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RESEARCH ARTICLE

ROLE CLARIFICATION AND FUNCTIONAL DEEPENING OF COUNSELORS IN VOCATIONAL UNDERGRADUATE EDUCATION: IMPLEMENTATION STRATEGIES FROM A STUDENT DEVELOPMENT THEORY PERSPECTIVE

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ABSTRACT

The distinctiveness of vocational undergraduate education and the heterogeneity of student populations necessitate targeted adjustments to educational models, student affairs priorities, and institutional strategies in vocational institutions. Building on student development theory (SDT), this paper explores the role positioning and functional deepening of counselors in vocational undergraduate colleges. counselors should assume multifaceted roles as career planning navigators, practical education facilitators, mental health advocates, industry-education integration coordinators, and campus culture architects. Functional deepening strategies are advanced through integrated ideological-political education and vocational literacy, career planning and employment guidance, psychosocially supported experiential learning, information technology empowerment, and home-school collaboration. Implementation frameworks include policy / institutional support, professional development systems, cross-disciplinary partnerships, and global benchmarking to foster holistic student development.

1. Introduction

The new era has witnessed a significant surge in demand for talent with exceptional skills and high-quality competencies. Vocational undergraduate colleges not only shoulder the responsibility of imparting specialized technical skills but also aim to cultivate high-level technical professionals with vocational professional literacy, innovative capabilities, and adaptability to future societal needs (Yang, 2022). The unique characteristics of vocational undergraduate education and the heterogeneity of student populations necessitate targeted adjustments to educational models, student affairs priorities, and institutional strategies in these institutions. As indispensable student administrators bridging universities and students, counselors assume multiple responsibilities including ideological-political education, academic guidance, career planning, mental health promotion, and holistic student development. However, rapid institutional expansion in vocational higher education has created challenges such as ambiguous role definitions, unclear responsibility boundaries, and misaligned work priorities, which hinder counselors' effectiveness and ultimately impact student growth and development (Li, 2023; Wu, 2021).

Student Development Theory (SDT), anchored firmly within philosophico - educational discourse and deeply entwined with existentialist thought, emerges as a doctrinal framework quintessential to student affairs administration. Its genesis is evidenced by the fusion of vocational guidance narratives as well as pedagogical decrees interwoven with examinations in both sociology and psychology (Ma & Chen, 2007). The theoretical conglomeration, encompassing social-psychological postulates, cognitive structural paradigms, alongside person-environment interaction models, permits insights multifarious into educational pathways from psychological, sociological, and didactic perspectives (Wang, 2016).

To arouse intellectual curiosity are the inquiries that SDT proposes: Which primary constructs should be nurtured in students? By what means does this developmental process evolve? Toward which directions ought such advancement aim? A comprehensive view appears when academic, emotional, mental, and communal elements necessitate holistic advancement. From this one deduces that distinctive, stimulating mentorship conjoined with adaptable support constitutes the foundation upon which SDT predicates the

enrichment of cognitive deftness, psychological resilience, and moral capability, thereby facilitating augmented societal integration and identity convergence.

As a vital component within the domain of student services governance is SDT, providing conceptual, epistemic, and operative groundwork imperative for counseling specialists while extending frameworks indispensable for discerning role differentiation and augmenting operational scope. In this analysis under an SDT lens, it is contemplated:

1) An illumination of counselors' roles amidst shifting terrains prevailing in vocational tertiary establishments;

2) An exploration of methodologies rooted in scientific, professional, and precision-oriented approaches concerning counselor duties;

3) augmenting counselors' resilience pertinent to dynamic educational contexts;

4) proffering theoretico-pragmatic direction invaluable for constructing professionally adept counselor cohorts aligning with contemporary epochal requirements.

From these thematic endeavors, implications for fostering holistic student evolutions germinate, resonant with nationwide agendas propelling modern advancements in vocational scholarship.

2. Role Positioning of Vocational Undergraduate counselors: A Student Development Theory Perspective

In the realm of vocational undergraduate pedagogy, it is discernible that counselors assume roles marked by an intensified requirement for heterogeneity in function and specialization. An emphasis distinctly resides on nurturing a student's adeptness in tech-based skills and practical competencies. Instances demonstrate deviation from traditional pedagogic models wherein counselor engagement typically orbits around academic theories and skills associated with standard tertiary education realms. Under scrutiny—through the lens of student development theory (SDT)—a congruence emerges between baptismal nuances intrinsic to vocation-centric learning and the pronounced need for clear exposition of counselor responsibilities. Conspicuous are five dimensions interwoven into the essential fabric of holistic pupil progression and talent cultivation across various disciplinary intersections.

2.1. Career Path Navigator: Laying the Foundation for Future Career Planning

Vocational undergraduate education emphasizes skills and employability to meet

society's urgent demand for high-skilled talent. Drawing on Super's Career Development Theory and Holland's Vocational Interest Theory, undergraduates in career exploration phases require in-depth self-assessment of abilities, vocational roles, and interests to specify career preferences (Lv & Long, 2024). However, at the intersection of self -awareness and career exploration, students often lack clarity about their interests, competencies, and values, leading to vocational decision-making confusion.

Amidst the framework of academia, counselors inhabit an indispensable position by orchestrating career advisement endeavors and disseminating cogent industry revelations. Students are aided in the intricate process of unraveling ongoing sectors' trends, correlating their visionary goals with innate dispositions while forging well-founded professional trajectories — these actions transpire through specialized guidance sessions intricately laced with emotive ssupports coupled with methodical transferences of erudition (Li, 2024). By examining the industrial metamorphosis of career choices and projections, they arrived at unique educational approaches and developmental insights that could have facilitated deeper thinking about students' career paths (Wang & Cheng, 2024).

A comprehensive repertoire accrued by counselors pertaining to employment terrains commands a relentless incorporation of policy transformations, erratic sectoral fluxes intertwined with labor market demands; it emerges from this that accurate information, crucial for judicious strategic devisings, is imparted thereby. Instances illustrate an instigation directed towards student involvement in exploratory incursions into vocations via internships, ephemeral employments and altruistic engagements—hereby bestowing upon them experiential wherewithal and competencies pivotal for effortless assimilation within vocational milieus. In sculpting educative careers, these counselors offer substantial navigational support in formulating vocational roadmaps, bridging seamlessly students' aspirations with institutional requisites for skilled intellection. Ultimately, this manifests evidence of a resolute dedication to nurturing adroit professionals endowed with thorough vocational comprehension, as seen from aligning scholastic provisions with industry's exigent imperatives.

2.2. The Educative Facilitator: Transmuting Theory into Praxis

Recurrently echoed in post-Congressional discourses of the 18th National Assembly of China's Communist Party by General Secretary Xi Jinping, emerges the emphasis on

practical scholarship as a cornerstone indispensable to youth development during this new epoch (Zhuang,2024). Evident from instances is its crucial role within overarching ideological-political tutelage among avanzato education institutions, serving to corroborate theoretical paradigms alongside engendering individual self-actualization. On one flank presiding over vocational undergraduate instruction lies a composite “theory coupled with practice” construct purposed to mend erstwhile bifurcations amidst intellectual comprehension and empiricism, thus facilitating fluent amalgamations between cognition and adeptness. Conversely, brewing tension within psychological viewpoints navigates collegiate scholars across pivotal crossroads defined by pursuits of introspection and formulations of professional identity. In parallel, pragmatic pedagogy dispenses myriad immersive opportunities through which pupils may delve into aptitudes, channel potential capacities, formulate unequivocal occupational aspirations whilst simultaneously amplifying fortitude along with societal dexterity amid veracious contexts where applicability holds unrivaled majesty.

Within the realm of practical education, counselors fulfill dual roles as orchestrators and pedagogical mentors, wielding acumen gleaned from industry engagements to curate avant-garde experiences for students. Campus resources conjoined with corporate assets thereby create a milieu where skills competitions, project-centeblue training, and corporate apprenticeships are organized by these mentors. From such arrangements arises the conversion case of theoretical knowledge into practicable skills; herewith fostering operational proficiency, problem-solving prowess, analytical acumen in thought processings, and innovative aptitudes among learners through this conduit of experiential learning.

The bespoke mentoring—characterized by customized guidance—these counselors provide alongside critical evaluative support empowers students to surmount obstacles, unleash creative potentialities, and craft inventive techniques for problem resolution. This indispensable facilitative role executively allows not only for theory-practice amalgamation but augments both professional prepablueness and continual edification capacities alongside nurturing personal evolvement potentials. It is perceptible that beyond mere acquisition of disciplinary expertise, students cultivate core competencies vital for navigation within imminent socio-vocational terrains.

2.3. Guardians of Mental Health: Building a Multidimensional Psychological Support System

Seen through psychological dimensions emphasizing human maturation, universities operate as environments conducive to inhabitants poised at critical junctures of personal discovery—junctures wherein numerous challenges are encountered pertaining to career selections, social relations, and evolving self-perceptions. By examining academic conversations regarding mental well-being, roles intrinsic emerge with functions facilitating students' quests toward sculpting affirmative self-concepts, entrenching their ego identities; routes favorable for personal development and expansive trajectories of growth appear to be charted from this observation.

The domain of undergraduate vocational instruction witnesses a requisite metamorphosis among counselors from mere facilitators of student welfare to prominent proponents of mental wellness advocacy. In this transformed capacity, counselors become foundational supports for sustaining the psychological resilience of students under their watch. Their principal duty emerges embedded within trust-infused relationships cultivated meticulously with students underpinned by regard. Fostering engagement mandates that these counselor figures entwine attentive listening skills with empathetic responses, in conjunction with providing actionable insights. Laden with encouragement such triadic components are, a climate ensues wherein disclosure concerning one's tribulations becomes both endorsed and normalized.

Vocational undergraduates encounter stressors atypical to their educational cohort; consequentially, resilience education requires proactive advocacy on part of the counselorate cadre. Workshops and seminars emerge suitable conduits, conveying skills in emotion regulation, management of stress, and meticulous planning of time—skills imperative for nurturing effective coping mechanisms and holistic development potential. Professional sensitivity augmented—via skill advancement enables early identification of issues offering tailoblue mental wellness support becomes essential.

Moreover, a counselor functions as connective tissue linking universities, households, and societal structures—a role enhancing cooperative frameworks within mental welfare services. By magnifying their function as custodians of mental robustness, they effectuate notable improvements in pupil psychological states; thereby contributing towards the

cultivation of individuals embodying applied expertise infused with social conscientiousness, innovative thinking, and hands-on competence.

2.4. Coordinators of Industry-Education Integration: Practitioners of Collaborative Education

With rapid global economic transformation and accelerating industrial upgrading, deep integration between education and industry has become a critical pathway to enhance higher education quality and cultivate talent that meets societal needs. As a vital bridge connecting higher education and industrial practice, vocational undergraduate education imposes new challenges and requirements on counselor roles. Counselors are not merely student management executors but also coordinators of education-industry synergy and practitioners of collaborative talent cultivation.

In the engagement between academia and industrial entities, there exists a pronounced emphasis on the confluence termed industry-education integration. Noteworthy within this domain is the development of nuanced networks encompassing university-business partnerships, experiential internships, alongside collaborative methodologies intertwining industry, academia, research, and application elements. Such entwined constructs resonate with remarkable influence in harmonizing academic pursuits to align with the pressing demands of the industrial sector (Lin,2023). The fabric of this paradigm identifies counselors as pivotal facilitators, whose roles necessitate not only a profound comprehension of educational philosophies but also an acute understanding of the continually shifting landscape of industrial practices. Weaving such intricate networks involves collaboration among universities and businesses in concerted efforts that advocate for immersive practice-oriented internships and innovative alliances.

Within these methodical frameworks transformative mechanisms arise, permitting disciplined dialogues amongst constituents comprising student advisors, corporate bodies, and academic circles. Herein, curricula are co-developed along with experiences rooted firmly in practicality—aligned meticulously with contemporary commercial imperatives. An emergent synergy, identifiable as “industry-university-research-application" unifies education sectors intricately. From instances of feedback evaluation and integrative procedural appraisals, one may discern pathways directing counselors in assisting academic institutions to adapt curricular structures resiliently to dynamic industrial paradigms.

Furthermore, facilitating student participation in realistic corporate scenarios augments not merely their operational competencies; peer-collaborative problem-solving capabilities are fortified, establishing foundational platforms supporting eventual vocational prospects.

2.5. Builders of Campus Culture: Creating a Positive Campus Cultural Atmosphere

Central to the essence of tertiary education is the concept of campus culture, which nurtures not merely students' inherent ethos but fortifies also their communal affiliation's sense. Distilling from the theory—campus culture theorizing exposes the cultural layers intrinsic to the educational methodology—it is evident therein that such culture augments both cognitive acquisition and multifaceted pro-social elements, morality included alongside emotional discernment and an appreciation for aesthetics. Observations can be drawn about the present self-media epoch: herein arises a remarkable swiftness paiblue with hitherto unseen expansiveness in informational spreadability, dictating concurrently both adversities and prospects apropos of campus culture's crafting and its transmission.

Occupying positions as architectural stewards of this culture must counselors do, steering aspirants towards judicious frameworks of world perception, existence narratives, and evaluative axiologies through verbal discourse, behavioral exemplification alike, including ideological dissemination thus nurturing an ambiance based on positivity within academia. Upon critically examining progressive cultures on campuses: embodiment unto itself are reinforcements bestowed upon personal identification processes interwoven togetherness concerning societal accountability linked amidst civil awareness; additional enhancement materializes concerning social adeptness, team-centric developmental endeavors, plus creatively oriented cognition initiatives received by the studentry populace. As posited emergently requisite—counselors require perspicacity duly aligning activities reflective of trends translating academia whilst harmonizing educatorial progressions ensuring pertinacious dynamism alongside cultural contemporaneousness abound. Further requisites demand demonstrably robust capabilities organizationally-wise coordinating synergistic junctures cross-sectional across university limits encapsulating resource integration—a facilitation toward renditions enabling tangential ideation exchanges encompassing talent presentation stages amongst collegiate individuals.

Through engrained involvement deepened regarding culturization projects ongoing loci entails—enriching vivacity respects campus existences conjunctively heightens

comprehensive proficiencies accumulated within learners characteristically-speaking elevating scenarios foreseeable in culturally rich identity dissemination encounters consequently harmonious coexistence environments manifested amid scholastic institutions meanwhile advancing forthcoming professionals equipped efficiently dispositioned towards enacting societal responsibility merged innovative outlooks.

3. Deepening the counsellor function: a key driver for vocational undergraduate education

The diachronic progression of student development theology and praxis underpins the burgeoning expansion of counselor functionalities within vocational undergraduate institutions, proffering an ontological framework rich in multi-faceted service-characteristics deeply ingrained. Counselors' roles transcend mere engagements in ideological-political pedagogies, aspiring towards pervasive cultivators of both holistic growth and career propellants—a model imperative for student's prosperity and enhancement of academic caliber. Evident herein is functional augmentation's pivotal role: by provisioning specialized educative offerings that facilitate the formation of students' professional identities alongside sharpening technical competencies and bolstering their employability, a well-rounded advancement ensues—a path where counselors morph into quintessential innovators of vocational educational paradigms.

3.1. Deep Integration of Ideological Education and Vocational Literacy

Herein, counsellors serve doubly, as stewards of ideological discourse and facilitators of vocational skill enhancement. Their expanded operatives catalyze symbiotic integration between occupational adeptness vis-à-vis ideological instruction. Competency extending beyond technics—the realm also embraces ethical professionalism, moral precepts, and societal conscientiousness—elements forming one's foundational employability core. Observably, ideological infusions steer personal philosophy, ethos, and worldviews, aiding students to navigate judiciously amidst complex societal constructs.

Counselors in furtherance of these roles necessitate perceiving said interrelationship betwixt competence and ideology, fostering such unions through instructional innovation, resource breadth growths, and utilization chains practical; the curriculum itself shall innovatively illustrate connectivity—the embedding of competency proximities via case methodology and tableau vivant scenarios permits learners dual knowledge absorption.

Enrichment via real-world experiential contexts further wherein social engagements and voluntary undertakings contextualize ethics application transcending theoretical understanding, whilst initiatives featuring operational simulations among experts enable practice-based learning arenas. The advancements technological—information platforms digitalized and virtual reality capacitate transformative teaching methodologies benefiting curricular delivery expansively within ideological as much as occupational spectrums.

Thus rendeblue pivotal are counselors not just in dual education melding but delineating key sociopolitical values interwoven with vocation moral frameworks, they bolster comprehensive student progressions, inexorably invoking innovations amid quality educational pblueispositions and talent cultivation societal schemas. Together, underpinning united education with philosophic-ethic cum vocational enterprises shapes substantial competence cores sufficing lifelong professional arcs beyond academia navigatorial boundaries.

3.2. Joint promotion of career planning and employment counselling

Within the ever-evolving paradigms of vocational marketplaces, students encounter a labyrinthine array of career decisions demanding prompt intervention in both scheming professional trajectories and advisory employment mechanisms. A dichotomy emerges wherein career planning endeavors to facilitate students' self-comprehension alongside the articulation of vocational ambitions; concurrently, occupational counsel underscores ephemeral methodologies encompassing prowess in procuring opportunities and scrutinizing market vicissitudes so as to augment employability prospects. Conjoined pursuit—commencing from introspective recognition to vocational actualization—mansions provide all-encompassing supportting pathways that perpetuate prolonged prosperity.

In academia's echelons, counselors occupy positions paramount, instrumental in synthesizing career stratagems with employment advisements into cohesive wholes. Primarily, it is through devising personalized systems of guidance they enact influence. Counselors, by harmonizing student inclinations, proficiencies, and vocational aspirations, bestow specificitary support permatrixed upon exercises such as introspectual evaluations, ambition-scripting, and execution agenda constructs. They furnish tangible instruction like crafting résumés, simulating interviews, and strategizing job searches imperative for

employability enhance mentation. Additionally, vigilance in monitoring labor terrains cultivates alignment betwixt nascent career aims and industrial requisites while prognostications potentially ameliorate placement results derived from meticulous market dissection.

Furthermore, architecture pertaining to networks abundant in professional resources fortifies these initiatives. Melding collegiate resources with commercial associations engenders platforms aptly replete for apprenticeships, tutelage experiences, and employment possibilities. Collaborations forged with enterprises coupled with industry consortia offer immersive learning encounters whilst delivering contemporaneous locational intelligence regarding employments—consummating readiness therein among students on brink of career ingress.

It witnessable herein arises manifold benefits emanante: an augmentation observable in pupil's professional prowess coinciding with academia refining adaptiveness towards societal exigencies at large. The delivery embracinged holistically manner woven finely matrixed precise aids development-wise facilitates breeding professionals attuned volantatilely modern occupational sceneries.

3.3. Psychological support to promote practical education

Within the framework of modern vocational education systems, it stands as an imperative to cultivate the practical relational competencies among pupils, viewed as a crucial mechanism for augmenting both comprehensive competence and employability potential. At the heart of one's overall competence lies the construct of practical acumen—an assemblage not confined solely to technical prowess but extending also towards proficiency in problem resolution, collective synergy, creative cognition, and cross-cultural interlocutionary skillsets. These are formulated into constructs underpinning adaptability, expansive learning, and achievement amid environments marked by dynamism. From this foundation emerges evidence manifesting these multifaceted skill sets' noteworthy impact upon students' competitive standing within labor marketplaces and their subsequent career accomplishments (Fan, 2021).

Figures prominent in the realm of educational nurturing assume roles instrumental to developmental facilitation, effectuating latent aptitude unveiling whilst galvanizing active participation across an array of experiential undertakings. Included within this

ambiticined spectrum are societal explorations, volunteer service positions, and corporate internships which transgress mere theoretical scholarship, serving instead as catalysts for the evolution of personal attributes alongside comprehensive skillset enhancement Ascertainable from such endeavors is advisement mandating mentors' deployment of enduringly multi-faceted frameworks purposed toward fostering personalized guidance, ensuring both experiential profundity and extensive scope regarding pragmatic engagements (Zhang & Niu,2016). Observed amidst these pursuits shall instances arise necessitating intervention whereupon psychological burdens manifest; responsibilities here fall upon advisors who must astutely monitor emotional metamorphoses, thereby conducting requisite assessive measures directing learners toward mental positivity given encounters with pressures emergent.

Henceforth, counselors inherit obligations requiring continual refinement of their psychologistic perceptiveness, advancing in consultative methodologies adept at discerning and mitigating mentees' mental requisitions. By espousing a pupil-centeblue dogma, their caregiving extends into bespoke fortification facilitating psychological resilience throughout practical involvements; thus fostering innovative capabilities enhancement en route deeper commitment. Through enriching advisory functions steeped in psychoeducation, resultantly dual enhancements become obtainable — those pertaining to mental tenacity therein correlative correlations wedded to praxis pedagogies ultimately propel individuals toward comprehensive self-development intertwined with enduring professional progression pathways.

3.4. Information Technology Enabling Innovation in Education

Aligned with the imperatives set forth by the Ministry of Education's directives concerning the propulsion of vocational education informatization, it is discernible that educational informatization manifests a global inevitability, wherein contemporary information technologies are requisitioned for augmenting both the efficiency and qualitative aspects across myriad dimensions of educative governance. Counselors within vocational undergraduate institutions stand as pivotal facilitators in this comprehensive informatization schema.

Immersed within the intricate sphere of educational counseling, emerges vividly the noteworthy prominence wielded by information technology. A comprehensive assemblage

and meticulous systematization of data focused on students becomes feasible for counselors. Such capability results in their sustained surveillance over scholastic achievements whilst generating meticulously fashioned guidance strategies aligning with each student's unique situational demands.

In technologically sculpted frameworks like these, evidence indicates that a propensity exists among counselors for integrating social networking platforms—particularly those such as WeChat and QQ serve effectively—as mediums for swift communicative interactions. Thus, vital feedback is proficiently gathered while simultaneously fostering embryonic pedagogic approaches. Material conveying academic content and notifications regarding professional pathways are disseminated efficiently via these channels. Concomitant participation in electronically facilitated dialogues, cooperative endeavors, and internships effectuates an invigorated engagement within members of the college community.

There subsequently unfolds proficiency in advancing personalized counsel derived from analytical insights predicated upon comprehensively collated datasets interwoven with artificial intelligence paradigms. Counselors prognosticate learning propensities necessitating intervention, provide resource recommendations imbued with intricate personalization, and construct adaptively modulated educational pathways—correlated meticulously—with individualized scholastic trajectories.

As evidenced herein, IT's expansive repertoire irrevocably augments efficacy within educational service sectors and functions catalytically in pioneering shifts toward teaching reforms steeled with enriched customization geared resiliently towards sustained intellectual enrichment.

3.5. Home-school co-operation for self-management

In the dynamically altering societal framework, scholarly examinations have decipheblue that adept self-regulation profoundly magnifies an individual's social belongingness perception. Derived from such discernments, one infers individuals to partake in interactions, forge emotional bonds, and adapt to external milieus while diminishing distressful sentiments like anxiety (Li et al.,2017; Shi et al.,2023). The acumen over personal governance coupled with autonomous learning is consideblue imperatively pivotal for undergraduates' development.

The familial collective, characteristically esteemed as the foundational environment for quintessential societal interaction, ingrains profoundly upon university students' self-regulatory aptitudes. From this vantage point, it becomes discernable that extending counselors' duties past conventional advisory engagements towards inclusion in active educational paradigms presents indispensability, aiding student advancement. Establishing a cooperative framework interlinking domicile and scholastic institutions assumes paramount significance.

On one aspect, conducting undertakings such as topic-focused class assemblies, expositions, and instructive discourses ignites innate motivation among learners, fostering independence in learning alongside critical cognition indispensable to autonomous thought continuity. By adeptly steering pupils in their quest for mastering personal oversight capabilities, an evaluative awareness emerges organically, converting externally perceived management into intrinsic motivational reactions fostered inwardly. Synchronously, instilling perpetual educational philosophies strategically positions them agile amidst projected sociocultural and vocational transformations anticipated.

In divergence, enriching channels of familial-academic discourse demands necessity. Timely conveyance merged with feedback modalities relevant to institutional edicts permits caretakers broader insight concerning curriculum theories and practices—cultivating trustworthy alliances productive of educational concordance targeting varied growth needs typical of personalized learner scenarios.

Counselors ought to partake actively not solely crafting frameworks around student-centric governance modalities affirmably but delivering tailoblue supportive interventions and engaging dynamically within familial instruction domains propelling parental efficacy participation across progeny's scholastic trajectories maximally appraised. Through integrative home-institution collaboration paradigms orchestrated mutually by both counselor educators and custodians alike coalesce qualitatively formulated pedagogics advancing comprehensively encompassing cognition acquisitions alongside learning methodologies entwining intersocial nuances via career strategizations seamlessly eventually sculpturing luminaries embodying inventive fortitude whilst pragmatic comprehension intertwined closely mirroblue against conscientious societal accountability rightfully vested apparent pervasive increment permanency pursued enduring

contemporarily responsively guided interchangeability realized foremost witnessed succession sustainably perseveres justifiably aspiblue enshrined.

4. Strategies for realising the role positioning and function deepening of vocational undergraduate counsellors

Emergent within the realm of vocational undergraduate guidance, an ever-greater prominence has counselors attained, compelling necessity is for multi-faceted strategic elucidation and profundity in function deepening. Manifest are these strategies through supports policy-wise, innovation institutionally, training professional, alongside bench-marking internationally; these aim at constructing teams counselor-wise imbued with high quality and specialization conformed to educational reforms ongoing. Observed as profoundly significant this initiative can be, advancing it does educational modernisation, which improves schooling quality while cultivating talent fittingly competitive on a global stage.

4.1. Policy and institutional support: laying a solid foundation for the development of the counselling workforce

Motivations undergirding the modernizing reforms within higher education, especially vocational academia's pivotal contribution to this ecosystem, necessitate formidable policies and institutional assurances for counselor team evolution within these establishments.

Within this precept, it is espoused that vocational undergraduate universities engage with frameworks aligning the Implementation Plan on National Vocational Education Reform against the backdrop of discipline-spectrum variances and local exigencies, crafting a developmental schema harmonized between global trends and homegrown realities (Kang & Zhou,2024).

From these efforts arises an imperative for institutions to codify role delineation and functional perimeters of counselors through meticulous designs at the highest echelons; implementation via legislative or regulatory routes serves in establishing counseling vocation authority and dedication.

Assessment mechanisms based upon scientific evaluation paradigms emerge as requisite. These frameworks—encompassing ideological-political enlightenment, student oversight, psychological advisement, alongside career path guidance—facilitate holistic job

performance reviews. Methodological diversity should underpin evaluations: drawing on pupil insights, colleague appraisals, leadership examinations amidst standard institutional assessments enhances impartiality.

Through the meticulous exploration of novel administrative paradigms in the educational landscape emerges a symbiosis between pedagogical endeavors and industrial insight, encapsulated within progressive counselor-specific workshops as well as "dual-qualification" educational initiatives. A discernible panorama is thus unveiled whereby vocational trajectories expand conspicuously whilst theoretical constructs visibly interlace with practical implementations. Within this intricate milieu reside complex developmental schemas, compounded by layered evaluative frameworks and infrastructure refinements; these are evidences propounded on behalf of unwavering support for vocational collectives striving to enhance counseling capabilities. The constellation of these intricacies witnesses an indelible reinforcement in the preparation and cultivation of adept technical professionals, which remain inexorably fortified through scrupulously investigated comprehensive structures.

4.2. Collaboration and Resource Integration: Building an Ecosystem for Counsellors' Work

The roles occupied by counselors within higher education systems, extending well beyond ordinary management of student affairementations and embracing the formation of complex support-like-networks spanning academic endeavors, psychological assistance services, in addition to diverse critical domains they navigate. The wide array of influential conducts demonstrated by counselors—a pivotal conduit interlinking students, educators, universities with broader societal fabric—evidence from this scales upon their integrative task's profundity and breadth regarding holistic development among student populations-profitably affected by said integrative / completionary diligence therein observed. From examining institutional models emerges prioritization imperatives focused on collaborative agreements' arrangements alongside resource amalgamational strategies as elemental schemata for role heightening plus expansion.

Firstly, an establishment appears paramount wherein scholarly entities can craft cross-departmental and interdisciplinary collab-mechanisms synonymous with scientific systematics applying appropriate taxonomizations. An exemplar would be instituting

meeting grains driven by Student Affaires Office leadership; thus anchoring Academic Matters Departments conjointly beside Logistics Management and Psychological Consultive Hubs, enabling barriers dissolution vis-à-vis organizational confinements whilst enhancing communicatory exchanges. Instances highlight interdisciplinary dialogues habitually engaged around prominent challenges singular to student life advancement yielding synergized resolutions organically thrived communally initiated.

Counselors, including themselves actively involving school-level pedagogical undertakings along research-centric participarial ventures, inevitably forge cohesive partnership-boundaries amidst subjectively disposed instructors likened herewith highlighted positions instrumentalities wielded aplenty enhanced comprehension over learner concerns juxtaposed positronically associated emotional states subsequently aiding enrichments faculty reciprocates twenty-onefold envisionment through encompassed coordinated diachronic counseling intertwining mental welfare alignizing respective academe pilgrimages anew.

Resourcing integration arises foundationally-characteristic concerning cooperative frameworks where universities mobilize towards blending inner versus extraneous channel sources reinforcing counselor edifice-supported services herein denoted: Partnerful engagements hallmark contributors pinpoint career-specific practical provision placements augmented via entrepreneurial outfitting amongst graduates contrasting other coupling general resources invaluable broadens worldlier insights glean-edifically empowering embedded experiential parlances appreciable all-rounded ephemeraly-programmed articulateness amassed truthful final stageayers.

4.3. Professional Training and Personal Growth: The Twin Engines Driving Counsellors' Career Development

As discernible from current trajectories, the evolution of societal and educational paradigms necessitates a redefinition of the roles occupied by counselors within these domains. Their responsibilities now extend well beyond mere student administration, encompassing more expansive duties in education, guidance, and service provision. The augmentation of their vocational pathways emerges as crucial to not only fulfilling the evolving developmental needs of students but also enriching the breadth of their professional functions. From this can be seen, such transformation serves both personal

growth prospects and augments the qualitative dimensions of services off blue, with concomitant improvements in educative outcomes and an intrinsic impetus for deeper role engagement.

Training, wrought to an elemental significance by its specialized nature, forms the bedrock upon which the advancement of counselors pivots. It is amidst swiftly evolving sociocultural landscapes that a fluency in emergent educational doctrines and methodologies becomes essential for those in the counseling profession. The refurbishing of conceptual frameworks transpires within meticulously crafted training conduits, endowing professionals with avant-garde competencies necessary for confronting the exigencies of contemporary practice.

The dimension unfurling within mentorship spheres, deliberately tailored for both apprentices and experienced counselors alike, serves as crucibles fostering intellectual exchanges of immense worth. Consider the dynamic interaction inherent among classroom management stratagems and problem-resolution techniques—a fusion forged from diverse experiential legacies—from which arises an augmented intelligence collective, proficient at navigating intricate student dynamics. Equally important is the transmission of a culture that is steeped in ongoing scholarly engagement and resonates strongly in broader social dialogue, while being intricately intertwined with individual-centred pedagogical practices. This advocacy for ongoing involvement cultivates counselor participation in research initiatives, engenders academic authorship, or births comprehensive treatises—manifesting elevated regard within academic echelons and precise governance of pedagogy. One witnesses a shift ensue from dependency on experience-driven approaches to methods more attuned to empirical scrutiny and skill-centric implementation, thereby enabling practitioners to provide nuanced counsel that aligns seamlessly with unfolding paths in student growth trajectories.

4.4. International perspectives and comparative analyses: broadening the global perspective of deepening the counsellor's functions

The tapestry of global pedagogic assimilation suggests that scrutinizing international counseling paradigms reveals profound ramifications for the progressive evolution and refinement of China's advisory apparatus. Within this rigorously delineated context, assessments comparative in nature concerning counselor systems extant amongst

established locomotives culturally diverse such as those typified by American originality, Japanese meticulousness, and continental European variance supply wellspring - illuminating both parallelism alongside contradiction which functions as instrumental models conducive to augmenting Chinese methodologies' intricate framework.

Emerging from the referenced paradigm within America—a nation steeped in advocating multifaceted service orientations—is exhibited counselors envisioning expansive capacities wherein their remit exceeds mere academic ascentionisim; functioning therein become facilitators grooming holistic development including corporeal vitality, psychological resilience, career planning acumen, coupled with social dexterity (Jiang,2019). From Japan's schools of thought, one perceives principles firmly interwoven around emphasizing intimate human interaction, subtending towards harmonious educator-disciple relational dynamics centrally pivoted on emotional cohesion (Weng,2016).

Examinations undertaken in Singapore acknowledge experiential integration into intercultural curricular methods prioritizing synthesis across multicultural lines whilst cultivating conscientious stewardship recognized universally. Indicated herein lies evidence substantiating requisite skills among advisors entrenched amidst these environments necessitating adept command over perspectives transnationally varied along with dialogues transcending cultural barriers—fortitudes rend blue indispensable when entangled under globalization’s burgeoning tides (Yu & Han,2020).

