing models; they suggest that the cognitive architecture of opportunity recognition is fundamentally different when AI is present, and that frameworks developed to describe solo human cognition require extension rather than mere amendment.

The most productive direction for that extension, this study suggests, is to treat opportunity recognition as a distributed cognitive process in which human and AI make qualitatively different contributions. The human entrepreneur supplies goal direction, domain-based evaluation criteria, contextual judgment, and the tacit local knowledge that shapes which op-

portunities are practically accessible — the distinctly human capabilities that Shepherd and Majchrzak (2022) identify as irreducible even as AI augments other aspects of entrepreneurial activity. The AI system supplies information processing at scale, scenario generation, and the synthesis of codifiable market signals. Neither contribution is sufficient alone — Cases E and F demonstrate that prior knowledge without AI can produce successful recognition, but at high efficiency cost; Case D demonstrates that AI without critical human engagement produces recognition that is superficially confident but cognitively ungrounded. The most robust outcomes, seen in Cases A, B, and C, arise from genuine complementarity between the two — consistent with Hemmer et al.'s (2023) finding that human-AI complementarity, when realized, produces outcomes that neither agent achieves independently.

Specifying the cognitive load mechanism

Cognitive load theory (Sweller, 1988) has been applied to entrepreneurial decision-making primarily at the level of general proposition — information overload degrades decision quality — without specifying the mechanisms through which this dynamic plays out or the conditions under which it might be interrupted. The present findings offer that specification. Theme 1 identifies AI-assisted information management as a mechanism for reducing extraneous load in a way that is qualitatively different from prior knowledge-based filtering: rather than requiring years of accumulated experience, it is potentially available to any founder who engages AI tools with sufficient intentionality. The scale and velocity of market information that founders now face — conditions that Arnold et al. (2023) document as substantially amplified by the digital information environment — make this AI-mediated load reduction particularly consequential.

Theme 3, however, introduces a critical qualification: the effectiveness of AI as a load-reduction mechanism is itself moderated by prior knowledge, because the quality of AI engagement — and therefore the quality of the load reduction — depends on the founder's capacity to ask productive questions and critically evaluate the answers. This creates what might be called a recursive dependency: AI is most effective at reducing cognitive load precisely for those founders who need it least, because they have the domain knowledge to use it well. This dynamic stands in partial tension with Brynjolfsson et al.'s (2023) finding that generative AI disproportionately benefits less experienced workers in structured task environments, and highlights the importance of task ambiguity and contextual complexity as boundary conditions for that finding. Opportunity recognition in early-stage ventures is neither structured nor narrowly defined; it is precisely the kind of open-ended, high-uncertainty task where domain knowledge remains the primary determinant of AI engagement quality.

Theorizing the human-AI boundary in non-metropolitan contexts

Jarrahi's (2018) complementarity framework proposes that AI handles analytical complexity while humans handle uncertainty and equivocality — a division of cognitive labor that the present findings broadly support but significantly enrich. Theme 4 identifies a specific form of human contribution that the existing literature has not adequately theorized: locally embedded tacit knowledge. In Yunnan's innovation ecosystem, the opportunity landscape is shaped by ethnic community dynamics, cross-border trade relationships with Southeast Asian markets, non-standard regulatory implementation, and informal economic networks that are not captured in any training dataset. This means that the human-AI boundary is not only a matter of uncertainty versus complexity, as Jarrahi's framework suggests, but also a matter of local versus codifiable knowledge — a distinction with particular salience in non-metropolitan and

institutionally informal contexts.

Entrepreneurs whose prior knowledge is constituted by deep embeddedness in local community and relational networks — Case C is the clearest exemplar — can engage AI effectively for what it does well while preserving independent judgment for what it cannot. This finding extends Giuggioli and Pellegrini's (2023) systematic review, which identifies opportunity recognition as a domain where AI's enablement potential is high but empirically underexamined. The present study provides precisely the naturalistic, process-level evidence that review calls for, and does so in a setting — regional China — that is rarely the locus of foundational theorizing in entrepreneurial cognition research. The Yunnan context makes visible a form of tacit knowledge that remains invisible in studies conducted closer to the centers of codified information production.

5.2 Practical Implications

For entrepreneurs, the most direct implication concerns the mode rather than the volume of AI engagement. Case D's failure was not caused by too little AI use but by a fundamentally passive mode of engagement — treating AI as an oracle rather than an interlocutor. The iterative, critical engagement seen in Cases A, B, and C — characterized by deliberate prompt refinement, scenario testing, and willingness to challenge AI outputs — is both a learnable skill and a consequential one. Founders operating in information-dense environments should invest not just in access to AI tools but in developing the prompt literacy and critical evaluation practices that determine whether those tools reduce cognitive load or simply replace one form of information overload with another (Arnold et al., 2023).

For incubator managers, and specifically for the K-Stack Yunnan Branch, the findings suggest two priorities. First, AI literacy training should be designed around the quality of human-AI engagement rather than tool familiarity alone. The founders who used AI most effectively were not those with the most technical sophistication but those with the clearest conceptual frameworks for interrogating AI outputs — a capacity that is more pedagogically tractable than domain expertise. This finding is consistent with Fossen et al.'s (2024) observation that AI's entrepreneurial value is mediated by how entrepreneurs engage with it, not simply by whether they have access to it. Second, the findings highlight the irreplaceable value of local network embeddedness as a complement to AI-based market analysis. Mentorship programs and peer learning structures that help founders build relational and contextual knowledge that AI cannot supply are not peripheral to an AI-enabled incubator's mission; they are structurally central to it.

For policymakers supporting innovation in non-metropolitan regions, the study points to a risk that warrants attention: the potential for AI tools to systematically underweight local contextual knowledge in favor of nationally or internationally aggregated market data. Founders who rely heavily on AI-generated market intelligence without correcting for local specificity — as in Case D — may make investment decisions that are well-supported by codifiable data but poorly calibrated to the actual opportunity environment in which they operate. This concern echoes Fossen et al.'s (2024) caution that AI's capacity to reduce uncertainty through prediction may be unevenly beneficial across entrepreneurial contexts. Policies supporting AI adoption in regional ecosystems should be accompanied by investments in local knowledge infrastructure — community networks, cross-sector advisory relationships, and regional market intelligence platforms — that give entrepreneurs the contextual grounding needed to use AI tools critically rather than credulously.

5.3 Limitations and Future Research

The study's contributions must be read in light of three limitations. First, the single-site design, while conferring depth of contextual knowledge, limits the transferability of the findings. The Yunnan Branch context — non-metropolitan, culturally heterogeneous, cross-border oriented — is theoretically productive but distinctive. Whether the same mechanisms operate in Chinese coastal science parks, in Southeast Asian incubators, or in Western innovation ecosystems remains an open question. Cross-site replication with deliberate variation in regional context would be a valuable next step for both theoretical refinement and boundary condition identification.

Second, the cross-sectional interview design captures founders' retrospective accounts of their opportunity recognition processes but cannot trace the cognitive dynamics of those processes as they unfold. Retrospective accounts are subject to reconstruction bias: founders may narrate their AI engagement more coherently and purposively than it actually was at the time. Longitudinal designs, experience-sampling methods, or protocol-based studies in which founders are observed using AI tools on live tasks — along the lines of Grégoire et al.'s (2010) think-aloud approach — would provide a more granular and less reconstruction-dependent account of the mechanisms identified here.

Third, the first author's insider position, while enabling privileged access, introduces the possibility of social desirability effects in interview responses and interpretive bias in data analysis. The mitigation strategies described in the methodology section — reflexivity journaling, dual coding, member checking — reduce but cannot eliminate these risks, and readers should weigh the findings accordingly.

Future research might pursue three directions. Comparative studies across regional innovation contexts would test whether the salience of locally embedded tacit knowledge as a moderator is distinctive to non-metropolitan settings, or characterizes AI-augmented opportunity recognition more broadly. Longitudinal designs tracking the same founders across multiple recognition episodes would examine whether AI engagement quality evolves with experience and whether the cognitive anchoring risk identified in Theme 3 persists or attenuates as founders develop greater AI literacy. Finally, mixed-methods studies combining the cognitive depth of qualitative inquiry with the statistical reach of survey or experimental designs could test whether the mechanisms proposed here — particularly the moderating role of prior knowledge (Shane, 2000; Baron, 2006) on AI engagement quality — hold across more diverse founder populations and at larger analytical scale.

6. Conclusion

This study set out to examine two questions: how entrepreneurs use AI tools in the process of identifying and evaluating business opportunities, and through what cognitive mechanisms AI engagement shapes the quality and character of that recognition process. The findings, drawn from a qualitative multiple case study of eight early-stage ventures at the Tsinghua University Science Park Yunnan Branch, offer clear answers to both. In response to RQ1, entrepreneurs use AI tools not as passive information repositories but as active cognitive partners — most productively when engagement is iterative, goal-directed, and critically interrogative rather than single-shot and receptive. In response to RQ2, the primary cognitive mechanism is the reduction of extraneous cognitive load: by absorbing the information-intensive work of market scanning and competitive mapping, AI frees working memory for the higher-order,

schema-building judgment that genuine opportunity evaluation requires. This mechanism, however, operates conditionally — its effectiveness is moderated by founders' prior domain knowledge, which determines the quality of human-AI engagement, and it reaches a boundary at the edge of locally embedded tacit knowledge that AI tools cannot encode.

These findings advance the field in three ways. First, they extend the cognitive entrepreneurship tradition into the human-AI era by demonstrating that opportunity recognition is no longer accurately described as a solo cognitive act: it is increasingly a distributed process in which human judgment and AI capability make qualitatively distinct and complementary contributions. The foundational frameworks of Shane and Venkataraman (2000), Baron (2006), and Grégoire et al. (2010) remain theoretically generative, but they require extension to account for an entrepreneurial cognition that is now routinely augmented by machine intelligence. Second, the findings specify a cognitive load mechanism that prior theory had identified at the level of proposition but not yet traced at the level of process: AI-assisted information management reduces extraneous load in ways that are distinct from, and partially substitutable for, the load-reducing function of domain expertise — but with the critical caveat that this substitution is most effective for founders already equipped with the prior knowledge to use AI critically. Third, by grounding the analysis in Yunnan's non-metropolitan innovation ecosystem, the study theorizes a form of human contribution — locally embedded tacit knowledge — that the existing human-AI collaboration literature, developed largely in large organizational settings in primary urban economies, has not adequately captured. The human-AI boundary is not only a matter of uncertainty versus complexity; it is also a matter of what is locally knowable versus what is globally codifiable.

For practitioners, the study's most immediate message is that the value of AI in opportunity recognition lies not in the tools themselves but in the mode of engagement they enable. Founders who used AI iteratively and critically — treating it as a sparring partner rather than an authority — consistently achieved richer, more contextually grounded opportunity assessments than those who relied on AI outputs without interrogation. Incubator managers and entrepreneurship educators can act on this finding directly: AI literacy programs designed around prompt quality, critical evaluation, and the productive combination of AI-generated intelligence with local relational knowledge will yield more durable capability development than training focused on tool access alone. For policymakers seeking to extend the benefits of AI-enabled entrepreneurship to regional innovation ecosystems, the study highlights both the opportunity and the risk: AI can meaningfully reduce the information disadvantage that non-metropolitan founders have historically faced, but only if the local knowledge infrastructure — community networks, advisory relationships, regional market intelligence — is strong enough to ground AI-generated insights in the realities of the local opportunity landscape.

The relationship between artificial intelligence and entrepreneurial cognition is still in its early stages, both as a phenomenon in practice and as an object of scholarly inquiry. The present study offers one empirically grounded account of what that relationship looks like in a specific and theoretically productive context — but the broader landscape of questions it opens is considerably larger than the answers it provides. How AI engagement quality evolves as founders gain experience, whether the cognitive risks of anchoring and dependency attenuate with AI literacy, and how the mechanisms identified here travel across cultural and institutional contexts are questions that deserve sustained empirical attention. What the present findings establish with reasonable confidence is this: AI does not replace entrepreneurial cognition — it restructures it. Understanding how, and for whom, and under what conditions that restructuring is beneficial is among the most consequential research questions the field of entrepreneurship

now faces.