Upon juxtaposing aforementioned universal insights against indigenous encumbrances peculiar to China—and notably within spheres plicated upon vocational undergraduate educative strata—the resultant confluence sustains potential bestowing latitude ripe with prospects endeavoring toward amplifying counselor operational depth distinctively informed by sovereign parameters; honing practitioners primed favorably to vie amid worldwide exemplary standards of excellence.

5. Conclusion

This scholarly inquiry delves into the systematic framework concerning the positioning of vocational undergraduate college counselors, alongside strategies and functionalities in the domain of student development theory (SDT). From these explorations emerges a nuanced understanding: within the scope of vocational education's uniqueness, counsel-seekers must extend beyond traditional professional boundaries,

embracing a multifaceted system shaped by vocational imperatives, active empowerment initiatives, socioeconomic-psychological support frameworks,collaboration -industry educational integrations, and an immersion infused culturally. Conceived is herein a five-facet paradigm deepening functional exploration: amalgamating ideological-political pedagogy with vocational competency literacy; aligning strategic career pathing with employment facilitation guidance; psychosocial nuances backed experiential learning methodologies; innovations engine blue through IT-enhanced educative processes, and facilitator-parental collaborations aiming towards self-regulatory objectives.

Commended upon the praxis of operational methodology, a support construct of multi-dimensional nature emerges, comprising chiefly pathways for policy or institutional reformulation. Enhancement through cooperative ventures of cross-disciplinary essence and cultivation of acumen professional via trajectories of target-specific training stand as further components; adherence to benchmarks comparative on a global scale—these collectively engender an evolution toward professionalism within the counseling domain. Seen is theoretical enrichment as expansion of SDT application suitably tailored to vocational settings accompanied by introducing a framework directed at facilitating development for counselors.

Empirical discourse reveals diverse vocational scholars' progression requirements encompassing technological proficiency, enhanced literacy across professions, psychological tenacity, and sociocultural adaptability; therefore, signaling a paradigmatic transition from mere 'administrative overseer' to proactive ‘development enablers.' An associated basis is thus constituted for vocations-centric student welfare oversight frameworks.

Practical elucidations suggest means to counteract perennial challenges such as fragmented academia-industrial collaborative dialogues and delays in educational technology integration mechanisms. A viable approach includes structuring tripartite alliances among counselors, enterprise mentorship benches, and academic faculty networks to bolster learners’ vocational versatility, while analytical data procublue through AI modalities afford foresighted impediment interventions regarding development constraints.

Constraints confronting this study reflect limited empirical breadth characterized by

theoretical empiricism absent significatory large-scale affirmations. Furthermore, generalizability issues emerge since transformative propositions like "dual-qualified counselor acculturation" necessitate bespoke adaptations aligned with distinct regional and institutional idioms. Gaps pervade cultural comparatism where present analyses lack comprehensive mosaics against international blueprints.

In recognition of vocational academics evolving as foundational components underpinning China's collegiate framework, deepened understanding pertinent to counselor roles constitutes indispensable pedagogical reformation and essential development obligatio–a twin perspective acknowledging theoretical-pragmatic counselor competence enhancement against continuously fluctuating educational legislation, industrial modification, and technologic dynamism. Subsequent research undertakings should fortify cross-theory-practice linkages aimed at fostering robust quality standpoints in vocational education spheres.

Sponsorship

Research on the Path and Role of the Grassroots Working Committees for the Care of the Next Generation in Vocational Undergraduate Colleges Participating in Curriculum Ideological and Political Education - An Approved Project of the Working Committees for the Care of the Next Generation in the Education System of Shanghai in 2024, Project Number: 2024GGW227

Analysis of the Paths for the Construction of Clean and Honest Culture in Private Higher Vocational Colleges - An Implementation Project of the Special Plan for the Innovation of Party Building and Ideological and Political Work in Private Higher Education Institutions in Shanghai in 2024, Project Number: z90020.24.09

CONFLICT STATEMENT

The authors of the article "Role Clarification and Functional Deepening of counselors in Vocational Undergraduate Education: Implementation Strategies from a Student Development Theory Perspective", Peisen Hou, Hui Yang, and Zhixiong Wang , solemnly declare that throughout the entire process of creating this work and all subsequent activities related to it, including but not limited to collecting and analyzing research materials, forming opinions, writing, modifying, submitting, and publishing papers, I have

no conflicts of interest that may interfere with the fairness, objectivity, and originality of the work.

COOPERATION STATEMENT

The first author (Peisen Hou) is responsible for writing the methodology, investigation, and initial draft. The second author (Hui Yang) and third author (Zhixiong Wang) provided supervision, guidance, and critical editing.

References

Yang, X. B. (2022). Reflections on talent cultivation models in vocational undergraduate education. Research in Higher Education of Engineering, 1, 127-132.

Li, P. (2023). Challenges and breakthroughs in role positioning of vocational undergraduate college counselors. University, 22, 177-180.

Wu, H. J. (2021). Vocational mobility of vocational college counselors: Dilemmas and solutions. Vocational and Technical Education, 42(5), 60-65.

Ma, D. H., & Chen, M. (2007). Student development theory in U.S. higher education: Key issues and implications. Modern Education Science, 5, 132-136.

Wang, F. C. (2016). Freshman education in Chinese universities from a student development theory perspective. Journal of Jianghan University (Social Sciences Edition), 33(1), 89-92+127.

Liao, J. Q. (2017). Innovative strategies for counselors in newly established undergraduate colleges: A student development theory perspective. Journal of Chengdu Normal University, 33(6), 6-9.

Lv, K. R., & Long, Y. F. (2024). Integrating career planning education and ideological-political education in vocational undergraduate colleges: A case study of counsellor roles. Education Guide, 5, 79-81.

Li, L. Y. (2024). Counselors' guiding role in university career planning. In Proceedings of the 2023 Life Education Symposium (Vol. 2, pp. 1-4). Shandong Vocational University.

Wang, T. H., & Cheng, L. Q. (2024). Policy evolution and future adjustments in talent cultivation orientation of Chinese vocational education. Education and Vocation, 9, 98-104.

Zhuang, M. L. (2024). Fundamental principles and implementation pathways of practical education in the new era. Teaching Reference of Middle School Politics, 28, 7-10.

Lin, Y. N. (2023). Competency development of vocational college counselors: Ideal states, realistic challenges, and improvement paths from an industry-university collaboration perspective. Education and Vocation, 2, 101-105.

Fan, W. L. (2021). Guiding professional success concepts among applied undergraduate students: A case study of accounting graduates. Accountant, 24, 103-106.

Zhang, S. W., & Niu, L. R. (2016). Comparative study on practical competency cultivation models for Chinese and international undergraduates. Chinese Adult Education, 16, 73-76.

Li, X. Y., Dong, D., Yang, J., et al. (2017). Impact of loneliness on depression among college students: Mediating roles of social support and internet addiction. Psychological Research, 10(6), 78-85.

Shi, X. J., Wu, S. W., & Dong, L. (2023). Effect of psychological capital on employment anxiety in college students: The mediating role of self-management. China Journal of Health Psychology, 31(10), 1558-1564.

Kang, Y. Y., & Zhou, B. Y. (2024). Era requirements, challenges, and breakthrough paths for vocational college counsellor team development. Education and Vocation, 2, 85-89.

Jiang, T. Y. (2019). Professionalization and specialization of U.S. university counselors: Implications for China. Studies in Ideological and Political Education, 35(4), 146-149.

Weng, T. T. (2016). Characteristics of Japanese university student affairs management and implications for China. Journal of Higher Education Research, 9, 13-14.

Yu, Y., & Han, Z. Y. (2020). Guided cultivation and whole-person education: Insights from Singaporean higher education models for international student management in China. University Education, 3, 187-189.

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RESEARCH ARTICLE

COMPARATIVE ANALYSIS OF EVIDENCE SYSTEMS IN CRIMINAL JUSTICE BETWEEN CHINA AND THE PHILIPPINES

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ABSTRACT

Against the backdrop of economic globalization and deepening regional cooperation, legal exchanges and judicial cooperation between China and the Philippines are becoming increasingly frequent. Especially in the field of criminal justice, understanding the differences in evidence systems has become the key to transnational law enforcement cooperation and legal aid. This paper compares the evidence systems in criminal justice in China and the Philippines, combs through the historical origins and legal basis of each system, systematically compares the core contents such as types of evidence, exclusionary rules for illegal evidence, witness system, protection of defendant's rights and adoption of electronic evidence, and combines typical case analysis to reveal the fundamental differences between the two systems in terms of value orientation and institutional operation. The study found that the Philippine system focuses more on procedural justice and constitutional protection, while the Chinese system focuses on substantive truth and case handling efficiency. On this basis, this paper puts forward several targeted reform suggestions, such as improving the procedure for excluding illegal evidence, strengthening the mechanism for witnesses to appear in court, promoting the implementation of the cross-examination system, improving the standardization of electronic evidence acceptance, and strengthening the protection of procedural rights such as the right to remain silent, in order to provide international experience and path inspiration for the reform of China's criminal evidence system.

1. INTRODUCTION

With the continuous acceleration of the process of globalization, economic, cultural and personnel exchanges between countries have become more frequent, and transnational judicial cooperation and legal coordination have become the focus of international attention. In recent

years, China and the Philippines have not only achieved in-depth cooperation in the economic field, but also increasingly close in personnel exchanges, trade exchanges, tourism, and labor exports. This trend has inevitably brought about an increase in transnational legal issues, especially in the field of criminal justice. How to deal with the institutional differences between different legal systems and how to achieve effective evidence cooperation and identification have become important issues that need to be urgently resolved in the legal practice between China and the Philippines.

In cross-border criminal cases between China and the Philippines, the evidence system is the core link in achieving fair trials, effectively combating crimes, and protecting human rights. Since China and the Philippines belong to different legal traditions, China belongs to a continental legal system country, and the law is mainly based on statutory law, emphasizing the systematic nature and procedural control of legal provisions; while the Philippines is a typical mixed legal system country, deeply influenced by both continental law and Anglo-American law, especially in terms of criminal evidence rules, its introduction and development of the adversarial system, exclusion of illegal evidence, and cross-examination of witnesses in Anglo-American law has distinct characteristics. This difference in the origin of the legal system is particularly prominent in the specific rules of evidence, acceptance standards, handling of illegal evidence, and the obligation of witnesses to testify, which directly affects the judicial practice paths and procedural concepts of the two countries in criminal proceedings.

Against the background of the continuous deepening of the reform of my country's criminal justice, the evidence system is gradually shifting from the traditional emphasis on the pursuit of "substantive truth" to a modern litigation model that takes into account procedural justice and human rights protection. In this transformation process, how to learn from the institutional design of other countries, especially those with mixed legal system experience, is of great practical significance. As a typical mixed legal country in Southeast Asia, the Philippines has introduced the evidence concept of Anglo-American law on the basis of inheriting the continental legal system, forming a relatively unique evidence operation mechanism. Its constitutional guarantee for the exclusion of illegal evidence, the protection of witness rights, and the practice of the cross-examination system are all of great inspiration to China's current reform of the evidence system (Aquino, 2019; Lim, 2022).

At the same time, with the widespread entry into force of international legal documents such as the United Nations Convention against Corruption and the United Nations Convention against Transnational Organized Crime, the international community has put forward higher requirements for the normativeness, procedurality, and fairness of criminal judicial cooperation. When China and the Philippines carry out cross-border judicial cooperation, such as extradition, evidence transfer, remote evidence collection, joint investigation and other links, the legality and admissibility of evidence often become the key to the success of cooperation. Due to the large differences between the two countries in evidence collection and application standards, this institutional dislocation is not only easy to lead to obstacles to cooperation, but also may affect the protection of the rights of the accused and the fair handling of cases. Therefore, from the perspective of comparative law, in-depth exploration of the similarities and differences between the criminal evidence systems of China and the Philippines will help to build a judicial cooperation framework that conforms to international norms, and at the same time help to

improve the modern transformation of my country's evidence system.

Furthermore, from a legal perspective, the evidence system is not only a technical institutional arrangement in the litigation process, but also reflects a country's basic attitude towards procedural justice, the boundaries of judicial power and the rights of the accused. The Philippines' practice of establishing the exclusionary rule of illegal evidence at the constitutional level and emphasizing the defendant's "right to remain silent" and "right to have a lawyer present" reflects its high attention to human rights protection. China's reform of the "confession and leniency" system and the practical attempt to "exclude the rule of illegal evidence" in recent years also reflect that my country's criminal justice is moving towards procedural protection and institutionalization. By comparing the system with the Philippines, we can not only discover the problems and shortcomings in my country's current evidence system, but also extract valuable experience from it to promote the evolution of my country's criminal justice system towards a more standardized, fair, and human rights-friendly direction.

2. METHODOLOGY

This study aims to systematically compare the similarities and differences in the evidence system and its operating logic in the criminal justice systems of China and the Philippines, explore the theoretical basis, system design and judicial practice effects of the evidence rules under different legal traditions, and try to put forward inspiration and suggestions for the reform of China's criminal evidence system. To achieve this research goal, this paper adopts the following research methods:

2.1. Literature Review

This paper extensively consults Chinese and English literature, especially focusing on collecting research results on China's Criminal Procedure Law, judicial interpretations, Philippine Rules of Evidence and related constitutional provisions in recent years, and systematically summarizes and analyzes them in combination with journal articles, case compilations, legal reviews, etc. By sorting out the existing research, it not only clarifies the current status of academic research on the criminal evidence system of China and the Philippines, but also lays a theoretical foundation for the subsequent system comparison and case study of this paper. For example, scholars such as Chen (2019) and Zhao (2020) studied the operating mechanism of China's illegal evidence exclusionary rule from an empirical perspective, while Garcia (2020) and Lim (2022) deeply analyzed the application context of the "fruit of the poisonous tree principle" in Philippine judicial practice. These documents provide a multi-dimensional understanding of the institutional evolution of evidence rules, providing rich first-hand information and analytical perspectives for this comparative study.

2.2. Comparative Legal Method

Given that China and the Philippines represent typical countries of the continental legal system and the mixed legal system, respectively, their evidence systems have significant differences in theoretical starting points, rule structures and practical logic, so this paper adopts the comparative legal method to conduct a horizontal comparison and structural analysis of the criminal evidence systems of the two.

Specifically, this paper starts from five dimensions: evidence types and evidence capacity, illegal evidence exclusionary rule, witness system and confrontation mechanism, defendant's rights protection, and electronic evidence adoption, compares the similarities and differences between the two in rule design and judicial application, and evaluates them in combination with different orientations of institutional goals (such as substantive truth and procedural justice). In the process of comparison, we focus on clarifying the legal culture logic and constitutional tradition behind the systems of various countries to avoid the misunderstanding of simply "copying" the system.

2.3. Case Study Method

In order to enhance the practical orientation and persuasiveness of the research, this article selects a typical criminal case from China and the Philippines to analyze the application process of the illegal evidence exclusion rule in detail. In the Chinese part, we focus on selecting representative "zero confession conviction cases" or cases where evidence was ruled invalid due to torture in recent years to analyze how the court determines the legality and probative force of evidence; in the Philippine part, we quote the representative judgment of the Supreme Court on the exclusion of illegal evidence to analyze the institutional role of the "fruit of the poisonous tree principle" in procedural justice and human rights protection.

By observing the evidence acceptance standards, judges' discretion, lawyers' role and judicial supervision mechanism in specific cases, this article reveals the differences in the operation of the Chinese and Philippine evidence systems in judicial practice from an empirical perspective, which is helpful to evaluate the effectiveness and portability of institutional design.

2.4. Doctrinal and Critical Analysis

On the theoretical level, this article combines criminal procedure law, comparative law and constitutional law theory to summarize and analyze the legal basis and institutional evolution logic of the evidence systems of China and the Philippines, and explores the focus of different legal systems on the protection of criminal procedural rights, the path of implementation and the national governance concept behind it.

In terms of critical analysis, this article pays special attention to the institutional bottlenecks of China's criminal evidence system in the exclusion mechanism of illegal evidence, the application of the right to remain silent, the witness appearance system and the adoption of electronic evidence, and attempts to draw feasible reform ideas and practical paths from the Philippine experience. Through the comparison and functional analysis of the institutional structure, this article explores how China's evidence system can better balance procedural justice and human rights protection while pursuing the goal of entity truth, and puts forward targeted institutional optimization suggestions.

3. RESULTS

3.1. Origin and Development of China's Criminal Evidence System

3.1.1. Influence of the Written Law Tradition

China's criminal evidence system is deeply influenced by the written law tradition, which

emphasizes the explicit provisions and systematic structure of the law. In the context of the continental legal system, procedural justice is mainly clearly stipulated through legislation, rather than relying on the accumulation of precedents and the free discretion of judges. Since the late Qing Dynasty, China's legal system has gradually moved closer to the continental legal system, especially after the founding of the People's Republic of China in 1949, when a socialist legal system with written law as the core was established. As an important part of the national governance system, the criminal judicial procedure and its evidence system are also constantly developing and standardizing on the track of written law.

The written law tradition has given China's criminal evidence system the following significant characteristics: First, the source of legal norms is mainly laws, administrative regulations and judicial interpretations, and has a strict hierarchical structure; second, the types, qualifications, and adoption standards of evidence are all detailed in the legal text; finally, in the trial, the judge's judgment on evidence must be based on legal provisions, reflecting the basic principle of "judging cases by law". Although this structural system design enhances the uniformity and authority of legal application, it is also prone to rigid and mechanical application when faced with complex and changing social realities and case types.

3.1.2. The Criminal Procedure Law and Related Judicial Interpretation Systems

The core normative source of China's criminal evidence system is the Criminal Procedure Law of the People's Republic of China. Since the first Criminal Procedure Law was promulgated in 1979, it has undergone several important revisions in 1996, 2012, and 2018. In particular, in recent years, key issues such as the exclusion of illegal evidence, witness appearance, and electronic data acceptance have been further clarified, which has effectively promoted the modernization of the evidence system.

The Criminal Procedure Law has made systematic provisions on the types of evidence (such as physical evidence, documentary evidence, witness testimony, defendant's confession, expert opinions, inspection records, electronic data, etc.) from a legal perspective; at the same time, it has established the standard of proof of "confirmed and sufficient evidence" and clearly pointed out that the "zero confession principle" that conviction cannot be based solely on the defendant's confession. In addition, Article 54 of the Criminal Procedure Law introduces the rule of exclusion of illegal evidence for the first time, stipulating that confessions collected by illegal means shall not be used as the basis for a verdict, and granting defense lawyers the right to propose exclusion of illegal evidence.

In addition to legal provisions, the development of China's evidence system is also highly dependent on judicial interpretations and guiding opinions issued by the Supreme People's Court, the Supreme People's Procuratorate, the Ministry of Public Security and other agencies. For example, the "Regulations on Several Issues Concerning the Exclusion of Illegal Evidence in Handling Criminal Cases" and the "Opinions on Several Issues Concerning the Standardization of Criminal Witnesses' Appearance in Court to Testify" have all made specific and operational treatments on the application of legal provisions. This "law-interpretation" structure reflects the efforts of China's evidence system from abstract norms to practical implementation.

3.1.3. Systematization of Evidence Rules

In recent years, China's evidence system has gradually moved towards a systematic and practical development direction. First, in terms of the exclusion of illegal evidence, although it was initially limited to torture and violent evidence collection, in recent years, it has gradually expanded to evidence obtained by procedural violations (such as failure to notify lawyers in accordance with the law and illegal detention), and has also begun to enter the scope of consideration for exclusion. Although the exclusion mechanism still has problems such as difficulty in implementation and inversion of the burden of proof, it has shown a breakthrough from the perspective of system construction.

Secondly, the reform of the witness appearance system has also made progress. For a long time, the failure of witnesses to appear in court and the "one-paper conviction" of testimony records have been widely criticized. With the amendment of the Criminal Procedure Law in 2012 to clarify the obligation of witnesses to appear in court, and the establishment of supporting systems such as witness protection, subsidies, and compulsory appearance, although the witness appearance rate is still not high, the testimony in court has gradually been included in the conviction process, and the court's review of the authenticity of witness testimony has become more and more strict.

In addition, with the advent of the digital age, the evidentiary status of electronic data has continued to rise. In recent years, a series of normative documents such as the "Judicial Interpretation of Electronic Data" and the "Guiding Opinions on Evidence Collection in Cybercrime Cases" have been issued, which have promoted the formation of standards for the review of the legality, authenticity, and relevance of electronic evidence, making the rules of evidence more systematic and technical.

3.2. The Origin and Development of the Criminal Evidence System in the Philippines

3.2.1. Characteristics of a Mixed Legal System: Fusion of Continental Law and Anglo-American Law

The legal system of the Philippines is a typical mixed legal system, and its evidence system combines the codified law tradition of the continental legal system with the precedents and procedural concepts of the Anglo-American legal system. This legal mixture stems from its colonial history: it was successively influenced by the colonization of Spain (continental legal system) and the United States (Anglo-American legal system), and the characteristics of the two major legal systems were deeply rooted in the substantive law and procedural law levels. The criminal evidence system presents a unique structural hybridity under this historical background. In practice, although the Philippine criminal procedure system is based on codified law, the procedural concepts and rule systems are obviously deeply influenced by the Anglo-American adversarial system. For example, the court structure adopts a prosecution-defense adversarial structure, and the defendant enjoys typical defendant protection mechanisms under Anglo-American law, such as the right to remain silent, the right to have a lawyer present, and the right to be free from self-incrimination; at the same time, systems such as cross-examination, witness testimony, and exclusion of illegal evidence also highly reflect the Anglo-American procedural spirit.

3.2.2. The Philippine Rules of Evidence and the Rules of Criminal Procedure

The Philippine evidence standards are mainly reflected in the Philippine Rules of Evidence and the Philippine Rules of Criminal Procedure. These rules were originally formulated by the Supreme Court in accordance with the authorization of the Constitution, have legal force, and are the direct basis for court judgments. The Rules of Evidence specify in detail the definition, types, qualifications, admissibility, and standards for judging the admissibility of evidence. Among them, the admission of documentary and oral evidence, the qualifications of witnesses, the acceptance standards of professional expert testimony, and the rules of presumption are all carefully regulated. The Rules of Criminal Procedure stipulate the principles for the use of evidence in the stages of investigation, pretrial, and trial, and emphasize that the defendant enjoys complete procedural rights, such as the right to counsel, the right to public trial, and the right to face-to-face cross-examination.

3.2.3. The Impact of the Constitution on the Protection of the Defendant's Rights

The 1987 Constitution of the Philippines makes clear and detailed provisions on the protection of the defendant's rights in criminal proceedings. Article III "Bill of Rights" partially establishes the principle that "illegally obtained evidence is invalid", which is called the "fruit of the poisonous tree doctrine". This principle requires that all evidence obtained through illegal means, including secondary evidence derived from illegal evidence, shall not be used in court. In addition, the Constitution also clearly stipulates the basic rights of the defendant, such as the right to remain silent, to avoid self-incrimination, the right to have a lawyer present, public trial, and trial within a reasonable time. These constitutional guarantees are directly applicable in judicial practice. When applying the rules of evidence, the court must first consider the basic procedural rights granted to the parties by the Constitution, reflecting the high importance attached to procedural justice.

3.3. Comparative Analysis of Institutional Development

3.3.1. Differences in Institutional Goals Between Procedural Justice and Substantive Truth

The fundamental difference between the criminal evidence systems of China and the Philippines lies in the differences in institutional goals and value orientations. China's criminal justice has long emphasized the principle of "substantive truth" and believes that the ascertainment of case facts is the core of justice. Therefore, it tends to emphasize the "objectivity" and "relevance" of evidence and the authority of the investigative agency to obtain evidence. Procedural flaws can be remedied to a certain extent by "final factual correctness". In contrast, the Philippine criminal procedure system emphasizes procedural justice first, believing that improper procedures may lead to unreliable factual results. Even if the facts of the case may be true, evidence obtained by illegal means must be excluded to maintain the legitimacy and credibility of the system itself. This concept is reflected in its constitution's strict exclusion of illegal evidence and comprehensive protection of the rights of the accused.

3.3.2. Different Logics and Backgrounds of Institutional Evolution Paths

The development of China's evidence system more reflects a top-down gradual institutional construction path. Its reforms are often driven by legislation or judicial interpretation, with a certain macro-control color, while judicial practice constantly adapts to and tests the boundaries of the system. Due to the structural protection of the constitutional system, the Philippines'

evidence rules and procedural protection system were formed earlier, and in practice, it has continuously accumulated precedents and judicial discretion experience, taking a path of institutional evolution guided by precedents, gradually refined, and with clear bottom lines. Although this institutional maturity stems from the transplantation of colonial law, it also reflects a respect for legal cultural compatibility and judicial autonomy.

4. DISCUSSION

4.1. Comparison of the Main Contents of Criminal Evidence Rules in China and the Philippines

Although the criminal evidence systems of China and the Philippines are both based on ensuring the fairness and legality of criminal justice, the specific content of the rules is significantly different due to differences in legal systems, constitutional protection and judicial culture. This section will compare and analyze the types and capacity of evidence, the exclusionary rules of illegal evidence, the witness system and confrontation mechanism, the protection of defendants' rights, and the adoption of emerging electronic evidence.

4.1.1. Types of Evidence and Evidence Capacity

Comparison of evidence types. The following main types of evidence are recognized in the criminal judicial practice of China and the Philippines: physical evidence, documentary evidence, witness testimony, defendant's confession, expert opinion, inspection record, electronic data, etc.

In China, Article 50 of the Criminal Procedure Law clearly stipulates seven types of statutory evidence, and makes detailed provisions on the acquisition method, storage procedures and review standards of each type of evidence. This classification method emphasizes the legalization and standardization of evidence types, which helps the prosecution and defense and the trial organs to unify their understanding.

The Philippine Rules of Evidence focus more on the admissibility and probative value of evidence, emphasizing the distinction between "direct evidence" and "indirect evidence" and "preliminary evidence" and "final evidence". Unlike China, the types of evidence in the Philippines are not completely legal, but retain a large degree of judicial discretion. Judges have greater power to accept or reject certain new types of evidence (such as witness recollections and social media records).

Differences in the standards for determining the admissibility of evidence. China's judgment on the admissibility of evidence is mainly based on the three elements of "legality, objectivity, and relevance". Among them, "legality" requires that the acquisition of evidence must comply with the procedures prescribed by law; "objectivity" emphasizes that the evidence itself must be true and not forged or tampered with; "relevance" requires that the evidence has a direct or indirect connection with the facts of the case. These three standards complement each other and become the threshold for the acceptance of the basis for conviction and sentencing.

In terms of determining the admissibility of evidence, the Philippines emphasizes the "admissibility" and "probative value" of evidence. The former is mainly determined by the court before trial or during trial, relying on the standards such as qualification restrictions and procedural legitimacy requirements clearly defined in the Rules of Evidence; the latter is

determined by the jury or judge based on the specific circumstances of the case. This structure is deeply influenced by the Anglo-American legal system, highlighting the principles of procedural justice and trial neutrality.

In general, China's admissibility of evidence focuses on formal legality and explicit legal provisions, while the Philippines pays more attention to the procedural acquisition of evidence during the trial process and the confrontation test in court. Both have their advantages and disadvantages.

4.1.2. Illegal Evidence Exclusion Rules

China’s illegal evidence exclusion mechanism. For a long time, China’s criminal justice system did not clearly define the applicable conditions for the exclusion of illegal evidence. It was not until the promulgation of the “Regulations on Several Issues Concerning the Exclusion of Illegal Evidence in Handling Criminal Cases” in 2010 that the exclusion of illegal evidence was gradually institutionalized and proceduralized. The 2012 Amendment to the Criminal Procedure Law elevated this provision to a legal provision, establishing the basic principles of “strictly prohibiting torture and extracting confessions” and “illegal confessions shall not be accepted”. China’s illegal evidence exclusion is mainly limited to confession evidence obtained illegally, especially confessions of defendants obtained through torture, threats, inducement, etc. Non-verbal evidence such as physical evidence and documentary evidence is generally not subject to the exclusion rule unless it is directly obtained by illegal means. In addition, in practice, evidence exclusion is often restricted by factors such as “self-examination by the investigative agency” and “the defendant’s burden of proof”, resulting in poor application (Guo, 2016).

The Philippines’ illegal evidence exclusion system. Article III of the Philippine Constitution clearly stipulates that “any evidence obtained in violation of the Constitution shall not be accepted in any procedure”, which is the “fruit of the poisonous tree” principle. This principle originates from the judicial practice of the United States. It not only requires the exclusion of direct illegal evidence, but also extends to indirect evidence derived from illegal acts. In the criminal proceedings of the Philippines, once illegal evidence is identified, it shall not be used to convict, regardless of whether it is consistent with the facts of the case. This highly procedural rule reflects the firm protection of the human rights of the accused. Its purpose is not simply to pursue truth, but to maintain the legitimacy and credibility of the judicial system.

Comparison and analysis: Differences in the level of procedural protection. The differences between the illegal evidence exclusion systems of China and the Philippines essentially reflect the different priorities of the two countries for procedural justice and substantive truth. China attaches importance to "error prevention and remedy". Even if there are flaws in the procedure, it can be compensated by "comprehensive judgment"; the Philippines attaches importance to "procedure is justice". Once the process of obtaining evidence is illegal, the consequence is exclusion. The flexibility of the Chinese system helps to improve the efficiency of investigation, but there is also room for abuse of power; the Philippine system emphasizes the bottom line principle and effectively curbs the abuse of law enforcement power, but in practice it may cause evidence loss and the truth to be unclear due to technical limitations. The two countries' systems have their own focuses and are worth learning from each other.

4.1.3. Witness System and Adversarial Mechanism

Difficulties in witness appearance and insufficient compulsory measures in China. In criminal proceedings in China, the rate of witness appearance has been low for a long time. Although the law clearly stipulates that important witnesses should appear in court, due to the lack of a compulsory summons mechanism, an imperfect witness protection system, and insufficient economic compensation, in practice, transcripts are often used instead of testifying in court, which affects the substantive review of testimony. The Supreme People's Court, the Supreme People's Procuratorate and other departments have issued several documents, trying to improve the current situation by increasing witness fee subsidies, strengthening protection mechanisms, and clarifying the legal consequences of refusing to appear in court, but the effect is still limited by local enforcement capabilities and judicial resource allocation (Lin et al., 2018).

Cross-examination and practical challenges in the Philippines. The Philippines adopts an adversarial trial model, and cross-examination is a core component of the trial. Both the prosecution and the defense have the right to question the other party's witnesses to test the authenticity and consistency of their testimony. This system effectively enhances the transparency of the trial and the objectivity of the basis for judgment. However, the Philippines also faces practical difficulties in the cross-examination system. For example, if a witness refuses to testify due to fear, bribery or threats, it is difficult for the court to enforce the order to appear in court. In addition, the serious backlog of cases and insufficient judicial resources have also weakened the substantive review effect of cross-examination.

Witness protection and evidence collection methods under the adversarial system. Compared with China, the Philippines pays more attention to the substantive presentation of evidence in the trial. If a witness does not appear in court, it is usually considered that the testimony is inadmissible. Accordingly, the Philippines has a relatively sound witness protection program, including hidden residence, identity change, financial assistance, etc., to minimize the security threats faced by witnesses due to testifying. Although China has piloted the establishment of a "witness protection system", its coverage, enforcement and supporting systems still need to be strengthened. Promoting the increase in the appearance rate under the premise of ensuring the safety of witnesses is the key direction for future system improvement.

4.1.4. The Rights of the Accused and the Right to Remain Silent

China's confession system and "zero confession" conviction. In China, although the law has clearly stated that "confessions alone shall not be used to convict", in practice the confession of the accused is still considered to have a high degree of probative value and often becomes the primary goal of investigation and evidence collection. For a long time, "confession-led investigation" has been prevalent in practice, resulting in the problem of illegal confessions. In recent years, the number of "zero confession" cases has gradually increased. Especially in cases supported by objective evidence (such as surveillance, DNA, and electronic data), the courts have begun to attach importance to the acceptance of non-verbal evidence, which has positive significance for transforming "confession-centrism".

The protection of the right to remain silent and the practical dilemma in the Philippines. The Philippine Constitution clearly grants the accused the right to remain silent and the right not to

incriminate himself. The law also requires the police to clearly inform the accused of the "Miranda Rights" before questioning, including the right to remain silent and the right to have a lawyer present. Once this right is violated, the subsequent confession will be excluded. However, in the reality of limited judicial resources and uneven legal literacy among law enforcement personnel, there is still a gap between "rights on paper" and "actual protection" in the protection of defendants' rights. Some defendants make confessions without being fully informed of their rights or lacking legal aid, which poses a risk of procedural flaws.