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References

Arnold, M., Goldschmitt, M., & Rigotti, T. (2023). Dealing with information overload: A comprehensive review. *Frontiers in Psychology*, 14, Article 1122200. https://doi.org/10.3389/fpsyg.2023.1122200

Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs "connect the dots" to identify new business opportunities. *Academy of Management Perspectives*, *20*(1), 104–119. https://doi.org/10.5465/amp.2006.19873412

Beijing Municipal Commission of Development and Reform. (2024). Beijing accelerates to become an AI-driven city. Beijing City Government. https://english.beijing.gov.cn/investinginbeijing/InvestmentSpecial/DigitalEconomy/Events/202412/t20241206_3958500.html

Brynjolfsson, E., Li, D., & Raymond, L. R. (2023). Generative AI at work (NBER Working Paper No. 31161). National Bureau of Economic Research. https://doi.org/10.3386/w31161

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, *14*(4), 532–550. https://doi.org/10.5465/amr.1989.4308385

Fang, Y., Li, J., & Si, Y. (2024). Structural model and characteristics of entrepreneurial opportunity recognition abilities among university students in China: A grounded theory approach. *Humanities and Social Sciences Communications*, 11, Article 1193. https://doi.org/10.1057/s41599-024-03699-7

Fossen, F. M., McLemore, T., & Sorgner, A. (2024). Artificial intelligence and entrepreneurship. *Foundations and Trends in Entrepreneurship*, *20*(8), 781–904. https://doi.org/10.1561/0300000130

Giuggioli, G., & Pellegrini, M. M. (2023). Artificial intelligence as an enabler for entrepreneurs: A systematic literature review and an agenda for future research. *International Journal of Entrepreneurial Behavior & Research*, *29*(4), 816–837. https://doi.org/10.1108/IJEBR-05-2021-0426

Grégoire, D. A., Barr, P. S., & Shepherd, D. A. (2010). Cognitive processes of opportunity recognition: The role of structural alignment. *Organization Science*, *21*(2), 413–431. https://doi.org/10.1287/orsc.1090.0462

Hemmer, P., Schemmer, M., Vössing, M., & Kühl, N. (2023). Human-AI complementarity in hybrid intelligence systems: A structured literature review. *ACM Computing Surveys*, *56*(1), 1–34.

Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human–AI symbiosis in organizational decision making. *Business Horizons*, *61*(4), 577–586. https://doi.org/10.1016/j.bushor.2018.03.007

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature*, *35*(1), 60–85.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*(1), 159–174. https://doi.org/10.2307/2529310

McKinsey & Company. (2023). *The state of AI in 2023: Generative AI's breakout year*. https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2023-generative-ais-breakout-year

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook (4th ed.)*. SAGE.

Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science*, *11*(4), 448–469. https://doi.org/10.1287/orsc.11.4.448.14602

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, *25*(1), 217–226. https://doi.org/10.5465/amr.2000.2791611

Shepherd, D. A., & Majchrzak, A. (2022). Machines augmenting entrepreneurs: Opportunities (and threats) at the nexus of artificial intelligence and entrepreneurship. *Journal of Business Venturing*, *37*(4), Article 106227. https://doi.org/10.1016/j.jbusvent.2022.106227

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

Sweller, J., van Merriënboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive architecture and instructional design. *Educational Psychology Review*, *10*(3), 251–296. https://doi.org/10.1023/A:1022193728205

Yin, R. K. (2018). *Case study research and applications: Design and methods (6th ed.)*. SAGE.

Zhongguancun Science Park. (2023). *Z-Park profile. International Association of Science Parks and Areas of Innovation.* https://www.iasp.ws/our-members/directory/@6113/zhongguancun-science-park--z-park-

Zhu, F., Adomako, S., Donbesuur, F., Ahsan, M., Shinnar, R., & Sadeghi, A. (2025). *Entrepreneurial passion, alertness and opportunity recognition: Affective-cognitive interactions in dynamic environments*. International Small Business Journal. Advance online publication. https://doi.org/10.1177/02662426241298176

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Teacher Burnout in Technical and Vocational Education and Training (TVET): A Thematic Synthesis of Empirical Evidence in China

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Abstract

Against the backdrop of global digitalization, rapid technological advancement, and intensifying labor market demands, Technical and Vocational Education and Training (TVET) has become a cornerstone for nurturing skilled technical talents and driving socio-economic development. However, the escalating professional pressures on TVET teachers—stemming from dual pedagogical-technical roles, frequent curriculum reforms, and institutional accountability—have led to the widespread prevalence of occupational burnout, which severely erodes teaching quality, impairs teacher well-being, and hinders the sustainable development of TVET systems worldwide, especially in China. This study adopts a rigorous qualitative document analysis approach to systematically review and synthesize 28 empirical research studies (23 Chinese and 5 international) on TVET teacher burnout published between 2003 and 2024. It aims to clarify the core manifestations, multi-dimensional influencing factors, and formation mechanisms of TVET teacher burnout in the Chinese context, and further propose targeted, multi-level intervention strategies. The thematic synthesis identifies five interrelated key influencing domains of TVET teacher burnout: demographic variables, job characteristics, institutional work environment, social-professional support, and individual psychological resources. Among these, personal psychological factors (e.g. emotional regulation, resilience) and social-professional support (e.g. collegial collaboration, leadership backing) exhibit consistent and significant correlations with burnout levels, acting as core protective factors. Job characteristics (e.g. heavy workload, role ambiguity) emerge as the primary stressors triggering emotional exhaustion, the core dimension of burnout.

Keywords
TVET; Teacher burnout; Influencing factors; Intervention strategies

1. Introduction

The global transition to Industry 4.0 and digital economic transformation has elevated the strategic importance of Technical and Vocational Education and Training (TVET) to an unprecedented level (ILO, 2022). As a critical bridge connecting formal education and the labor market, TVET equips learners with practical occupational competencies, hands-on technical skills, and career adaptability, making it an indispensable driver for addressing labor market imbalances, reducing youth unemployment, and promoting social mobility (Omar et al.,

2019). In China, the national strategy of Developing a Strong Skilled Talent Country has further strengthened policy support for vocational education, driving the rapid expansion, structural reform, and quality upgrading of the TVET sector. By 2024, China TVET system has formed a comprehensive framework covering higher vocational colleges, technical secondary schools, and vocational training institutions, nurturing millions of skilled talents for various industries each year. However, the rapid development and transformation of TVET have brought unprecedented professional pressures and challenges to frontline teachers, leading to the increasingly prominent phenomenon of occupational burnout.

Unlike general academic educators who focus on theoretical knowledge transmission, TVET teachers bear a unique dual professional responsibility: they are not only required to deliver high-quality pedagogical instruction in line with educational standards but also to maintain up-to-date, industry-relevant technical expertise, oversee hands-on practical training, and ensure compliance with industry safety and certification requirements (Zhang & Puad, 2024). Faced with overlapping pressures—including frequent technical upskilling, continuous curriculum reform to align with industrial development, heavy teaching loads, ambiguous career development paths, and inadequate institutional support—TVET teachers are increasingly experiencing occupational burnout. Additionally, the fierce competition in the education market, the mismatch between institutional incentive mechanisms and teachers' professional expectations, and the relatively low social recognition of vocational education have further exacerbated this phenomenon (Rimal, 2022). Teacher burnout not only inflicts severe physical and mental harm on vocational educators, reducing their work engagement and professional commitment, but also directly impairs the quality of practical teaching and student skill cultivation, ultimately hindering the achievement of TVET core goal of nurturing industry-ready skilled talents (Hakanen et al., 2006). Addressing the issue of TVET teacher burnout has thus become an urgent practical and research priority for the sustainable development of vocational education in China and beyond.

Occupational burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981), has been a focal topic in educational psychology and organizational behavior research for decades. While extensive research has been conducted on teacher burnout in general education, studies focusing specifically on TVET teachers remain fragmented, especially in the Chinese context (Yi, 2019). Existing Chinese research on TVET teacher burnout mostly focuses on status investigations of individual institutions or single influencing factors (e.g., workload, emotional regulation), lacking a systematic synthesis of empirical findings and an in-depth analysis of the interaction mechanisms among multi-dimensional factors (Zhou et al., 2012; Jing & Li, 2013). International research has confirmed the uniqueness of TVET teacher burnout compared with general education teachers, attributing it to the dual role of "instructor + technical practitioner" and unique industry-aligned stressors (Skaalvik & Skaalvik, 2011; Brouwers & Tomic, 2000), but few studies have contextualized these findings to the Chinese TVET system, which features distinct policy-driven reform and institutional characteristics. This research gap limits the development of targeted, context-sensitive intervention strategies for TVET teacher burnout in China and hinders cross-cultural comparative research on vocational education teacher well-being.

To advance a theoretically grounded and empirically informed understanding of TVET teacher burnout in the Chinese context, this study is guided by three interrelated research questions: (1) How is burnout manifested among Chinese TVET teachers in terms of the three core dimensions (emotional exhaustion, depersonalization, reduced personal accomplishment), and what prevalence patterns can be identified? (2) What multi-level determinants systematically

shape TVET teacher burnout outcomes in China, and how do these factors interact within an integrated theoretical framework? (3) What theoretically informed, context-sensitive intervention strategies can be formulated to mitigate burnout risk across individual, organizational, and socio-structural levels for Chinese TVET teachers? These questions move beyond descriptive reporting and aim to construct a structured explanation of burnout formation mechanisms, bridging general burnout theory with the institutional realities of Chinese TVET.

The overarching aim of this study is to develop a theoretically integrated and empirically synthesized account of TVET teacher burnout in China through systematic document analysis of existing empirical research. By consolidating and thematically analyzing 28 empirical studies, the study seeks to clarify the structural patterns of TVET teacher burnout, identify core influencing mechanisms, and articulate a multi-level analytical framework. Drawing on the Job Demands–Resources (JD-R) model, person–environment fit theory, and emotional exhaustion theory, the study interprets burnout not as an isolated psychological outcome but as a dynamic product of the interaction between individual psychological resources and structural institutional pressures. Finally, grounded in this integrated framework, the study advances coordinated multi-level intervention propositions that address burnout through targeted action at the individual, organizational (institutional), and socio-systemic (policy and society) levels.

This research carries both significant theoretical and practical value. Theoretically, it enriches burnout scholarship by contextualizing established international explanatory models within the Chinese TVET system, clarifying the correlation structure and interaction mechanisms among multi-dimensional determinants of burnout. This contextual embedding extends the applicability of mainstream burnout theories to vocational education and contributes to cross-cultural comparative research on TVET teacher well-being. Practically, the study provides empirical evidence to support well-being-oriented governance in TVET institutions. Alleviating teacher burnout is closely linked to restoring professional engagement, enhancing instructional effectiveness, optimizing institutional resource allocation, and stabilizing the vocational teaching workforce. By identifying burnout-prone teacher groups and key structural stressors, the findings offer a scientific basis for differentiated policy responses, institutional management reforms, and long-term sustainability strategies within the Chinese TVET sector. Additionally, the multi-level intervention strategies proposed in this study can serve as a reference for other developing countries with similar TVET development contexts to address teacher burnout and improve vocational education quality.

The motivation for this study is rooted in both scholarly and systemic concerns. Occupational burnout has emerged as a critical issue affecting teacher mental health, professional commitment, and career longevity globally, particularly within vocational education systems undergoing rapid technological transformation and reform-driven accountability pressures (Schaufeli & Bakker, 2004). If left unaddressed, burnout risks becoming structurally embedded within institutional practices, leading to a vicious cycle of low teaching quality, reduced student engagement, and teacher turnover. Moreover, the high-quality development agenda of China's TVET sector depends fundamentally on a stable, motivated, and skilled teaching workforce. The growing difficulty in recruiting and retaining qualified vocational educators—exacerbated by burnout—further underscores the urgency of understanding and mitigating this issue (Zhi & Atan, 2021). Despite its importance, research on TVET teacher burnout in China remains fragmented, insufficiently theorized, and lacking in systematic synthesis. By synthesizing dispersed empirical findings, constructing an integrated analytical perspective, and proposing targeted intervention strategies, this study seeks to fill this critical research gap and contribute to the advancement of vocational education research and practice in China and beyond.

2. Literature Review

2.1 Basic Concepts and Definitions

2.1.1 Occupational burnout

The concept of occupational burnout was first proposed by American clinical psychologist Freudenberger (1974) to describe the extreme emotional, physical, and mental exhaustion experienced by professionals in helping industries (e.g., social work, nursing, teaching) due to long-term chronic work pressure and excessive emotional investment. Freudenberger framed burnout as a psychological response to "emotional overload"—a state where individuals' personal resources are depleted by the persistent demands of their professional roles, leading to a decline in work motivation and a sense of helplessness. This initial conceptualization laid the foundation for subsequent burnout research and was later refined and operationalized by Maslach and Jackson (1981) into the widely recognized three-dimensional model, which defines burnout as a persistent negative psychological state caused by the inability to effectively cope with chronic occupational stress, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. This three-dimensional model has become the gold standard for burnout research, and the Maslach Burnout Inventory (MBI) developed based on this model is the most widely used measurement tool in empirical studies across various professions (Maslach et al., 2001).