Comparison from the perspective of human rights protection. From the perspective of human rights protection, the Philippine criminal evidence system pays more attention to procedural rights and emphasizes the formal protection of judicial fairness; China is still in a transitional stage of balancing substance and procedure and gradually promoting procedural human rights protection. Strengthening the judicial implementation of systems such as the defendant's right to remain silent and the right of lawyers to be present is the key to improving the legitimacy and fairness of criminal evidence in China.

4.1.5. Adoption of Electronic Data and Modern Scientific and Technological Evidence

Development of electronic evidence in China and improvement of rules. With the development of information society, the status of electronic data in criminal cases has risen rapidly. In recent years, China has standardized the legality, authenticity and review methods of the source of electronic evidence through documents such as the "Judicial Interpretation of Electronic Data" and the "Cyber Crime Evidence Collection Standards". The court has gradually tightened the acceptance of electronic data, such as requiring the submission of original carriers, legal sealing process, and technical guarantees such as verification values. In addition, AI video analysis, chat record screenshots, positioning information, etc. have also been gradually included in the scope of admissible evidence, but how to ensure the neutrality of their source, preservation, and review is still a problem (De Leon, 2023; Shahaab et al., 2021).

Legislative gaps and judicial practice of electronic evidence in the Philippines. In 2000, the Philippines passed the "Electronic Commerce Law" and recognized the legality of electronic evidence for the first time. However, its "Rules of Evidence" have not been fully updated to adapt to the emergence of new forms of evidence, resulting in the acceptance of electronic data still relying on individual case precedents and judicial interpretations, lacking unified standards. Despite this, Philippine courts have gradually accepted emails, text messages, and social platform conversation records as the basis for verdicts in practice, but the relevant evidence and technical guarantee mechanisms are still imperfect, and disputes over evidence exclusion are frequent.

Institutional response to emerging forms of evidence. Against the background of increasing complexity and diversification of electronic evidence, both China and the Philippines face common problems such as evidence authenticity verification, evidence collection compliance, and technical review standards. China has developed rapidly in legislation and technical specifications, while the Philippines has advantages in constitutional protection and judicial review experience. The institutional construction of the two countries should further strengthen the response to emerging forms of evidence to ensure that judicial justice is not weakened by technological progress.

4.2. Comparative Analysis of Typical Cases

Through specific cases, we can more intuitively understand the operating logic and institutional effectiveness of the criminal evidence systems in China and the Philippines in judicial practice. This section will select one representative criminal case from China and the Philippines to show the judicial application of issues such as exclusion of illegal evidence, "zero confession" conviction, procedural justice and human rights protection, and compare and analyze the actual differences in the operation of the two systems and the discretion of judges.

4.2.1. Analysis of Typical Cases in China

Case overview: Exclusion of illegal evidence in Zhang's intentional homicide case. In 2015, the Intermediate People's Court of a certain place tried an intentional homicide case. The defendant Zhang in the case had no lawyer present since he was taken back to the investigation agency by the public security agency. He was interrogated for 48 hours without rest and made a confession of guilt. Afterwards, he refused to confess again in the detention center, saying that the above confession was due to physical and mental fatigue. During the trial, the defendant applied for the exclusion of illegal evidence and claimed that his confession was obtained through torture. The defense lawyer submitted materials such as surveillance video of the detention center, photos of Zhang's body scars, and doctor's examination reports. After investigation, the court confirmed that there were problems such as overtime and illegal fatigue interrogation during the interrogation process of the public security organs, and ruled to exclude Zhang's confession evidence.

The court's determination of the legality and probative force of evidence. In this case, the court showed a strong procedural awareness in the application of the illegal evidence exclusion rule. According to Article 56 of the Criminal Procedure Law and the Provisions on Excluding Illegal Evidence, the court held that the public security organs failed to provide evidence to refute the claim of "illegal acquisition" and presumed that it was illegal, thus ruling to exclude the confession. Although Zhang's confession was excluded, the court still constructed a complete chain of evidence based on physical evidence at the scene (bloodstains, fingerprints and DNA left at the scene of the crime), eyewitness testimony, and surveillance videos provided by the victim's family, and finally determined that he constituted intentional homicide. This case has become one of the typical cases of "zero confession" conviction, and it also marks the trend of China's criminal trials paying more and more attention to the legality of procedures.

Lessons from the case. This case reflects that China's illegal evidence exclusion system is gradually becoming institutionalized and practical, and judicial organs are beginning to actively respond to procedural rights claims. It also shows that, with the increasing variety of evidence, conviction based solely on confessions is no longer the norm, and the combination of objective and indirect evidence has become a new model of adjudication. However, such cases are still relatively rare. Many claims of illegal evidence have failed to effectively promote evidence exclusion due to difficulties in providing evidence, judicial inertia, or resistance from investigative agencies. Therefore, there is still significant room for improvement in the protection of procedural rights and the improvement of mechanisms.

4.2.2. Analysis of Typical Cases in the Philippines

Case Overview: People v. Marti (G.R. No. 81561, January 18, 1991). In this case, the defendant Marti was arrested for drug possession. The police searched his apartment without a search warrant and found suspected drugs in the closet. Marti claimed that the police illegally entered his private residence and the relevant evidence was obtained illegally, violating the constitutional rights to privacy and due process. After hearing the case, the Supreme Court held that the search violated Article 3 of the 1987 Philippine Constitution, which stipulates that "citizens' residences shall not be entered without a search warrant." Although the drugs found had a strong criminal orientation, the process of obtaining them was obviously illegal and constituted "fruits of the poisonous tree", so they should be excluded according to law. The court finally ruled that the batch of drug evidence was invalid and Marti was acquitted.

The court's embodiment of procedural justice and human rights protection. The judgment of this case shows that the Philippine criminal justice attaches great importance to procedural justice. The court clearly pointed out that procedural rights are not only formal norms, but also the basis of substantive justice. Even if conclusive evidence is found by illegal means, it cannot be used as a basis for conviction. More importantly, the case emphasizes the role of judges as guardians of constitutional rights. Their judgment criteria are not limited to the legal text, but are based on the overall grasp of rights protection. Regardless of whether the public agrees with the result of acquittal, the court must adhere to the bottom line of procedural justice.

Case enlightenment. The People v. Marti case established the judicial style of "procedure first" in the Philippine evidence system. The court takes constitutional rights as the core and conducts substantive review of the law enforcement process, thereby curbing the abuse of power at the institutional level. This approach helps to enhance judicial authority and public trust, but it also faces practical difficulties, such as increased difficulty in law enforcement and evidence collection, and criminals may escape legal punishment. Compared with China, the Philippine system has stricter requirements on procedures, more prominent judicial powers, and more stringent restrictions on investigative powers.

4.2.3. Conclusion of Case Comparison

Reflection of differences in institutional implementation. Through the above cases, it can be seen that the evidence systems of China and the Philippines, under the background of convergence of legal texts, show obvious differences in judicial application: Chinese cases show that the system of excluding illegal evidence is still limited by the procedural initiation mechanism, the configuration of the burden of proof and the initiative of court review, and the system rigidity is relatively low. Philippine cases show the strength of the court's active intervention and strict exclusion of procedural rights, and the system rigidity and judicial independence are stronger. This difference reflects the institutional choice of the two countries in dealing with the tension between "legitimate procedures" and "substantive truth": the former pursues balance, and the latter sticks to the bottom line.

Different ways of using judicial discretion. In China, courts still rely more on substantive results when applying evidence rules, that is, whether they can constitute a "complete chain of evidence". Philippine courts, on the other hand, focus more on procedural justice judgments and do not easily relax the review of the legality of evidence. In addition, in China's "zero confession" conviction cases, judges often have to combine multiple pieces of evidence for overall

identification, showing a high degree of discretionary flexibility; while the Philippine judiciary is strictly limited by "evidence admissibility", so the discretionary space is smaller, but the system is more rigid and the degree of rights protection is stronger.

Reflection on legal culture. These two cases not only reveal the differences in institutional technology, but also deeply reflect the differences in the foundations of the legal culture of the two countries: China's judiciary is still deeply influenced by the concepts of "seeking truth from facts" and "substantial truth first", and procedural guarantees show "instrumental" characteristics; the Philippines, influenced by Anglo-American law, attaches more importance to "procedural justice" as the cornerstone of legitimacy, and would rather tolerate the imperfection of substantive results than sacrifice procedural rights. This cultural difference directly affects the development path of the criminal evidence system of the two countries, the style of judicial decisions and the degree of public judicial recognition(McConville & Choongh, 2011; Vu, 2024).

CONFLICT STATEMENT

The authors declare no conflict of interest.

REFERENCES

Aquino, D. M. (2019). Witness protection and adversarial proceedings in the Philippines. *Journal of Southeast Asian Law*, *4*(1), 67–85.

Chen, G. (2019). The operation and limitation of the exclusionary rule in China's crimin al procedure: An empirical investigation. *Journal of Criminal Justice Studies*, *32*(2), 45–62.

De Leon, J. (2023). Technology and criminal justice reform. *Law and Technology Review*, *12*(2), 105–123. https://doi.org/10.2139/ssrn.4537289

Garcia, R. A. (2020). Constitutional boundaries and the exclusion of evidence: Reassessin g the fruit of the poisonous tree in Philippine law. *Philippine Law Journal*, *91*(1), 101–123.

Guo, Z. (2016). Exclusion of illegally obtained confessions in China: An empirical perspe ctive. *The International Journal of Evidence & Proof*, *21*(1–2), 30–51. https://doi.org /10.1177/1365712716674799

Lim, R. T. (2022). The fruit of the poisonous tree doctrine in Philippine criminal justice: Constitutional theory and practical constraints. *Philippine Social Science Review*, *7 4*(1), 55–72.

Lin, X., Chen, C., & Wang, Y. (2018). Regulating the power of Chinese police through t he exclusionary rule – an empirical study. *Policing and Society*, *29*(9), 1109–1125. https://doi.org/10.1080/10439463.2018.1502291

McConville, M., & Choongh, S. (2011). Criminal justice in China: An empirical inquiry. *Edward Elgar.* https://doi.org/10.4337/9780857931917

Shahaab, A., Hewage, C., & Khan, I. (2021). Preventing spoliation of evidence with bloc kchain: A perspective from South Asia. 45–52. https://doi.org/10.1145/3460537.3460 550

Vu, T. Q. (2024). Exclusionary rule of illegal evidence under China's Criminal Procedure Law and recommendations for Vietnam. *Vietnamese Journal of Legal Sciences*, *12* (3), 75–87. https://doi.org/10.2478/vjls-2024-0021

Zhao, Y. (2020). Illegal evidence exclusion in China: A legal transplant in trouble. *Intern ational Journal of Evidence & Proof*, *24*(4), 320–340.

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RESEARCH ARTICLE

THE DEVELOPMENT STATUS OF CHINESE SCIENCE FICTION FILMS UNDER THE INFLUENCE OF FILM INDUSTRIALIZATION

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ABSTRACT

As an important film genre, science fiction has long generated significant economic value and social impact in developed Western countries, standing out among various film genres and moving towards industrialized development. With the ongoing deepening of China's film industry reform and the rapid development of the market economy, Chinese science fiction films have shown promising growth. The recent surge in popularity of science fiction films has provided a rare opportunity for the development of Chinese science fiction films. Today, China is calling for the emergence of domestically produced science fiction films. Market demand, social expectations, and the needs of the times have all undergone significant changes, creating real possibilities and favorable conditions for the development of this genre. However, Chinese science fiction films still faces several challenges, such as low social recognition of science fiction culture, underdeveloped creative output, and inadequate promotional efforts.

1. INTRODUCTION

The term science fiction first appeared in Christian Hellmann's History of World Science Fiction Films, where Hellmann quoted and agreed with Herbert W. Frank's definition of science fiction films (Chen, 2023). According to Frank, science fiction films depict dramatic events occurring in a fictional world that, in principle, could actually exist. The Dictionary of Film Art expands and elaborates on this definition, stating that science fiction refers to science fiction films and is a film genre whose basic characteristic is that it uses scientific principles and known scientific achievements as a starting point, and imagines future worlds or distant pasts (Beaver, 2006). According to the revised edition of the Cihai, science fiction novels are based on new scientific discoveries or achievements, with a foundation in fantasy and the foresight of the future, often combining various artistic forms. When the concepts of scientific education, artistic

imagination, and cinematic techniques converge, science fiction films naturally emerge and continue to evolve.

British scholar Lister introduced the fundamental concept of technological imagination, suggesting that the use of new technologies in China has revived humanity's visions of the future in the context of rational socialist development through modern information technology (Lister et al., 2008). With the rapid development of new technologies such as 5G, VR, and AI, as well as the widespread use of mobile devices like smartphones and wearable gadgets, the channels through which people access information have expanded. This has also led to higher demands for leisure and entertainment, which to some extent has become one of the factors influencing audiences to visit cinemas.

After the impact of the COVID-19 pandemic on the global film market, some investors and production companies have become particularly cautious when investing in new films. In the context of market-oriented and commercialized operations, the level of audience interest in a film has undoubtedly become an important factor in determining a film's success. Hollywood blockbusters often achieve both box office and critical success in China. For example, the 2021 game movie adaptation Ready Player One earned over 100 million USD at the Chinese box office in just one month, and was awarded the most popular American film by Chinese audiences at the 17th China-US Film Festival. The science fiction novel adaptation Dune was released simultaneously in China and the US, making its way into the top ten of the global box office in 2021.

In recent years, China's film box office performance has been relatively optimistic, with total box office rankings consistently being updated. This marks a key step toward China becoming a film powerhouse. However, issues such as a lack of variety in film genres and the absence of works that achieve both strong box office performance and good critical reception remain prominent challenges to be addressed. Science fiction films, which are currently one of the most popular genres attracting audiences to cinemas, are also among the least frequently produced in China. This paper focuses on Chinese science fiction films, analyzing its current development status, identifying existing problems, and exploring suitable paths for future development.

2. ANALYSIS OF THE DEVELOPMENT ENVIRONMENT OF CHINESE SCIENCE FICTION FILMS

As an important part of the cultural industry, cinema not only provides social benefits but also generates substantial economic returns, setting new box office records year after year. In 2019, The Wandering Earth achieved a box office of 653 million USD, topping the list of Chinese science fiction films' box office earnings and ranking sixth on the all-time box office chart in China (Ye, 2019). The success of this film marked a milestone for Chinese science fiction films, sparking new expectations for its development from national to local levels, from producers to audiences. To explore the development of Chinese science fiction films, it is crucial to first analyze its development environment and current state.

2.1. Government Policies Supporting Development

In recent years, the Chinese government has introduced various new policies to support and protect the growth of Chinese science fiction films. In August 2020, the China Film Bureau and

the China Association for Science and Technology jointly issued the Opinions on Further Promoting the Development of China's Science Fiction Film Industry. The document focused on areas such as innovation at the source of science fiction film creation, sustainable supply, establishing screening mechanisms, improving special effects technology, and supporting finance, taxation, and talent development. These efforts are laying the foundation for a favorable environment for the growth of Chinese science fiction films. In November 2021, the China Film Bureau released the 14th Five-Year Plan for China's Film Development, which strongly supports the creation and production of science fiction films, further encouraging the development of the genre (Parc et al., 2022).

2.2. Rising Consumer Spending and Expanding Market

As the consumption level of residents continues to rise, the Chinese film market continues to expand. In 2019, China's annual box office revenue reached 11.38 billion USD, making it the largest market globally (Costantino, 2024). By 2024, the number of cinema screens in China is expected to remain the largest in the world, with the country having 90,968 screens. This significant growth in the scale of cinema screens also contributes to the dominant position of China in the global film industry.

2.3. High Level of Domestic Film Production Technology Supporting Science Fiction Films

The level of domestic technology in film production has also reached a high standard, empowering the production of science fiction films. While The Wandering Earth borrowed from Hollywood's techniques, it also successfully adapted them to Chinese contexts. Film studios like Qingdao Oriental Movie Metropolis and domestic visual effects companies such as MORE played pivotal roles in achieving the high production standards of The Wandering Earth, driving the formation of a local film industry system, talent cultivation, and industrial upgrading.

3. ANALYSIS OF THE CURRENT STATE OF CHINESE SCIENCE FICTION FILMS

The Wandering Earth in 2019 was a monstrous success, and it changed the morale of Chinese science fiction films, as it evoked a new feeling of national pride and optimism. Some are even claiming 2019 as the Year of Chinese Science Fiction. This movie did not only demonstrated that China was able to create mass-market sci-fi blockbusters but also stimulated the whole nation to learn more about this genre. But the attendance of later science fiction movies like Shanghai Fortress did not perform well, even after the initial hype. Nobody has turned out to be as acclaimed as well as commercially successful as The Wandering Earth in Chinese sci-fi films since the release of the latter. It raises a very topical question in the industry: the possibility of Chinese sci-fiction film-making is evident, but maintaining the popularity of the genre and making it evolve is very difficult (Hartley, 2022).

Within the wider community of science fiction writers, works are usually divided into two subgenres of hard sci-fi and soft sci-fi. Hard sci-fi concentrates on the technological and scientific realistic nature of the story and the story activities are based on probable scientific theories. Soft sci-fi, in contrast, has a tendency to cover humanistic issues, and it often does so by touching on the emotional, social, and moral consequences of futuristic situations. In order to comprehend the situation in Chinese science fiction film, one should both analyze the field through the sources of hard and soft sci-fi.

3.1. The Rise of Hard Science Fiction Films

China's journey in sci-fi filmmaking has been deeply influenced by technological constraints. Historically, one of the main reasons for the delayed development of sci-fi films in China has been the slow progress in key technological areas. For many years, the country lacked the necessary infrastructure and expertise in advanced special effects, visual technology, and scientific authenticity to produce high-quality sci-fi films. Consequently, hard sci-fi films—those that hinge on a strong, scientifically plausible foundation (Westfahl, 2005)—were scarce in China's film market. This trend persisted until The Wandering Earth broke new ground, demonstrating that China could create a successful sci-fi epic on a global scale.

The idea of historical materialism, which posits that social existence shapes social consciousness, is particularly relevant here. As China's national power has grown, particularly in the field of space exploration, the country has seen notable advancements in areas such as space science and technology. Initiatives like the Chang'e Moon Mission, the Tiangong Space Station, and the Chinese Mars Exploration Program have not only demonstrated China's capability in these fields but have also provided a wealth of theoretical and practical support for sci-fi film production. These projects have also generated a wealth of public interest and scientific discourse, creating a fertile ground for future sci-fi film content.

Moreover, the advent of new technologies—such as 5G, artificial intelligence (AI), and virtual reality (VR)—has further empowered film production (Du & Han, 2021). These innovations have enabled filmmakers to create more immersive and visually striking sci-fi narratives. At the same time, the rise of domestic visual effects companies, such as Qingdao Oriental Movie Metropolis and MORE VFX, has allowed Chinese filmmakers to access cutting-edge technological resources, enabling them to produce sci-fi blockbusters that can rival their Western counterparts.

3.2. Emphasize content and narrative

It is important, however, to note that not the technological improvement can be the key behind the successful Chinese sci-fi films. Although novel tools and techniques provide filmmakers with much greater freedom and expression, one persistent problem with Chinese science fiction films is that, in the forms used, the stress is increasingly being laid on form to the exclusion of content. Numerous Chinese sci-fi movies, especially those with a softer tone, often struggle to develop an engaging plot or effectively address the philosophical and emotional layers of their main narratives. The effect is a crisp packaging that can only be entertaining with special effects and visual display of the content but cannot provide depth and serious matter-of-fact theme development.

More specifically, soft sci-fi films in China have not been able to satisfy critical reception and triumph at the box office. Such movies usually deal with humanistic issues, but unless these issues are really looked into and examined closely, then the movies are typically shallow. Failure to invest in creating a complex character, intricate plotlines, and coherent dialogue also means that a significant portion of these films cannot satisfy the viewer at all, especially when viewers are expecting a more in-depth experience with the genre (Hu et al., 2024).

3.3. Science fiction literature has developed

The recent Chinese sci-fi literature has encountered an incredible increase over the last years with such successes as The Three-Body Problem by Liu Cixin being recognized with honors such as Hugo Award. Through success, there has been an increasing number of people interested in the genre and that has extended not only to China but also abroad. In numerous ways, the literary world was ahead of the cinema because there is a great variety of good sci-fi novels, with a position of bestsellers (Yan et al., 2018).

Such a literacy boom is an opportunity to Chinese science-fiction films. It does not lack effective source material; there are numerous masterpieces based on Chinese sci-fi literature. But still, it is hard to translate them into successful movies. The novels provide a lot of food, but it has been difficult to create riveting cinema through the novels which both honor and reach a wide audience. The screenwriters tend to confront problems of the script, rhythm, and visual style to find the right balance between the intellectual content and the effect of the visual film communication.

To conclude, the volume of Chinese sci-fi films is still low, and after The Wandering Earth there is no movie that managed to achieve the same success in both box-office performance and reception of Chinese critics. Although technological limitations are minor issues now, narrative construction and storytelling need to be improved. The movies that are primarily oriented on technological spectacle, flagrantly ignoring the story structure, character development, and thematic profundity will not go far, as they have little chance of attracting large proportions of the audience and critics. To succeed, the Chinese sci-fi movies cannot afford to be limited by the use of special effects and should resort to deeper and more holistic storytelling that appeals to local and international markets. The most important question posed on the newer waves of advertising technology will be making sure that the sci-fi films that exist in China are not just visually appealing but also appealing in their intellectual and emotional appeal. Chinese sci-fi film also has the possibility to make history and rival other sci-fi in the world with an appropriate combination of technical knowledge, fictional narrative, and cultural authenticity (Jiang & Yin, 2024).

4. PROBLEMS AND SHORTCOMINGS OF CHINESE SCIENCE FICTION FILMS

In recent years, with the widespread use of smartphones, smart TVs, and home theater systems, and particularly due to the impact of the COVID-19 pandemic, online streaming has become a popular trend for watching films (Agnihotri et al., 2022). This has increased the factors influencing audiences' decisions to visit cinemas. Sci-fi films, due to their grand narrative scenes and excellent post-production, have become one of the genres that attract audiences to theaters. The success of The Wandering Earth has made it clear that technological issues are no longer a valid excuse for the public's tolerance of Chinese sci-fi films. Audiences' demands and standards for sci-fi films are rising, and it is therefore crucial to critically examine the issues and shortcomings that currently exist in Chinese sci-fi films. These problems stem from various aspects, primarily reflecting the low social recognition of sci-fi culture, outdated creative capacity in the sci-fi film industry, and inadequate promotional efforts.

4.1. Low Social Recognition of Sci-Fi Culture

If we were to categorize the issues facing Chinese sci-fi films into internal and external causes,

the low social recognition of sci-fi culture would be the primary external factor. When discussing Chinese sci-fi films, many people attribute its underdevelopment to problems such as a lack of imagination and creativity. However, Chinese cinema, literature, and art are not devoid of imagination. In fact, the fantasy genre—also based on imaginative concepts—has flourished in China, as it is more easily accepted and appreciated by the public. This genre, while rooted in the inheritance and promotion of China's 5,000-year-old traditional culture, is more easily understood and embraced by a wider audience. The development of literature has provided fertile soil for film content creation, and recently, the trend of adapting intellectual property (IP) into films has gained significant momentum (Han, 2022). Sci-fi films are no exception—The Wandering Earth, for instance, was adapted from the sci-fi novel of author Liu Cixin, and another popular film, Crazy Alien, was also adapted from his works.

In 2015, Liu Cixin won the Hugo Award for Best Novel with The Three-Body Problem, which sparked a surge in interest in Chinese sci-fi literature. This led to the rapid development of the genre, and an increasing number of high-quality works have been embraced by the public. However, the real question is: why did the Chinese public begin to accept sci-fi literature only after it won international awards? The reason lies in the historically low social recognition of sci-fi culture in China. The same holds true for sci-fi films. Prior to The Wandering Earth, Chinese audiences were overly enamored with Hollywood blockbusters. While there were some excellent domestic soft sci-fi films, audiences were clearly more interested in hard sci-fi films. In hindsight, The Wandering Earth is regarded as a success, often hailed as China's first true hard sci-fi film. However, at the time of its release, it garnered little attention. Audiences subconsciously believed that Chinese sci-fi films were not worth watching, which was one of the main reasons for the film's underappreciation at first. Thus, it is evident that improving the social recognition of sci-fi culture and increasing the public's acceptance of sci-fi films are key issues that need to be addressed.

4.2. Outdated Creative Capacity in Sci-Fi Film Production

In the context of the industrialization of cinema, sci-fi films have become an important genre in developed Western countries, generating immense economic and cultural value and establishing a complete sci-fi film industry chain. In contrast, the Chinese sci-fi film industry is still in its infancy, lacking the scale of an established industry. The concept of a Chinese sci-fi film industry is still unrealistic. However, the success of The Wandering Earth has demonstrated the potential for the formation of a domestic sci-fi film industry. Given this potential, we must address the long-standing key issue that has restricted the development of Chinese sci-fi films: outdated creative capacity.

The narrative techniques in Chinese sci-fi films need further development. As Chinese commercial cinema increasingly follows the trends of Hollywood films, the use of "spectacle" has been employed to satisfy viewers' evolving curiosity. However, this emphasis on spectacle often leads to the use of traditional Hollywood narrative structures, and the global influence of American blockbusters has shaped filmmaking practices worldwide, resulting in what has been termed "spectacle cinema." The primary logical flaw in this trend is that it prioritizes visuals at the expense of narrative—form dictates content. Characters become more superficial, and the storylines lose their depth and logic. The focus shifts toward visual impact and emotional music,

with grand scenes and high-budget productions becoming the main visual expressions, while storytelling becomes the weakest link.

The creative output in sci-fi film production is directly reflected in the number and quality of sci-fi filmmakers. Currently, most film directors in China come from professional film academies, and their education, which tends to prioritize the humanities, does not always meet the specific needs of sci-fi film content creation. Many directors lack a deep understanding of the scientific world, and sci-fi films require a solid foundation in scientific knowledge. In terms of scriptwriting, most Chinese sci-fi films are adaptations of sci-fi novels. While Chinese sci-fi literature has reached new heights, the process of adapting novels into films often encounters setbacks. Many sci-fi novel IPs are bought for adaptation but then remain in development limbo, reflecting the shortage of qualified scriptwriters.

In post-production, although some domestic visual effects companies have become integral to film production, the reality is that post-production technology still has considerable room for improvement. The training of post-production talent must keep pace with technological advancements. While the success of The Wandering Earth showed hope for Chinese sci-fi films, the subsequent release of Shanghai Fortress did not build on that hope but instead dealt a blow to the Chinese sci-fi film industry. Since then, sci-fi films have rarely appeared in theaters. Overall, talent remains the most crucial factor affecting sci-fi film creation. Only by improving both the quantity and quality of talent will China's sci-fi film industry rekindle its hope.

4.3. Outdated Creative Capacity in Sci-Fi Film Production

According to Stuart Hall's Encoding-Decoding theory, information dissemination involves production, circulation, consumption, and reproduction. These stages involve various meanings and information organized in a specific way and presented in symbolic forms. However, the ability to transmit and interpret these symbols is not fully symmetrical—misunderstandings and misinterpretations often arise. The longstanding dismissal of Chinese sci-fi films is a result of ineffective decoding by the media and audiences. To some extent, this stems from a lack of proper promotion by the sci-fi film creation teams.

For Chinese sci-fi films, the focus should not solely be on promoting individual films, but rather on promoting the overall image of Chinese sci-fi films. The target audience for promotion should not only include the media and the public but also investors and producers, who must be convinced of the potential of Chinese sci-fi films. With the increasing recognition of sci-fi culture and the gradual improvement of creative capacity in sci-fi film production, the immediate challenge is securing the approval of investors, media, and the audience. In the internet age, online marketing plays a significant role in influencing film reputation and box office performance. Sci-fi film teams often neglect the distribution process, failing to create a positive environment for the film's reputation. This has led to a decline in audience interest, causing investors to further question the return on investment in sci-fi films.

5. DEVELOPMENT PATH OF CHINESE SCIENCE FICTION FILMS

5.1. Actively Creating a Social Atmosphere That Respects Sci-Fi Culture

Creating a social atmosphere that respects sci-fi culture means fostering a positive creative

environment for sci-fi films from the very beginning, allowing more people to correctly understand sci-fi films and appreciate the significance of sci-fi filmmakers' work. Such a culture of respect can greatly inspire the enthusiasm for sci-fi film creation, leading to a greater number of sci-fi films. The rise of the Chinese sci-fi film industry, in particular, requires the efforts of both the artistic and scientific communities to create an atmosphere that respects sci-fi culture and films. We must emphasize the importance of sci-fi films in enhancing both people's humanistic and scientific literacy and encourage the development of sci-fi cultural forms that merge science and humanities.

A good story cannot be told without a script, and without narrative, it is also impossible. Perhaps we should focus on how to break through the Hollywood blockbuster production model and consider what topics could balance cultural distinctiveness and story depth. How can we use layered storytelling to reflect changes in Chinese society and the essence of Chinese culture? How can we address potential logical gaps and flaws in the storytelling process? Chinese sci-fi films should be grounded in Marxist historical materialism, national perspectives, and cultural viewpoints, using Xi Jinping's thoughts on socialism with Chinese characteristics as the guiding coordinate. By using the rich 5,000-year history of Chinese culture as a link, we can construct the logical core of sci-fi stories, offering profound reflections on the future, reality, and history. Indeed, telling Chinese stories well is just the beginning; more importantly, we need a narrative core that resonates emotionally, showing global audiences the current social realities, the pulse of the times, and the spiritual state of China.

5.2. Focusing on Enhancing the Creative Capacity of the Sci-Fi Film Industry

Some Chinese sci-fi films have exposed deficiencies in areas such as industrial design and special effects creativity. The Chinese sci-fi film industry still lacks a sense of branding and serial production, and it needs the support of industrialization and related industry upgrades. The productivity of sci-fi films is directly reflected in the number and quality of sci-fi creators. To enhance creative productivity, we must fundamentally change the current talent training model for sci-fi filmmakers in China and innovate the development of talent tiers. It is also essential to pay attention to the development of creative teams in sci-fi film literature.

Given the severe shortage of creative talent in sci-fi content, we must place more emphasis on fostering children's interest in sci-fi from primary and secondary school education. Additionally, it is vital to promote the collaborative development model between sci-fi and science. To drive the sci-fi film industry forward, it is essential to strengthen the communication and collaboration between the sci-fi film industry and the scientific community. The development of the Chinese sci-fi film industry must rely on the power of the scientific community, fully leveraging their expertise. China should further draw on the commercial experience of mature global film industries and build a cinematic universe, integrating resources across the entire industry chain. By enhancing genre-focused, branded, and serialized content and fostering collaboration and communication, we can expand the global market for Chinese sci-fi films.

5.3. Effectively Strengthening the Promotion and Marketing of Sci-Fi Films

Strengthening the promotion and marketing of sci-fi films plays a critical role not only in boosting the economic output of the sci-fi film industry but also in shaping the social sci-fi culture.

Online reviews are particularly important in increasing the promotional effectiveness of sci-fi films. With the rise of the internet era, interactive marketing has become more valued and widely applied. Within the film value chain, marketing methods such as integrated and derivative marketing can fully leverage a film's value, allowing more people to learn about and choose to watch the film.

It is essential to expand the promotion of sci-fi films, with emerging media platforms continuously reporting on them, sparking sustained public attention and discussion. Chinese cinemas and film circuits need to innovate and develop new marketing strategies for Chinese sci-fi films. Marketing efforts need to be improved, and cinema chains should increase their investment in promoting sci-fi films. Film distribution companies must also make their marketing efforts more refined and innovative. In China's film investment sector, sci-fi films have always been at the periphery, primarily due to the high investment and risk characteristics of the entire sci-fi film industry chain. Industry professionals must seize the opportunities of the times, actively attract investment, and build financing platforms to provide solid financial support for the growth of the Chinese sci-fi film industry.

5.4. Creating Localized Sci-Fi Films with Chinese Characteristics

In the future, for Chinese sci-fi films to secure a place in the global sci-fi film industry, they must innovate based on their own characteristics and incorporate uniquely Chinese elements from a richer and more diverse perspective. Initially, Chinese sci-fi films were criticized for having weak stories, poor logic, and being overly simplistic. However, this does not mean that sci-fi films must always involve spaceships or aliens. If a story is based on a scientific theory or phenomenon, it can still be considered a sci-fi film. Therefore, sci-fi films can be closer to real life, making them more grounded and relatable.

Moreover, when facing the high thresholds of hard sci-fi, China could take a step back and focus on creating a compelling story, using science to build the narrative, and adding visual elements to present it to audiences. The visual shock and spectacle generated by images may temporarily grab the audience's attention, but this is merely a superficial technique. Whether a film can move the audience depends on whether the theme includes humanistic sentiment, the correct values, and a high-quality storyline.