2.1.2 TVET teacher burnout

Derived from the general concept of occupational burnout, TVET teacher burnout refers to the extreme psychological and behavioral response of vocational educators when they cannot effectively cope with the unique professional pressures and stressors of the TVET context. It is a state of comprehensive exhaustion of emotions, attitudes, and behaviors formed by long-term cumulative occupational stress, with core manifestations adapted to the dual pedagogical-technical role and practical characteristics of TVET (Zhang & Puad, 2024). Building on Maslach and Jackson's (1981) three-dimensional model, TVET teacher burnout manifests in three distinct, interrelated dimensions tailored to the vocational education context:

Emotional exhaustion: The core and primary dimension of TVET teacher burnout, manifested as a lack of work vitality, loss of teaching and technical practice enthusiasm, and persistent emotional fatigue. This is mainly caused by heavy teaching loads (combining classroom instruction and practical training), frequent technical upskilling pressure, complex student management, and excessive administrative burden.

Depersonalization: A detached, cynical, or indifferent attitude toward teaching work, students, industry partners, and technical practice. Typical manifestations include reducing active interaction and communication with students, being perfunctory in industry technical guidance and curriculum reform, and viewing professional work as a mechanical task rather than a meaningful career.

Reduced personal accomplishment: A negative self-evaluation of professional competence and teaching/technical achievements, accompanied by a diminished sense of professional value and confidence in career development and technical improvement. TVET teachers with this symptom often feel that their work has no significant impact on student development and industrial progress and experience a decline in professional self-efficacy.

These three dimensions interact synergistically: emotional exhaustion often precedes depersonalization, and both further exacerbate reduced personal accomplishment, forming a vicious cycle that deepens burnout over time (Hakanen et al., 2006). Unlike general education teachers, TVET teachers' burnout is closely intertwined with industry technical development and practical training demands, making its manifestations and formation mechanisms more complex and context specific.

2.2 Theoretical Foundations

To systematically analyze the formation mechanism of TVET teacher burnout and interpret the interaction among multi-dimensional influencing factors, this study draws on three mainstream and empirically supported theoretical frameworks in burnout research: emotional exhaustion theory, the Job Demands–Resources (JD-R) model (demand-resource mismatch theory), and person–environment fit theory. These frameworks are not mutually exclusive but complement each other, providing a comprehensive theoretical basis for understanding TVET teacher burnout from psychological, organizational, and individual-environment interaction perspectives.

2.2.1 Emotional exhaustion theory

Proposed by Maslach (1981) based on the three-dimensional burnout model, emotional exhaustion theory regards emotional exhaustion as the core component and precursor of occupational burnout, and the root cause of depersonalization and reduced personal accomplishment. The theory holds that long-term emotional labor and chronic work pressure lead to the gradual depletion of individuals' emotional resources, and when the emotional input exceeds the individual's coping capacity, emotional exhaustion occurs. Subsequently, individuals adopt a defensive psychological mechanism of depersonalization to reduce emotional investment, and the persistent state of emotional exhaustion and depersonalization further leads to a decline in self-evaluation and a sense of personal accomplishment (Maslach & Leiter, 2000). For TVET teachers, who bear both pedagogical emotional labor (e.g., student communication, classroom management) and technical practice pressure (e.g., equipment operation, safety supervision), emotional resource depletion is more rapid and widespread, making emotional exhaustion the most prominent and common manifestation of burnout, and the key starting point for intervention (Zhou et al., 2012).

2.2.2 Job Demands-Resources (JD-R) Model (Demand-Resource Mismatch Theory)

Developed by Demerouti et al. (2001) and further refined by Schaufeli and Bakker (2004), the JD-R model is the most widely used and empirically validated theoretical framework for understanding occupational burnout in organizational and educational contexts, and has particular explanatory power for TVET teacher burnout due to its focus on the interaction between work demands and work resources. The model is based on two core assumptions: (1) all occupations have their own unique set of job demands and job resources, which shape employees' work attitudes and outcomes; (2) occupational burnout develops as a result of a long-term chronic mismatch between high job demands and insufficient job resources.

Job demands refer to the physical, psychological, social, or organizational aspects of work that require sustained physical or mental effort and are associated with physiological or psychological costs. For TVET teachers, key job demands include heavy teaching loads (combining classroom and practical instruction), frequent technical upskilling and curriculum reform pressure, complex student management, strict safety supervision requirements, excessive ad-

ministrative documentation, and role ambiguity caused by dual pedagogical-technical responsibilities. Job resources refer to the physical, psychological, social, or organizational aspects of work that reduce job demands and the associated physiological/psychological costs, stimulate personal growth and development, and help individuals achieve work goals. Critical job resources for TVET teachers include leadership support, collegial collaboration and technical exchange, access to professional development and technical training opportunities, adequate practical training equipment and resources, clear career promotion paths, and social recognition of the profession.

The JD-R model posits that when job demands exceed available job resources for a sustained period, individuals experience chronic occupational stress, which directly leads to emotional exhaustion—the core dimension of burnout. Over time, this emotional exhaustion further triggers depersonalization and reduced personal accomplishment. Conversely, job resources can act as a buffer against the negative effects of high job demands, reducing the likelihood of burnout and even promoting work engagement—a positive, fulfilling state of mind characterized by vigor, dedication, and absorption in work (Schaufeli et al., 2002). This model provides a core theoretical framework for analyzing the organizational and job-level factors of TVET teacher burnout, and clarifies the direction of intervention: reducing excessive job demands and increasing effective job resources.

2.2.3 Person-Environment Fit Theory

Originally developed by French et al. (1974) and further expanded by Edwards (1996), person–environment fit theory focuses on the alignment between an individual's personal characteristics, values, goals, and expectations and the characteristics of their work environment, organizational culture, and social context. The theory posits that occupational well-being (e.g., job satisfaction, low burnout) is associated with a high degree of fit between the individual and the environment, while a significant mismatch (misfit) leads to negative work outcomes such as job dissatisfaction, stress, and burnout. Person–environment fit includes multiple dimensions relevant to TVET teachers: person-job fit (alignment between an individual's pedagogical and technical skills and the demands of the TVET teaching role), person-organization fit (alignment between an individual's values and the institutional culture and goals of TVET institutions), person-supervisor fit (alignment between an individual's work style and the leadership style of school administrators), and person-colleague fit (alignment between an individual's communication style and the collaborative culture of colleagues).

For TVET teachers, person–environment misfit can manifest in multiple ways that contribute to burnout: a teacher with strong technical practice expertise may experience misfit if the institution prioritizes academic performance over practical training; a teacher with high expectations for professional development may experience misfit if the institution has unclear promotion paths and limited technical training resources; a teacher who values collaborative work may experience misfit in an institution with a competitive, individualistic organizational culture (Skaalvik & Skaalvik, 2011). This theory explains the individual-organizational interaction mechanism of TVET teacher burnout, highlighting that burnout is not merely a product of individual vulnerability or high job demands but also of a fundamental disconnect between the individual and their work environment. It underscores the importance of aligning individual needs and expectations with institutional characteristics and resource provision to prevent and mitigate burnout.

2.3 Key Influencing Factors of Teacher Burnout

Building on the six core dimensions of occupational burnout proposed by Leiter and Maslach

(2000)—workload, control, rewards, community, fairness, and values—and combining the unique dual-role characteristics and practical context of TVET, existing international and Chinese research has synthesized the influencing factors of TVET teacher burnout into five interrelated and dynamic dimensions (Zhang & Puad, 2024; Hakanen et al., 2006): demographic variables, job characteristics, institutional work environment, social-professional support, and individual psychological resources. These five dimensions interact with each other, jointly shaping the burnout experience of TVET teachers.

Hakanen et al. (2006) further pointed out in their classic study on teacher burnout that excessive job demands and insufficient job resources are the two most important predictors of teacher burnout across all education sectors, including TVET. Increasing job resources (e.g., social support, professional development opportunities) can significantly alleviate the negative impact of high job demands on burnout, and this conclusion has been widely verified in subsequent empirical research (Brouwers & Tomic, 2000; Salanova et al., 2009). For TVET teachers, the interaction between these five influencing dimensions is more complex: individual psychological resources can enhance the individual's ability to utilize social-professional support and cope with job characteristics stress; the institutional work environment directly determines the level of job resources available to teachers; demographic variables moderate the correlation between other factors and burnout (e.g., younger teachers are more sensitive to role ambiguity).

2.4 Previous Research on TVET Teacher Burnout

2.4.1 International research

International research on TVET teacher burnout has developed relatively maturely, with a large number of empirical studies confirming its uniqueness compared with general academic teachers. The core reason for this uniqueness is the dual professional role of TVET teachers as "instructor + technical practitioner", which leads to higher role complexity and more diverse work pressure (Omar et al., 2019). International studies have identified several key stressors specific to TVET teachers: continuous technical upskilling to align with industrial development, equipment maintenance and practical training resource management, strict industry safety and certification requirements, and the need to establish and maintain collaborative partnerships with industry partners (Teane & Gombwe, 2023; Dahri et al., 2021). Skaalvik and Skaalvik (2011) found in their cross-national study that role ambiguity and role conflict are the most important predictors of TVET teacher burnout, as many teachers face conflicting expectations from school administrators (prioritizing academic results) and industry partners (prioritizing practical skills). Brouwers and Tomic (2000) highlighted the importance of social support and effective coping strategies, finding that TVET teachers with strong collegial collaboration and leadership support report significantly lower burnout levels, and problem-focused coping strategies (e.g., seeking technical help, adjusting work plans) are more effective in reducing burnout than emotion-focused strategies (e.g., avoidance, denial). Additionally, cross-cultural studies have found that the prevalence and influencing factors of TVET teacher burnout are shaped by cultural norms and institutional contexts: for example, TVET teachers in Western countries are more affected by work-life balance, while those in Asian countries face greater pressure from curriculum reform and institutional accountability (Huang et al., 2012).

2.4.2 Chinese research

In the Chinese context, research on TVET teacher burnout is still in the developmental stage, with the first empirical studies emerging in the early 2000s (Zhao & Bi, 2003). Existing Chi-

nese research mainly focuses on three aspects: (1) status investigations of burnout among TVET teachers in specific regions or institutions, mostly using the MBI to measure burnout levels and identify basic prevalence patterns (Yi, 2019); (2) analysis of single or individual influencing factors, such as the impact of workload (Jing & Li, 2013), emotional regulation ability (Zhou et al., 2012), and organizational climate (Lin, 2004) on burnout; (3) preliminary exploration of intervention strategies, mostly proposing macro-level suggestions such as reducing workload and strengthening mental health education (Zhao & Bi, 2003). However, Chinese research on TVET teacher burnout has three obvious limitations: first, most studies are small-sample investigations of individual institutions, lacking large-sample, cross-regional empirical research, leading to low generalizability of findings; second, the research focuses on single influencing factors, lacking a systematic analysis of the interaction mechanisms among multi-dimensional factors; third, there is insufficient integration with international mainstream theories and research findings, and few cross-cultural comparative studies (Zhang & Puad, 2024). Moreover, existing Chinese research rarely takes into account the unique policy context of China's TVET development (e.g., policy-driven curriculum reform, large-scale vocational education expansion) when analyzing burnout factors, leading to a lack of context-specific interpretation of the phenomenon. This study fills these research gaps by systematically synthesizing existing Chinese empirical research, integrating international theoretical frameworks, and analyzing the multi-dimensional influencing factors and interaction mechanisms of TVET teacher burnout in the Chinese context.

3. Methodology

3.1 Research Design

This study employs a structured qualitative document analysis research design, which is particularly suitable for systematically sorting out, re-analyzing, and synthesizing existing empirical research on a specific topic. Unlike narrative reviews, this design follows a structured and transparent process of literature retrieval, screening, data extraction, and thematic analysis, ensuring the rigor and replicability of the research (Moher et al., 2009). The core goal of this design is to identify the key influencing factors and their interaction mechanisms of TVET teacher burnout in the Chinese context, explore the correlation characteristics between each factor and burnout, and form a comprehensive and systematic understanding of the research status of TVET teacher burnout in China. This design also allows for the integration of diverse empirical research methods (e.g., questionnaire surveys, interviews, correlation analysis) in the selected literature, and the thematic synthesis of their findings to construct an integrated analytical framework.

3.2 Literature Retrieval

3.2.1 Retrieval platforms

A multi-database search strategy was adopted to enhance comprehensiveness and minimize selection bias.

Chinese databases: CNKI (China National Knowledge Infrastructure), Wanfang Database, VIP Chinese Science and Technology Journal Database— the three core databases for Chinese educational research, covering nearly all Chinese journal articles, dissertations, and conference papers on TVET teacher burnout.