The Wandering Earth broke free from the Western civilization-centric narrative of early Chinese sci-fi works, creating a new recognition of Chinese sci-fi films. The film evokes a sense of national pride and hope, using themes that resonate with Chinese audiences. To emphasize its local nature, the director favored using elements rich in traditional Chinese cultural symbols—such as the Chinese New Year setting, the dancing red lion, the large red lanterns, and the auspicious red fu character stickers. These elements highlight traditional Chinese imagery. However, once the film reaches the surface, the camera shows frozen skyscrapers, dark skies, powerful transport trucks, and massive propulsion engines—sci-fi elements reminiscent of Hollywood blockbusters. While The Wandering Earth draws heavily on Hollywood filmmaking in terms of form, audiovisual effects, and narrative development, it also showcases Chinese values and cultural sentiment in its deeper story content.

6. CONCLUSION

In the context of the industrialization of cinema, science fiction films in developed Western countries have long been a significant film genre, generating enormous economic and cultural value, as well as broad social benefits (Hennig-Thurau et al., 2021). These films have followed a path of industrial development and now boast a complete sci-fi film industry chain. In contrast, China's sci-fi films started relatively late and faces several challenges, including low social recognition of sci-fi culture, outdated creative capacity, and insufficient promotion and marketing of sci-fi films. However, with the widespread application of new technologies such as 5G, VR, and artificial intelligence, along with empowering policies like the "Several Opinions on Promoting the Development of Sci-Fi Films" and the "14th Five-Year Plan for the Development of Chinese Cinema", China's sci-fi film industry is now facing new opportunities for industrialization and growth.

Amid both new opportunities and challenges, in order for Chinese sci-fi films to tell compelling Chinese stories, they must focus on integrating technological innovation with popular culture. These films should tell their stories in a way that resonates with current trends and fashions while also embedding the poetry and subtle elegance of traditional Chinese culture, showcasing the delicate emotional depth of the Eastern worldview.

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CONFLICT STATEMENT

The authors declare no conflict of interest.

COOPERATION STATEMENT

All authors contributed equally to this work and approved the final manuscript.

REFERENCES

Agnihotri, K., Srivastava, S. K., & Nawaz, M. S. (2022). Analysis of rising trend of onlin e streaming services during pandemic situation of COVID-19. *International Journal o f Enterprise Network Management*, *13*(2), 155–179.

Beaver, F. E. (2006). *Dictionary of film terms: The aesthetic companion to film art*. Peter Lang.

Chen, X. (2023). On the "Imagination Consumption" of Film in the Internet Age. *Journ al of Chinese Film Studies*, *3*(1), 85–101.

Costantino, M. (2024). The Current Impact of Mainland China on the International (ie Global) Film Industry. In *The Palgrave Handbook of Global Social Change* (pp. 1–2 9). Springer International Publishing.

Du, W., & Han, Q. (2021). Research on application of artificial intelligence in movie ind ustry. *2021 International Conference on Image, Video Processing, and Artificial Intellig ence*, *12076*, 265–270.

Han, T. (2022). From Script to Screen: What Role for Intellectual Property in IP Movie. *Journal of Commercial Biotechnology*, *27*(2), 196–204.

Hartley, J. (2022). 'Pathetic earthlings! Who can save you now?' Science fiction, planetary

crisis and the globalisation of Chinese culture. *Global Media and China*, *7*(1), 3–23.

Hennig-Thurau, T., Ravid, S. A., & Sorenson, O. (2021). The economics of filmed enterta inment in the digital era. *Journal of Cultural Economics*, *45*, 157–170.

Hu, Z., Ismail, R., & Wang, C. (2024). Identity and cultural allegory amidst the Chinese new era: Analyzing narrative strategies of the Chinese science fiction film. *Cogent A rts & Humanities*, *11*(1), 2313339.

Jiang, F., & Yin, H. (2024). Exploring Cultural Identity and Localized Aesthetics in Chin ese Science Fiction Cinema: A Study of Community Building. *Library of Progress-Lib rary Science, Information Technology & Computer*, *44*(3).

Lister, M., Dovey, J., Giddings, S., Grant, I., & Kelly, K. (2008). *New media: A critical int roduction*. Routledge.

Parc, J., Messerlin, P., & Kim, K. (2022). The impact of protectionism on cultural indust ries: The effect of China's film policies on imported films. *Journal of Media Econom ics*, *34*(2), 117–133.

Westfahl, G. (2005). Hard science fiction. In *A companion to science fiction* (pp. 185–201).

Yan, W., Jianbin, Y., & Lingenfelter, A. (2018). A very brief history of Chinese science fi ction. *Chinese Literature Today*, *7*(1), 44–53.

Ye, L. (2019). The Influence of "Wandering Earth" on Chinese Cultural Soft Power. *The 4th International Conference on Economy, Judicature, Administration and Humanitari an Projects (JAHP 2019)*, 151–154.

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RESEARCH ARTICLE

CROSS-TEXT MODAL PREFERENCE SYSTEMATIZATION (CTP-S): A DYNAMIC FRAMEWORK FOR PERSONALITY PREDICTION VIA MUSIC PREFERENCES

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ABSTRACT

Music preference, as an explicit behavioral marker of psychological traits, carries structured personality representations, yet existing research is constrained by three critical limitations: inadequate cross-cultural adaptability of Western-centric scales in interpreting non-Western music systems; neglect of cognitive dimensions in traditional models like the Big Five; and static analytical frameworks ignoring scenario-behavior dynamics.

This study proposes the Cross-Text Preference-Systematization (CTP-S) model, integrating MBTI cognitive structure, FPA motivational color theory, and CAPS situational dynamics to establish a cross-modal mapping mechanism from music preference to personality. Empirical results validate significant multi-dimensional correlations with distinct scenario dependency—introverts favor instrumental solos in private settings while extraverts prefer high-tempo music socially. The model achieves high prediction accuracy (up to 90.21% for MBI/FPA classification).

Theoretically, this work breaks through static frameworks by constructing a "cognition-motivation-context" triadic paradigm, bridging neural mechanisms and cultural theories. Methodologically, it realizes multimodal fusion of lyrics, audio, and behavioral data, offering technical paths for personalized mental health intervention and intelligent human-computer interaction. Future research will enhance cross-cultural applicability and explore neural encoding mechanisms.

1. INTRODUCTION

Music preference, as a major psychological characteristic and external behavioral marker of

individual information behavior, is closely related to personality traits. From the perspective of information behavior, personal music preferences not only reflect sensory experiences, but also carry structured representations of personality traits, providing an important path for exploring individual psychological mechanisms and personality traits. Music preference, as an explicit behavior of individual aesthetic choice, Rentfrow & Gosling (2003) and others' empirical research shows that there is a stable psychological representation basis for music aesthetic selection, and personal music preferences (melody, lyrics) are equal to the self-psychological state and have a strong correlation with one's own personality characteristics.

The correlation between music preferences and personal personality traits and characteristics is reflected in cross-, complex and multi-dimensional characteristics. Fenghua & Qianzhong (2016) in the study, personal music preferences were combined with the Big Five personality model, and it was found that there is a certain regression correlation between personal music preferences and self personality in the Big Five personality model (positive correlation between openness and complex music types: $r=0.32$, $p<0.01$). In addition, personal music preferences also affect an individual's cognitive style, style, and performance. D. M. Greenberg et al., (2015) proposed in their research that personal music preferences have a certain impact on personal cognitive methods and styles, among which, they particularly affect or determine to a certain extent the personal cognitive extroverted and introverted behavior performance.

The correlation analysis and prediction methods between personal music preferences and personality traits and characteristics are also developing towards diversification. In Anonymous's (2014) research, through extensive personal music preferences and lyrics related in-depth retrieval, personal personality characteristics and traits can be reflected in a certain retrieval method, which reflects that the recommendation system based on personal retrieval behavior and the personality traits based on personal music preferences and self are essentially interoperable.

However, existing research has significant limitations in the applicability of theoretical frameworks and analytical prediction modeling methods.

Lack of cultural validity. The Western centric music classification paradigm (such as the STOMP scale) is difficult to integrate with the aesthetic characteristics of traditional Chinese music (such as folk music, opera, etc.), that is, the current music classification mainly focuses on emotional expression and personal personality representation scales in Western traditional music classification, making it difficult to achieve accurate prediction and analysis from personal music preferences to self personality traits and characteristics.

Absence in cognitive dimension. Traditional analysis methods and models mainly rely on the Big Five personality model, but the Big Five personality model cannot effectively capture the differences in individual information processing methods. In Furnham's (2022) study, it was pointed out that the Big Five personality model and MBTI personality analysis and prediction model have tea art and their information processing methods for the evaluated individuals, which make it difficult to distinguish the cognitive performance and processing methods exhibited by the analyzed music preference party in reality (such as intuitive N and sensory S cognitive preferences).

Insufficient dynamic prediction. Traditional correlation analysis is difficult to construct a

mapping function from music feature vectors to personality types, and cannot cope with the processing and analysis of "singularity" data in personal music preferences. For example, in Zhao's (2022) study, only static music preference analysis was used, focusing on the relative stability in the static state, but neglecting the impact of dynamic prediction on the accuracy and correlation of models and prediction methods, as well as the lack of explicit transformation and correspondence from personal music preference feature vectors to self personality traits.

This study conducts a rigorous analysis of the relationship between individual music preferences and self-character traits. We introduce the innovative concept of cross-textual data, defined as integrated records of playback logs, preference indicators, and multi-source behavioral data consolidated through neural encoding techniques. Drawing upon established personality frameworks—including the Myers-Briggs Type Indicator (MBTI) and Four-colors Personality Analysis (FPA)—we develop a multivariate comparative prediction model. The research further pioneers a quadripartite binary framework, offering novel perspectives for examining the cognitive mechanisms underlying music preference and its correlation with personality trait mapping:

Integrate introverted and extroverted personality traits. Cohen et al., (2012) pointed out in their study that the introversion (I)-extroversion (E) dimension is significantly correlated with the music listening scene (I type prefers instrumental solo in private environment, E type prefers high-tempo music in social scene), which provides a partial perspective as a reflection.

Integrate intuition and perceived personality traits. In Vella & Mills's (2017) study, it was found that the personality dimension of intuition (N) - perception (S) affects and reflects an individual's processing mode of lyrics (N-type has a 37.2% higher acceptance of metaphorical texts compared to S-type), $p=0.008$).

At the same time, this study also creatively proposed the "music preference characteristics-cognitive type" mapping hypothesis, and realized the corresponding mapping from personal music preferences to self-characteristic traits of "cross-big text-systematization" at the bottom layer, aiming to achieve cross-modal prediction of MBTI and FPA types through deep learning architecture. At the same time, the empirical results of this study are also expected to provide a theoretical basis and technical path for personalized mental health intervention (such as depression tendency screening based on music preference) and intelligent human-computer interaction (adaptive music recommendation system).

2. LITERATURE REVIEW

2.1. Neural Causal Chain of Music Preference and Personality Prediction

Neuroscience research has laid a solid physiological foundation for the relationship between music preference and personality. Foundational fMRI studies have shown that when individuals experience musical pleasure, the activation intensity of the nucleus accumbens, the core area of their reward circuit, shows cross-cultural consistency (Blood & Zatorre, 2001). Salimpoor et al., (2013) deepened their multimodal research through PET-fMRI fusion technology. It was confirmed that the dopamine release triggered by music climax and the activity of the nucleus accumbens were synchronously enhanced in a dose-dependent manner.

Through hybrid analysis and prediction research, it was found that the functional connection pattern of auditory-prefrontal neural pathway can effectively predict personality traits, that is, individuals with high openness show enhanced prefrontal-insular neural coupling (reflecting cognitive integration advantages), while those with high neuroticism show amygdala-auditory cortex hypersensitivity (Alluri et al., 2012). It is worth noting that transcranial magnetic stimulation (TMS) experiments have confirmed that artificial activation of the nucleus accumbens can significantly enhance the pleasure of music. Mas-Herrero et al., (2021) revealing the neuroplastic basis of personality traits. Recent fNIRS studies have further found that neurotic individuals have significantly prolonged amygdala response delays to dissonant chords in anxious situations (β=0.34, $p<.001$), indicating that personality traits regulate the neural dynamics of music processing (Martínez et al., 2023).

The theoretical and practical research on related neural systems strongly supports the analysis and prediction of the correlation between personal physical function preferences and personality traits. Similarly, it lays a solid theoretical foundation for the "cross-text preference-systematization" model constructed in this paper and the discussion of music preferences and personality traits.

2.2. Theoretical Evolution of the Association Between Music Preference and Personality

The development of theoretical models presents an evolutionary path from static classification to dynamic cognition. The four-dimensional model (STOMP) pioneered by Rentfrow & Gosling (2003) systematically constructed the correspondence between music preference and the Big Five personality for the first time: classical music lovers usually show higher openness, while rock music lovers tend to have low agreeableness. The model was evolved by Zweigenhaft (2008). After validation with the NEO-PI-R scale, it was further refined into a five-factor framework that includes "contemporary" music, and revealed that the aesthetic sensitivity sub-dimension of openness has a particularly strong predictive power for complex music preference (β=0.31).

Important breakthroughs in the evolution of theory came from the perspective of cognitive science, L. S. Greenberg (2019) proposed a dual-channel model that pointed out that systematists prefer complex classical music (accompanied by enhanced activation of the prefrontal-parietal network), while empaths prefer emotionally rich pop music (involving default mode network-limbic system connection). This theory has been verified in East Asian groups - the explanatory power of systematic cognitive style for music preference (ΔR^2=0.14) significantly exceeds the traditional personality dimension (Vuoskoski et al., 2022). However, the unique cognitive processing mechanism of non-Western music systems (such as Indian ragas) remains to be analyzed, Bhattacharya et al., (2021) conducted research and theoretical discussions under non-native Western music systems under non-Western music systems, suggesting that the cultural universality of existing theories is questionable.

In recent years, research has begun to break through the traditional personality framework (Meneses & Greenberg, 2019). The empathy-systemizing cognitive style theory proposed by et al. provides a new explanation for music preference: the difference in neural mechanisms between systematizers (preferring complex classical music) and empathizers (preferring emotionally rich pop music) may be more predictive than the Big Five personality traits. However, existing theories

are mostly based on Western samples, and the unique music-personality association patterns of non-Western cultures (such as the Indian raga music system) still need to be verified.

Although existing studies have revealed the neural mechanisms and theoretical frameworks for the association between music preference and personality, there are still three key limitations: first, the connection between neural mechanisms and behavioral expressions is weak, and there is a lack of an integrated model of multimodal data (acoustic feature eye movement physiological indicators); second, traditional dimensional models are difficult to explain the moderating effects of cultural acquisition and social norms on the "preference-personality" relationship. To break through these limitations, this study proposes a "cross-text preference-systemizing" theoretical model, which innovatively integrates dimensions such as music acoustic feature analysis and cross-text features, and constructs a dynamic prediction system through a machine learning architecture. Based on the empirical research designed by this model, the predictive effectiveness of music preference on personality traits within the cultural cognitive framework is systematically tested, thus bridging the explanatory gap between neural mechanisms and cultural theories.

3. MODEL DESIGN

3.1. Model Basis Reference

3.1.1. Analysis of MBTI Personality Prediction Scale

MBTI (Myers-Briggs Type Indicator) is based on Jung (1923).The continuation and development of the psychological type theory. Jung proposed that there are four basic functions of human psychological activities: thinking (Thinking)-feeling (Feeling), feeling (Sensation)-intuition (Intuition), supplemented by the attitude dimension extraversion (Extraversion)-introversion (Introversion). Briggs and Myers (*The History of the MBTI® Assessment*, n.d.) on this basis, the Judging-Perceiving dimension is added to form a four-dimensional octupole structure.

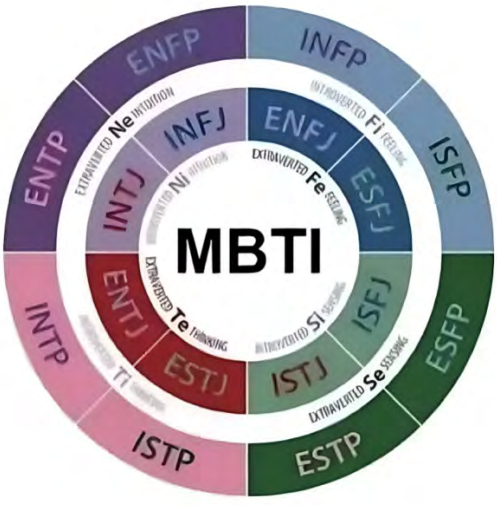

Figure 1: MBTI four-dimensional octapole structure

The MBTI model enforces classification through binary classification, categorizing individuals into 16 personality types, each corresponding to a specific level of cognitive function (such as dominant function and auxiliary function), forming a static typological framework that

maintains a certain static appearance over a certain period of time. Keeping an individual's personality traits and traits static for a certain period of time also provides theoretical support and a way to speculate on the mapping and transformation from personal music preferences to personal personality traits.

3.1.2. FPA Personality Prediction Scale Analysis

Different from the MBTI model test scale, the theoretical pedigree of FPA (Four-colors Personality Assessment) is more popular psychology. Its direct source is Hartman & Yixi (2001). The "personality color code" of waiting is used to metaphorically represent behavioral motivation through the four colors of red, blue, yellow, and green. Red represents goal driven dominance, blue indicates perfectionism in precise analysis, yellow represents influence in social orientation, and green reflects moderation in stable avoidance.

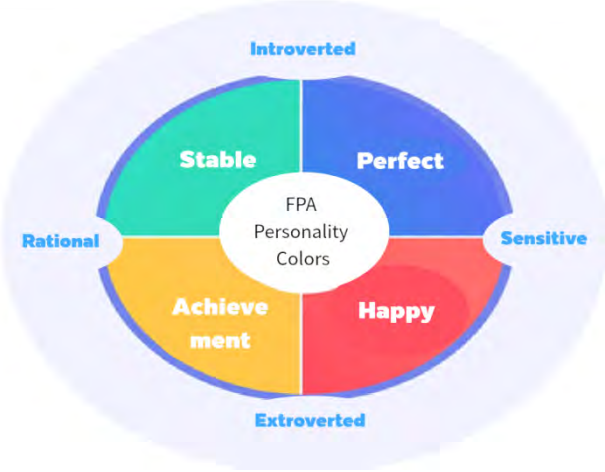

Figure 2: FPA structure diagram

This model abandons strict classification and adopts dynamic combinations of primary and secondary colors (such as "red+yellow", "red+green", etc.). By emphasizing contextualized behavioral tendencies, the focus is placed on behaviors and personality expressions in specific contexts rather than internal cognitive structures. In its practical significance, it adds practical significance to MBTI's focus on individuals' cognitive characteristics and personality performance in different scenarios, essentially providing theoretical references and tools for the mapping of "motivation behavior" or "preference behavior".

3.1.3. CAPS (cognitive-Affective Personality System) Model Analysis

The CAPS model was proposed by psychologists Walter Mischel and Yuichi Shoda in 1995 to address the long-standing controversy in personality psychology regarding the consistency and variability of behavior. This model is different from the traditional Big Five personality model, which no longer attributes behavior to global traits, but emphasizes that personality is a dynamic cognitive emotional processing system, and behavior is determined by the interaction between individuals and situations. Mischel & Shoda (1995) systematically summarized and explained the CAPS model. Specifically, behavior prediction requires a comprehensive understanding of individual characteristics, specific contexts, and their interactions, rather than relying on fixed traits across contexts. It involves analyzing and predicting personality traits through a

combination of binary and binary coupled factors, and interpreting external behavioral inconsistencies (such as someone being extroverted in social situations or introverted when alone) as stable "behavioral pattern variations" within the individual. This also reflects the unique organizational structure of cognitive affective units (CAUs) (Smith, 2006). The system explains that the personality system has structural stability and process dynamics, avoiding the limitations of the traditional "trait-process" dichotomy.

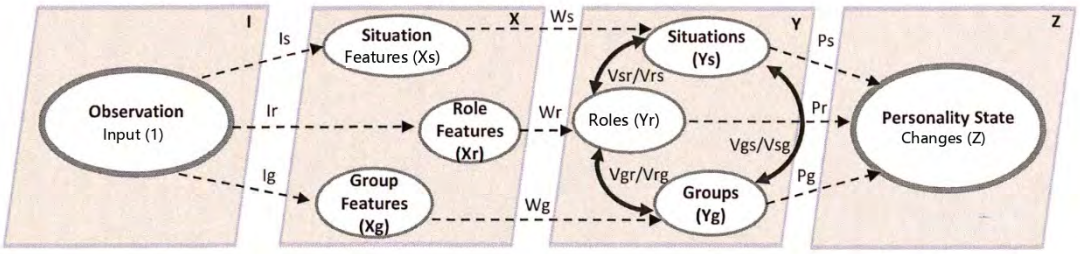

Figure 3: CAPS Structure and Impact Path

Source: From Personality and Assessment (1968) to Personality Science, 2009. Walter Mischel.

The CAPS model uniquely combines specific situations with behaviors in those situations, and comprehensively considers them as a major variable influencing factor of behavior and traits. It elucidates the principle of relative stability and variability of individual personality traits, providing a communication bridge for reflecting individual personality traits from their behavior and action preferences, ensuring the stability of individual psychology over a long period of time and the relative stability and sustainability of related analysis and inference methods.

3.2. Music Preference Dimension Extraction Design

Based on the analysis and summary of the above personality characteristics and personal preference model theory, the scientificity and practicability of the process of mapping from personal music preferences to personal personality characteristics are fully supported. However, in the specific mapping and conversion process, personal music preferences are more subjective and lack explicit standards. This paper extracts and designs dimensions based on multi-dimensional and multi-element cross-data in personal music preferences, and provides a certain feature dimension extraction paradigm and reference for personal music preferences.

Extract and abstract the overall form of lyrics as the basic unit of meaning. Implementing semantic embedding and latent semantic mining of multi-layer cross text based on BERT model. By introducing the BERT model, lyrics can be preserved in both LRC and text file formats with rich multi-layer cross text data sources. By analyzing and comparing the MBTI and FPA personality attributes and characteristic colors of song providers, the model can achieve a basic mapping from the basic form of lyrics to individual personality traits and characteristics, in order to improve the accuracy and wide reusability of the model in multiple scenarios.

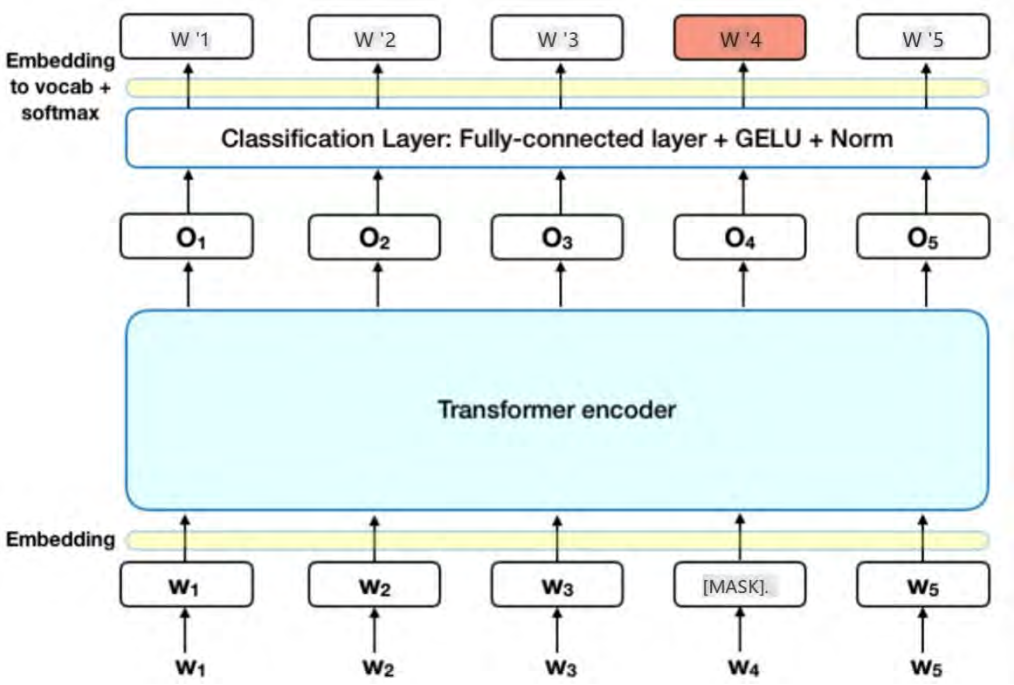

Figure 4: BERT model architecture and processing diagram

Source: NLP: Bidirectional Encoder Representations from Transformers (Bunoob, 2021)

Integrate the overall melody style and express the mood and personality traits in specific contexts. Mainly relying on the use of pre trained audio labeling model AudioSet for melody description and labeling of each song. On the basis of basic tagging, the melody style is extracted based on the LDA theme word extraction and construction model. The combination of melody and lyrics is used to achieve a basic and complete summary of the song's ontology and label comparison. This comparative dimension constructed from the music ontology also reduces to some extent the neglect of the front-end model user ontology due to the introduction of models such as MBTI (Siyi & Xiaonuo, 2024).

Record the number of plays in the recent period and assign different weights to represent personality traits. On the basis of implementing the basic identification dimension and visualization of song tracks in the previous two, the recent playback frequency of each song is included. In the overall dimension of the song, different weights are assigned to each song, and the comparative advantages of the CAPS model considering specific scenarios and different situations are fully utilized to provide more accurate correlation and analysis prediction for song feature recognition and mapping from song feature recognition to personal personality traits and characteristics.

3.3. Model Summary and Presentation

This model achieves a relative abstraction of personal emotions and personality traits by referring to the MBTI and FPA personality trait expression and prediction scales, and introduces the CAPS cognitive affective personality system model to support the theoretical expression of a relatively stable personality in specific scenarios. At the same time, multidimensional and multimodal processing models and algorithms such as BERT model, Word2Vec, doc2Vec, LDA

theme word extraction and analysis models are introduced to analyze and integrate the original data of songs, and then combined with models such as random forest and decision tree to infer and analyze specific personalities. In addition, during the data preprocessing process, we actively seek relevant open-source models for auxiliary preprocessing, such as MusicLyric (jitwxs, 2025, 2017/2025), Librosa (McFee et al., 2015), AudioSet and other models. The multi-element and multi-dimensional music data are comprehensively conducted and applied, and through four-layer interactive processing, the mapping from the labeling of multi-element data such as lyrics pure text, timestamps and audio to the analysis and prediction of personal personality traits and characteristics is fully realized. Entity information behavior and information preference to abstract personality trait expression.

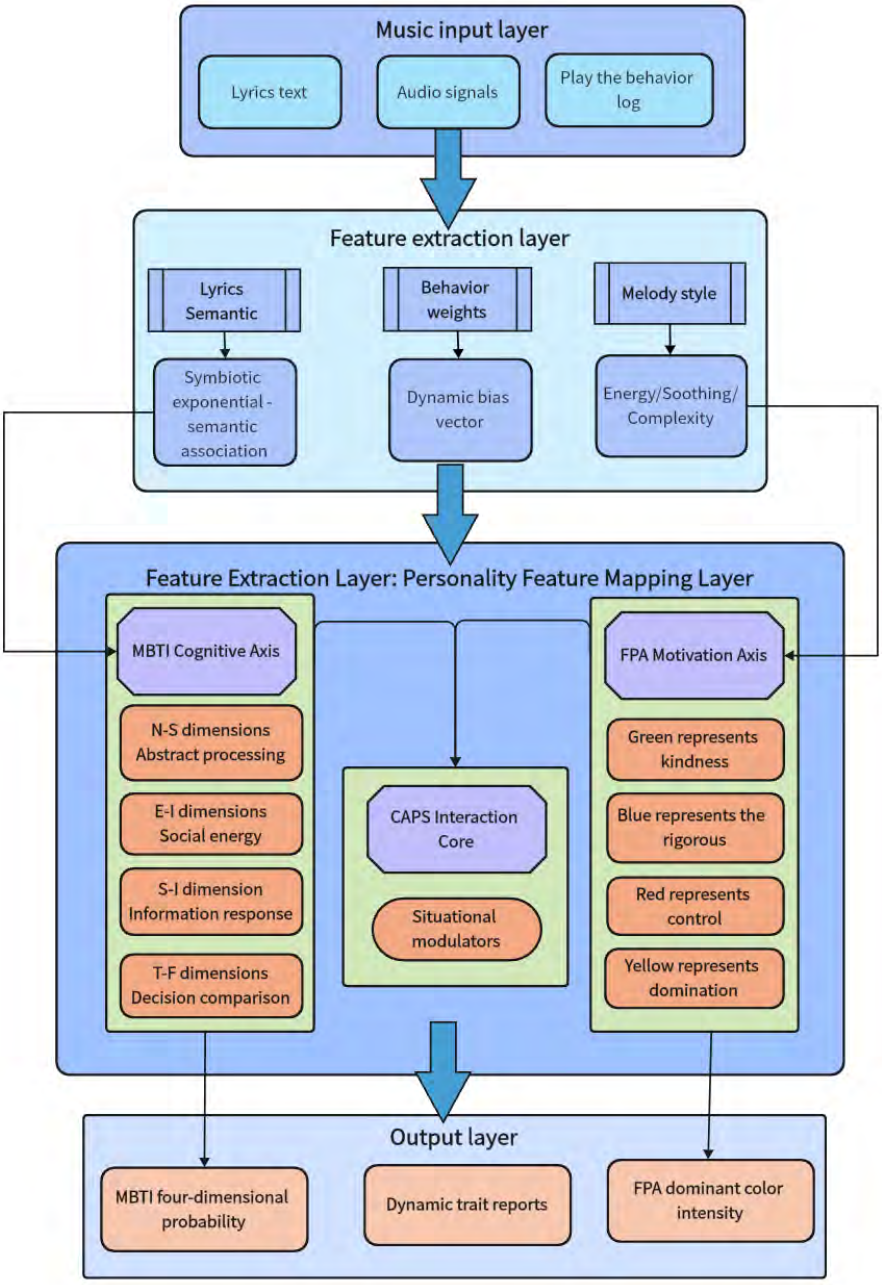

Figure 5: "Cross-text preference-systematization" model

Table 1: Multivariate data processing flow

Data type	Data source	Standardization processing flow
Lyrics text	LRC file/music platform API	Chinese word segmentation (jieba tool) → stop word filtering → part-of-speech tagging
Audio feature vector	MP3/WAV format audio	Tagging and extracting music melodies through AudioSet, combined with theme word extraction such as LDA for music melody characterization, and using Librosa to extract multidimensional acoustic features such as rhythm intensity for auxiliary and comparative purposes
Behavior time series data	Play log (timestamp/device ID)	Scene semantic annotation, and through the reserved content of the front-end music data, time series detection and identification

At the same time, this model realizes the innovative application of multivariate technology and models in the following aspects:

(1) Multidimensional personality theory integration innovation

This study has achieved the deep integration of "Triarchic Personality Theory" in the music context. In the application of MBTI theory, in view of the lack of the traditional Big Five model in the cognitive dimension, the lyrics metaphor analysis is innovatively mapped to the intuition (N) and feeling (S) dimensions to find the fit between music expression and individual cognitive style; at the same time, the playback scene is cleverly integrated into the extraversion (E)-introversion (I) dimension assessment, expanding the data source and accuracy of personality measurement. For FPA theory, by setting different colors corresponding to lyrics with different melodies and singing styles, the explanatory power of individual motivation is enhanced and the connotation of personality color model is enriched. In terms of the integration of CAPS theory, time and scene weights are introduced, and a conditional probability model for trait expression is innovatively constructed, which breaks through the traditional static personality prediction framework, realizes the accurate capture of dynamic personality expression, and establishes a triangular explanatory system that correlates music characteristics with cognition, motivation, and context, achieving unified modeling of personality "steady-state traits" and "dynamic expression".

(2) Application scenario expansion innovation

This model has achieved cross-domain and breakthrough application expansion in many fields. Through the introduction of multiple theoretical models, it has achieved full coverage of music and promoted the realization of unified personality assessment driven by music. Its core contribution lies in achieving cross-theoretical integration, integrating MBTI cognitive structure, FPA motivational color, and CAPS dynamic interaction to create a comprehensive evaluation system; achieving cultural adaptation, relying on the localization of the basic model, and realizing the dilemma of relying solely on the validity of Western scales; with dynamic evolvability, the time-varying design of playback weight gives the model continuous learning ability, setting a reference for the development of music psychology with both explanatory depth and real-time

prediction, and promoting discipline progress and multi-field application.