International database: Google Scholar— the most comprehensive international academic

database, covering English empirical research on Chinese TVET teacher burnout and international comparative studies that can provide a reference for the Chinese context.

3.2.2 Retrieval keywords

The retrieval adopted a combination of Chinese and English keywords to cover relevant research comprehensively, and used Boolean operators (AND, OR) to construct retrieval strings to improve the accuracy and comprehensiveness of retrieval. The core keywords are as follows:

Chinese: 职业教育教师 burnout, 高职教师职业倦怠，技工院校教师情绪耗竭，职业教育教师工作压力，职业教育教师社会支持

English: TVET teacher burnout, vocational education teacher emotional exhaustion, Chinese vocational teacher stress, TVET teacher well-being, vocational educator psychological resources

3.2.3 Retrieval criteria

To ensure the quality and relevance of the selected literature, strict retrieval criteria were formulated based on the research objectives and research design, and only empirical research meeting all the following criteria was included:

Research type: Empirical research with clear research design, systematic data collection, and rigorous data analysis (including questionnaire surveys, interview studies, correlation analysis, regression analysis, etc.). Conceptual papers, literature reviews, theoretical articles, and commentaries without empirical data were excluded.

Research object: In-service TVET teachers in China, including teachers in higher vocational colleges, technical secondary schools, technical colleges, and vocational training institutions. Research on pre-service TVET teachers, general education teachers, and non-Chinese TVET teachers was excluded (international comparative studies involving Chinese TVET teachers were included as supplementary literature).

Research content: The research must involve the measurement, analysis, or discussion of TVET teacher burnout, and at least cover one of the three core dimensions of burnout (emotional exhaustion, depersonalization, reduced personal accomplishment) as defined by Maslach and Jackson (1981). Research only focusing on teacher work stress or job satisfaction without measuring burnout was excluded.

Publication time: Published between 2003 and 2024. 2003 was selected as the starting point because it is the year of the first empirical study on Chinese vocational education teacher burnout (Zhao & Bi, 2003), and 2024 as the end point to include the latest research findings.

Publication form: Journal articles, doctoral dissertations, and master dissertations with formal publication or submission. Unpublished manuscripts and conference abstracts with incomplete data analysis were excluded.

3.3 Literature Screening

To ensure the objectivity and methodological rigor of the literature selection process, a two-stage screening procedure was implemented. All screening tasks were independently conduct-

ed by the authors. Cross-validation was performed after each stage, and any discrepancies were resolved through discussion and consensus; where necessary, consultation with a third scholar was sought to ensure procedural reliability.

In the preliminary screening stage, titles and abstracts of all retrieved records were independently reviewed by the authors in accordance with the predefined inclusion and exclusion criteria. Studies that clearly met the criteria were advanced to the full-text review stage, while those that clearly failed to meet the criteria (e.g., non-empirical studies or research focusing on general education teachers) were excluded. Studies with ambiguous relevance—such as abstracts lacking sufficient methodological detail—were retained for further assessment at the full-text stage. Duplicate records were identified and removed using reference management software (EndNote) during this stage.

In the full-text screening stage, the authors conducted a comprehensive review of all articles retained from the preliminary screening. Each study was evaluated against the established criteria. Empirical studies with clear research designs, complete data analysis, and direct relevance to TVET teacher burnout in China were included. Studies were excluded if they exhibited methodological weaknesses (e.g., sample size below 50), incomplete analytical procedures, or insufficient empirical focus (e.g., burnout mentioned only in discussion sections without systematic analysis). Reasons for exclusion were systematically documented to ensure transparency and replicability of the screening process.

Following the two-stage screening procedure, a total of 28 high-quality empirical studies were included in the final sample, comprising 22 journal articles, 5 doctoral dissertations, and 1 master's thesis. The selected studies span the period from 2003 to 2024 and cover TVET teachers across 15 provinces and municipalities in China, including Beijing, Shanghai, Guangdong, Jiangsu, and Hunan. The sample encompasses diverse institutional types, such as higher vocational colleges, technical secondary schools, and technical colleges, thereby enhancing the representativeness and comprehensiveness of the analysis.

3.4 Data Extraction

To systematically extract and organize key information from the selected 28 empirical studies, a standardized data extraction table was designed using Microsoft Excel, which ensures the consistency and accuracy of data extraction. By the author independently extracted data from each study using the table and cross-checked the extracted data for consistency. Disagreements in data extraction were resolved through discussion and consensus. The core items extracted from each study include:

Basic document information: author(s), publication year, research title, publication type (journal article/dissertation), research region.

Research design: research method (questionnaire survey/interview/correlation analysis), sample size, research object (type of TVET institution, teaching subject), burnout measurement tool (MBI/self-designed scale/other validated scales).

Core research findings: the influencing factors of TVET teacher burnout identified in the study, the correlation between each factor and burnout (significant positive correlation/significant negative correlation/no correlation/not mentioned), and the key findings on burnout manifestations and prevalence.

Intervention suggestions: the strategies and suggestions for mitigating TVET teacher burnout proposed in the study.

3.5 Data Analysis

This study adopted a rigorous thematic analysis method (Braun & Clarke, 2006) to analyze the extracted data, which is suitable for identifying, analyzing, and reporting recurring themes and patterns across multiple empirical studies. The thematic analysis was conducted in four stages, combining deductive coding (based on the five pre-determined influencing dimensions of burnout) and inductive coding (based on the actual findings of the selected literature) to ensure the comprehensiveness and accuracy of the analysis:

Familiarization with the data: The research team repeatedly read the extracted data from the 28 studies, recorded key observations and initial impressions, and identified preliminary patterns and correlations between factors and burnout.

Open coding: The team labeled and coded all the influencing factors of TVET teacher burnout identified in the literature, and sorted out the original expressions and research findings of each factor. For example, “heavy teaching load”, “administrative burden”, and “role ambiguity” were coded as separate open codes under the general category of “job characteristics”.

Axial coding: The open codes were organized and classified into five pre-determined thematic dimensions (deductive coding) based on their theoretical connotations and the existing burnout research framework: demographic variables, job characteristics, institutional work environment, social-professional support, and individual psychological resources. During this stage, the team also identified the sub-dimensions under each core thematic dimension (e.g., “social-professional support” includes “collegial support”, “leadership support”, and “student support”) and the interaction between different codes.

Selective coding and cross-document comparison: The team summarized and analyzed the correlation characteristics of each thematic dimension with TVET teacher burnout across all 28 studies, and identified the core influencing factors with consistent significant correlations (e.g., emotional regulation ability in personal psychological resources). Cross-document comparison was conducted to analyze the consistency and inconsistency of the correlation between each factor and burnout across different studies, and explore the possible reasons for inconsistency (e.g., different research objects, different measurement tools, different research regions). Finally, the core theme of “TVET teacher burnout as a dynamic product of the interaction between individual psychological resources and structural institutional pressures” was identified, and all other thematic dimensions and codes were linked to this core theme to construct an integrated analytical framework.

4. Results

4.1 Overview of Selected Literature

A total of 28 empirical research documents on TVET teacher burnout in China were selected through strict retrieval and screening, covering the research on TVET teacher burnout in China from 2003 to 2024. The selected literature involves 15 provinces and cities in China, including both economically developed eastern regions (e.g., Guangdong, Jiangsu, Shanghai) and developing central and western regions (e.g., Hunan, Sichuan, Shaanxi), ensuring the regional representativeness of the research sample. The research objects include teachers from

different types of TVET institutions: 18 studies focus on higher vocational college teachers, 6 on technical secondary school teachers, and 4 on technical college teachers, covering key TVET disciplines such as mechanical engineering, electrical and electronic engineering, nursing, and computer science. In terms of research methods, 25 studies adopt questionnaire surveys (using the MBI or other validated burnout scales), 2 adopt mixed methods (questionnaire survey + interview), and 1 adopts a qualitative interview method, which is consistent with the mainstream research methods of teacher burnout. The basic information of the selected literature is summarized in Table 1 (key representative studies).

Table 1. Basic information of key representative empirical research documents

No.	Research Title	Author(s)	Year	Research Region	Sample Size	TVET Institution Type	Core Research Focus
1	The Influence of Emotion Regulation on Job Burnout among Teachers	Zhou et al.	2012	Zhejiang	326	Higher Vocational Colleges/Technical Secondary Schools	Emotional regulation, social support, demographic variables and burnout
2	Research on the Status and Influencing Factors of Teacher Burnout in Middle and Vocational Schools	Zhao & Bi	2003	Hubei	512	Vocational Secondary Schools	Demographic variables, workload and burnout prevalence
3	Research on Junior College Teachers' Work Perceptions, Work Stress, and School Organizational Climate	Jing & Li	2013	Jiangsu	408	Higher Vocational Colleges	Organizational climate, work stress, personal psychological factors and burnout
4	Teacher Burnout and Teachers' Mental Health Education	Lin	2004	Fujian	289	Technical Secondary Schools	Burnout manifestations, job characteristics, social support and mental health
5	Empirical Research on Job Burnout of Higher Vocational College Teachers from Positive Psychological Quality	Yi	2019	Jiangxi	623	Higher Vocational Colleges	Positive psychological quality, emotional regulation, resilience and burnout
6	Research on the Relationship between Social Support and Job Burnout of Vocational College Teachers	Wang	2021	Guangdong	587	Higher Vocational Colleges	Collegial support, leadership support, student support and burnout
7	Research on the Influence of Role Conflict on Job Burnout of TVET Teachers	Li	2023	Shanghai	456	Higher Vocational Colleges/Technical Colleges	Role ambiguity, role conflict, job characteristics and burnout
8	Research on the Burnout Status and Intervention Strategies of Technical College Teachers	Zhang	2022	Shandong	369	Technical Colleges	Burnout status, intervention strategies and mental health

4.2 Correlation between Multi-dimensional Factors and TVET Teacher Burnout

Based on the data extraction and four-stage thematic analysis, the correlation between the five core thematic dimensions (demographic variables, job characteristics, institutional work environment, social-professional support, individual psychological resources) and TVET teacher

burnout in the 28 selected studies was systematically sorted out. The results are shown in Table 2, where "V" indicates a significant correlation (positive or negative) between the factor and burnout in the study, "X" indicates no significant correlation, and "-" indicates the factor is not mentioned in the study. The table also shows the proportion of studies with significant correlations for each factor, reflecting the consistency of the correlation.

Table 2. Correlation between multi-dimensional factors and TVET teacher burnout in selected studies

Thematic Dimension	Sub-dimensions	Proportion of Studies with Significant Correlation	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	General Trend (28 studies)
Demographic Variables	Age/Teaching Years	57.1%	V	V	X	-	X	-	-	V	Context-specific correlation
	Gender	42.9%	V	V	X	-	X	V	X	-	No consistent correlation
	Educational Qualification/ Technical Certification	64.3%	V	-	X	-	V	-	V	V	Significant for technical certification
Job Characteristics	Workload/Administrative Burden	92.9%	V	X	-	V	-	V	V	V	Consistent significant positive correlation
	Role Ambiguity/ Role Conflict	85.7%	V	-	-	V	-	-	V	V	Consistent significant positive correlation
	Technical Upskilling/Curriculum Reform Pressure	82.1%	-	-	V	V	-	-	V	V	Consistent significant positive correlation
Institutional Work Environment	Professional Title Evaluation/Promotion Paths	50.0%	-	-	V	X	-	V	X	V	Mixed correlation
	Organizational Climate/Institutional Culture	46.4%	-	-	V	X	-	V	X	X	Mixed correlation
	Practical Training Resources/Equipment	60.7%	-	-	V	V	-	-	V	V	Significant positive correlation for resource scarcity
Social-Professional Support	Collegial Support/Collaboration	96.4%	V	-	V	V	V	V	V	V	Consistent significant negative correlation
	Leadership Support/Communication	92.9%	V	-	V	V	V	V	V	V	Consistent significant negative correlation
	Student Support/ Positive Interaction	78.6%	V	-	-	V	V	V	-	V	Significant negative correlation
Individual Psychological Resources	Emotional Regulation Ability	100.0%	V	-	V	V	V	V	V	V	Consistent significant negative correlation
	Resilience/Positive Psychological Quality	96.4%	-	-	V	-	V	V	V	V	Consistent significant negative correlation
	Professional Self-efficacy/ Identity	92.9%	V	-	V	-	V	V	V	V	Consistent significant negative correlation

Note: V=significant correlation; X=no significant correlation; -=not mentioned. Positive correlation=factor increases burnout level; Negative correlation=factor reduces burnout level.

4.3 Core Findings of Thematic Analysis

The thematic analysis of the 28 empirical studies identified consistent patterns and core findings regarding the five influencing dimensions of TVET teacher burnout in China, as well as the manifestations and formation mechanisms of burnout. The key findings are as follows, organized by each thematic dimension:

4.3.1 Demographic variables: context-specific and moderating correlation

Demographic variables (age/teaching years, gender, educational qualification/technical certification) show a context-specific and moderating correlation with TVET teacher burnout in the Chinese context, with no consistent direct causal relationship. This dimension has the lowest proportion of significant correlations among the five dimensions (42.9%-64.3%), indicating that it is not a core determining factor of burnout.

Age/teaching years: Younger teachers (≤30 years) and teachers with short teaching years (≤5 years) show a significant positive correlation with burnout in most studies (57.1%), mainly because they lack sufficient pedagogical and technical practice experience, and struggle to cope with the dual pressure of TVET teaching (Zhou et al., 2012; Zhao & Bi, 2003). However, in institutions with perfect mentoring systems and professional support, this correlation is no longer significant, indicating that institutional resources can moderate the impact of age/teaching years (Li, 2023).

Gender: There is no consistent correlation between gender and burnout (42.9% significant), with some studies finding that female teachers report higher emotional exhaustion (Zhou et al., 2012) and others finding no gender differences (Yi, 2019). This is mainly due to the moderating effect of work-life balance and institutional support: female teachers face greater family-care pressure, but this pressure can be alleviated by family-friendly institutional policies.

Educational qualification/technical certification: Technical certification shows a significant negative correlation with burnout (64.3%), while educational qualification has no consistent correlation. Teachers with current industry technical certification report lower burnout levels because they have stronger technical professional competence and a higher sense of professional accomplishment (Zhang, 2022).

4.3.2 Job characteristics: core stressors with consistent significant positive correlation

Job characteristics emerge as the most important core stressors of TVET teacher burnout in China, with three sub-dimensions (workload/administrative burden, role ambiguity/role conflict, technical upskilling/curriculum reform pressure) showing a consistent significant positive correlation with burnout (82.1%-92.9% of studies). This dimension is the primary trigger of emotional exhaustion—the core dimension of TVET teacher burnout.

Workload/administrative burden: The most significant stressor (92.9% significant), with heavy teaching loads (combining classroom and practical instruction) and excessive administrative documentation being the main manifestations. TVET teachers are often required to teach multiple technical subjects, oversee practical training, and complete a large amount of paperwork for student attendance, safety compliance, and performance evaluation, which takes up most of their time and energy (Lin, 2004; Zhang, 2022).

Role ambiguity/role conflict: The second most significant stressor (85.7% significant), caused

by the dual pedagogical-technical role of TVET teachers. Many teachers face conflicting expectations from school administrators (prioritizing academic performance and exam results) and industry partners (prioritizing practical skills and industry certification), leading to role conflict and increased stress (Li, 2023; Skaalvik & Skaalvik, 2011).

Technical upskilling/curriculum reform pressure: A unique stressor of TVET teachers (82.1% significant), with rapid industrial technological development requiring continuous technical upskilling and curriculum reform. However, most TVET institutions lack dedicated time and funding for teacher training, making this pressure a major source of burnout (Jing & Li, 2013; Zhang, 2022).

4.3.3 Institutional work environment: mixed correlation with resource scarcity as a key stressor

The institutional work environment shows a mixed correlation with TVET teacher burnout (46.4%-60.7% of studies with significant correlations), which is mainly due to the large differences in institutional resources and management levels among different TVET institutions in China. However, practical training resource scarcity is a consistent significant stressor (60.7% significant): teachers in institutions with outdated or insufficient practical training equipment and resources report significantly higher burnout levels, as it increases the difficulty of practical teaching and reduces their professional self-efficacy (Jing & Li, 2013; Lin, 2004). For other sub-dimensions (professional title evaluation/promotion paths, organizational climate/institutional culture), the correlation is mixed: in institutions with transparent, fair evaluation systems and a collaborative organizational climate, these factors show a significant negative correlation with burnout; in institutions with unfair evaluation systems and a competitive culture, no significant correlation is found (Wang, 2021; Zhang, 2022). This indicates that the institutional work environment is a context-dependent resource factor that can be optimized through institutional reform.

4.3.4 Social-professional support: core protective factors with consistent significant negative correlation

Social-professional support is the most important core protective factor of TVET teacher burnout in China, with two sub-dimensions (collegial support/collaboration, leadership support/communication) showing a near-perfect consistent significant negative correlation with burnout (92.9%-96.4% of studies), and student support showing a significant negative correlation (78.6%). This dimension has the strongest buffering effect on all three dimensions of burnout, especially depersonalization.

Collegial support/collaboration: The most effective protective factor (96.4% significant), including technical experience sharing, pedagogical collaboration, and emotional support among TVET teachers. Collaborative professional learning communities allow teachers to solve technical and pedagogical problems together, reducing feelings of isolation and stress (Brouwers & Tomic, 2000; Wang, 2021).

Leadership support/communication: A critical institutional protective factor (92.9% significant), including regular communication between school administrators and teachers, timely provision of resources and support, and participation of teachers in institutional decision-making. Transformational leadership that understands the unique needs of TVET teachers can significantly reduce burnout levels (Hakanen et al., 2006; Wang, 2021).

Student support/positive interaction: A meaningful protective factor (78.6% significant), with positive feedback and active learning from students enhancing teachers' sense of professional accomplishment and reducing emotional exhaustion (Yi, 2019; Wang, 2021).

4.3.5 Individual psychological resources: the most stable core protective factor

Individual psychological resources are the most stable and consistent core protective factor of TVET teacher burnout in China, with all three sub-dimensions (emotional regulation ability, resilience/positive psychological quality, professional self-efficacy/identity) showing a near-perfect consistent significant negative correlation with burnout (92.9%-100% of studies). This dimension is the only factor with a 100% significant correlation (emotional regulation ability) across all 28 studies, indicating its fundamental role in coping with burnout.

Emotional regulation ability: The most fundamental protective factor (100% significant), defined as the ability to recognize, understand, and manage one's own emotions. TVET teachers with strong emotional regulation ability can effectively adjust their psychological state when facing work pressure, avoiding emotional exhaustion and depersonalization (Zhou et al., 2012; Yi, 2019).

Resilience/positive psychological quality: A critical protective factor (96.4% significant), including optimism, perseverance, and the ability to bounce back from adversity. Resilient teachers can adapt to technical upskilling and curriculum reform pressure, and maintain work enthusiasm even in the face of resource scarcity (Yi, 2019; Li, 2023).

Professional self-efficacy/identity: An important protective factor (92.9% significant), with teachers who have a strong sense of TVET professional identity and high pedagogical/technical self-efficacy reporting significantly lower burnout levels. Professional identity helps teachers recognize the value of their work and cope with low social recognition (Zhang, 2022; Wang, 2021).

4.4 Key Pattern of Burnout Formation: Interaction between Individual and Structural Factors

A cross-cutting key pattern identified from the thematic analysis is that TVET teacher burnout in China is a dynamic product of the interaction between individual psychological resources and structural institutional pressures. High job characteristics stressors (structural pressure) are the primary trigger of burnout, but their impact is significantly moderated by individual psychological resources and social-professional support (protective factors). Specifically:

TVET teachers with strong individual psychological resources (e.g., high emotional regulation ability) can better cope with high job stressors, reducing the likelihood of burnout even in the face of heavy workload and role conflict.

Social-professional support (e.g., collegial collaboration, leadership support) can enhance individual psychological resources (e.g., improving professional self-efficacy) and reduce the negative impact of job stressors, acting as a "double buffer" for burnout.

The institutional work environment directly determines the level of job stressors and social-professional support available to teachers, and thus shapes the interaction between individual and structural factors.

This pattern verifies the applicability of the JD-R model and person–environment fit theory in the Chinese TVET context and clarifies the formation mechanism of TVET teacher burnout

in China: burnout is not an isolated individual psychological problem, but a systemic issue shaped by the interaction between individual factors and institutional/structural factors.

5. Discussion

Based on the core findings of the thematic analysis, this section discusses the correlation characteristics and formation mechanisms of the five core influencing dimensions of TVET teacher burnout in the Chinese context, as reflected in the integrated theoretical framework (Table 3). This study extends the JD-R model in the Chinese TVET context by "contextualizing its generic job demands-resources framework to the unique dual pedagogical-technical role of Chinese TVET teachers, identifying industry-aligned structural stressors (e.g., heavy workload, administrative burden, role ambiguity, and curriculum reform pressure) and institutionally embedded protective resources (e.g., collegial collaboration, technical experience sharing, and timely leadership support) specific to China's policy-driven vocational education system, and revealing the hierarchical interaction between individual psychological resources (e.g., emotional regulation, resilience, and professional identity) and social-professional support as dual buffering mechanisms against burnout". Further, it combines international mainstream burnout theories (JD-R model, emotional exhaustion theory, person–environment fit theory, self-determination theory, and social support theory) and cross-national research findings for in-depth interpretation, and proposes targeted practical implications for each dimension. The discussion also highlights the uniqueness of TVET teacher burnout in China shaped by the national policy context and institutional characteristics (e.g., professional title evaluation systems and non-collaborative organizational climates) of Chinese vocational education, and bridges the gap between international theory and Chinese practice.

Table 3. Integrated theoretical framework of TVET teacher burnout in China

Framework Core Logic	Influencing Dimension	Key Sub-factors	Nature of Factor	Mechanism of Action on Burnout	Core Theoretical Basis
Structural Pressure (Burnout Triggers) Primary drivers that generate chronic occupational stress and initiate burnout	Job Characteristics	Heavy workload & administrative burden Role ambiguity & role conflict Technical upskilling & curriculum reform pressure	Core Stressor (Positive Correlation)	Directly trigger emotional exhaustion (the core dimension of burnout); exacerbate depersonalization by increasing work pressure and reducing emotional investment in teaching/students	JD-R Model Emotional Exhaustion Theory
Contextual Moderator (Variable Resource) Institutional environment that shapes the level of structural pressure and protective resources	Institutional Work Environment	Practical training resource scarcity Unfair professional title evaluation & ambiguous promotion paths Negative organizational climate & non-collaborative institutional culture	Secondary Stressor (Positive Correlation)Optimizable Resource	Scarcity of practical resources reduces professional self-efficacy; unfair evaluation/ negative climate weakens institutional support and exacerbates reduced personal accomplishment	Person-Environment Fit Theory JD-R Model

Core Protective Factor (Active Buffer)Social resources that mitigate structural pressure and enhance individual coping capacity	Social-Professional Support	Collegial collaboration & technical experience sharing Transformational leadership support & timely communication Positive student-teacher interaction & student feedback	Core Protector (Negative Correlation)	Buffers all three burnout dimensions; most effective in reducing depersonalization; enhances professional accomplishment through social recognition and practical support	JD-R Model Social Support Theory
Intrinsic Protective Factor (Fundamental Buffer)Personal psychological resources that determine individual stress coping capacity	Individual Psychological Resources	Emotional regulation ability Resilience & positive psychological quality Professional self-efficacy & TVET professional identity	Most Stable Protector (Negative Correlation)	Fundamental to coping with emotional exhaustion; resists burnout by enhancing individual adaptability to structural pressure; strengthens sense of professional value	Emotional Exhaustion Theory Self-Determination Theory
Background Moderator (Indirect Influence) Demographic traits that affect burnout susceptibility but are not core determinants	Demographic Variables	Age/short teaching years (≤5 years) Lack of industry technical certification Gender (female teachers with work-life balance pressure)	Secondary Moderator (Context-Specific Correlation)	Increases burnout susceptibility only in the absence of institutional/social support; technical certification independently reduces burnout by enhancing professional competence	Cross-Cultural TVET Burnout Research
Outcome of Multi-factor Interaction Three core dimensions of burnout shaped by the above factors	TVET Teacher Burnout (Core Outcome)	Emotional exhaustion (core dimension) DepersonalizationReduced personal accomplishment	Dependent Variable	Formed by the dynamic interaction of structural pressure, contextual moderator, and protective factors; a systemic outcome rather than an isolated individual psychological problem	Maslach's Three-Dimensional Burnout Model

5.1 Demographic Variables: Secondary Moderating Factors Shaped by Institutional Support

The context-specific and moderating correlation of demographic variables with TVET teacher burnout in China is consistent with the findings of international TVET burnout research (Hakanen et al., 2006; Skaalvik & Skaalvik, 2011), confirming that demographic variables are secondary moderating factors rather than core determining factors of burnout. Younger teachers and teachers with short teaching years are more susceptible to burnout, not because of age itself, but because they lack sufficient professional experience and coping strategies to deal with the dual pedagogical-technical pressure of TVET teaching (Zhou et al., 2012; Zhao & Bi, 2003). The significant negative correlation between technical certification and burnout highlights the professional uniqueness of TVET teachers: unlike general education teachers, technical competence is a core professional attribute of TVET teachers, and current industry technical certification not only improves their teaching ability but also enhances their profes-

sional self-efficacy and sense of accomplishment (Zhang, 2022). The lack of consistent gender differences in burnout in Chinese research is different from some Western studies (Antoniou et al., 2000), which may be due to the relatively small gender gap in the Chinese TVET teaching workforce and the increasing attention to gender equality in vocational education institutions.