4. EMPIRICAL ANALYSIS

4.1. Experimental Ideas

The empirical research part of this paper will focus on the "cross text preference systematization" model to realize the whole process of analysis and prediction from personal music preference to personal personality characteristics. In the specific model validation process and empirical research, this article extensively collected and crawled the "I Like" and "My Favorites" playlist data of 15 students on QQ Music and NetEase Cloud Music two major music platforms in the early stage, and implemented LRC, TXT, WAV three data formats, totaling more than 67500 pieces of raw data. After collecting and organizing the basic original books, this experiment randomly processed the raw data of 12 students and trained and practiced the mapping prediction model. The remaining 3 students were used for testing and analyzing the accuracy of the model. The specific experimental process is as follows:

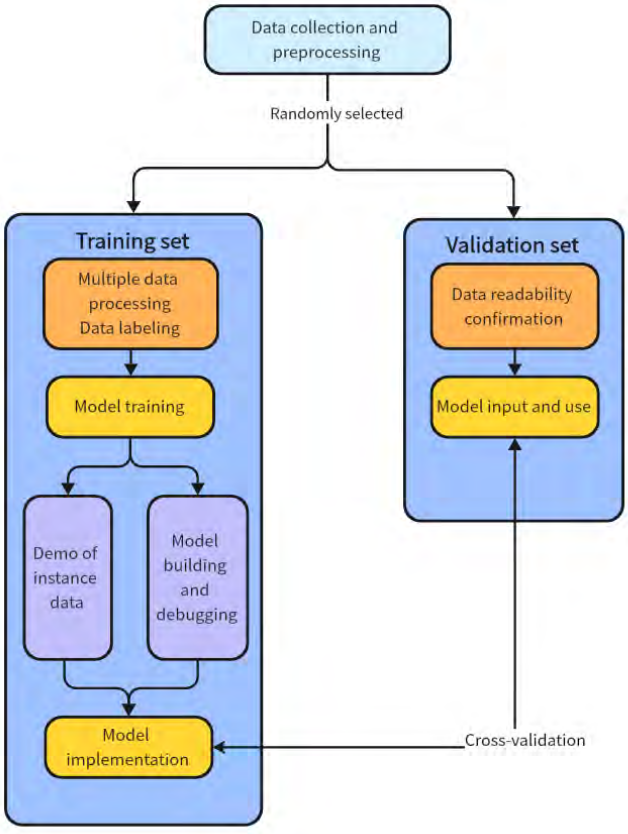

Figure 6: Empirical research process

4.2. Experimental Process

4.2.1. Data Collection and Preprocessing

This study is respectively on NetEase Cloud Music and QQ Music On the developer platform, basic LRC format data crawling of playlists for 15 students was carried out by obtaining APIs, and

timestamp formatted lyric crawling and audio data crawling were performed by deploying open-source software MusicLyric locally.

By introducing AudioSet to assist in the labeling of music styles, the labeling of songs can be quickly realized. The following are some label specifications of AudioSet:

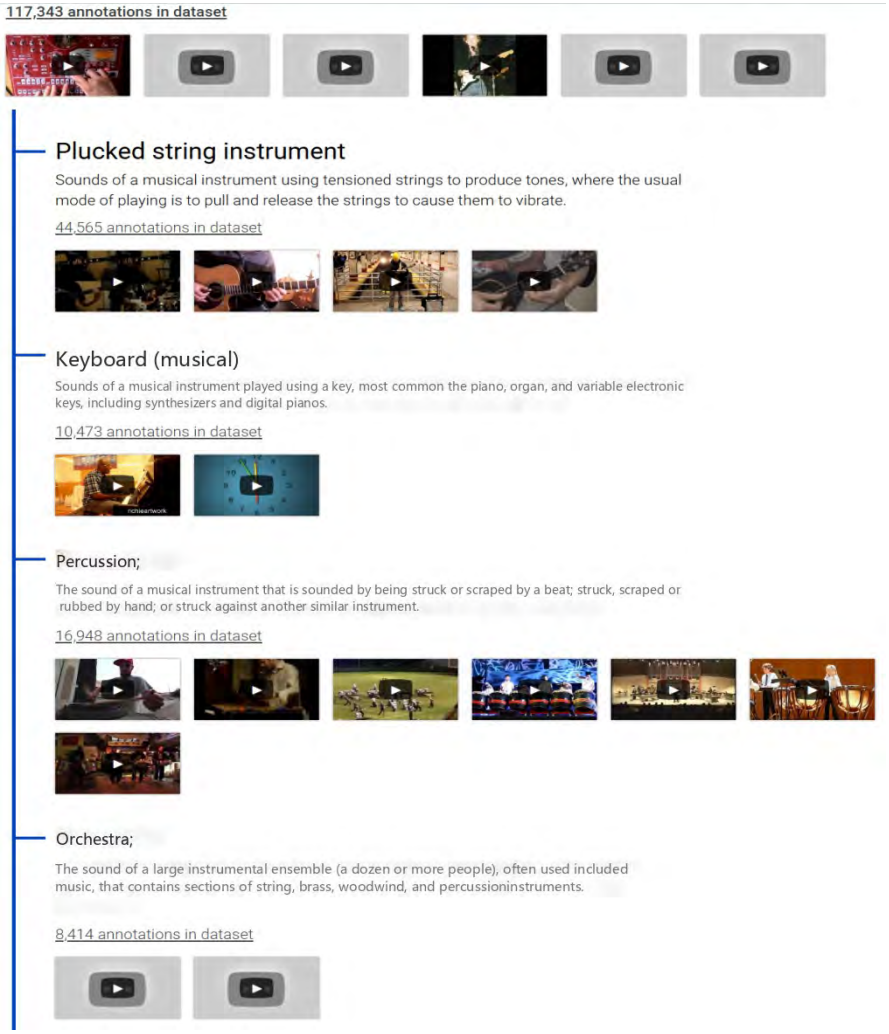

Figure 7: AudioSet Audio Tagging System

4.2.2. Model Construction and Training

(1) LDA-based Topic Word Extraction and Sentiment Extraction Module Construction

After data preprocessing, each lyric file was obtained with a summary and descriptive text of the overall melody. At the same time, 5-10 MFCC and deep emotion detection tracks generated based on their original audio files were randomly selected from each training set (due to technical, time, and free trial limitations of open source software, only partial songs of each student were subjected to this operation as auxiliary verification).

This section has achieved the preliminary correspondence between song lyrics, melody, and personal personality traits through the extraction and comparison of theme words from lyrics and emotional theme word lists (MBTI four-dimensional word list, positive and negative emotional

word list, and positive and negative polarized emotional word list).

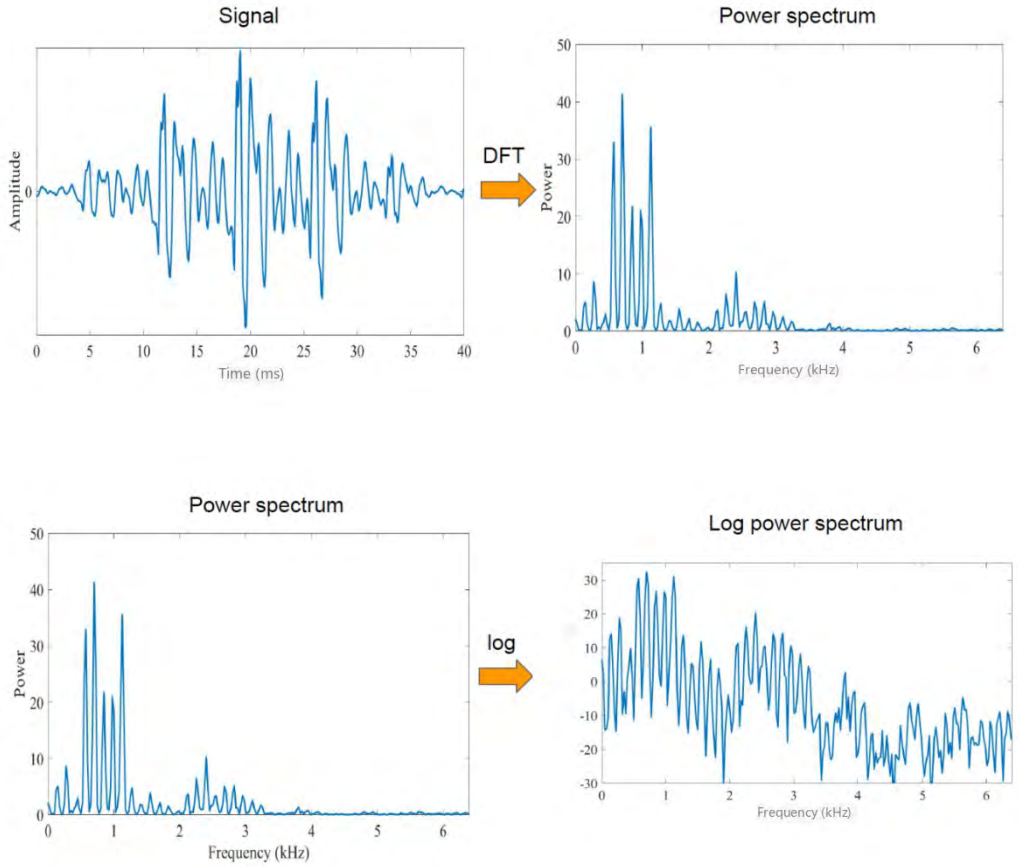

Figure 8: Example diagram of MFCC in Experiment 1

MFCC related formulas are as follows:

$$\text{Forward difference:} \Delta x[n] = x[n+1] - x[n]$$

$$\text{Backward difference:} \Delta x[n] = x[n] - x[n-1]$$

$$\text{Central difference:} \Delta x[n] = \frac{x[n+1] - x[n-1]}{2}$$

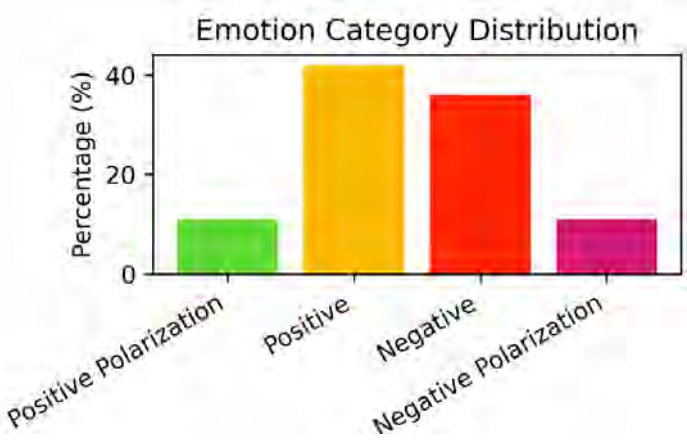

Figure 9: Lyrics emotion distribution frequency of experiment 1

(2) Embedded Sentiment Module Construction Based on BERT Model

Through the basic extraction of theme words and theme emotions in LDA, a basic mapping from the perspective of lyrics ontology to personal personality traits has been achieved. However, in reality, the different positions of lyrics or the different singing styles used can also affect the analysis of emotions and the prediction of personal personality traits and traits. Combining BERT model features, through its unique design method and ideas, using a bidirectional method (Bidirectional), while considering the left and right contexts of words in a sentence, rather than analyzing text in sequence, BERT looks at all words in a sentence at the same time, this model has a better understanding of the connotation and emotion of words, and embeds certain emotions, so that the model can better grasp the emotional aspects of personal music preferences.

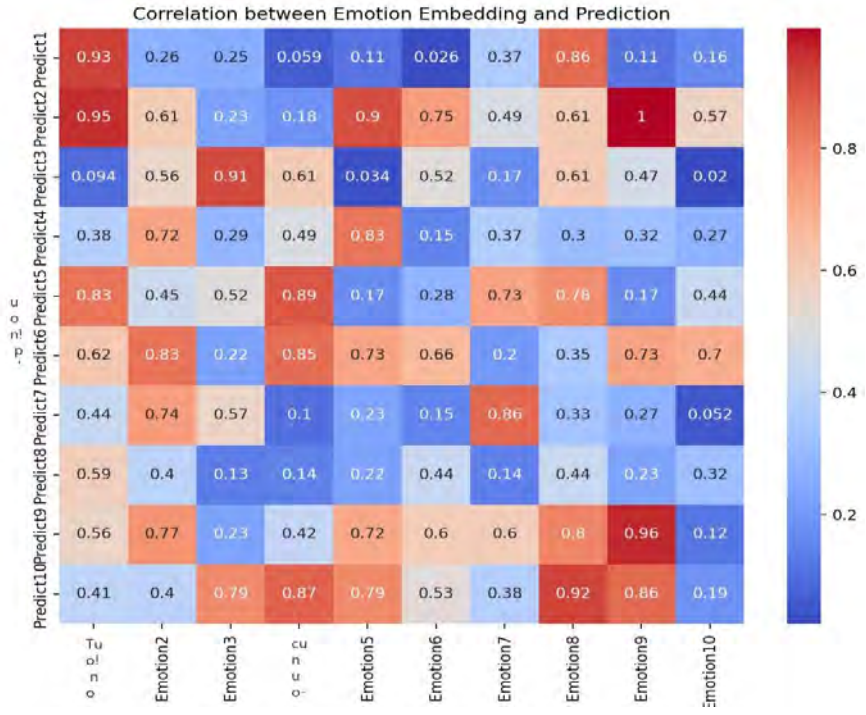

Figure 10: BERT sentiment embedding and predictive analysis correlation

(3) Construction of the Personal Listening Scene Consideration Module Based on Collaborative Filtering Algorithm

Based on the CAPS model, this study introduces reference indicators for listeners in different scenarios on the basis of extracting the characteristics, themes, and emotions of the song itself, providing more accurate predictions for the complete mapping from music preferences to personal personality traits. This module is based on the three-dimensional interactive data of "listener song scene". By introducing scene semantic embedding and dynamic weight mechanism, it solves the problem of insufficient scene generalization ability of traditional collaborative filtering algorithms in cross scene recommendation. The specific process is as follows:

Feature modeling and data fusion at the scene dimension. The module first semantically encodes the user's listening scenarios (such as commuting, work, exercise, nighttime, etc.), uses a BERT pre trained model to extract deep semantic features of the scene text, and constructs a joint feature space with the acoustic features of the song (such as rhythm, timbre, emotional polarity) and the theme features of the lyrics (such as philosophy, life, emotion, etc. extracted through LDA).

Specifically, the user's interactive behavior with song I in scene S (such as the number of plays, completion rate, and collection behavior) is constructed as a three-dimensional tensor $(Y_{\quad})$, where u represents the user, i represents the song, and s represents the scene. Through tensor decomposition technology, the three-dimensional data is mapped to a low-dimensional latent space to capture the user's preference pattern in different scenes. For example, in the commuting scene, the user's high-frequency playback behavior of fast-paced electronic music will be encoded as a scene-song interaction feature, which is fused with contextual features such as the ambient noise level and commuting time in the scene to form a multi-dimensional scene vector.

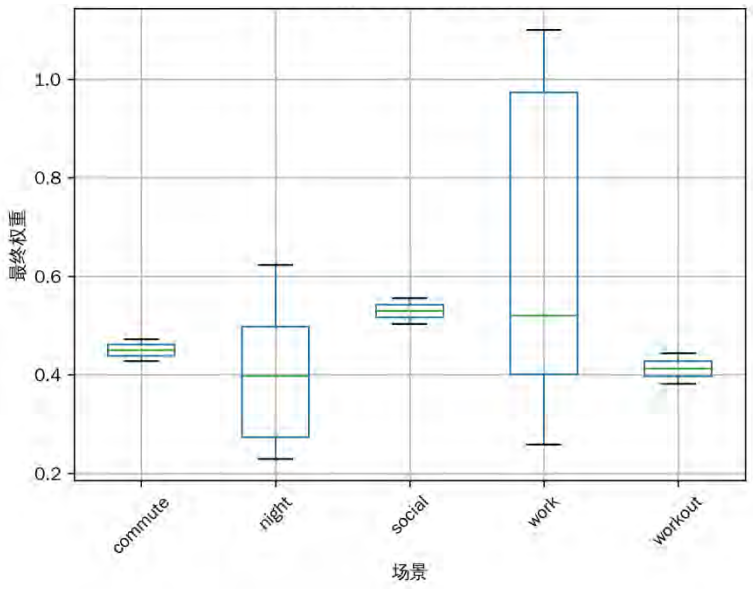

Figure 11: The weight distribution of listening scenes in Experiment 1

(4) Construction of the Analysis and Prediction Module Based on Random Forest and Decision Tree

This module achieves the final prediction and implementation of the transformation from pre structured and labeled personal music preferences to self personality traits and characteristics through training and using random forests. This module combines the song features emphasized in the CAPS model (such as emotional polarity, theme distribution), scene variables (such as time, activity type), and user interaction data (such as playback frequency, collection behavior) as inputs to construct a hierarchical decision-making model, ultimately achieving accurate prediction of multidimensional personality traits such as MBTI personality type and FPA personality color of users.

In order to fully ensure the rigor of the final output and the accuracy of the prediction, this module uses a two-level integrated architecture to achieve the final prediction by coupling the random forest and decision tree integration model.

Basic decision tree model. Construct multiple classification decision trees, each of which is trained for different personality dimensions (such as MBTI's I/E, N/S, T/F, and J/P dimensions). The decision tree uses the information gain rate (Gain Ratio) as the splitting criterion, and prevents overfitting through pre-pruning (limiting the tree depth to 8-12 layers) and post-pruning (based on the minimum error principle).

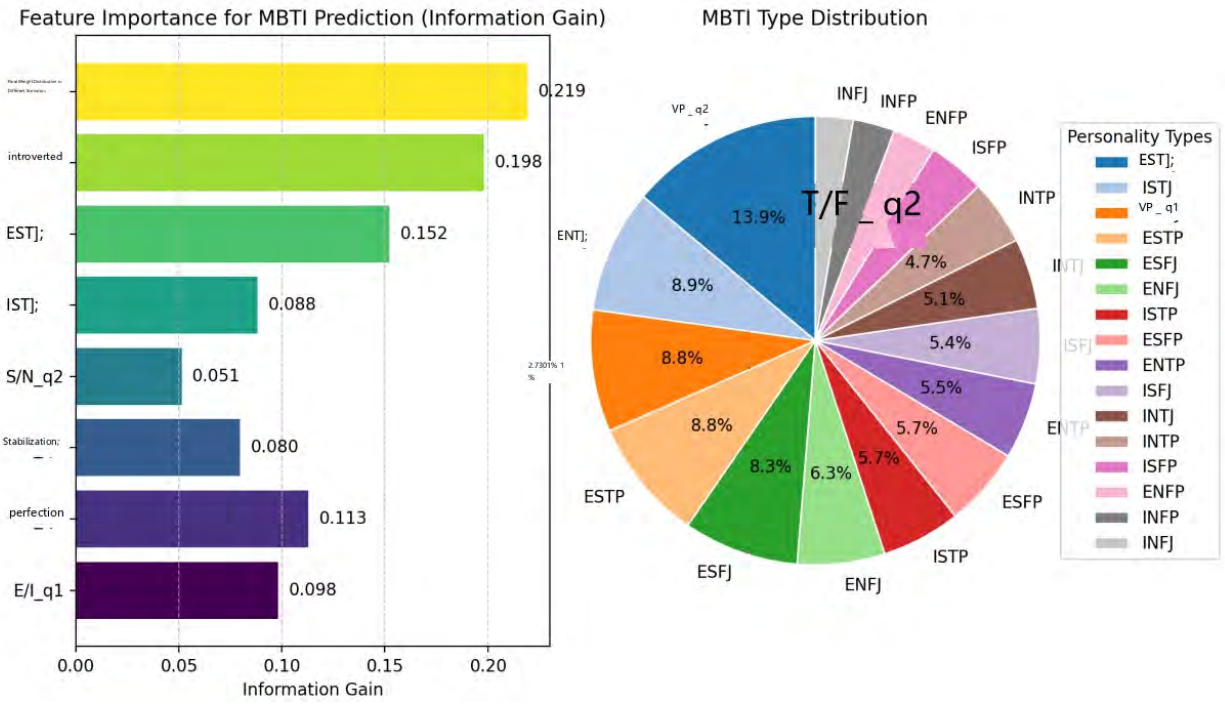

Figure 12 MBTI16 personality information gain value

Random forest ensemble. Generate multiple subsets from the original dataset through bootstrap sampling, train a decision tree for each subset, and randomly select a feature subset (usually a subset of the total number of features) during node splitting$\sqrt{n}$) Ultimately, the

prediction results of all decision trees are integrated through a majority voting mechanism. In the specific time process, for the prediction of MBTI type, the model will integrate the classification results of 100 decision trees on four dimensions to generate the final personality type label.

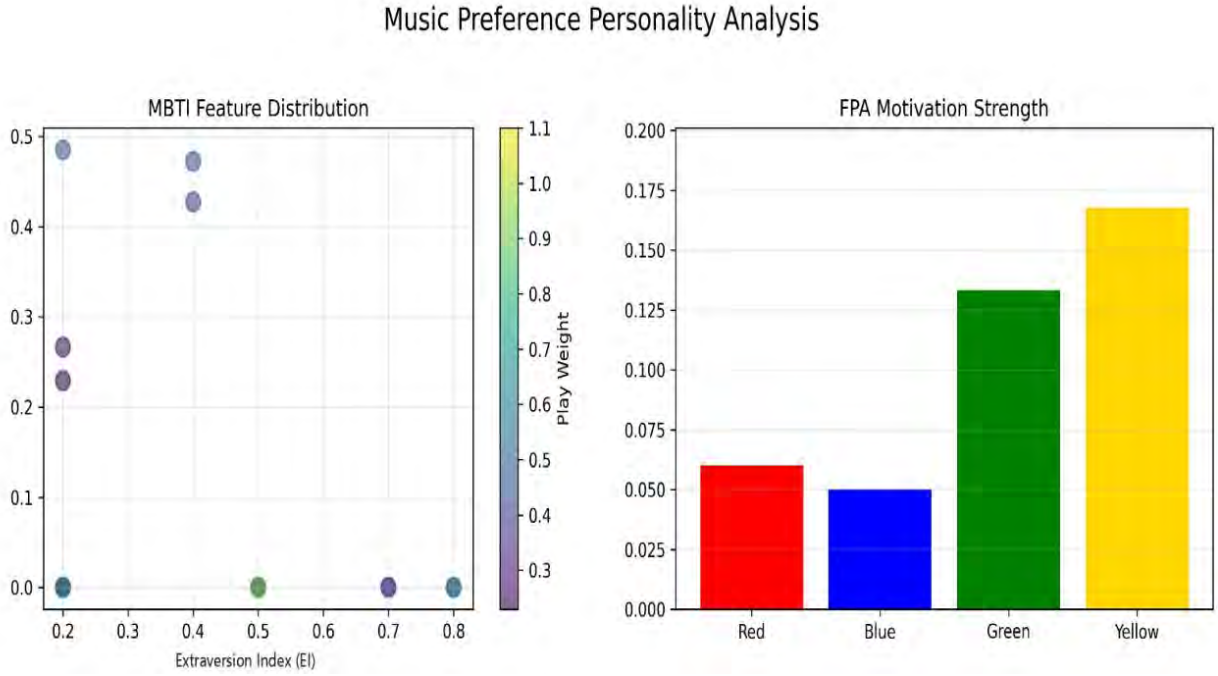

Figure 13: MBTI and FPA prediction results for Experiment 1

4.2.3. Model Application

Through the previous model foundation and algorithm construction, the complete path from personal music preference to personal personality trait prediction is basically formed and realized. During the training process, it was also found that if only the song with the most recent playback times of the experimenter is input, the different labeled lyrics and the lyrics in the most repeated segments are summarized, the model can also basically realize the prediction and analysis of the experimenter's personality. To verify the general applicability of this model, this study also passed the playlists of three students who had not undergone complex preprocessing into this model. The following are the specific outputs and performances of the model:

```
FPA tag: green
Motivation intensity: {'red ': 0.0, 'blue': 0.0, 'yellow ': 0.0, 'green': 0.4}
```

Figure 14: Analysis and prediction information of Experiment 4 on the PyCharm page

Table 2: Model usage and prediction results

	Actual MBTI	Model predicts MBTI	Actual FPA personality	Model prediction motivation	Accuracy
Experiment NO.4	ISFP	ISFJ	Green	Red: 0.0 Blue: 0.0 Yellow: 0.0 Green: 0.4	0.9021
Experiment No. 9	ENFJ	ENTJ	Red	Red: 0.43 Blue: 0.11 Yellow: 0.00 Green: 0.39	0.7213
Experiment No. 15	ISTP	ESTP	Green	Red: 0.21 Blue: 0.32 Yellow: 0.00 Green: 0.43	0.8756

4.3. Experimental Summary and Optimization

This experiment aims to build a complete path mapping from personal music preferences to personal personality trait predictions, and realize innovative exploration through multi-module collaboration. During the experiment, we built a topic word extraction and sentiment extraction module based on LDA, which effectively extracted topic words from the lyrics and compared them with the sentiment topic word list, realizing the preliminary correspondence between lyrics and melody and personal personality traits. At the same time, we introduced an embedded sentiment module based on the BERT model, and used its bidirectional characteristics to more accurately grasp the influence of different positions and different singing methods of lyrics on sentiment analysis, and deeply understand the emotional connotation of lyrics.

On this basis, a personal listening scene consideration module based on collaborative filtering algorithm is constructed. Combined with the CAPS model, scene semantic embedding and dynamic weight mechanism are introduced to solve the shortcomings of traditional collaborative filtering algorithm in cross scene recommendation, making the prediction more in line with the actual listening scene. Finally, based on the analysis and prediction module of random forest and decision tree, using song features, scene variables, user interaction data, etc. as inputs, a hierarchical decision model is constructed to achieve accurate prediction of multidimensional personality traits such as MBTI personality type and FPA personality color of users.

The experimental results show that the model has good prediction performance and generalization ability. For example, when only the lyrics of the most recently played songs and the repeated lyrics are input, the prediction and analysis of the experimenter's personality can still be basically achieved. In addition, the model's prediction results were verified on the playlists

of three students who had not undergone complex preprocessing. The model's prediction results were highly consistent with the actual personality type, showing certain application potential.

However, the overall experiment still has certain drawbacks. The model training data set is small and limited by hardware facilities, which cannot achieve the participation and training of a large amount of data. At the same time, the analysis and prediction results of Experiment 9 in the output verification stage performed poorly, lacking sufficient reason support and technical explanation, and the interpretability was poor.

5. SUMMARY AND OUTLOOK

5.1. Summary of Research Results

This study constructed a Music Preference Personality Trait Dynamic Mapping Model (MPDM) and explored the correlation mechanism between music preference and personality traits by systematically integrating a multimodal feature analysis framework. The main innovative contributions are reflected in the following three aspects:

(1) Innovative Integration of Theoretical Framework

For the first time, the cognitive dimension of MBTI (N-S information processing approach), the motivational color model of FPA, and the situational dynamics theory of CAPS were integrated into a unified analytical framework. This three-dimensional perspective of "cognition motivation context" overcomes the limitations of the traditional Big Five model in explaining cognitive style differences and behavioral dynamics, providing a new explanatory path for music psychology.

(2) Lightweight Interpretable Model Design

The dictionary-based lyrics labeling and scene-weighted behavior vector are used to optimize the computational efficiency while ensuring the interpretability of the model. This solution avoids the black box defects of complex deep learning models and provides a feasible technical path for practical applications.

5.2. Experimental Limitations

5.2.1. Data Coverage Limitations

Due to the constraints of research resources, the experimental data set is insufficient in terms of music genre coverage and user sample diversity. In particular, the sample representativeness of niche music types (such as local opera, experimental electronic) and special populations (such as clinical psychiatric patients) needs to be strengthened, which may affect the generalization ability of the model.

5.2.2. Insufficient integrity of the verification system

Limited by the research cycle, no cross-cultural comparison group (such as Chinese and Western user controls) and long-term tracking cohort (such as quarterly retests) were established, making it difficult to fully evaluate the time stability and cultural transfer ability of the model.

5.3. Future Research Directions

Based on the results and limitations of this study, follow-up work can be carried out in the following directions:

Theoretical exploration and research. This study's understanding of the complex relationship between music and personality is just the tip of the iceberg. Future research should further explore the potential psychological mechanisms between music preferences and personality traits, and study how to promote individual personality development and improvement through music intervention. In addition, it is also possible to combine multidisciplinary knowledge such as neuroscience to study the neural encoding mechanism of music in the brain and its relationship with personality traits. From a theoretical perspective, further improve the model construction of the relationship between music and personality, clarify the interaction path and influence mechanism between various variables, and provide a more solid theoretical basis for subsequent research and application.

Data augmentation and model optimization. At the data level, expand the size and diversity of the dataset to cover music preference data from different cultural backgrounds, age groups, music styles, etc., in order to improve the universality of the model. By applying advanced data augmentation techniques such as music style conversion and lyric rewriting, more high-quality training data can be generated to enhance the model's generalization and adaptability in different scenarios. At the model level, explore new deep learning architectures, such as hybrid models with stronger reasoning and application capabilities like Transformer, optimize the model's feature extraction and emotion capture capabilities, and further improve the accuracy of predicting music preferences and personality traits.

Multimodal fusion and interactive analysis. Conduct multimodal data fusion research to integrate and analyze the acoustic characteristics of music, lyrics text characteristics, and multiple modal data such as users' listening behavior, physiological reactions, and facial expressions. Although there are related studies and analyses, none of them have developed a model architecture that can process and integrate multimodal data, making it difficult to fully explore the association and complementary information between different modal data.

CONFLICT STATEMENT

The authors declare no conflict of interest.

REFERENCES

Alluri, V., Toiviainen, P., Jääskeläinen, I. P., Glerean, E., Sams, M., & Brattico, E. (2012). Large-scale brain networks emerge from dynamic processing of musical timbre, ke y and rhythm. *NeuroImage*, *59*(4), 3677 ~ 3689. https://doi.org/10.1016/j.neuroimage. 2011.11.019

Anonymous. (2014). Music Information Retrieval: Recent Developments and Applications. *FOUNDATIONS AND TRENDS IN INFORMATION RETRIEVAL*, *8*(2 ~ 3), 128-+. htt ps://doi.org/10.1561/1500000042

Bhattacharya, A., Bolch, T., Mukherjee, K., King, O., Menounos, B., Kapitsa, V., Neckel, N., Yang, W., & Yao, T. (2021). Glacier elevation changes data in the High Mount ain Asia derived from multitemporal digital elevation models since the 1960s [Dat aset]. In *PANGAEA*. https://doi.org/10.1594/PANGAEA.933924

Blood, A. J., & Zatorre, R. J. (2001). Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion. *Proceedings of th e National Academy of Sciences of the United States of America*, *98*(20), 11818 ~ 11 823. https://doi.org/10.1073/pnas.191355898

Cohen, L., Malloy, C., & Pomorski, L. (2012). Decoding Inside Information. *The Journal of Finance*, *67*(3), 1009 ~ 1043. https://doi.org/10.1111/j.1540-6261.2012.01740.x

Fenghua, L., & Qianzhong, S. (2016). Research on the correlation between college stude nts' music appreciation preferences and the personality characteristics of the Big Five. *Journal of Shangrao Normal University*, *36*(5), 100 ~ 106.

Furnham, A. (2022). The Big Five Facets and the MBTI: The Relationship between the 30 NEO-PI(R) Facets and the Four Myers-Briggs Type Indicator (MBTI) Scores. *Ps ychology*, *13*(10), 条 10. https://doi.org/10.4236/psych.2022.1310095

Greenberg, D. M., Baron-Cohen, S., Stillwell, D. J., Kosinski, M., & Rentfrow, P. J. (201 5). Musical Preferences are Linked to Cognitive Styles. *PLoS ONE*, *10*(7), e0131151. https://doi.org/10.1371/journal.pone.0131151

Greenberg, L. S. (2019). Theory of functioning in emotion-focused therapy. In *Clinical ha ndbook of emotion-focused therapy* (p. 37 ~ 59). American Psychological Association. https://doi.org/10.1037/0000112-002

Hartman, T., & Yixi, W. (2001). Color Code: The Personality of the Four Colors. *China's Supply and Marketing Cooperative Economy*, *12*. https://kns.cnki.net/KCMS/detail/de tail.aspx?dbcode=CJFQ&dbname=CJFD2001&filename=ZGGH200112037

jitwxs. (2025). *Jitwxs/163MusicLyrics* [C#]. https://github.com/jitwxs/163MusicLyrics (Origin al work published 2017)

Jung, C. G. (1923). *Psychological types*. Harcourt, Brace.