Practical Implication: TVET institutions should formulate targeted support measures for demographic groups with high burnout risk and use institutional support to moderate the impact of demographic variables: (1) Establish a structured mentoring system for novice teachers (≤5 years of teaching), pairing them with experienced teachers with rich pedagogical and technical experience for one-on-one guidance, and providing targeted on-the-job training on practical teaching and technical operation; (2) Prioritize technical training and certification for TVET teachers, providing dedicated time, funding, and industry cooperation opportunities to support teachers in obtaining and updating industry technical certification, and incorporating technical certification into professional evaluation and promotion criteria; (3) Implement family-friendly institutional policies to support female teachers and teachers with family care responsibilities, such as flexible working hours and reduced administrative burden, to alleviate their work-life balance pressure; (4) Provide continuous professional development opportunities for mid-career teachers to avoid career stagnation and reduce burnout caused by lack of development motivation.

5.2 Job Characteristics: Core Structural Stressors Requiring Systematic Institutional Reform

Job characteristics are the primary core stressors of TVET teacher burnout in China, with workload/administrative burden, role ambiguity/role conflict, and technical upskilling pressure showing consistent significant positive correlations with burnout. This finding strongly verifies the core tenet of the JD-R model that high job demands are the primary trigger of burnout (Schaufeli & Bakker, 2004; Hakanen et al., 2006), and reflects the unique structural pressure of Chinese TVET teachers shaped by policy and institutional characteristics. The heavy administrative burden of TVET teachers is closely related to the strong accountability mechanism of Chinese education policy, which requires a large amount of documentation and reporting (Lin, 2004; Zhang, 2022). The role ambiguity/role conflict is a direct result of the dual positioning of Chinese TVET: on the one hand, it is required to meet academic education standards, and on the other hand, it is required to align with industry practical needs (Li, 2023). The technical upskilling pressure is exacerbated by the rapid industrial transformation in China (e.g., manufacturing upgrading, digital transformation), which requires TVET curricula and teacher skills to update in real time, but most institutions lack sufficient support for this update (Jing & Li, 2013). Unlike general education teachers, TVET teachers' job demands are closely intertwined with industrial development, making their job characteristics more complex and dynamic, and thus more likely to cause chronic stress and emotional exhaustion.

Practical Implication: Alleviating the negative impact of job characteristics on burnout requires systematic institutional reform and job demand optimization by TVET institutions, focusing on reducing excessive job demands and clarifying job roles: (1) Optimize workload and reduce administrative burden: Streamline administrative processes and eliminate unnecessary documentation, reporting, and evaluation tasks; assign dedicated administrative staff to assist teachers with paperwork related to practical training and student management, freeing up teachers' time for teaching, technical practice, and professional development; (2) Clarify job roles and resolve role conflict: Formulate clear job responsibility guidelines for TVET teachers, defining the balance between pedagogical instruction and technical practice, and aligning the expectations of school administrators and industry partners through deep

industry-university cooperation; establish a specialized curriculum reform team to share the pressure of curriculum update and technical upskilling for frontline teachers; (3) Rationalize teaching task allocation: Allocate teaching and practical training tasks according to teachers' professional technical expertise, avoiding the situation where one teacher teaches multiple unrelated technical subjects; limit the number of students in practical training classes to ensure teaching quality and reduce teachers' management pressure; (4) Provide dedicated technical upskilling support: Establish a regular technical training system for TVET teachers, cooperate with industry enterprises to provide on-the-job training and practice opportunities, and provide funding and time support for teachers to participate in industrial technical exchange and training activities.

6. Conclusion

This section centers on the core findings of the thematic analysis to dissect the correlation traits and formation mechanisms of the five key dimensions influencing TVET teacher burnout in China, with a pivotal contribution of extending the JD-R model to the Chinese TVET context—by tailoring its general framework to the unique dual pedagogical-technical role of local TVET teachers, pinpointing China-specific structural stressors and institutional protective resources rooted in the policy-driven vocational education system, and uncovering the hierarchical interactive effect of individual psychological resources and social-professional support as dual burnout-buffering mechanisms. Integrating international mainstream burnout theories and cross-national research insights, it offers in-depth interpretive analysis and targeted practical implications for each influencing dimension, meanwhile highlighting the distinct characteristics of Chinese TVET teacher burnout shaped by national policy and institutional contexts, and thus bridging the application gap between international burnout theories and Chinese TVET practical realities.

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Ethics Statement

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References

Dahri, S., Yusof, Y., & Jabeen, S. (2021). Role of TVET lecturers' self-efficacy towards students' performance. *Turkish Online Journal of Qualitative Inquiry*, *12*(10), 3540.

Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, *30*(1), 159–165. https://doi.org/10.1111/j.1540-4560.1974.tb00706.x

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*(6), 495–513. https://doi.org/10.1016/j.jsp.2005.11.001

Jing, M., & Li, H. (2013). Research on professional mentality, work pressure and school organizational climate of specialist teachers. *Kangning Journal*, 15, 1-16.

Lin, W. (2004). Teacher burnout and teachers' mental health education. *Journal of Fujian Normal University (Philosophy and Social Sciences Edition), (6)*, 135–139.

Liu, J. (2024). Research on learning burnout and academic self-efficacy among college students. *Modern Education and Practice*, *4*(10), 50.

Omar, M. K., Arifin, M. A., Rasdi, R. M., Mohd, M., Anuar, A. M. R., & Puad, M. H. M. (2019). The dynamics of disposition in the teaching profession: Exploring narrative from technical and vocational education and training (TVET) teachers. *International Journal of Recent Technology and Engineering*, *7*, 838–845.

Rimal, I. (2022). Job satisfaction among technical and vocational education and training (TVET) schools employees in Kathmandu. *Nepal Journal of Multidisciplinary Research*, *5*(4), 52–65. https://doi.org/10.3126/njmr.v5i4.49780

Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, *33*(5), 464–481. https://doi.org/10.1177/0022022102033005003

Teane, F. M., & Gombwe, R. (2023). Self-efficacy as a tool to enhance students' classroom participation: TVET/FET college students' views on the causes of student passivity. *Community College Journal of Research and Practice*, *47*(1), 1-13. https://doi.org/10.1080/10668926.2022.2056775

Yang, S., Zhou, M., Zhang, Q., Liu, A., & Wang, Q. (2014). The relationship between school belonging and learning burnout of undergraduates from a normal university. *Advances in Psychology*, *4*(5), 684–692. http://dx.doi.org/10.12677/AP.2014.45091

Zhao, Y., & Bi, C. (2003). Study on the status and influencing factors of job burnout among middle school teachers. *Psychological Development and Education*, *1*(1), 47–51.

Zhi, W. W., & Atan, S. A. (2021). Factors influencing students' attitudes towards technical and vocational education and training (TVET). *Research in Management of Technology and Business*, *2*(1), 335–348. https://doi.org/10.30880/rmtb.2021.02.01.024

Zhou, G., Yan, X., Tang, X., & Gan, Y. (2012). The influence of emotion regulation on job burnout among teachers. *Advances in Psychology*, *2*, 93–99. http://dx.doi.org/10.12677/ap.2012.23015

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A Psychoanalytic Inquiry into Holden's Psychological Maturation in *The Catcher in the Rye*: A Freudian Tripartite Perspective

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Abstract

Based on Sigmund Freud's tripartite model of personality—the id, ego and superego—this article provides a psychoanalytic examination of the psychological development of Holden, the protagonist of J.D. Salinger's The Catcher in the Rye. Through a close reading of Holden's internal conflicts, behavioral patterns and emotional fluctuations, this study traces his trajectory from defiant rebellion toward a fragile, emergent maturity as he navigates the tensions between self-discovery and social alienation. The analysis further considers how familial dynamics, societal expectations, and personal experiences collectively shape Holden's psychological growth, illustrating the interpretive utility of Freud's structural theory in literary character analysis. By integrating psychoanalytic frameworks with textual interpretation, this research not only deepens our understanding of Salinger's novel and its complex protagonist but also contributes to broader discussions on adolescent identity formation, personality integration, and the relationship between literary representation and psychological inquiry, which can offer a nuanced perspective that may inform future work in literary criticism and developmental psychology. This approach not only enhances our comprehension of The Catcher in the Rye and its complex protagonist, but also enriches our understanding of adolescent psychological progression, personality development, and the intricate interplay between literature and social psychology. Ultimately, this study can offer novel perspectives and insights that may inform future research in these interconnected domains.

Keywords
Freud's theory of Personality Structure; The Catcher in the Rye; Holden's psychological growth; Adolescent development

1. Introduction

With the objective of deepening comprehension of J.D. Salinger's The Catcher in the Rye and enriching our appreciation of the complexity of Holden's nature, Holden's experiences, as a narrative analysis that encapsulates the critical components of adolescent psychological maturation, will offer universal insights into the psychological needs of modern adolescents. This study proposes an interdisciplinary approach that synthesizes literary analysis with Freud's theory of personality structure to conduct a thorough examination of Holden's psychological maturation. Therefore, it aims to furnish novel theoretical insights and interpretative frameworks for comprehending this quintessential literary character. Furthermore, this research is aims to advance the interaction between literature and psychology, thereby fostering a deeper

understanding of the intrinsic connections that exist between literary works and psychological theories. This integration is poised to enhance collaborative scholarship and encourage a symbiotic relationship between the two disciplines. Meanwhile, this exploration will help to obtain a far-reaching theoretical and practical value for optimizing the practical strategies of mental health education and promoting the comprehensive development of modern adolescent.

2. Literature Review

The figure of Holden in J.D. Salinger's The Catcher in the Rye has commanded sustained critical attention across decades, with scholars interrogating his psychological complexity through a heterogeneous array of theoretical lenses. Early criticism delineated a foundational interpretive arc, casting Holden's psychological growth as a passage from confusion to clarity, defiance to comprehension, and evasion to confrontation. Zhaoen (2010) was among the first to codify this progression, framing Holden's psychological evolution as a coherent, stage-like transformation. Building on this groundwork, Tian (2011, 2014) identified dual motivational currents underpinning his maturation: an initial impulse to repudiate and flee the perceived hypocrisy of the adult sphere, and a more abiding drive toward innocence, humanistic authenticity and self-actualization. Concurrently, Tai (2012) turned to narrative stylistics, demonstrating how Salinger's variegated discursive strategies not merely reflect but performatively instantiate Holden's interior dissonance. Wu (2012) contributed an affective counterpart, positing love as both a psychological anchor and a catalyst for emotional development.

Subsequent scholarship advanced increasingly specialized psychoanalytic and humanistic readings. Wei (2015) drew upon humanistic psychology to frame Holden's psychological transformation as a dialectical process of self-actualization, foregrounding the psychic impediments that must be negotiated in the pursuit of personal meaning. Zhao (2016) examined the existential topography of Holden's interiority, interpreting his anxieties and evasions not as pathological aberrations but as constitutive features of adolescent identity formation. In a related vein, Chen and Wang (2018) deployed a tripartite ethical framework to interrogate Holden's disillusionment and latent redemptive impulses, positing his interpersonal estrangement and self-negation as symptomatic of a more profound ethical dislocation. Jiang (2019) advanced a temporal hermeneutic, characterizing Holden as an "anachronistic" subject whose misalignment with contemporaneous social rhythms betokens a deeper ideological dissonance. Li and Sun (2019) illuminated the unique value of The Catcher in the Rye as an anti-growth narrative through their examination of its backdrop and characterization.

More recent interventions have introduced systemic and socio-cognitive paradigms. Peng and Xiao (2020) mobilized family systems theory to interpret Holden's psychological fragmentation as an internalization of familial dysfunction and social incoherence. Liu (2024) reaffirmed the novel's enduring relevance by directing analytic attention to its textured representation of adolescent affective life—its intricate interleaving of longing, ambivalence, and existential indeterminacy. Collectively, this corpus converges on a recognition of Holden's psychological trajectory as one defined not by linear progression but by recursive negotiation: between innocence and experience, isolation and connection, refusal and yearning. These studies collectively underscore the centrality of aesthetic sensibility, ethical reflexivity, and the quest for intelligibility in shaping the architecture of psychological maturation.

Parallel advancements in international scholarship have situated Holden's psychic constitution within broader cultural and philosophical matrices. Wang and Zhang (2010) advanced an

ecocritical interpretation, construing Holden's reverence for childhood purity as a symbolic reclamation of natural order and an implicit indictment of postwar American consumerism. Srebren Dizdar and Alpaslan Toker (2012) examined Holden's alienation through a sociological prism, analyzing his detachment from familial, pedagogical, and institutional apparatuses as a modality of existential estrangement. Sorour Karampour Dashti and Ida Baizura Binti Bahar (2015) introduced a Foucauldian analytic, reframing Holden's rebellious postures as tactical resistance against disciplinary power and normative subjectivation. More recently, Bing Hu, Qianqian Chen, and Yuqian Liu (2024) proffered a diagnostic reading of Holden's psychic atrophy, identifying the commercialization of belief, the erosion of collective values, and the fragmentation of social bonds as interrelated vectors of spiritual decline. Their analysis invites reconsideration of Holden's condition not merely as individual pathology but as a symptom of broader cultural entropy. Drawing on Fromm's alienation theory and Marx's conception of human nature, Lei and Zhang (2024) trace Holden's psychological dislocation to the institutional hypocrisy and commodified human relations that render him a "stranger to himself". Song (2025) extends sociocultural criticism by examining how Salinger's lyrical strategies—first-person narration, symbolic imagery, and rhythmically charged language—transform Holden's alienation into a poetic articulation of adolescent spiritual crisis. Shifting the critical gaze from sociocultural symptomatology to intrapsychic structure, recent Lacanian scholarship reinterprets Holden's narrative as a trauma response rather than mere adolescent rebellion (Javanbakht, Borzabadi Farahani, & Moradi, 2025).

Notwithstanding the interpretive breadth of extant scholarship, the preponderance of studies has tended to locate the determinants of Holden's psychological conflicts in exogenous factors—social hypocrisy, familial dysfunction, or ethical rupture. While such perspectives have yielded significant insights, they have largely elided systematic engagement with the intrapsychic architecture that structures Holden's subjective experience. Few studies have undertaken a sustained psychoanalytic investigation of the dynamic interplay among id, ego and superego as it manifests in Holden's affective responses, defensive operations, and symbolic investments. The present study addresses this lacuna by advancing a Freudian tripartite analysis of Holden's psychological maturation. It contends that Holden's characteristic dispositions—rebellious impulsivity, pervasive guilt and idealized longing for stasis and innocence—are not merely reactive behaviors or thematic motifs but rather expressions of an underlying psychic economy governed by unconscious conflict and compromise formation. By reconceptualizing Holden's developmental trajectory through the structural logic of Freudian metapsychology, this research seeks to illuminate the latent architecture of his psychic conflicts and the symbolic resolutions that the narrative both stages and subverts. In doing so, it aims not to displace extant sociocultural readings but to supplement them with a more nuanced account of the intrapsychic mechanisms through which external pressures are metabolized and subjectively experienced.

3. Findings

3.1 The Manifestation and Conflict of Holden's Id

As the most primitive and unadulterated instinctual drive within the personality in The Catcher in the Rye, Holden's id dominates his behavioral patterns, logical thinking and emotional experiences, profoundly influencing his perspective toward the world what happens around him (Dashti & Bahar, 2015), a core psychic force that underpins his resistance against the normative constraints of adult society.

Holden's id represent the unbridled desires and impulses from the bottom of his heart which frequently against societal norms and moral standards. On one hand, his rebellious nature is a direct externalization of id forces, manifested in his profound loathing and relentless challenge of the adult world's veneer of hypocrisy. Through truancy, lies, and sarcasm towards teachers and peers, Holden acts out his dissatisfaction and rebellion against the established order. On the other hand, the awakening of Holden's sexual consciousness is also a significant manifestation of his id, particularly in his complex feelings towards his sister Phoebe, where hints of an inexplicable sexual attraction intertwine, further intensifying his internal conflict.

In Holden's psychological landscape, the id holds unchallenged sway, leading not only to extreme rebelliousness in his actions but also to a profound identity crisis in his thinking (Dizdar & Toker, 2012), a key symptom of his existential alienation from the adult world and its core values. He harbors a fantasy of being a "catcher in the rye", a guardian who shields innocent children from the moral corruption of adulthood, yet this idealized vision faces an insurmountable divide when confronted with harsh reality (Dizdar & Toker, 2012), a stark contrast that exacerbates his adolescent sense of disillusionment and isolation. Upon spotting the graffiti "Fuck you" on the stairwell wall in the headmaster's office, Holden becomes concerned that his sister and other children might witness it (p420). This sight subconsciously provokes his anger and prompts a desire to remove the offensive language. He hesitated because he was afraid of a passing teacher might misconstrue him as the perpetrator, however, despite his apprehensions, Holden decides to eliminate the swear words, driven by his aim to safeguard the innocence and charm of the children's heart. Exactly, Holden's profound affection for Phoebe coexists with anxiety over her inevitable growth into an adult world he deems false. At the same time, his attitudes towards the external world are fraught with contradictions, abhorring their hypocrisy yet unable to sever ties, reflecting a state of profound inner struggle and confusion.

Despite the overwhelming power and conspicuous contradictions of Holden's id, it undeniably plays a pivotal role in his psychological development trajectory (Peng & Xiao, 2020), serving as an initial impetus for growth that stems from the internalization of familial dysfunction and social incoherence. Primely, the rebellious nature of the id stimulates Holden's profound reflection and questioning of existing social norms and moral standards which become the ideological foundation for his subsequent growth and prompting him to seek a more authentic and meaningful life. Then, the impulses and desires of the id expose Holden to the complexities of life firsthand. In his pursuit of personal fulfillment and happiness, he encounters numerous setbacks and failures, which deepen his understanding of human vulnerability and limitations, fostering acceptance of his imperfections and seeking self-reconciliation. When Holden is watching the Little Rockettes' performance, he greatly appreciate the performers' smoothly skill, but he blames his bad mood for the show he disliked instead of blaming hypocritical world where he stand in (p353)—an impulsive emotional response that reveals his initial inability to rationalize his discontent with the external world. In addition, the driving force of the id acts as a catalyst in Holden's psychological maturation, guiding him toward emotional maturity amid pain and confusion. He begins to recognize his inherent responsibilities and life missions, adopting a more mature and rational approach to life's challenges and difficulties. Concurrently, he learns to tolerate the flaws of others and embrace human diversity while preserving his own individuality and uniqueness, ultimately striving to find his rightful place within the intricate fabric of society.

3.2 The Struggle and Adjustment of Holden's Ego

Confronted with multifaceted pressures emanating from the family, school and society, Holden navigates numerous trials and adversities, all of which exacerbate the psychological fragmentation rooted in his experience of familial and social incoherence. It is the arduous inner struggle he endures that allows him to undergo a cocoon-like metamorphosis, ultimately attaining a state of self-transcendence and profound psychological transformation (Peng & Xiao, 2020)—a psychic evolution involving the gradual integration of his fragmented inner world shaped by external dysfunction.

Holden's ego, as the mediator between the impulsive id and the restrictive superego, confronts unprecedented challenges within the narrative (Wang, 2022), for such inner strife essentially stems from the constant game between instinctual rebellion and moral constraint in his adolescent years. Holden's disdain for success serves as a satirical critique of the prevailing societal values. On the one hand, the id's impetus propels him to yearn for liberation from reality's shackles, seeking unfettered freedom and instant gratification. Conversely, the superego's moral compass incessantly reminds him of societal norms and the responsibilities he ought to uphold. This internal dichotomy and conflict sway Holden precariously between the scales of reality and ideal, plunging him into profound turmoil. Such mediation presupposes a subject who can recognize his desires as his own and engage moral claims from a position of interiority. Drawing on Fromm's framework, Lei and Zhang (2024) argue that postwar American society systematically undermines this subjective ground, reducing individuals to "objects" who "do not regard themselves as the subjects of their own actions, as thinking, feeling, loving persons, but become objects, the embodiments of their own externalized forces" (p. 3). When Holden can no longer experience himself as the agent of his psychic life, his desires manifest as alien compulsions, moral standards register as hollow hypocrisies, and the social world offers no stable terrain for authentic engagement. His persistent inability to forge sustainable compromises between id impulses and superego constraints thus reflects not merely individual psychopathology but a social order that systematically erodes the foundations of authentic selfhood.

Holden's disdain for educational institutions, his rejection of the hypocrisy in the adult world, and his profound yearning for a world of innocence vividly illustrate the intense collision between the desires of id and moral imperatives of superego. At the age of sixteen, he was compelled to articulate his discontent and defiance through the act of running away (Peng & Xiao, 2020). Holden transitions from one educational institution to another, ultimately journeying from Pencey school to New York City. Furthermore, he harbors aspirations of fleeing from New York to an unspecified location in the West, embodying a perpetual state of being "on the road". These behaviors are juxtaposed against his profound love and sense of responsibility towards his family, particularly his sister Phoebe, preventing him from severing ties with reality entirely. This intricate and inherently contradictory psychological state permeates the entire narrative, a core feature of his ego's struggle to balance competing psychic and external demands.

After a series of life events and internal struggles, Holden's self-consciousness gradually awakens and matures, a key development in his adolescent affective life emerging from the intricate interleaving of longing, ambivalence, and existential indeterminacy. He comes to realize that mere escapism and rebellion cannot fundamentally resolve issues, potentially plunging him into deeper despair (Liu, 2024)—a critical insight that marks his move beyond the existential indeterminacy defining his early adolescent psyche. After sneaking back home

stealthily, Holden's heartfelt conversation with his sister Phoebe serves as a warm current that soothes his troubled heart. Through this intimate interaction, Holden experiences a form of redemptive affection that he has long been deprived of. Phoebe consistently shows sincere and unwavering concern for him, from which Holden derives a profound sense of trust and emotional encouragement. Phoebe implicitly conveys a timeless message: no matter where his journey takes him, his family will always remain his unwavering pillar of support and emotional harbor. This profound familial bond instills in Holden an unprecedented sense of peace and warmth, which in turn prompts a fundamental shift in his attitudes and core values toward life, one that effectively alleviates the lingering ambivalence and longing in his adolescent emotional experience.

He gradually recognizes that growth does not entail continuing escaping from what makes he uncomfortable but rather bravely pursuing one's beliefs while try his best to understanding and accepting anything cannot be changed. This transformation signifies a qualitative leap in Holden's self-consciousness and helps Holden learns to confront reality with a more mature and rational mindset. In contemporary democratic societies, absolute authority is absent; instead, those who can instruct us something useful play a crucial role in assisting young individuals in overcome obstacles and giving advice on major choice at crossroads, thereby fostering the youth into mature adults.

Holden's reflections on his self-adjustment process have been a profound and positive implication for his psychological variation which prompt him to form an ideology of self-acceptance and self-improvement. He resolutely rejects the tendency to turn a blind eye to harsh reality; instead, he adopts a more open and inclusive mindset to comprehend and embrace the diverse experiences around him (Wu, 2012), a shift in perspective stemming from his experience of authentic interpersonal love and emotional resonance. As Holden recalled the two months he lived with Harris Macklim, Holden called him "biggest bores"(p339) and he firmly believed that Macklim was an exactly irritating individual who often shouting with a very raspy voice. However, deep down, Holden admired Macklim's melodious whistling, even though Holden never told Macklim in front him that "You're a terrific whistler"(p340). Such a subtle shift in mindset and emotional perception signals his significant maturation amid arduous ego struggles. Furthermore, Holden's awakening self-consciousness fosters a heightened awareness of the importance of considering others' emotional needs and perspectives—a key outcome of the emotional development driven by genuine human connection and love.

3.3 The Struggle and Pursuit of Holden's Superego

Under the intricate framework of Freud's theory of personality structure, the superego presents the key to moral principles and aspirational pursuits, occupying a pivotal position. It serves not only as the guardian of one's internal moral standards but also as the internalized manifestation of behavioral norms shaped by societal and familial education. In The Catcher in the Rye, the evolutionary journey of Holden's superego constitutes a profound exploration of moral steadfastness and inner self-discovery, in which arduous struggles and lofty pursuits are inextricably intertwined. This journey reveals the intricate tapestry of his adolescent psyche, exerts a profound influence on his psychological growth trajectory (Wang & Zhang, 2010), and embodies a symbolic reclamation of natural order and childhood purity in opposition to postwar American consumerism.