Martínez, V., Jiménez-Molina, Á., & Gerber, M. M. (2023). Social contagion, violence, an d suicide among adolescents. *Current Opinion in Psychiatry*, *36*(3), 237 ~ 242. https: //doi.org/10.1097/YCO.0000000000000858

Mas-Herrero, E., Dagher, A., Farrés-Franch, M., & Zatorre, R. J. (2021). Unraveling the T emporal Dynamics of Reward Signals in Music-Induced Pleasure with TMS. *The J ournal of Neuroscience: The Official Journal of the Society for Neuroscience*, *41*(17), 3889 ~ 3899. https://doi.org/10.1523/JNEUROSCI.0727-20.2020

McFee, B., Raffel, C., Liang, D., Ellis, D., McVicar, M., Battenberg, E., & Nieto, O. (201 5). *librosa: Audio and Music Signal Analysis in Python*. 18 ~ 24. https://doi.org/10.2 5080/Majora-7b98e3ed-003

Meneses, C. W., & Greenberg, L. S. (2019). *Forgiveness and letting go in emotion-focused therapy*. American Psychological Association. https://doi.org/10.1037/0000144-000

Mischel, W., & Shoda, Y. (1995). A Cognitive-Affective System-Theory of Personality—Rec onceptualizing Situations, Dispositions, Dynamics, and Invariance in Personality Str ucture. *PSYCHOLOGICAL REVIEW*, *102*(2), 246 ~ 268. https://doi.org/10.1037/0033-2 95X.102.2.246

Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure a nd personality correlates of music preferences. *Journal of Personality and Social P sychology*, *84*(6), 1236 ~ 1256. https://doi.org/10.1037/0022-3514.84.6.1236

Salimpoor, V. N., van den Bosch, I., Kovacevic, N., McIntosh, A. R., Dagher, A., & Zator re, R. J. (2013). Interactions Between the Nucleus Accumbens and Auditory Cortic

es Predict Music Reward Value. *Science*, *340*(6129), 216 ~ 219. https://doi.org/10.1126/science.1231059

Siyi, X., & Xiaonuo, L. (2024). *A review of research on MBTI personality measurement tools and personality characteristics of music students*. 103 ~ 104. https://doi.org/10.26914/c.cnkihy.2024.024595

Smith, R. E. (2006). Understanding sport behavior: A cognitive-affective processing systems approach. *JOURNAL OF APPLIED SPORT PSYCHOLOGY*, *18*(1), 1 ~ 27. https://doi.org/10.1080/10413200500471293

The history of the MBTI® assessment. (n.d.). https://eu.themyersbriggs.com/en/tools/MBTI/Myers-Briggs-history

Vella, E. J., & Mills, G. (2017). Personality, uses of music, and music preference: The influence of openness to experience and extraversion. *Psychology of Music*, *45*(3), 338 ~ 354. https://doi.org/10.1177/0305735616658957

Vuoskoski, J. K., Zickfeld, J. H., Alluri, V., Moorthigari, V., & Seibt, B. (2022). Feeling moved by music: Investigating continuous ratings and acoustic correlates. *PLOS ONE*, *17*(1), e0261151. https://doi.org/10.1371/journal.pone.0261151

Zhao, W. (2022). *Correlation between Music Preference and College Students' Personality Traits* [Master's Thesis, Central China Normal University]. https://doi.org/10.27159/d.cnki.ghzsu.2021.002069

Zweigenhaft, R. L. (2008). A do re mi encore: A closer look at the personality correlates of music preferences. *Journal of Individual Differences*, *29*(1), 45 ~ 55. https://doi.org/10.1027/1614-0001.29.1.45

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RESEARCH ARTICLE

MULTI-DIMENSIONAL INNOVATIVE REVITALIZATION OF LIN ZEXU'S CULTURAL HERITAGE EMPOWERED BY DIGITAL TECHNOLOGY

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ABSTRACT

This paper focuses on the critical issue of revitalizing Lin Zexu's cultural heritage through the empowerment of digital technologies. We combine the national cultural digitization strategy with the regional cultural protection needs of Fuzhou, analyzing the current state of Lin Zexu's cultural heritage, identifying the challenges in its revitalization process, and proposing recommendations for its revitalization. First, we review the current state of Lin Zexu's cultural heritage in Fuzhou, including its composition and spatial characteristics, the status of preservation and restoration, and the state of academic research and digital construction. Next, we analyze the challenges encountered during the revitalization of Lin Zexu's cultural heritage from six dimensions: spiritual connotation, digital technology, data resources, social participation, long-term mechanism, and talent assurance. Finally, based on the challenges identified, we draw on the 4T (Technology, Targeted, Talent, Transcendent) model and revitalization methods (industrial revitalization, tourism revitalization, social work revitalization) to propose multi-dimensional innovative revitalization suggestions, such as building a spiritual decoding system, developing emotional digital narrative products, deepening the integration of digital technologies, establishing technical adaptation strategies, creating an all-domain digital resource platform, co-building data alliances and standards, innovating public participation mechanisms, promoting integration with short video platforms, innovating investment and financing mechanisms, establishing long-term mechanisms, and accelerating the cultivation of compound talents.

1. INTRODUCTION

In recent years, the revitalization of cultural heritage has become an increasingly prominent

focus in academic, policy, and public discourse (Xiao, 2022; Zhao & Kim, 2025). Wang & Zaibon (2024) reviewed the policy framework for the protection of intangible cultural heritage in China and raised several challenges faced in the implementation of these policies. In the context of national strategies emphasizing cultural confidence and digital transformation, the revitalization of cultural heritage has become even more important. Among China's many historical figures, Lin Zexu stands out as a pivotal symbol of patriotism, moral resolve, and global vision. As the architect of the historic destruction of opium and a trailblazer in engaging with the world during the late Qing dynasty, Lin Zexu's legacy is not only a critical part of modern Chinese history but also an invaluable resource for public education, cultural identity, and international understanding.

Lin Zexu's cultural heritage in Fuzhou comprises a dense cluster of physical sites, documents, artifacts, and public memory networks. These sites, including his birthplace, former residence, and memorial hall, are highly valued by local and national authorities. Moreover, like many heritage clusters rooted in traditional museum-based narratives, they face mounting challenges amid evolving audience expectations, spatial limitations, and technological disruptions. Kwong (2008) explored Lin Zexu's Anti-Opium Campaign of 1839. Chen (2017) conducted a study of Lin Zexu's translation activities from an ideological perspective. Zhang et al. (2024) studied the spatial and temporal aggregation and corridor distribution characteristics of Fuzhou's cultural heritage.

At the same time, the rapid development of digital technologies, such as artificial intelligence (AI), virtual and augmented reality (VR/AR), big data, cloud computing, and digital twins, has opened new frontiers for cultural production, dissemination, and engagement (Liritzis et al., 2015; Liu, 2022; Portalés et al., 2018; Zhu & Liu, 2025). These technologies are not merely tools for documentation; they offer immersive, intelligent, and participatory environments that can bridge the gap between historical legacy and contemporary relevance (Georgopoulos, 2018; Giglitto et al., 2019; Poulopoulos & Wallace, 2022). In this context, the concept of heritage revitalization has shifted from static preservation to dynamic recreation, emphasizing creative transformation and innovative development grounded in emotional resonance and multidimensional value expression.

This paper takes the case of Lin Zexu's cultural heritage as a focal point to explore the multi-dimensional revitalization potential enabled by digital technology. It aims to answer several interrelated questions: How can cutting-edge digital resources be effectively integrated to transcend the limitations of traditional heritage utilization? What kinds of narrative frameworks, participatory mechanisms, and technical strategies are needed to foster deeper public engagement—particularly among youth? And how can Lin Zexu's historical significance be translated into an accessible, resonant cultural experience in the digital age?

Drawing on the 4T model (Technology, Targeted, Talent, Transcendent) and grounded in empirical analysis of Lin Zexu's heritage ecosystem in Fuzhou, this study offers a systematic examination of current challenges, analyzes the opportunities presented by digital empowerment, and proposes an integrated, multi-path framework for sustainable and innovative heritage revitalization. Its findings not only enrich the research on Lin Zexu and cultural memory but also contribute a transferable model for similar historical figures and cultural heritage projects facing the pressures and potentials of the digital era.

2. CURRENT STATUS OF LIN ZEXU'S CULTURAL HERITAGE

We summarize the current state of Lin Zexu's cultural heritage from the following perspectives.

2.1. Composition and Spatial Characteristics of the Heritage

Within the city of Fuzhou, Lin Zexu's cultural heritage is centered around the nationally protected cultural site Lin Zexu's Residence and Ancestral Hall, forming a spatial layout characterized by three interconnected points radiating outwards across the city. The core heritage sites include Lin Zexu's birthplace (Zhongshan Road, Gulou District), his former residence (Wenbei Road, Gulou District), and the Lin Zexu Memorial Hall (Macau Road, Gulou District). All three are nationally protected cultural sites and were jointly listed in 2013 as part of the seventh batch of National Key Cultural Relics Protection Units under the title "Lin Zexu's Residence and Ancestral Hall." Penića et al. (2015) explored methods of revitalizing historic buildings to protect cultural and historical heritage. Some studies discuss cultural heritage preservation and urban renewal(Bizzarro & Nijkamp, 1998; Knippschild & Zöllter, 2021).

The Lin Zexu Literature Museum in Fuzhou holds nearly 4,000 books related to him, including manuscripts, memorials to the throne, and family letters, and is gradually advancing digitization efforts. Additionally, memorial institutions in other regions, such as the Lin Zexu Memorial Park in Guangzhou, the Lin Zexu Memorial Museum in Suzhou, the Lin Zexu Memorial Hall in Pucheng (Shaanxi), and the Beijing Fuzhou Guild Hall (Lin Zexu Anti-Drug Education Base), collectively form a nationwide commemorative network.

The three major heritage sites in Fuzhou are compactly located and functionally complementary. All are within a 3-kilometer radius in Gulou District and are accessible by foot from the Sanfang Qixiang Historic and Cultural District, forming a cultural circle. During the Spring Festival in 2025, the Lin Zexu Memorial Hall saw more than 30,000 visitors in a single day, with a total of 486,000 visitors in January and February, showcasing strong cultural vitality and forming a dense cultural cluster. From a functional perspective, the birthplace emphasizes biographical commemoration, the former residence focuses on literature collection and research, and the memorial hall prioritizes public education. Together, the three form a complementary "commemoration-research-education" network.

2.2. Status of Preservation and Restoration

The protection of Lin Zexu's cultural heritage is based on archaeological research and supported by policy frameworks, resulting in a multi-level protection system. Regarding archaeology and scientific restoration, the second phase of restoration work on Lin Zexu's former residence involved systematic archaeological investigation, identifying the foundational structures of the entrance hall, first and second courtyards, and discovering key artifacts such as Song dynasty ceramic water pipes and Ming-Qing era inscribed bricks, providing scientific evidence for accurate reconstruction. By May 7, 2025, the full restoration of the residence had been completed, and the site began trial operations.

On the policy and funding front, Fuzhou has incorporated the protection of Lin Zexu's heritage into its strategy to strengthen the city's cultural influence. The 2025 government work

report specifically mandated the successful organization of the 240th anniversary of Lin Zexu's birth, and the city allocated special funds to support the restoration of his residence and upgrades to the memorial hall's exhibitions.

2.3. Academic Research and Digital Construction

Academic research and value excavation of Lin Zexu's cultural heritage follow a dual approach: textual collation and digital transformation. The Lin Zexu Memorial Hall, in cooperation with the Fuzhou Library, has commissioned professional institutions to digitize rare books, manuscripts, and hand-copied documents, establishing a specialized literature database to address the conflict between preservation and utilization of aging documents. Based on the "Seventy-Two Peaks Pavilion" in his former residence, the center collects ancient books, manuscripts, and monographs, covering topics such as the Opium War and early modern hydraulic engineering archives, and is building a national-level Lin Zexu Research Center.

The commemorative exhibition held in 2025 showcased for the first time a collection of nearly four thousand words of letters written by Lin Zexu, covering topics such as grain transportation and local governance in the Jiangnan region. Currently, this is the longest surviving letter known to have been written by Lin Zexu and is of great historical value.

In terms of digital construction, efforts currently focus on digitizing literature and multimedia presentations. High-precision digital collection methods (e.g., 3D scanning and HD photography) are used to create digital archives of artifacts, documents, images, and architecture. Multimedia technologies (touch screens, projections, animations) enhance exhibition formats and interactive experience projects to improve visitor engagement. Smart guide devices or mobile apps offer features like QR code scanning for audio explanations, exhibit information, and route planning, enhancing the convenience and personalization of visits. Emerging digital technologies such as AI-powered virtual guides are also under exploratory implementation.

3. CHALLENGES IN THE REVITALIZATION OF LIN ZEXU'S CULTURAL HERITAGE

Despite significant progress in the preservation and revitalization of Lin Zexu's cultural heritage, several systemic challenges remain.

3.1. Spatial Constraints and Uneven Value Interpretation

First, there are bottlenecks in the physical space that hosts the heritage. The core sites, including Lin Zexu's birthplace, former residence, and memorial hall, are all located in Fuzhou's old town (Gulou District) and are relatively small in scale (e.g., the residence covers only 720 square meters), with limited room for expansion. During the 2025 Spring Festival peak, daily visitor numbers exceeded 30,000, far surpassing the sites' carrying capacity and negatively affecting the visitor experience. Although these sites are within walking distance of each other, their functions are fragmented: the memorial hall focuses on exhibitions, while the residence concentrates on document preservation, with no unified narrative structure, making it difficult for visitors to form a coherent understanding.

Second, the interpretation of heritage values is imbalanced. Current revitalization efforts overly emphasize Lin Zexu's anti-opium actions and the Humen Opium Destruction narrative, while insufficient attention is given to his contributions in water governance (e.g., Yellow River

management and the dredging of Fuzhou's West Lake), family ethics (e.g., the practice of Ten Unbeneficial Habits), and diplomatic thought (e.g., the compilation of Illustrated Four Continents). This limits the contemporary relevance and transformative potential of his legacy.

3.2. Inadequate Depth of Digitalization and Virtual-Physical Integration

First, the application of digital technologies remains superficial. Current digitalization efforts are largely limited to scanning and archiving (e.g., digitizing manuscripts) and lack advanced tools such as AI-based interpretation or knowledge graph construction. Key texts like the Illustrated Four Continents have not yet been linked to broader frameworks of modern intellectual history.

Second, the integration of virtual and physical spaces is insufficient. Existing digital tools primarily rely on multimedia and projection technologies and are not effectively embedded in physical exhibitions. This has prevented the formation of a seamless feedback loop between physical participation and virtual extension, and digital experiences have yet to be incorporated into permanent exhibition routes.

Third, data resource integration remains weak. Databases for the former residence, artifact archives from the memorial hall, and catalogues from the calligraphy and painting academy remain siloed, forming data silos that constrain the development of a unified cloud-based platform for Lin Zexu's cultural heritage.

3.3. Limited Audience Engagement and Weak Cultural Industry Integration

First, educational revitalization remains homogeneous. Current practices rely heavily on unidirectional approaches such as docent-guided tours and moral education courses, lacking the co-creative and interactive formats favored by younger audiences. This results in low youth participation and a small proportion of young visitors.

Second, the integration between cultural heritage and tourism industries remains shallow. The development of cultural and creative products is slow, with no iconic outputs akin to the brand of Palace Museum Cultural Creativity. Existing souvenirs are mainly limited to books and reproductions of calligraphy or paintings, generating limited revenue. In-site experiences are relatively shallow, often restricted to exterior architecture and basic storytelling. Augmented reality (AR) and similar technologies have yet to be fully applied to recreate historical scenes or improve immersion and interactivity.

3.4. Operational Models and Talent Development Require Innovation

First, sustainable operations face pressure. The current revitalization and operation of Lin Zexu's cultural heritage rely primarily on government funding, with limited public participation. Market-driven approaches, such as creative product development and intellectual property (IP) commercialization, have yet to form a complete cycle, and a mature market-oriented operation model is still lacking.

Second, there is a shortage of skilled professionals. There is a lack of interdisciplinary talent proficient in cultural preservation, exhibition planning, digital technology, and educational communication. The volunteer system remains underdeveloped, and collaboration between

historians and digital technologists is insufficient, sometimes leading to historical inaccuracies.

4. ADVANTAGES AND LIMITATIONS OF DIGITAL TECHNOLOGY IN EMPOWERING LIN ZEXU'S CULTURAL HERITAGE REVITALIZATION

Digital technologies offer significant advantages in revitalizing Lin Zexu's cultural heritage and can effectively address many of the current challenges.

First, digital tools can overcome physical space limitations. Technologies such as virtual museums can expand display capacity, while data analytics can reveal deeper layers of heritage value, thus balancing spatial constraints with value expression. Second, technologies such as artificial intelligence and big data enable in-depth mining of heritage content. Immersive virtual experience projects allow audiences to engage with history firsthand, enhancing the integration of the virtual and physical, and deepening digital applications. Third, through the internet and mobile platforms, digital dissemination can reach broader and more diverse audiences, particularly attracting younger generations. Combined with the cultural and tourism industries, digital innovation can foster the development of creative products and online tourism routes, injecting new energy into industrial growth and improving both audience reach and economic impact. Fourth, digital management platforms can optimize operational workflows and increase efficiency. Online training programs and simulation-based internships can cultivate interdisciplinary professionals who understand both cultural heritage and digital technologies, thereby fostering innovation in operational models and professional development.

However, the application of digital technologies in the revitalization of Lin Zexu's cultural heritage still faces several key issues. These challenges must be systematically analyzed across six dimensions: digital technology, cultural interpretation, copyright management, sustainable development, talent assurance, and public participation. It helps us to identify and resolve the main bottlenecks in implementation.

4.1. Challenges in Spiritual Interpretation and Expression

First, the deconstruction of Lin Zexu's core spirit remains insufficient. Current digital displays often focus narrowly on his anti-opium achievements, while other important aspects are marginalized, such as his contributions to water governance and frontier development. These reflect his pragmatic and responsible character, yet the complex historical context of his spiritual development is often ignored. Under traditional exhibition modes, key values like patriotism (such as devotion to the nation above personal fate) and openness (such as learning from the West) are frequently reduced to slogans, lacking deeper explanation of their origins or relevance today. Especially for younger audiences, abstract value transmission fails to generate emotional resonance or behavioral identification, limiting educational effectiveness.

Second, modes of presentation remain limited. Contemporary expressions of Lin Zexu's spirit are often conceptual or symbolic, lacking vivid, emotional, and experiential formats. Most digital exhibits still rely on static images or one-way video presentations, failing to creatively interpret or deeply explore his spiritual legacy through technology. His multifaceted character, such as embodying loyalty, righteousness, courage, and wisdom, is usually flattened into a single heroic narrative, lacking a structured spiritual framework. Moreover, emotional engagement is underdeveloped. His heartfelt family letters and his struggles during exile, which carry strong

emotional weight, are rarely utilized in digital storytelling.

4.2. Shallow Application and Limited Adaptation of Digital Technologies

First, technological application in Lin Zexu's heritage projects remains superficial. Digital exhibits at the Lin Zexu Memorial Hall often follow a standardized model, such as 3D screens and basic multimedia displays, but lack tailored solutions reflecting local cultural features. In terms of educational transformation, the focus tends to be on sensory stimulation rather than internalization of values. Anti-drug education for youth still emphasizes warning about harm, neglecting Lin Zexu's forward-looking "eyes-open-to-the-world" mindset.

Second, there is insufficient adaptation between digital technologies and Lin Zexu's cultural heritage. Heritage projects require highly customized technical solutions, but commercial enterprises are reluctant to tailor products for individual projects due to high costs, reducing technological suitability. Furthermore, there is no clear framework for selecting digital technologies based on the type of heritage involved. More research is needed to match specific technologies with different forms of heritage.

4.3. Fragmented Data Resources and Lack of Unified Standards

First, data resources related to Lin Zexu's heritage are fragmented. Digital resources remain dispersed, and there is no effective mechanism for resource integration or sharing. Spatially, artifacts and documents related to Lin Zexu are housed in multiple regions, such as Fuzhou, Yili, and Humen. Although the Fuzhou Lin Zexu Literature Museum holds nearly four thousand volumes, digitization progress is slow, and mechanisms for interregional sharing are lacking.

Second, data standards are inconsistent. The collection and integration of data require unified specifications. Lin Zexu's heritage spans various categories (such as literature, architecture, artifacts) scattered across different locations, posing challenges to data acquisition. There is no consistent standard or technical interface between traditional materials like manuscripts and memorials, and modern formats like digital animations and holographic images. Differences in scanning resolution, data formats, and metadata protocols create data silos, hindering efficient resource utilization.

4.4. Limited Social Participation and Weak Communication Channels

First, public participation remains low. Although digital technology provides more opportunities for public engagement, actual enthusiasm and initiative are lacking. Public understanding of Lin Zexu's spirit is often limited to textbook knowledge, and digital outreach relies heavily on official social media, lacking interactive features. Public interest in or awareness of digital revitalization projects is weak, limiting their broader influence.

Second, communication channels and effectiveness are limited. While the internet and new media offer expansive platforms for cultural dissemination, it remains difficult for digital content about Lin Zexu's heritage to stand out and attract significant attention. Youth audiences prefer immersive and deconstructive storytelling, but current digital offerings fail to incorporate gamification or social interaction, leaving innovative formats largely unexplored. Dissemination channels are insufficiently diversified, and communication results fall short of expectations, limiting the advantages digital technology could bring to cultural transmission.

4.5. Funding Limitations and Incomplete Long-term Mechanisms

First, full-cycle funding costs are high. Digital transformation, from data collection and processing to platform development, operation, and maintenance, requires significant investment. Large-scale heritage revitalization projects, such as immersive experience centers or complex digital applications, demand especially high funding. Most projects still rely on government support, while private investment is limited due to long return cycles. A coordinated "government-market-society" funding model is yet to be formed.

Second, long-term mechanisms are underdeveloped. Current digital projects lack a sustainable return path. Although some digital collectible initiatives have been piloted, blockchain authentication and revenue distribution mechanisms are still immature, preventing a closed loop where digital asset income supports physical heritage conservation. Moreover, Fuzhou's Lin Zexu heritage projects are not yet capable of industrial transformation. Cultural-tourism integration remains at basic levels such as AR guides, lacking an IP-driven industry chain. Cultural resources have yet to be translated into economic value, and creative derivative products are insufficient to reinvest in heritage protection.

4.6. Difficulty in Cultivating and Attracting Interdisciplinary Talent

First, there is a shortage of interdisciplinary professionals. Revitalizing cultural heritage through digital technology requires talent with expertise in both heritage conservation and digital tools. Currently, such professionals are scarce, hindering project implementation. For instance, designing digital displays for Lin Zexu's heritage requires individuals who understand his historical and cultural background and can use technologies such as VR and AR for creative design. However, it is often difficult for one person to possess all of these skills.

Second, talent cultivation and recruitment are difficult. Developing interdisciplinary talent takes significant time, effort, and resources. Related academic programs and educational systems are not yet fully developed. Fuzhou also faces stiff competition from larger cities in attracting high-end digital and cultural heritage experts, making talent recruitment even more challenging.

5. SUGGESTIONS FOR DIGITALLY EMPOWERED REVITALIZATION OF LIN ZEXU'S CULTURAL HERITAGE

While digital technology presents powerful tools for revitalizing Lin Zexu's cultural heritage, mere static or rigid forms of preservation are inadequate. Instead, strategies such as industrial revitalization, tourism revitalization, and social work-based revitalization offer integrated approaches that balance economic and social benefits. Drawing on the China Cultural Heritage Digitization Research Report, particularly its 4T innovation model (Technology, Targeted, Talent, Transcendent), and successful practices in other regions, this paper proposes the following strategies to guide the innovative and multidimensional revitalization of Lin Zexu's cultural heritage through digital technology.

5.1. Build a Spiritual Decoding System and Develop Emotionally Engaging Digital Narratives

First, establish a four-dimensional spiritual coordinate framework. Use AI-based deep semantic analysis to process Lin Zexu's memorials, family letters, and poetry, identifying

emotional patterns and reconstructing historical contexts to extract core values: loyalty, righteousness, courage, and wisdom. Employ natural language processing to create a structured, annotated database that categorizes these spiritual traits. Develop a dynamic visualization platform (the Lin Zexu Spiritual Atla) which transforms abstract values into interactive digital symbols. Flagship initiatives such as a Digital Family Code project could include animated shorts or AR-powered community apps that allow residents to view family stories by scanning neighborhood bulletin boards, embedding cultural values in daily life.

Second, develop emotionally rich digital storytelling products. Drawing inspiration from Dongguan "Lin Zexu 1839" special-effects performance, use narrative strategies from the perspective of ordinary people (such as fishermen, craftsmen) to reflect Lin Zexu's values and increase emotional connection. Create an immersive theater experience titled A Day in the Life of Lin Zexu, allowing visitors to inhabit his perspective, face moral dilemmas, and feel his internal struggles. Leverage AR technology to build interactive installations that immerse users in Lin Zexu's patriotism and anti-opium efforts. By blending historical reenactment, interactive games, and educational content, the heritage site becomes more attractive. In schools, launch a "Lin Zexu Spirit Digital Ethics Kit" that uses VR to recreate key historical scenes and reinforce affective learning.

5.2. Deepen Digital Integration and Develop Tiered Technology Adaptation Strategies

First, promote the tailored integration of digital technologies with Lin Zexu's heritage. Use generative AI restoration tools to recreate original manuscripts, paired with stroke evolution simulation techniques to reflect his thought processes. For water governance heritage, build a Hydraulic Wisdom Knowledge Graph to offer insights into modern flood prevention efforts. In education, design branching storyline simulations where students role-play in decision-making during the 1839 opium suppression, experiencing the historical complexities involved. Drawing from VR anti-drug education platforms, add immersive modules based on Lin Zexu's Illustrated Treatise on the Maritime Kingdoms to highlight his open-mindedness.

Second, create a tiered strategy for technological adaptation. Tailor digital applications to the type of heritage involved. For commemorative documents such as letters, interactive digital family letters can be created using artificial intelligence text analysis and stroke reconstruction technology, and support can be provided through educational applications. For architectural heritage like his residence and ancestral hall, refer to the Sanfang Qixiang digital restoration model, which could employ laser scanning and BIM modeling with AR scene overlays. Inspired by Nanjing Yangtze River Bridge's metaverse project, use digital twin modeling and real-time 3D rendering to build a cloud-based Lin Zexu Heritage Space for immersive virtual experiences.

5.3. Build a Comprehensive Digital Resource Platform and Co-develop Data Alliances and Standards

First, construct a comprehensive digital resource platform. Under the coordination of Fujian's Department of Culture and Tourism, partner with institutions in Yili, Guangdong (Humen), and other regions to build a Lin Zexu Digital Memory Bank. This would integrate nearly 4,000 volumes from the Fuzhou Literature Museum, scanned artifacts from Yili, and video resources from Dongguan's anti-opium reenactments. The platform should serve dual purposes:

academic research and industrial application. On the academic side, open AI research interfaces for studies such as semantic analysis of Lin Zexu's spirit. On the industrial side, offer standardized data packages to lower development costs. Use blockchain, in cooperation with institutions like the Fujian Strait Blockchain Research Institute, to implement inter-institutional copyright accounting and incentivize data sharing.

Second, establish data alliances and common standards. Following the model of the Dunhuang cultural heritage digitization system, work with the Fujian Museum and provincial archives to create a Lin Zexu Cultural Heritage Data Hub and draft unified protocols such as the Lin Zexu Heritage Digital Collection Standards. These should regulate technical parameters such as 2D scan resolution, 3D modeling error margins, metadata structures, and format specifications. Provide distributed collection kits, including portable scanning devices and standardized data-entry templates, empowering local preservation teams for collaborative data collection.

5.4. Innovate Public Participation Mechanisms and Integrate with Short-Form Video Platforms

First, design diversified public participation mechanisms. Launch a platform to recruit youth teams for developing Lin Zexu-themed mini-games, with competitions to select outstanding entries. Promote Fuzhou's scenario-based cultural tourism model by deploying AR apps in landmarks like Sanfang Qixiang, allowing visitors to activate historical event re-creations through real-world scans. Create youth-targeted content such as history vlogs that explain Lin's anti-opium efforts, or produce graphic novels and animations that link his civil service journey to modern educational values. Promote home-school-community collaboration through animated adaptations of Ten Unbeneficial Habits in school moral education programs.

Second, encourage deep integration with short-form video platforms. Leverage the advantages of short videos in terms of speed, reach, and interactivity to transform the way Lin Zexu's legacy is disseminated. Develop a series of high-quality, emotionally engaging short videos to convey Lin Zexu's patriotism, integrity, and global vision. Launch community-wide contests (e.g., Discover the Lin Zexu Spirit Around You) to attract broader engagement in heritage revitalization. Support collaborations between museums and top short-video creators to ensure a balance between professional authority and popular appeal.

5.5. Innovate Investment and Financing Models and Improve Long-Term Mechanisms

First, diversify funding sources and attract private investment. Establish the "Fuzhou Lin Zexu Heritage Revitalization Industry Guidance Fund" to mobilize private capital. Use government guidance, industrial investment, and project partnerships to enable diversified funding and sustainable development. Begin with lightweight pilot projects that show commercial potential, particularly in digital IP incubation. Explore interregional cultural industry cooperation to achieve financial synergy and regional cultural-economic prosperity.

Second, strengthen economic feedback loops and build an industrial ecosystem. Create a closed-loop model where digital copyrights support physical heritage protection. Digitally restored manuscript animations can be verified on blockchain and released as limited-edition collectibles, with smart contracts directing profits into artifact conservation funds. Develop an integrated cultural-tourism industry chain; for instance, following Dongguan's Humen special-

effects show, design a Fuzhou version (such as "Lin Zexu and the Min River") linking heritage sites into an educational tourism route. Set up the "Lin Zexu Digital Conservation Fund" to support R&D and IP incubation, prioritizing projects with both social and economic benefits. Promote a virtuous cycle of cultural heritage protection and industrial development through a tripartite model combining culture, technology, and finance.

5.6. Accelerate Interdisciplinary Talent Development and Establish Flexible Recruitment Mechanisms

First, strengthen local talent cultivation. Foster partnerships with universities and training institutions to launch courses and certification programs in cultural heritage preservation and digitization. Encourage local institutions to collaborate with tech firms on dual-skill training programs such as "Artifacts + AI" or "Architecture + VR". These efforts will help build a workforce equipped for industry needs and sustainable development. Introduce regionally coordinated digital heritage courses to ensure balanced growth and human capital for future projects.

Second, innovate flexible recruitment mechanisms. Establish a Lin Zexu heritage digitization workstation to host short-term residencies for experts from leading institutions like the Dunhuang Academy and the Palace Museum. Recruit remote collaborators, including historians and digital specialists, to contribute to revitalization efforts. Remove geographical and urban-rural barriers in talent mobility, attracting top domestic and international professionals to participate in Lin Zexu's heritage projects. Create a shared expert resource platform to promote interregional and cross-sector collaboration.

6. CONCLUSION

The revitalization of Lin Zexu's cultural heritage in the digital era represents both a profound historical responsibility and an urgent contemporary challenge. As a symbol of patriotism, integrity, and global vision, Lin Zexu's legacy holds immense value for national cultural identity, civic education, and international dialogue. However, limitations in spatial capacity, narrative depth, technological integration, audience engagement, and sustainable operations continue to constrain the full realization of that value.

Digital technology offers powerful tools to address these challenges. Through immersive storytelling, intelligent interpretation, cross-platform dissemination, and data-driven management, digital solutions enable the creative transformation and innovative development of cultural heritage. By bridging time and space, technology not only preserves and disseminates historical memory but also facilitates emotional resonance and value co-creation among contemporary audiences.

This study has proposed a multi-dimensional revitalization framework grounded in the 4T model (Technology, Targeted, Talent, Transcendent), emphasizing the need for spiritual decoding systems, adaptive technical strategies, comprehensive data platforms, participatory mechanisms, sustainable funding models, and cross-disciplinary talent cultivation. These strategies aim to transform Lin Zexu's cultural heritage into a dynamic, accessible, and meaningful cultural resource for the digital age.

Ultimately, the case of Lin Zexu offers broader insights for the digital revitalization of cultural heritage associated with historical figures across China and beyond. By aligning cultural preservation with technological innovation, cities and institutions can not only safeguard the legacy of the past but also inspire the values and imaginations of the future.

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CONFLICT STATEMENT

The authors declare no conflict of interest.

COOPERATION STATEMENT

All authors contributed equally to this work and approved the final manuscript.

REFERENCE

Bizzarro, F., & Nijkamp, P. (1998). Cultural heritage and urban revitalization: A meta-analytic approach to urban sustainability. In *Evaluation in Planning: Facing the Challenge of Complexity* (pp. 193–211). Springer Netherlands.

Chen, S. (2017). Translation and ideology: A study of Lin Zexu's translation activities. *M eta*, *62*(2), 313–332.

Georgopoulos, A. (2018). Contemporary digital technologies at the service of cultural heri tage. In *Heritage Preservation: A Computational Approach* (pp. 1–20). Springer Sing apore.

Giglitto, D., Ciolfi, L., Claisse, C., & Lockley, E. (2019). *Bridging cultural heritage and co mmunities through digital technologies: Understanding perspectives and challenges*. 8 1–91.

Knippschild, R., & Zöllter, C. (2021). Urban regeneration between cultural heritage prese rvation and revitalization: Experiences with a decision support tool in eastern Ger many. *Land*, *10*(6), 547–547.

Kwong, L. S. (2008). The Chinese Myth of Universal Kingship and Commissioner Lin Z exu's Anti-Opium Campaign of 1839. *The English Historical Review*, *123*(505), 1470 –1503.

Liritzis, I., Al-Otaibi, F. M., & Volonakis, P. (2015). Digital technologies and trends in cu ltural heritage. *Mediterranean Archaeology and Archaeometry*, *15*(3), 313–313.

Liu, Y. (2022). Application of digital technology in intangible cultural heritage protection. *Mobile Information Systems*, *2022*(1), 7471121–7471121.

Penića, M., Svetlana, G., & Murgul, V. (2015). Revitalization of historic buildings as an a pproach to preserve cultural and historical heritage. *Procedia Engineering*, *117*, 883 –890.

Portalés, C., Rodrigues, J. M., Rodrigues Gonçalves, A., Alba, E., & Sebastián, J. (2018). Digital cultural heritage. *Multimodal Technologies and Interaction*, *2*(3), 58–58.

Poulopoulos, V., & Wallace, M. (2022). Digital technologies and the role of data in cultu

ral heritage: The past, the present, and the future. *Big Data and Cognitive Computing*, *6*(3), 73–73.

Wang, J., & Zaibon, S. B. (2024). Safeguarding intangible cultural heritage in China: Policy evolution and challenges. *Journal of Creative Industry and Sustainable Culture*, *3*, 136–150.

Xiao, L. (2022). Intangible cultural heritage reproduction and revitalization: Value feedback, practice, and exploration based on the IPA model. *Computational Intelligence and Neuroscience*, *2022*(1), 8411999–8411999.

Zhang, J., Jiang, L., Wang, X., Chen, Z., & Xu, S. (2024). A study on the spatiotemporal aggregation and corridor distribution characteristics of cultural heritage: The case of Fuzhou, China. *Buildings*, *14*(1), 121–121.

Zhao, L., & Kim, E. (2025). Urban Revitalization of World Heritage Cities Through Cultural and Creative Industries: A Case Study of Pingyao Under the Cities, Culture, and Creativity Framework. *Sustainability*, *17*(10), 4292–4292.

Zhu, Q., & Liu, X. (2025). The application of artificial intelligence in the revitalization of intangible cultural heritage helps the cultural industry succeed. *Journal of Computational Methods in Sciences and Engineering*, *14727978251337999*.

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REVIEW ARTICLE

RESEARCH ON THE PATHS OF RURAL WOMEN'S LABOR FORCE PARTICIPATION TO FACILITATE RURAL REVITALIZATION IN THE CONTEXT OF NEW QUALITY PRODUCTIVE FORCES

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ABSTRACT

In the context of new productivity, the participation of rural women's labor force plays a positive role in promoting rural revitalization. This study aims to explore the path of rural women's labor force participation in rural revitalization. This study found that under the background of new quality productivity, there are difficulties in rural women's labor force participation in rural revitalization, such as technological gap, lack of digital skills, traditional gender division of labor restrictions, policy support, and inadequate service system. New quality productivity can drive rural development through innovation, empower agricultural transformation and upgrading, and promote industrial integration. It can provide more skills training opportunities for rural women, encourage their participation in the labor force, and ultimately drive the process of rural revitalization.

1. INTRODUCTION

In the report of the 19th National Congress of the Communist Party of China, General Secretary Xi Jinping clearly proposed the implementation of the "Rural Revitalization Strategy", aiming to stimulate the inherent vitality and development potential of rural areas. In the "Opinions on Implementing the Rural Revitalization Strategy" subsequently issued by the Central Committee of the Communist Party of China and the State Council, the main position of farmers in the process of rural revitalization was emphasized, and it called for mobilizing the enthusiasm, initiative, and creativity of millions of farmers to jointly promote the comprehensive revitalization of rural areas (Z. Xu et al., 2023). Since the reform and opening up, a large number of rural

laborers have continuously migrated to cities, but due to various practical considerations, most families have not been able to achieve full family migration. In this context, traditional gender roles have led young men to tend to work outside, while women choose to stay in rural areas to balance family and agricultural production, becoming an important part of rural labor force. According to the data of the seventh national census, the employment rate of rural male labor force is 79.4%, compared with 58.8% of female labor force, highlighting the limitations of rural women's participation in the labor market (Zhang & Li, 2024). Faced with issues such as aging rural population and labor force hollowing out, left behind women in rural areas are particularly important in promoting agricultural and rural modernization. Rural female labor force is not only a beneficiary group of rural revitalization, but also a promoter and builder of rural revitalization. How to promote rural women's participation in employment and help rural revitalization has become a new challenge (Pan et al., 2021).

General Secretary Xi Jinping first proposed the concept of "new quality productivity" during his inspection tour in Northeast China on September 7, 2023, emphasizing that under the guidance of scientific and technological progress, digital transformation, and green development strategies, the formation of new forms of productivity with innovative, digital, and ecological characteristics through emerging technologies, innovative thinking, and optimized resource allocation is the core driving force for achieving high-quality development (Liu, 2024). The development of new quality productivity has opened up new employment areas for rural women, such as e-commerce, remote work, intelligent agriculture, etc., further promoting the transformation and upgrading of rural economic structure (Yang, 2024). In order to accelerate the formation of new quality productivity, the government is actively cultivating emerging industries such as new energy, new materials, advanced manufacturing, and electronic information, and attaches importance to the cultivation of future industries, providing unprecedented opportunities for rural female labor force participation (Bi & Ma, 2024). On this basis, the new forms of productivity that are digital, intelligent, and ecological are gradually becoming the key strategic pivot for rural revitalization. The integration of technology and education, as well as the integration of industry and education, has promoted the diversified cultivation of high-end skilled talents (Liu, 2024). The new quality of productivity has improved production efficiency, optimized resource allocation, provided higher value-added job opportunities for rural women, effectively promoted their labor participation and optimized employment structure, and thus assisted in the revitalization and comprehensive development of rural industries (Wang & Liu, 2024).

In the context of new quality productivity, the role and function of rural female labor force in the rural revitalization strategy are increasingly prominent. The rise of new quality productivity has provided new paths and impetus for rural women to participate in rural revitalization, but its theoretical logic and practical path still need to be explored in depth, especially in how to effectively utilize the characteristics of new quality productivity, such as high technology, high efficiency, and high quality, to further improve rural women's labor participation, promote industrial transformation, and promote comprehensive progress of rural economy and society. This is an urgent research topic at present (F. Wang et al., 2024). Therefore, this article aims to provide theoretical support and practical guidance for the implementation of the rural revitalization strategy by exploring the theoretical logic, practical difficulties, and practical paths of how new quality productivity can enhance the employment of rural female labor force.

2. THE CURRENT SITUATION OF RURAL WOMEN'S LABOR FORCE PARTICIPATION IN SUPPORTING RURAL REVITALIZATION

2.1. The Popularization of Digital Technology

With the rapid application and development of new technologies such as the Internet, big data and artificial intelligence, a vast world has been opened up for rural women's employment (Ma & Ning, 2017). Women's employment has become a new engine for promoting the integrated development of digital economy and rural revitalization (Yang & He, 2023). The wide coverage of the Internet has enabled rural women to directly connect with consumers through e-commerce platforms, social media and other digital channels (Dimaggio & Bonikowski, 2008), quickly connect fresh agricultural products in the field to the market, shorten the supply chain, and significantly improve the market attractiveness and commercial value of products. Especially with the rise of intelligent agriculture, such as IoT monitoring and big data guidance for planting, it has brought employment opportunities for rural women through technological innovation (Yin & Chou, 2024). New agriculture methods such as intelligent agricultural machinery operation and remote crop health management effectively improve the precision and efficiency of agricultural production while reducing the burden of physical labor, solving the problem of hollowing out of male labor in rural areas, and achieving a knowledge-based and relaxed transformation of agricultural labor. In addition, the application of digital technology has broken geographical boundaries, providing rural women with flexible options for remote work, covering various positions such as data processing, customer service, content creation, etc., enabling rural women to flexibly find employment while taking care of their families, expanding income channels, and enhancing the self-reliance of the family economy (Vazquez & Winkler, 2017). The rise of emerging business models such as e-commerce platforms and live streaming sales has broken geographical limitations, enabling the promotion and sale of agricultural products and handicrafts in rural areas, providing a platform for rural women to showcase their talents, expanding their sources of income, and promoting the branding and market expansion of local specialty products. This has greatly promoted the branding process and market competitiveness of products, injecting strong endogenous power into the rural revitalization strategy.

2.2. Vocational skill enhancement

The guiding opinions of the Action Plan for Enhancing the Digital Literacy and Skills of the Whole People issued by the Central Cybersecurity and Informatization Commission point out the need to strengthen the training of farmers' digital literacy and skills (Yin & Chou, 2024). In recent years, the government and non-governmental organizations have jointly implemented diversified training programs, emphasizing the cultivation of rural women's employment and entrepreneurial abilities in the digital economy era. Creating a digital employment center and offering digital economy training courses to help rural women improve their digital skills, management knowledge, and innovative thinking abilities has successfully incubated a group of rural female entrepreneurs. Rural women have driven the vigorous development of local characteristic industries with their digital skills, such as emerging fields such as rural e-commerce and rural tourism, which have shown great vitality (D. Li, 2024). Governments at all levels and social organizations have actively responded by launching skill training programs with wide coverage and strong targeting, covering multiple fields such as e-commerce operations, modern

agricultural technology, and handicraft innovation, effectively filling the gap in skills required by rural women in the job market and enhancing their adaptability to market demand (Zhang et al., 2019). Vocational skills training adopts a flexible teaching mode that integrates online and offline, ensuring the convenience and efficiency of learning, expanding the audience scope of training, and ensuring that participants can keep up with the pace of the times and master the latest employment and entrepreneurship skills. Especially in cutting-edge fields such as e-commerce, modern agricultural technology, and handicraft production, training investment has significantly increased, imparting practical skills, stimulating the inherent potential of rural women, helping them make breakthroughs in the workplace and entrepreneurship, achieving growth in the family economy, and also contributing to the comprehensive revitalization of the rural economy, providing solid talent support for the in-depth implementation of the rural revitalization strategy.

2.3. Policy Support and Social Attention

In recent years, the national and local governments have significantly increased their attention to rural women's employment issues, laying a solid foundation for their employment and entrepreneurship through a series of policy measures (Yang, 2023). Specific strategies include formulating special policies, providing financial subsidies, establishing a women's exclusive entrepreneurship fund, etc., creating an external environment conducive to the development of rural women, and paving the way for their career paths. At the same time, the widespread awareness of gender equality in society has opened up new spaces for rural women to expand their roles in rural governance structures, enhancing their voice and participation. The joint action of the national and local governments has introduced a series of incentive policies, such as establishing specialized women's entrepreneurship funds, providing small credit services, implementing tax reduction policies, etc., effectively reducing the threshold for rural women's entrepreneurship and employment, expanding the employment channels for rural women, and injecting fresh female power into the implementation of the rural revitalization strategy. In addition, at the policy level, emphasis is placed on strengthening the social security system for rural women, expanding the coverage of pension insurance and medical insurance, and adding protection measures for key life stages such as childbirth and unemployment, significantly enhancing the resilience of rural women to life changes (Xu, 2023). The continuous increase in social attention, accompanied by the deep-rooted concept of gender equality, has jointly created a more just and inclusive employment environment, inspiring rural women to confidently enter various fields of social and economic activities. The active involvement of media and social platforms, through the widespread dissemination of successful cases of rural women's employment and entrepreneurship, has set an example and greatly inspired the participation enthusiasm of more rural women, gathering strong social positive energy and public opinion support for the promotion of rural revitalization strategy.

3. RURAL WOMEN'S EMPLOYMENT ASSISTANCE FOR RURAL REVITALIZATION FACES PRACTICAL DIFFICULTIES

3.1. Technological Divide and Lack of Digital Skills

Although the wave of new quality productivity is driving the transformation and upgrading of economic structure with its digital and intelligent characteristics, the inherent digital divide in rural areas has become the main obstacle to rural women's participation in this process (X. Liu et

al., 2024). Restricted by the low educational background and limited training resources, many rural women are challenged in acquiring the necessary digital skills and Internet operation ability, which hinders rural women from seeking employment and entrepreneurship opportunities in emerging economic fields such as digital agriculture and e-commerce, and can not effectively stimulate rural women's employment potential in the new economic form. The imperfection of rural digital infrastructure further aggravates this situation. Limited Internet access and obstruction of information circulation make it difficult for rural women to capture technological progress and market dynamics in a timely manner, and to effectively use digital platforms to achieve career development (Peng et al., 2024). Therefore, rural women generally face the dilemma of digital skills shortage when facing the industrial transformation brought about by new quality productivity, which poses significant challenges for rural women to adapt to the requirements of intelligent and networked work. The key to solving this problem is to enhance the digital literacy and professional skills of rural women through systematic education and training interventions, making them competitive in the new economic environment. However, there is a mismatch between current training resources and actual needs, especially in high demand areas such as e-commerce operations, data analysis, and intelligent technology applications. The quantity and quality of its training courses have not fully met the actual needs of rural women to enhance their digital skills. The mismatch between training supply and demand is another obstacle for rural women to integrate into the new industrial ecosystem (Shang & Zhang, 2022).To solve the employment challenges faced by rural women in the era of new quality productivity, it is urgent to increase cooperation between the public and private sectors, invest in high-quality digital skills training programs, ensure that the training content closely meets actual needs, effectively improve the digital skills level of rural women, and broaden their employment opportunities in emerging economic fields.

3.2. Traditional Gender Role Limitations

The stereotype of traditional gender roles is deeply rooted in rural society. Under this conceptual framework, rural women often bear excessive family responsibilities, including heavy household chores and children's education, which compresses their time and energy to participate in the external labor market and limits their investment and focus in emerging employment fields led by new quality productivity (Wang, 2024). At the same time, gender stereotypes frame society's expectations for women's employment, directing women's career choices towards positions labeled as "suitable for women", invisibly constructing barriers that isolate women from entering technology intensive and other emerging industries, and restricting the diversified development of rural women's careers and the release of their economic potential (Li, 2024). Even if rural women achieve significant success in emerging industries, their efforts and achievements are often underestimated or overlooked due to gender bias, which significantly undermines their career advancement and confidence, and forms a negative feedback loop that is not conducive to the long-term development and self realization of rural women's careers. Although the new quality of productivity provides rural women with vast employment opportunities, the gender division of labor concept rooted in the social structure remains a major obstacle for rural women to cross traditional industry boundaries and explore higher paying and high-end career paths. In addition, the prevalent concept of "men leading the outside world and women leading the inside world" in rural communities further reinforces the fixation of gender

roles. When rural women attempt to enter non-traditional agricultural fields, they are subject to both invisible pressure from social public opinion and resistance from within their families, severely limiting their potential to play a more proactive and critical role in rural revitalization strategies (Chen, 2023). Therefore, in order to fully activate the vitality and potential of rural women in rural revitalization, it is necessary to deeply reflect on and gradually eliminate these deep-rooted gender role biases, and create a more equal, open, and inclusive social environment.

3.3. The Policy Support and Service System is Not Sound

Although the central and local governments have introduced a series of policies to support rural women's employment and entrepreneurship, there are often problems in the implementation process at the grassroots level, such as inadequate policy promotion, difficulty in implementation, and weak enforcement. Rural women face more difficulties in obtaining entrepreneurial loans, credit support, and other aspects. Financial institutions tend to be more conservative in their risk assessment of female entrepreneurs, and difficulty in financing has become a major bottleneck for entrepreneurship. When rural women are employed in industries related to new quality productivity, they often lack a sound social security system, such as work-related injury insurance and pension insurance, which increases the risk of occupational safety and future uncertainty for rural women (Wang & Ye, 2016). Although multiple policies have been introduced at the national level to encourage rural women's employment and entrepreneurship, there are still problems such as poor policy transmission, insufficient implementation, and inadequate supporting service facilities at the grassroots level. Rural women face many obstacles in obtaining financial support, technical training, market information, and lack necessary labor protection and social security, especially in emerging digital economy fields such as e-commerce and live streaming. Due to the lack of clear labor laws and regulations, the rights and interests of rural female workers are easily compromised, which affects their stable employment and long-term development. In addition, the development differences between the eastern and central western regions, as well as between urban and rural areas, have led to a concentration of high-quality resources and development opportunities in economically developed areas, while employment opportunities for rural women in underdeveloped areas are relatively limited, exacerbating the uneven development between regions.

4. THEORETICAL LOGIC OF RURAL WOMEN'S EMPLOYMENT SUPPORTING RURAL REVITALIZATION

4.1. Innovation Drives Rural Development

The core characteristic of new quality productivity lies in its innovation driven nature. This model relies on the catalysis of emerging technologies and the intelligent integration of production factors, opening up a diversified employment trajectory for rural female labor force towards non-traditional agricultural fields, such as emerging industries such as e-commerce and smart agriculture, significantly enhancing the attractiveness and competitiveness of rural female labor force in the job market (Liu et al., 2024). The promotion of this model requires the parallel improvement of labor quality, which promotes rural women to upgrade their skills and expand their career horizons through in-depth participation in professional training related to digital technology, e-commerce, and green agriculture. It also further consolidates the advantageous position of rural women in the labor market competition, opens the door to higher quality

employment for rural women, and becomes a key force in promoting the optimization of rural labor structure and overall quality improvement, demonstrating the profound connotation of new quality productivity promoting inclusive economic and social growth under innovation driven. The rise of new quality productivity is based on the continuous evolution of the innovation system, especially through the accelerated application of emerging technologies and the intelligent allocation of production factors, which has opened up broad career paths for rural female labor across traditional agricultural boundaries (Yao & Zhang, 2024). The practical cases of e-commerce platforms and smart agricultural technology not only break through the traditional framework of agricultural employment, but also significantly enhance the participation and market adaptability of female farmers in modern economic activities through technological empowerment.

4.2. Digital Technology Empowers Agricultural Transformation and Upgrading

The significant feature of new quality productivity lies in its profound digital imprint, which is reflected through the deep integration of cutting-edge technologies such as cloud computing, big data, and the Internet of Things in the agricultural field. The new quality productivity can fundamentally reshape the agricultural production mode, leading the transformation of agriculture from traditional small-scale and inefficient production to modern forms of scale and intelligence (Liu et al., 2024). In this process, the roles and functions of rural women have achieved a leap from single field labor to high value-added fields involving modern agricultural production, management, and services. This transformation significantly enhances the personal economic benefits of rural women and injects strong impetus into the modernization of agriculture and the improvement of production efficiency. Specifically, the booming development of smart agriculture and e-commerce platforms has opened up unprecedented employment opportunities for rural women. Enabling them to engage in work including online marketing of agricultural products and remote intelligent crop monitoring in the local environment through emerging platforms, effectively reducing their dependence on traditional physical labor, while significantly improving work efficiency and household economic income. In addition, the integrated application of digital and intelligent technologies has broken the limitations of regional employment and constructed a flexible employment model based on remote work and e-commerce, greatly expanding the employment field and career development potential of rural women.

4.3. Industrial Upgrading and Integration

The essence of new quality productivity lies in the leading role of technological innovation, especially through the deep integration of cutting-edge technologies such as big data, artificial intelligence, and the Internet of Things in traditional industries, which effectively drives the transformation and upgrading of traditional agriculture to smart agriculture and digital agriculture (Zhang & Tang, 2024). This transformation has greatly improved agricultural production efficiency and product quality, and accelerated the cross-border integration of agriculture with the secondary and tertiary industries. For example, the organic combination of agriculture and tourism has given rise to emerging industries such as leisure agriculture and rural tourism, opening up more diversified employment and entrepreneurship paths for rural women. The deep integration strategy across industries, such as the integration of agriculture and tourism, deep processing of agricultural products, and the alliance between agriculture and e-commerce,

has broadened the growth boundary of rural economy and provided rich employment choices and entrepreneurial platforms for rural female labor force. In addition, the meticulous and patient gender traits possessed by women have significant value in promoting industrial upgrading and increasing the added value of agricultural products, thereby promoting the diversification and deep development of rural economic structure (Liu et al., 2024).

5. THE IMPLEMENTATION PATH OF RURAL WOMEN'S EMPLOYMENT SUPPORTING RURAL REVITALIZATION

5.1. Strengthen Digital Skills Training

The sustainable development of new quality productivity urgently requires the construction of a high-quality new type of farmer team, especially for rural women. The government and social organizations should increase vocational training efforts, focusing on key areas such as digital skills and management abilities, to ensure that rural women can meet the talent needs of modern agriculture and emerging industries (Li et al., 2024). Through the improvement of skills, rural women can smoothly integrate into the new economic system, become the backbone of promoting rural revitalization strategies, and demonstrate their unique value in social and economic development. With the widespread application of new technologies, agricultural production and rural economic activities are increasingly becoming digitized and intelligent, providing new paths for rural women's participation (Shahiri & Osman, 2015). Rural women can leverage digital agricultural technology to innovate traditional agricultural production models, or use tools such as e-commerce platforms to effectively expand the market space for agricultural product sales and specialty processed products. In this context, the government should actively build digital rural infrastructure, provide necessary training and technical assistance, help rural women master essential skills, and broaden their channels for employment and entrepreneurship. To fully activate the potential of rural women in the new economic era, the government and all sectors of society should strengthen the cultivation of rural women's digital skills and innovative thinking, and enhance their comprehensive ability to adapt to new quality productivity. Strengthen the construction of rural education system and vocational training programs, focusing on skill development in multiple fields such as agricultural production technology, e-commerce operation, and domestic services, in order to enhance the adaptability and competitiveness of rural women in emerging industries. Establish and improve a lifelong learning mechanism for rural women, fully utilizing flexible learning modes such as online education and remote training, to ensure that rural women can continuously keep up with new knowledge and skills, and calmly cope with the constantly changing challenges of the job market. In addition, the optimization of the education and training system should focus on cultivating digital literacy, improving practical skills in e-commerce, and popularizing sustainable agricultural technologies. By iteratively upgrading professional skills, we aim to build a bridge connecting rural women with future labor market dynamics, laying the foundation for rural women to maintain a lasting advantage in fierce career competition. This series of measures not only deeply tap into individual potential, but also fundamentally reshape the human resource structure of rural communities. The comprehensive improvement of rural women's abilities directly promotes the diversification and modernization transformation of rural economic structure, forming a virtuous cycle effect from individual empowerment to collective progress. Therefore, the development strategy of new quality productivity, with its dual wheel drive strategy of innovation driven and education investment,

has opened up broader employment and growth space for rural women, laid a solid human capital foundation for the deep implementation of rural revitalization strategy, and demonstrated the powerful effectiveness of education and technological progress in promoting inclusive social and economic growth.

5.2. Optimize Resource Allocation and Policy Support

Strengthening the systematic construction of rural infrastructure, especially improving network communication facilities, is the hardware foundation to ensure the effective implementation of new quality productivity, which helps rural areas better access the digital economy, promote the free flow of information, and optimize resource allocation. Through government led policy support and resource allocation optimization, the modernization level of rural infrastructure can be improved, creating a favorable environment for rural women's entrepreneurship and employment. It can also accelerate the penetration of digital technology in rural areas, lay a solid material and policy foundation for the cultivation and development of new quality productivity, and help attract more women to participate in the wave of rural economic development under the background of new quality productivity development. To this end, the government and various social organizations should establish rural innovation and entrepreneurship incubation platforms and comprehensive employment service centers, providing comprehensive support services for rural women, including entrepreneurship planning, project incubation and training, marketing strategies, etc., to stimulate their entrepreneurial potential and enhance their employment capabilities. The government should implement a series of supportive policies to encourage rural women to establish small and micro enterprises or participate in cooperative operations. By providing incentives such as start-up funds and tax reductions, the barriers to entrepreneurship can be lowered, and women's enthusiasm for participating in economic activities can be stimulated (Sun & Sun, 2022). At the same time, utilizing economic levers such as fiscal subsidies and tax incentives, we will guide and promote the flow of female labor to industries related to new quality productivity, ensure that digital technology benefits every rural woman, and promote fair access to and utilization of resources. In addition, the government should introduce specific policy measures to provide tax exemptions, small credit facilities, and technical assistance for rural female entrepreneurs, effectively reducing their initial costs of entrepreneurship and employment and increasing their participation.

5.3. Promote Gender Equality and Social Inclusion

Under the strong driving force of new quality productivity, the employment participation of rural women has significantly increased, and their social status has been elevated, effectively challenging traditional gender role boundaries and paving the way for the realization of gender equality. In the face of this change, the government should take a leading role, introduce specific laws and regulations, build a system environment for gender equality, firmly implement gender equality policies, eliminate gender discrimination in the employment field, safeguard rural women's labor rights, provide a solid legal protection and support system for rural women, encourage women to participate more deeply in rural governance structures and decision-making processes, and ensure that rural women play a core role and play a leading role in the rural revitalization strategy. Through legislative action and active promotion of social culture, eliminate gender bias deeply rooted in consciousness, and ensure that women enjoy equal employment

opportunities and career advancement paths as men in the process of rural revitalization. In addition, the government should call for the participation of all sectors of society, including embedding gender equality education in the education system, promoting positive female images and successful cases in the media, and implementing gender sensitive human resources policies in the business sector, to jointly create a gender barrier free development environment. The government should also establish monitoring and evaluation mechanisms, regularly review the effectiveness of policy implementation, and ensure the effectiveness and continuous improvement of gender equality measures. This helps to identify and correct gender gaps in a timely manner, ensuring comprehensive progress of rural women in education, employment, leadership development, and other dimensions, laying the foundation for building a more just and inclusive social structure. In summary, the rise of new quality productive forces has brought unprecedented opportunities to promote the advancement of rural women's status and gender equality. The four in one strategy of policy support, legal protection, social and cultural change, and continuous monitoring and evaluation mechanisms will be the necessary path to achieve this goal.

5.4. Establish a Mechanism for Women's Participation

In the context of the development of new productive forces, in order to fully activate the vitality of rural women in rural revitalization, it is necessary to establish a systematic mechanism for women's participation and create a social and cultural ecology that respects the value of women's labor and actively promotes women's development. By widely promoting successful cases of women and showcasing their outstanding contributions and achievements in rural revitalization, it can significantly enhance the social recognition of rural women, inspire more women to bravely participate in the wave of rural development, and form a positive demonstration and driving effect. In the optimization and innovation of rural governance structure, practical measures must be taken to significantly enhance the representation and voice of women. Actively involve female members in village level organizations, cooperative management, and other decision-making bodies to ensure that the voices of rural women are heard and fully considered in important decision-making processes. By establishing specialized consultation groups for women and women's leadership development projects, we provide a platform and growth path for rural women to participate in decision-making, and promote the deep implementation of gender equality principles at all levels of rural governance. In addition, attention should be paid to the coordinated promotion of women's employment and rural revitalization strategies. Through policy guidance and project design, priority attention and support should be given to women's employment opportunities and career development in key areas of rural revitalization such as new agriculture, rural tourism, and handicraft development. Establish a monitoring mechanism for women's employment, regularly evaluate the effectiveness and impact of women's participation in rural revitalization, adjust strategies in a timely manner, and ensure that women can fully enjoy the development opportunities and achievements brought by rural revitalization.

CONFLICT STATEMENT

The authors declare no conflict of interest.

REFERENCES

Bi, J., & Ma, Y. (2024). Actively promoting high-quality employment and accelerating the development of new quality productive forces. *China Employment*, *04*, 17–19.

Chen, X. (2023). The Growth Mechanism of Industrial Women Talents under the Backgr ound of Rural Revitalization: An Analysis from the Perspective of Feasible Abilitie s. *Learning and Practice*, *12*, 64–78.

Dimaggio, P., & Bonikowski, B. (2008). Make Money Surfing the Web? The Impact of In ternet Use on the Earnings of U.S. Workers. *American Sociological Review*, *73*(2), 227–250.

Li, D. (2024). The "rights gap" in the digital society and its bridging. *Hebei Law Journal*, *42*(06), 127–143.

Li, F., Li, X., & Xiao, Z. (2024). How to enhance the endogenous development momentu m of rural women's local employment in families: A case study based on the assi stance workshop. *China Rural Observation*, *02*, 146–167.

Li, Q. (2024). The Impact of the Internet on Gender Role Concept and Family Division of Labor. *Population Journal*, *46*(03), 48–65.

Liu, D. (2024). On the Three Important Relationships that Need to be Coordinated to A ccelerate the Formation of New Quality Productivity. *Research on Technology, Econ omics, and Management*, *01*, 1–7.

Liu, S., Guo, R., & Wu, L. (2024). Empowering the Construction of Modern Industrial S ystem with New Quality Productivity: Internal Logic, Key Issues, and Practical Pat hs. *Xinjiang Social Sciences*, 1–23.

Liu, X., Li, J., & Liu, C. (2024). The realistic dilemma and policy recommendations of r ural labor force participation in new forms of employment in Guangdong under t he background of digital economy. *China Vocational and Technical Education*, *05*, 86–95.

Liu, Z. (2024). New Quality Productivity Promoting High-quality Development: Transmissi on Mechanism, Key Links and Practical Models. *Xinjiang Social Sciences*, *03*, 34–4 2.

Ma, J., & Ning, G. (2017). Internet and China's rural labor force non-agricultural employ ment. *Financial Science*, *07*, 56–69.

Pan, M., Cai, S., & Zhou, Y. (2021). Does Internet use promote rural women's non-agric ultural employment? An empirical study based on survey data from Jiangsu, Anh ui, Henan and Hubei provinces. *Agricultural Technology and Economy*, *08*, 133–14 4.

Peng, H., Jia, H., & Zhang, Y. (2024). The value, challenges, and paths of rural commu nity education development under the strategy of rural revitalization. *Adult Educat ion*, *44*(06), 20–26.

Shahiri, H., & Osman, Z. (2015). Internet Job Search and Labor Market Outcome. *Intern ational Economic Journal*, *29*(1), 161–173.

Shang, X., & Zhang, J. (2022). Elements and inspirations of cultivating digital literacy an d skills for all citizens in the European Union. *Library Science Research*, *05*, 67–7 6.

Sun, G., & Sun, Y. (2022). The Policy Effect of Employment for Rural Women in China: From the Perspective of Labor Transfer and Release. *Labor Economics Research*, *10*(05), 114–140.

Vazquez, E. J., & Winkler, H. (2017). How Is the Internet Changing Labor Market Arra

ngements? Evidence from Telecommunications Reforms in Europe. *Social Science Electronic Publishing*.

Wang, C., & Liu, Y. (2024). Has new quality productivity promoted the transformation o f employment structure? A study based on the perspective of super marginal gene ral equilibrium. *Economic Review*, *03*, 57–74.

Wang, F., Han, X., & Chen, R. (2024). Empowering Modern Industrial System with New Quality Productivity: Internal Logic and Implementation Path. *Contemporary Econ omic Management*, *46*(06), 12–19.

Wang, H., & Ye, W. (2016). Analysis of Factors Influencing the Employment Quality of Female College Students from a Gender Perspective: Based on a Survey of Five U niversities in Fujian Province. *Population and Economy*, *05*, 96–104.

Wang, J. (2024). Women's Poverty and Women's Development: A Perspective of Social Se curity Rights. *Lanzhou Journal*, 1–16.

Xu, H. (2023). Refined Employment Policies for Underdeveloped Areas in the Comprehe nsive Promotion of Rural Revitalization: An Analysis Based on Labor Types. *Guiz hou Social Sciences*, *01*, 161–168.

Xu, Z., Zheng, L., & Cheng, M. (2023). New Quality Productivity Helps High Quality De velopment: Advantages, Key Issues, and Path Selection. *Journal of Southwest Unive rsity (Social Sciences Edition)*, *2023*(6), 12–22.

Yang, B. (2024). Promoting Common Prosperity with New Productive Forces: Logical Me chanism and Implementation Path. *Party and Government Research*, *04*, 37–49.

Yang, W. (2023). Implementing the employment priority strategy to promote high-quality and full employment. *Teaching and Research*, *02*, 28–36.

Yang, Z., & He, M. (2023). Localization Vocational Training Action for Ethnic Minority Rural Women: Practice, Experience, and Prospects. *Guizhou Social Sciences*, *09*, 10 4–112.

Yao, S., & Zhang, X. (2024). The Era Connotation, Strategic Value, and Implementation Path of New Quality Productivity. *Journal of Chongqing University (Social Sciences Edition)*, *30*(01), 112–128.

Yin, Z., & Chou, H. (2024). "Numerical Intelligence" or "Numerical Stagnation": Digital Transformation and Non-Agricultural Employment. *Economic Dynamics*, *02*, 32–51.

Zhang, H., & Tang, Q. (2024). The Conditions, Directions, and Focus of the Formation o f New Quality Productivity. *Learning and Exploration*, *01*, 82–91.

Zhang, T., Zhang, L., & Zhang, L. (2019). Micro research on employment adjustment of rural labor force in China: Empirical evidence from a nationwide tracking survey of representative farmers. *China Rural Economy*, *08*, 20–35.

Zhang, X., & Li, J. (2024). A Study on the Impact of Social Interaction Internalization o n the Employment Quality of Migrant Workers in Cities. *Lanzhou Journal*, *05*, 13 0–146.