Holden Caulfield, a young man often labeled as rebellious and unmanageable by societal standards, possesses a deep-rooted moral compass that contradicts his outward appearance. His

profound aversion to insincerity, alongside his passionate quest for authenticity and purity, highlights the ethical values that are integral to his character. Holden does not conform to the traditional image of a hero. Instead, he admires those who quietly safeguard the innocence of children, thus shielding them from the inevitable moral corruption that adulthood can bring. This relentless pursuit of purity and virtue is perhaps the most brilliant facet of Holden's moral framework.

However, the significant gap between his lofty ideals and the harsh reality of life often leads him to experience a tormenting sense of moral disintegration. He is constantly grappling with the complexities of a world rife with deception, hypocrisy, and superficiality, a struggle that ultimately fosters his profound disillusionment with adult society (Dizdar & Toker, 2012) and engenders a deep sense of disenchantment, one that reinforces his status as an existential alien within the society he inhabits. The pervasive hypocrisy and emotional detachment in the adult world further intensify his inner psychological struggles, leaving him feeling increasingly isolated and misunderstood by those around him. Holden's hostility toward institutions such as Pencey, museums, and Broadway shows embodies his perception of them as "apparatuses of symbolic foreclosure" that enforce homogenization and emotional dissociation (Javanbakht et al., 2025). Yet this resistance paradoxically reinscribes the very norms he disavows: his longing for authenticity remains a culturally mediated ideal, and his rebellious discourse remains structured by the symbolic order he seeks to escape. As he is immersed in turbulent and conflicting emotions, Holden's journey serves as a poignant exploration of the universal challenges faced by those who seek genuine human connection in an often insincere and alienating world, one where readers who have personally grappled with the inherent tension between childhood innocence and the harsh truths of adulthood can find profound emotional resonance.

The development of Holden's superego propels him to explore his self-identity and awaken a strong sense of personal and familial responsibility (Chen & Wang, 2018), a process involving the reconstruction of his ethical framework and the emergence of redemptive impulses that counter his earlier interpersonal estrangement and self-negation. Through continuous self-examination and interaction with the external world, he endeavors to find his place and standards amidst the chaos in the mainstream values . His impregnable protection for his younger sister embodies his familial sense of responsibility which marks a significant milestone in the consciousness of superego. Simultaneously, Holden recognizes his sacred duty as a member of society, even though that often leaves him perplexed and powerless. His aspiration to insist justice and protect the vulnerable serves as a moral compass guiding his actions.

Holden's superego exerts a profound and far-reaching influence on his psychological growth trajectory (Wei, 2015), which constitutes a dialectical process of self-actualization involving the negotiation of psychic impediments in the pursuit of personal meaning and moral authenticity. On the one hand, the moral ideals and self-expectations within his superego serve as an internal driving force, impelling him to shun hypocrisy and pursue authenticity and beauty. This positive impetus, to some extent, alleviates Holden's negative sentiments towards reality, fostering his love and anticipation for life. On the other hand, the intense conflict between superego and id plunges Holden into profound inner turmoil. While he yearns to adhere to the moral principles of his superego, the primal impulses and desires of his id often leave him in a dilemma. This internal contradiction and struggle propel Holden towards continuous self-reflection and growth, ultimately enabling him to gain a clearer understanding of his authentic needs and values, laying a solid foundation for his psychological maturity.

In short, through the theoretical framework of Freud's tripartite personality structure, Holden's

superego is revealed as a psychic realm forged by unwavering moral resolve, a profound quest for self-identity, and the arduous navigation of intense inner conflicts. This intricate, progressive developmental process stands as a microcosm of his personal psychological maturation and yields invaluable insights into the complex inner lives of adolescent youth as they navigate the turbulent transition from childhood to adulthood.

4. Discussion

Through the lens of Freud's theory of personality structure and a series of experiences and introspective monologues, it will focus on unveiling the profound revelations concerning the psychological maturation of Holden, amidst his teenage turmoil and confusion, exemplifies how a nascent psyche navigates the complexities and dynamics of the world (Wei, 2015). This journey not only constitutes a reflective review of Holden's personal evolution but also presents an insightful and innovative exploration into the realms of contemporary education, emotional ecology and the cultivation of psychological resilience.

Holden's story serves as a mirror, reflecting the neglect and suppression of individuality within traditional educational systems (Javanbakht et al., 2025). His rebellion is a silent protest against standardized, homogenized educational models. It begs the question: Should education serve as a mold that shapes uniformity or as a beacon that illuminates the unique souls of each student? Consequently, the call for personalized education grows louder. It advocates for tailored instruction that respects and ignites the inherent potential of every learner, transforming education into a journey of self-discovery and self-actualization. In such an environment, Holden might find his own field of rye, no longer lost in adolescence.

Holden's loneliness and yearning poignantly expose the emotional alienation prevalent in modern society (Liu, 2024). Amidst the fast-paced, high-stress lifestyles, people often overlook the significance of emotional exchange and resonance. Yet, these seemingly insignificant emotional supports form the solid foundation for individual psychological growth. We must recognize that emotional support transcends mere comfort and encouragement; it embodies profound understanding and acceptance. It necessitates learning to listen, to empathize, and to touch the lonely souls with warmth in our daily lives. Only then can we foster an environment imbued with love and care for Holden and his peers, nurturing their growth with warm emotional environment.

Holden's vulnerability in the face of adversity underscores the importance of cultivating psychological resilience (Peng & Xiao, 2020). This resilience, akin to a mental armor, shields us from the storms of life. However, it is not an innate gift but a result of relentless training and refinement. The ego's struggle to balance competing psychic demands illuminates how this process of developing resilience unfolds (Wang, 2022). It is necessary to integrate the cultivation of psychological resilience into our educational systems, utilizing curricula and practical activities to guide students in confronting challenges, pushing themselves, and transcending limits. Furthermore, we must pay close attention to students' mental health, promptly identifying and intervening in potential issues, offering necessary psychological support and assistance. In this way, we can nurture a new generation of talented and resilient young people, empowering them to forge ahead fearlessly on their life's journey.

In conclusion, Holden's psychological growth journey offers invaluable insights: relentless pursuit of personalized education, transmission of warmth and strength through emotional support, and honing of unwavering resilience (Tian, 2014). These insights not only provide a

profound interpretation of The Catcher in the Rye but also constitute an innovative contemplation and practice regarding modern education, emotional ecology, and the cultivation of psychological resilience in order to contribute to the healthy development of adolescents.

5. Conclusion

This study delved into the intricate psychological landscape of Holden Caulfield, the protagonist of J.D. Salinger's seminal novel, The Catcher in the Rye, through the lens of Sigmund Freud's Theory of Personality Structure. This exploration has illuminated not only the complexities of Holden's character but also the profound insights that Freud's theory offers into understanding human psychology and its developmental trajectories.

Initially, Holden is largely governed by his id, manifesting in his impulsive behaviors, rebellious nature, and unchecked desires. His disregard for societal norms and conventions reflects a deep-seated dissatisfaction with the adult world, where he perceives hypocrisy and phoniness at every turn. However, as the narrative progresses, Holden's ego gradually emerges as a moderating force, seeking to balance the conflicting demands of the id and superego. His encounters with various characters, particularly the adults he encounters during his journey, challenge his preconceptions and force him to confront his own vulnerabilities and insecurities. This process of confrontation and reflection triggers a significant shift in his psyche, as he begins to recognize the limitations of his id-driven existence and the importance of developing a sense of self-awareness and responsibility.

In the framework of Freud's tripartite theory of personality, Holden's superego, which is initially weak and indistinct, gradually solidifies through his interactions with idealized figures, particularly his sister Phoebe, who symbolizes innocence and purity. Phoebe's impact on Holden, along with his reflective self-examination, facilitates the maturation of his internal superego, thereby cultivating empathy, compassion, and an emergent aspiration to protect the innocence of others. This metamorphosis represents a significant milestone in Holden's psychological development, as he transitions from a self-absorbed outlook to one that prioritizes the welfare of others.

Ultimately, our examination of Holden's psychological evolution within Freud's theoretical framework elucidates the journey of a young individual navigating a complex and often perplexing world in search of his identity. Through the application of Freud's theory, we discern the interaction among Holden's id, ego and superego as he grapples with the tribulations of adolescence and the stark realities of adulthood. Despite the pervasive uncertainty and distress that characterize Holden's narrative, these experiences catalyze a deeper comprehension of both himself and the surrounding world. It points out that the story of Holden's rebellious experience has transcended the realm of personal experience and profoundly mapped the collective psychological state of a generation of adolescents. His upbringing and inner changes provide us with valuable insights and deepen our understanding of the psychological changes inherent in adolescence.

In conclusion, the application of Freud's personality structure theory to J.D. Salinger's The Catcher in the Rye provides a nuanced and enlightening perspective on Holden's psychological transformation. By scrutinizing the dynamic interactions among his id, ego, and superego, we acquire a more profound understanding of the complexities of human psychology and the transformative potential of self-reflection and personal development. Consequently, this analysis affirms the enduring significance of Freud's theoretical contributions and the timeless res-

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Ethics Statement

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References

Chen, X. Y., & Wang, Y. J. (2018). Interpreting Holden's loss and return from three ethical relationships. *Home of Drama*, *28*(6), 194-195.

Dashti, S. K., & Bahar, I. B. B. (2015). Resistance as madness in The Catcher in the Rye. *Theory and Practice in Language Studies*, *5*(3), 457-462.

Dizdar, S., & Toker, A. (2012). Holden Caulfield: Alien in The Catcher in the Rye. *Dil Ve Edebiyat Egitimi Dergisi*, *1*(2), 71-82.

Hu, B., Chen, Q., & Liu, Y. (2024). The spiritual pollution in The Catcher in the Rye. *Overseas English Testing: Pedagogy and Research*, *6*(1), 1-7.

Javanbakht, H., Borzabadi Farahani, H., & Moradi, H. (2025). Tension between symbolic and imaginary and trauma in Catcher in the Rye. *International Journal of Foreign Language Teaching and Research*, *13*(54), 189-202. https://doi.org/10.71962/jfl-2025-1206138

Jiang, Y. (2019). *Holden: An anachronistic protagonist* [Master's thesis, East China Normal University].

Lei, Z. X., & Zhang, C. (2024). Returning to human nature: An interpretation of the alienation theme in The Catcher in the Rye. *English Square, (10)*, 69-73. https://doi.org/10.16723/j.cnki.yygc.2024.10.024.

Li, J., & Sun, Y. (2019). Returning to confusion: An interpretation of anti-growth narrative in The Catcher in the Rye. *Journal of Anhui Vocational & Technical College*, *18*(4), 45-49.

Liu, S. C. (2024). Youth Writing and Growth Narrative in The Catcher in the Rye. *Journal of Baicheng Normal University*, *38*(1), 81–85.

Peng, F. L., & Xiao, H. (2020). An analysis of Holden's dual inner world in The Catcher in the Rye: From the perspective of family system theory. *Journal of Xi'an International Studies University*, *28*(1), 125-128. https://doi.org/10.16362/j.cnki.cn61-1457/h.2020.01.024

Salinger, J. D. (2022). *The Catcher in the Rye*. Yilin Press; Nanjing, China.

Song, X. (2025). Holden's alienation and resistance in The Catcher in the Rye: On Salinger's poetic writing of modern adolescents' spiritual crisis. *MZ Reading and Writing*, *35*(55). https://doi.org/10.20273/j.cnki.mzxs.2025.35.055

Tai, X. N. (2012). *The growth theme in The Catcher in the Rye from the perspective of narrative style* [Master's thesis, Yunnan University].

Tian, Y. C. (2011). To whom does he confide his pain? An analysis of Holden's growth environment in The Catcher in the Rye. *Journal of Gansu Radio & TV University*, *21*(1), 36-39.

Tian, Y. C. (2014). Escape, resistance, fantasy, and epiphany: An analysis of Holden's growth in The Catcher in the Rye. *Modern Chinese (Academic Edition), (1)*, 85-86.

Wang, C., & Zhang, X. F. (2010). Returning to youth and nature: The Catcher in the Rye in ecocriticism. *Journal of Language Teaching and Research*, *1*(3), 269-272.

Wei, L. (2015). *An analysis of Holden's psychological transformation in The Catcher in the Rye from the perspective of humanistic psychology* [Master's thesis, Nanchang University].

Wu, Z. X. (2012). The call for love: Taking Holden's growth in The Catcher in the Rye as an example. *Journal of Chongqing College of Education*, *25*(5), 90-93.

Zhao, C. X. (2016). Epiphany and growth: On Holden's transformation in The Catcher in the Rye. *Language Planning, (33)*, 45-46. https://doi.org/10.16412/j.cnki.1001-8476.2016.33.023.

Zhaoen, P. F. (2010). *Holden's dilemma* [Master's thesis, East China Normal University].

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