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RESEARCH ARTICLE

THEORETICAL CONTROVERSIES OVER THE ORIGINALITY STANDARD FOR AI-GENERATED CONTENT AND THE CHINESE APPROACH

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ABSTRACT

The discourse surrounding the standard of originality has long been divided into two schools of thought: subjectivism and objectivism. Subjectivism emphasizes the participation of natural persons in the creative process, whereas objectivism focuses on the distinctiveness of a work's expression. Through a historical examination of the originality standard and a comparative analysis of judicial practices across multiple jurisdictions, it becomes evident that "anthropocentrism" imposes functional constraints on the copyright system and that a mechanistic application of objectivism may result in ethical risks. Neither school of thought can independently address the originality issues arising from AI-generated content. Therefore, drawing on the integrative tendencies demonstrated in current Chinese judicial practice, this paper advocates for a primarily objectivist judgment framework, supplemented by elements of subjectivism. The proposed framework bases its evaluation on the distinctiveness of the result and the novelty of expression, while incorporating a human intervention factor to introduce value judgments rooted in subjectivism. This approach not only enables the copyright system to fulfill its institutional functions and social values simultaneously, but also offers insights for the collaborative global governance of copyright.

1. INTRODUCTION

Since 2022, the total number of images generated by artificial intelligence (AI) models such as Stable Diffusion and Midjourney has exceeded 15 billion(Valyaeva, 2023), surpassing the total output of human photographers over the past two centuries. Artificial Intelligence Generated Content (hereinafter referred to as AIGC) is posing challenges to the copyright system. At present, judicial opinions differ on whether AIGC meets the standard of originality, leading to various debates. The divergence in viewpoints is related both to the originality standard itself and to the

differences between subjectivist and objectivist interpretations of originality. As the originality standard plays a fundamental and essential role in determining whether a creation qualifies as a "work," it is necessary to assess whether AIGC satisfies the originality requirement, assuming it is eligible for copyright protection. Furthermore, when the form of expression of AIGC is identical to that of human-created works, if AIGC cannot be recognized as a work under copyright law, there is no need to further consider the attribution of authorship or ownership of copyright in AIGC (Wang, 2017). Therefore, it is both necessary and beneficial to explore the originality standard for AIGC, which will also contribute to the unification of theoretical and practical approaches to its assessment.

2. PROBLEM STATEMENT: HOW SHOULD THE ORIGINALITY STANDARD RESPOND TO AIGC?

The interpretation of the originality standard is divided into subjectivism and objectivism (Yang & Wang, 2024). These two standards stand in equal opposition, and each emphasizes different aspects. Interpretations based on the two standards will lead to different conclusions regarding the originality of AIGC. Subjectivism compares the process of generating AIGC with the process of human creative activity, and analyzes whether AIGC meets the originality standard (Wang, 2017). Subjectivism holds that "a work is a representation of the author's subjective conception" (Yang, 2007), emphasizes the dominant role of the author in the creative process, and thus leads to the conclusion that AIGC does not meet the originality standard, and even lacks copyright eligibility.

Internationally, the question of whether AIGC can be protected under the copyright system is also frequently approached from this perspective. For example, when the U.S. Copyright Office refused to register Théâtre D'opéra Spatial (U.S. Copyright Office, 2023), it reasoned that the AIGC in question lacked the human intellectual input and original expression required in the creation process. Similarly, when Zarya of the Dawn (United States Copyright Office, 2023) was submitted for copyright registration, the U.S. Copyright Office repeatedly emphasized the importance of human participation in the process.

In line with the U.S. perspective, the Czech case of S. Š. v. TAUBEL LEGAL and advokátní kancelář s.r.o. (The Municipal Court in Prague, 2023) resulted in the court's conclusion that the image in question did not exhibit intellectual creative activity by a natural person, as the plaintiff failed to meet the burden of proof regarding authorship and the creation process. Therefore, the work was held not to meet the originality requirement and was not recognized as a copyrightable work. In the Italian case of RAI Radiotelevisione v. Chiara Biancheri (Biancheri v. Rai-Radiotelevisione Italiana S.p.A., 2024), the court confirmed that the mere use of a creative tool does not disqualify a work from copyright protection and recognized the human author's creative contribution as the core evaluative criterion.

This can also be attributed to the theoretical tradition of natural law in the West. Judicial practices in the United States and European countries, influenced by natural law, emphasize that "personality constitutes the basis of property rights" (Hegel, 1961/1820), that "property is the embodiment of personality" , and that "when a person mixes their labor with something held in common, it becomes their property" (Dehousse, 2017, p. 70), placing significant weight on human control over the creative outcome.

It is not difficult to observe that different legal systems share certain commonalities in their treatment of the originality standard. At least among countries deeply influenced by natural law, there is a general consensus that the essence of the copyright system remains the encouragement and reward of human creativity. The originality standards adopted still contain an expectation centered on the author, implicitly shaped by anthropocentric thinking (Li, 2013, p. 130).

However, within objectivism, there exists a tendency to adopt a "work-centered" approach, wherein the independent and final work serves as the sole object of assessment under the originality standard, excluding the influence of the author and the creative process (Yang, 2007). For instance, the United Kingdom continues to apply its traditional "skill, labour and judgment" standard, and affirms the copyrightability of AIGC even when lacking human author intervention (Copyright, Designs and Patents Act, 1988, § 178).

In China, both subjectivist and objectivist standards have been applied in judicial practice, but policy developments have signaled a shift—such as the call to "strengthen intellectual property protection in new fields and new business models" (Economic Daily, 2021)—indicating an increasing tendency to adopt the objectivist originality standard. As a result, Chinese judicial practice places greater emphasis on the social value of intellectual achievements and comparatively weakens the absolute constraint of personality over the nature of the work. For example, in the Chunfengtu case (Beijing Internet Court, 2023), the court held that user actions such as adjusting parameter instructions were sufficient to constitute individualized expression, thus meeting the originality standard.

This reasoning reflects a utilitarian tendency within the Chinese copyright system (Dai & Jin, 2023): when the outcome contributes to public interest or creative development, it may be eligible for copyright protection. This approach aligns with the views of some Chinese scholars (Wu, 2024); (Cong & Li, 2023), and has been adopted in subsequent cases (Wuhan Donghu New Technology Development Zone People's Court, 2024);(Changshu People's Court, 2024).

However, it must be noted that current judicial practice in China still reflects a degree of compromise regarding the status of AIGC. In China's first case involving an AI-generated article, the Tencent Dreamwriter case (Nanshan District People's Court, 2019), the court acknowledged that the generated content met the originality standard but denied its status as a copyrightable work because the author was not a natural person.

The academic community has also questioned the logical soundness of categorizing Artificial Intelligence (AI) simply as a tool, and argues that an overly lenient originality standard may lead to an imbalance in rights protection (Wang, 2024).

Thus, globally, two major trends have emerged regarding the originality standard for AIGC: one emphasizes the human-centered creative process—namely, subjectivism—while the other prioritizes the appearance of the final output—objectivism. The former stresses the "control" that a natural person exercises over the work, whereas the latter focuses more on the objective originality of the work itself. These divergent approaches stem not only from the differing interpretations of originality within various legal systems, the value preferences shaped by cultural foundations, and the uncertainty of AI technology development, but also from a deeper issue: the lag and lack of adaptability of the copyright system, as a core institution of intellectual

property, in the face of technological change.

The traditional copyright regime rests on a moral foundation of anthropocentrism, rendering its established originality standard incompatible with the entirely new modes of creation enabled by AI technology. On the other hand, completely removing the human factor and allowing technology to fully dictate the allocation of rights (McPherson, 1983) risks falling into a zero-sum logic that neglects the normative function of copyright law in guiding technological development and undermines the law's capacity for value judgment.

How, then, should the originality standard adapt to this new context of AI's deep involvement in the creative process? The answer requires breaking away from the binary thinking of "human versus machine," tracing the historical origins of the originality standard to uncover foundational answers, identifying the reasons behind the divergence between subjectivism and objectivism, and rising to meet the challenges that AI presents to the contemporary copyright system.

3. ANALYSIS OF THE ISSUE: FROM HISTORICAL ORIGINS TO THE TWO SCHOOLS OF THOUGHT

Looking back at the course of history, the copyright system has always experienced certain major transformations in response to technological change. Accordingly, the controversy surrounding the originality standard triggered by AIGC is not an isolated theoretical disturbance. Each time a new technology emerges, whether it is the printing press or the digital video recorder, it presents legislators with a choice. Legislators may choose to expand copyright in order to allow authors and publishers to capture the full market value of their works, or they may choose to limit copyright so that the public can obtain the right to use works freely under the new circumstances. (Gostin, 2023, p. 24) Similarly, each wave of technological change also brings renewed reflection on the meaning of "creation" and the criteria for what qualifies as a work. As the threshold for determining the eligibility of a work, the originality standard mirrors the evolution of both the moral assumptions and the functional mechanisms of the copyright system.

3.1. The Logical Regression of the Originality Standard

Even the earliest legislation enacted for the benefit of authors, the Statute of Anne of 1710 , was closely tied to the rise of the printing industry. The author existed as a "symbol" within the process of legitimizing copyright rights and only served to establish the starting point of a work. With the emergence and flourishing of Romanticism in the eighteenth and nineteenth centuries, authors acquired a "genius-like" status based on the theory of natural rights, and creative acts were elevated to the status of external expressions of individuality, emotion, and will. After establishing the central role of the natural person as author, judicial practice developed requirements concerning originality, drawing a boundary between the public domain and private rights. The originality standard was subsequently established as an important criterion for determining whether something constitutes a work. Its core lay in manifesting the spiritual world of the natural person author, and it embedded a strong anthropocentric tendency. However, at that time, the originality standard demanded complete human intellectual labor. When confronted with technological interventions in the creative process, such as photography and videography, the copyright system made adaptive adjustments. The nineteenth-century United States case Sarony(Burrow-Giles Lithographic Co. v. Sarony, 1884) confirmed that photographs

could also be original works because the photographer demonstrated "choice and judgment" in aspects such as composition, lighting, settings, and posture, thereby satisfying the originality standard. This case illustrates that the copyright system's understanding of "creation" is not immutable. It treats selectivity, differentiation, and individualization in technical operations as an extension of human creative activity, thereby broadening the interpretation of originality. This grants the originality standard a certain degree of institutional flexibility, allowing it to maintain an author-centered premise even as new modes of creation emerge. In the twentieth century, the copyright system increasingly exhibited a utilitarian orientation. The rapid increase of commercial works, popular culture, and media industry content gradually shifted the originality standard away from emphasizing complete human intellectual labor towards emphasizing differences in the expression of creative results. Even in the United Kingdom, the birthplace of author-centered copyright, historical developments have included perspectives holding that the value of a work lies in its contribution, in terms of knowledge and progress, or gross national product or productivity. (Sherman & Bentley, 2012, pp. 207–208) The functional interpretation of copyright law has also tended more towards the goal of encouraging the creation of literary, artistic, and scientific works (Zhao, 2011), emphasizing the realization of the value of copyright. This shift focuses on examining more objectively whether a work reflects the intellectual input of its author, demonstrating a results-oriented approach that essentially represents the originality standard's convergence with objectivism. From an institutional logic perspective, this adjustment reduces the cost of judicial determination and enhances the practicability of judicial practice. It is reasonable to make such adjustments to respond to new modes of creation in modern cultural production that feature depersonalization trends such as collective creation and industrialized processes. This utilitarian tendency has also allowed the copyright system to shed some of its anthropocentric characteristics and gain greater inclusiveness, enabling the system to maintain relatively consistent applicability in new types of works such as films, games, computer programs, and databases.

The development of AI technology and its application in fields such as image and text generation have once again placed the copyright system at a crossroads. The subjectivist view holds that the generation of AIGC relies heavily on the level of training of the model and the computational capacity of the algorithms. Although the final outputs may appear novel and diverse in form, it is difficult to identify any human creative intent within them. As a result, both core elements of the originality standard, namely "subjective independence" and "personalized expression", encounter significant challenges when applied to AIGC. This is evident not only in the cases of Théâtre D'opéra Spatial(U.S. Copyright Office, 2023), Zarya of the Dawn(United States Copyright Office, 2023), and A Recent Entrance to Paradise(U.S. Copyright Office, 2022), but also in the SURYAST case(U.S. Copyright Office, 2023). The U.S. Copyright Office has repeatedly denied copyright protection to AIGC in these instances, each time emphasizing the essential role of human participation in the creative process. This indicates that the subjectivist originality standard continues to exert considerable influence.

In contrast, China has adopted a different approach. In the case of Spring Breeze Painting(Beijing Internet Court, 2023), as well as in subsequent cases such as the Wuhan AIGC copyright infringement case(Wuhan Donghu New Technology Development Zone People’s Court, 2024), China became the first country to recognize AIGC as a work. China has taken a broader

view than other jurisdictions regarding the requirement of human involvement in the creative process. Although this objectivist-leaning standard remains in its early stages and lacks a unified consensus, a review of the formation and evolution of the originality standard shows that originality does not inherently represent a fixed value proposition(Dai & Jin, 2023). Rather, it should be understood as a technical rule for determining the allocation of rights.

Copyright originated from commercial needs and has become increasingly intertwined with trade as society has developed. Furthermore, as a form of limited monopoly, copyright has been subject to criticism since its inception due to its relatively weak exclusivity and its encroachment upon the public domain. Authors have long complained that the copyright system fails to offer strong protection and tangible benefits, while members of the public argue that it widens the knowledge gap between privileged and disadvantaged groups. If the copyright system cannot adapt to continually changing methods of creation, these criticisms will only intensify.

Against this backdrop, the focus of the originality standard should not remain solely on the author's intellectual labor or merely emphasize the author's individual imprint and artistic character. Greater attention should instead be given to the social value generated by the dissemination of the work, particularly its contribution to the collective body of human cultural and artistic output. Therefore, when confronting AIGC, the copyright system must seek to establish a new equilibrium. Only by ensuring sufficient inclusivity can it preserve its institutional legitimacy.

3.2. Subjectivism: "Author-Centered"

The research method explains the implementation methods employed in the study. The method is described clearly and in detail [STIX Two Text-Medium 12 font, normal]The author's position as the central figure of rights within the copyright system originated with the Statute of Anne and was subsequently justified through natural rights philosophy, based on the philosophical categories of "will-personality-property" to legitimize copyright property rights. (Wu, 2003) This author-rights system embraces a romantic author concept that is "author-centered," viewing literary works and other creations as "natural vessels of personality" (Hughes, 1988), emphasizing that works require human "mental input" and "expression of individuality." Regarding this theme, respecting the subjectivist originality standard and reflecting the author's unique personality, creative intention, and sources of inspiration are essential. However, meeting this standard is not difficult. Any work independently created by a human author without copying or plagiarism from other works is acceptable under the subjectivist originality standard. The originality standard under subjectivism effectively relies on constructing an author's subjective world entirely independent from the objective world, allowing the author to "create something out of nothing" through the act of creation within this subjective world. The essence lies in the fact that the work's emergence depends on the creative process of the subject, imprinting the work with the creator's unique style and characteristics. The work is therefore a "representation of the author's subjective conception" (Yang, 2007).

When machines generate content through a pathway different from human creativity by using algorithms to create new combinations based on existing data (Aslan, 2024) and reproduce human creation, has the legal concept of the originality standard become mere romantic rhetoric? Scholars who hold the subjectivist perspective often analyze the issue of originality standards for

AI-generated content without considering the subject as a premise, thereby avoiding logical circularity and focusing instead on the process of generating the relevant content (Wang, 2017). Therefore, criticisms of AI-generated content frequently appear in subjectivist scholars' discussions who regard it as simply the result of applying certain algorithms, rules and templates (Wang, 2017). They also emphasize the irreproducibility of human creative acts because even the most talented creators cannot replicate their own creative process, and the knowledge produced possesses an inherent scarcity (Yang & Chen, 2016). Since a work originates from an author's independent and highly individualistic creation, the intellectual labor invested is inevitably connected to the final outcome. This distinction separates the creative act under copyright law from labor in the general sense. Therefore, the process of AI-generated content creation is considered by subjectivist scholars as merely following predetermined procedures according to terms and obtaining definite results through algorithms. Anyone performing the same operations would achieve identical outcomes, which fundamentally differs from intellectual creation that reflects the author's individuality and irreproducibility. AI's learning ability marks a significant difference from other technological advances since it optimizes methods through self-play, similar to human thinking (The technological journey after "AlphaGo", 2016). However, this progress means only that AI can analyze data through algorithms to find the optimal strategy and then produce the best possible result within its computational scope using that strategy. Because this algorithm-based strategy search process is involved, the search results lack personalized features and cannot escape a high degree of reproducibility. In contrast, human authors maintain control over the language of the work when processing original materials due to their unique personality, emotions, fleeting inspirations and creative methods with minimal intervention (Li, 2025). They thus master their creative acts, and the results of those acts are unique. AI-generated content has sparked discussion only because the algorithms behind AI are sufficiently complex and advanced to give the public the illusion that machines are capable of creation.

In summary, subjectivism has its rational basis in determining whether AI-generated content meets the originality standard. Although AI-generated content is excluded from copyright protection under subjectivism because it lacks the personalized expression of a natural person, it is precisely the emphasis on the subjectivity of the author and the uniqueness of creation that has broadened the scope of the subjectivist standard. As a result, even works by natural persons that are extremely ordinary, extremely banal, or highly commercial can receive extensive copyright protection. A historical review reveals that subjectivism has been instrumental in the continuous expansion of the scope of protection under the copyright system over the past nearly three centuries. It is worth mentioning that although the public domain is often overlooked, it remains a general concept in intellectual property law (Oddi, 2002). As the scope of protected subject matter expands, the works in the public domain inevitably diminish. If subjectivism is applied indiscriminately in the copyright system, it will lead to serious erosion of the public domain and fail to achieve the copyright system's fundamental purposes of protecting innovation and knowledge. Moreover, the "anthropocentrism" proudly upheld by subjectivism has long shown its drawbacks, which have become increasingly pronounced with the passage of time. The emergence of copyright relied on the development of modern social structures and cultural concepts. Although the Statute of Anne established copyright law centered on the author's rights, the reason the author was chosen by the system as the rights holder was because printers required a stable and transferable right, which also needed a clear and generally accepted starting point.

Compared with royal privileges, the author was more socially acceptable (Li, 2013, pp. 61, 70, 130). It can be said that the copyright system has served market expansion needs since its inception. With the acceleration of industrialization and capital expansion, human labor has gradually been "outsourced" to machines as technology develops. When photography and cinematography emerged, they were described as "human hands no longer participating in the main artistic tasks of image reproduction" (Benjamin, 2017, p. 65). The impact this had on the copyright system closely resembles that of today's AI. Whether creation with reduced human participation still qualifies as creation was affirmatively answered by earlier copyright law. The United States Copyright Act of 1790(U.S. Copyright Office, 1790) adapted to market development by expanding protection from "maps, charts, and books" to include musical compositions and photographic works, thus enabling the copyright system to respond to emerging changes and new things. The important function of the concept of "creation" is to establish ownership (Li, 2019). Therefore, as long as the originality standard in copyright law is sufficient to establish a specific connection between the work and the subject and indicates that the work originates from the subject, it is acceptable (Li, 2019).

In conclusion, subjectivism continuously emphasizes the indispensability of humans in creation and strives to build protection for human authors' rights. However, the copyright system itself is inseparable from commercial needs and cannot avoid influence from market and other economic factors. Therefore, in an era where new things constantly emerge and modes of creation are to some extent reshaped, it is certainly worthwhile to discuss whether the creative outcomes of natural person subjects can continue to serve as the sole legitimate object of the copyright system.

3.3. Objectivism: "Work-Centered Approach"

Although it cannot be denied that "intellectual labor is the most influential organizing principle of pre-modern intellectual property law"(Sherman & Bentley, 2012), with the development of modern and contemporary economies as well as science and technology since the second half of the nineteenth century, intellectual property legal systems, including copyright, have gradually shifted their focus from intellectual labor and human creativity to the creative results themselves. Objectivism, which concentrates on the work itself, has thus entered public awareness. The objectivist originality standard that focuses on the work emphasizes that whether the standard of originality is met should be judged from the external appearance of the work. In contrast to subjectivism, objectivism excludes the author's personality, creative intention, subjectivity, and creative process from the evaluation system. It also advocates a postmodern structuralist philosophical perspective that is "reader-centered," focusing on whether the creative result meets the originality standard from the viewpoint of the "ordinary reader." Therefore, objectivism is more comprehensively described as "work- and reader-centered." However, in order to highlight the differences between the two perspectives in comparison, subjectivism is described as "author-centered," while objectivism is described as "work-centered."

Since creative activity is a factual act and the results of such activity have ultimate and fundamental significance, it is reasonable to judge the logic of the act based on the factual outcome. One of the advantages of objectivism lies in its ability to rapidly form judgments on whether a creative result qualifies as a work through a logical process. The gradual application of

the "idea-expression dichotomy" in judicial practice exemplifies objectivism by weakening the causal relationship between the author and the work. (Lin & You, 2018) In the "Spring Breeze" case, the court's judgment on originality was that it "should be based on whether the work was independently created and whether there is a certain degree of difference in external form compared to existing works" (Beijing Internet Court, 2023). It is evident that the court's approach leans toward objectivism, as it does not connect subjective factors such as the creator's personality or intent with the originality standard, instead focusing more on the external form of the work. Compared to the romantic author-centered view of subjectivism, which requires judges to explore the author's mental world from the author's perspective to reconstruct the creative process, this latter perspective tends to evaluate originality based on the creative process and may fall into subjective aesthetic judgments concerning beauty or ugliness. Such an approach tends to overlook changes in new works and their contributions to aesthetic value. On the other hand, from the ordinary reader's perspective, one can focus "more on whether the new work provides a spiritual enjoyment or other social values different from the original" (Lu, 2020). This viewpoint provides a clearer and more reasonable positioning, allowing for an unbiased, direct, and straightforward consideration of whether there are significant differences between works and whether the new work meets the originality standard. The advantage of objectivism lies in its ability to make simple judgments based on clear standards, which is especially suitable in contexts where technological intervention in creation is increasingly common. For new forms of "human-machine collaboration" such as AI-generated content, objectivism offers a more inclusive institutional recognition logic that frees copyright attribution from the constraints of human creative will and provides flexible space for technological evolution.

However, if the judgment of works excessively relies on "differences" in the work itself, this may lead to a mechanical judgment logic that neglects creative ethics and social value. This could accelerate the transformation of the copyright system into a tool that protects all identifiable content, ultimately making it difficult to maintain the moral legitimacy of the system. Moreover, if the creative process is entirely excluded from consideration, technologically generated content and human original works would receive exactly the same status, which would also damage the fairness of the system and run counter to the institutional goals aimed at realizing social value. The evaluation of works cannot rely solely on consequentialism (Li, 2019). Even if the influence of “human centrism” is completely excluded, the public still has the right to know whether a work originates from a natural person because readers have the desire to communicate with authors through their works. Social and cultural communication, critique, and research cannot entirely detach from the analysis of the author. There exists such an inherent connection between humans and works, and the reasonableness of subjectivism must be incorporated into considerations of the originality standard.

4. PROBLEM RESOLUTION: RECONSTRUCTION OF THE ORIGINALITY STANDARD DETERMINATION

"Artificial intelligence has opened an unprecedented window of opportunity" (Zhang, 2025). In the field of copyright, the controversy over the originality standard for AI-generated content (AIGC) has in fact long surpassed a mere technical issue confined to any single jurisdiction. Since the advent of AI, countries around the world have successively formulated their own artificial intelligence strategies, treaties, and regulations . However, these strategies generally focus only

on the interests of their own country or region. Although such localized development is crucial, there remains a lack of capability to address global risks and challenges and to ensure the sustainable development of AI technology (Roberts, Hine, Taddeo, & Floridi, 2024).

When addressing the issue of originality in AIGC, most countries focus on questions such as "whether human creative intervention exists" or "whether the work exhibits differential expression." While these perspectives have their own rational basis, differences arise from distinct legal traditions, cultural foundations, and governance philosophies. As a result, countries differ in their application and lack a foundation for consensus.

Yet copyright systems, which emerged alongside the evolution of industrial structures and cultural concepts (Li, 2013, p. 61), play an important role in social industrial development and cultural production across nations. Therefore, facing AIGC as a new phenomenon and its vast, emerging market, the uncertainty surrounding the copyright status of AIGC is highly detrimental to economic, cultural, and other aspects of development. Whether individuals and enterprises using AI, or companies building large AI models, can receive positive feedback from the copyright system (such as economic benefits) is not only a matter of individual property rights but also a primary concern for the development of entire industries and society.

In today's deepening globalization, the interdependence among nations is increasingly close. Given the significant cross-border effects of artificial intelligence , even though legal systems, legal sources, and legal families differ, national attitudes toward AIGC will affect other countries. Therefore, addressing the question of AIGC's originality standard requires "collaborative governance" to identify the "greatest common denominator" through seeking consensus while preserving differences, thereby promoting the development of national copyright systems and enabling AI technology to benefit humanity.

4.1. Insights from the Chinese Approach to Collaborative Governance

In the reality where multiple obstacles still exist in constructing a globally unified originality standard, China, lacking a tradition of natural law, is neither a copyright-centric country nor an author's rights-centric country (Dai & Jin, 2023). The overall copyright system is deeply influenced by utilitarianism . Consequently, in judicial practice regarding AIGC, China exhibits a tendency toward hybridization, focusing more on whether the protection of AIGC promotes public interests while placing the value of "human participation" in a relatively less important position.

On one hand, cases such as the "Spring Breeze" case (Beijing Internet Court, 2023) emphasize inferring the presence of individualized expression through user instructions. Although superficially closer to subjectivism, in reality, this approach emphasizes the difference between the creation and existing works, representing a "localized" application of objectivism. On the other hand, the Tencent Dreamwriter case (Guangdong Shenzhen Nanshan District People’s Court, 2019) demonstrates a hesitant attitude. While the court affirmed that AIGC can possess originality, it rejected AIGC as a work on the basis that "non-natural persons do not qualify as authors," revealing a coexistence of subjectivist and objectivist logics.

China may in the future no longer recognize AIGC as a work, but from another perspective, this diversity during the transitional period can provide an experimental space for constructing a

more inclusive recognition pathway. Institutionally and culturally, since the establishment of its copyright legislation, China has long emphasized the social utility of copyright and its role in promoting the cultural industry, placing greater importance on the promotion of cultural development, technological innovation, and public interest by creative outputs. Moreover, as AI is a new phenomenon with strong development potential, China, influenced by utilitarianism, is more inclined to recognize such non-traditional subjects.

This interpretative logic may also exert potential influence on East Asian countries with similar cultural traditions as well as developing countries—if recognizing the originality of AIGC at this stage is beneficial to fostering the AI industry within their own countries or regions, and can enable them to gain unprecedented advantages in the new industrial revolution, then driven by such interests, China's interpretation of AIGC originality may gain wider acceptance.

Most countries and regions affirm that originality is a prerequisite for copyright protection(Olson, 1983). This shared understanding forms a possible foundation for achieving consensus among nations on issues related to AI-generated content (AIGC). Even countries with a strong tradition of natural law and a high emphasis on personality rights theory must face the challenge of balancing the legitimacy of the copyright system with the promotion of innovation and encouragement of creativity in an era where AI technology intervenes in the creative process and the concepts of author and work become increasingly blurred.

Taking the United States as an example, the Feist case(Feist Publications, Inc. v. Rural Telephone Service Co., 1991) established that a work must possess at least some minimal degree of creativity and that originality requires independent creation plus a modest amount of creativity (Hughes, 2021). Although the U.S. viewpoint still centers on human authorship, its practical examinations also reveal attention to the value of creative outcomes.

Meanwhile, certain European courts have emphasized in their rulings the connection between creative acts and society, demonstrating that subjectivism and objectivism are not absolutely opposed but allow for flexible interpretation and extension. Even proponents of the so-called "absolute control" theory have shifted from outright rejection toward gradual acceptance (Jiang, 2025).

The fusion tendency revealed by the Chinese approach exemplifies an exploratory "middle path" among these phenomena. China's judicial practice in interpreting AIGC originality, by emphasizing social function and public interest orientation, also provides useful supplementation to legal systems deeply rooted in natural law.

Moreover, the significance of the Chinese approach lies not in exporting a model to replace others, but in inspiring countries to engage from their own systems in jointly exploring the legal boundaries of "creation" and the inclusiveness of copyright regimes. This offers a more constructive and inclusive institutional framework for the future governance of copyright.

4.2. Objectivism as the Main Axis, Subjectivism as a Supplement

Which is superior, subjectivism or objectivism? In fact, both have their respective advantages and disadvantages, making it difficult to rank them definitively. There have also been views questioning the practical utility of the originality standard itself (Zhao, 2011). If the issue of

originality is approached with an absolute subjectivist standard, it contradicts the "idea-expression dichotomy" in copyright law (Lu, 2020). Since copyright law only protects expressions that meet the originality standard, a lack of creative space during the creative process (for example, when AI generates content solely based on operator prompts) does not necessarily lead to the conclusion that the creative result lacks originality. On the other hand, adopting an absolute objectivist standard may foster mechanical result-orientation and lead to an improper expansion of the scope of protectable works. Many viewpoints (Huang & Huang, 2019); (Xie & Chen, 2019); (Ding, 2023) argue that more attention should be paid to the objective creativity of AIGC works. However, judgment of works cannot be made solely from an objectivist perspective; even when moving beyond "human centrism," the legal significance of the association between works and humans should not be neglected (Li, 2019). Therefore, a reasonable approach to resolving the originality standard issue for AIGC should be led by objectivism, using quantifiable criteria such as distinguishable differences in the final appearance and novelty of the work as the core basis of judgment. Subjectivism should serve as a fallback principle to prevent ethical lapses and cultural alienation caused by mechanically applying objectivist standards.

First, the fundamental logic for judging originality should be whether the work exhibits an identifiable, distinguishable expression. For a preliminary judgment of AIGC, the focus should be on whether the presented result exhibits structural changes, semantic innovation, or independence in aesthetic expression. If the AIGC work is sufficiently distinguishable from existing works and demonstrates a certain degree of novelty in expression, it can be preliminarily recognized as meeting the originality requirement. This allows AIGC to pass the initial threshold of scrutiny. Such logic not only enhances operability in judicial practice but also avoids the complexities and difficulties of tracing the creative process. It effectively responds to the reality of modern creation, which is highly automated and collaborative with technology. In judicial practice, Chinese courts have, in fact, preliminarily formed a "prompt design plus parameter adjustment" judgment criterion. When the user's input prompts possess a certain degree of directive character and, after multiple instructions and parameter adjustments, reach a certain threshold, AIGC can be recognized as meeting the originality requirement. Criticisms of such criteria generally stem from concerns that human participation is too limited, but these concerns can be addressed by setting appropriate thresholds.

Although AI's independence in the creative process is increasingly enhanced, completely excluding human participation remains inadvisable. Human legal systems are also incapable of regulating objects that exist without any human presence. From another perspective, the core value of subjectivism lies in maintaining the responsibility foundation and the boundary of rights in creative acts. For example, the paradox of the open-source model is that this model relies on copyright law to remain free. Only by ensuring copyright protection can arbitrary claims on ownership of improvements be prevented (Gostin, 2023, p. 290). The same applies to AIGC. If AIGC contains a certain degree of innovation, that part of the innovation requires protection under copyright law. Therefore, when there is significant controversy or ethical risk regarding AIGC's originality, subjectivism should be introduced as a "fallback clause" to evaluate the extent of human involvement in the creative process. Specifically, three influencing factors may be set: whether the design of the prompts or the setting of parameters is highly individualized and decisive for the final form of the AIGC output; whether the human operator has engaged in

multiple rounds of interaction, revision, and selection to shape the style of the work; and the degree to which AI technology is irreplaceable in the creative process. When these influencing factors are strong, the intervention of subjectivism may be considered. Some scholars have already constructed detailed human intervention models for judicial practice (He & Deng, 2021), which categorize human subjective involvement by timing and degree, thereby enabling even highly subjective, uncertain, or non-intuitive human interventions to follow a standardized and procedural technical evaluation path.

While enhancing the copyright system's inclusiveness for new types of content, it is also necessary to guard against the erosion of the public domain caused by excessive expansion of the protection scope. In the reconstruction of the originality standard, when there is a risk that the objectivist standard may be oversimplified into mechanical judgment, subjectivism should be simultaneously adopted. Appropriate rules regarding the public domain or anti-circumvention measures should be established to ensure that the copyright system maintains a dynamic balance between encouraging creation and protecting sharing. Regarding the protection term for AIGC, granting the same duration as human-authored original works may provoke greater concerns about fairness in the copyright system. Therefore, it is reasonable to set the copyright protection term for AIGC at five years. Given the rapid advancement of AI technology, even one calendar year may see a model evolve into a second or third generation. Granting longer protection terms would neither continue to generate economic benefits after technological iteration, nor would it be conducive to the public domain. Calculating AIGC's economic value on a five-year life cycle is relatively reasonable. Regarding labeling of AIGC, China has already issued the Measures for the Identification of AI-Generated Synthetic Content (Cyberspace Administration of China, 2025). AI companies and content platforms are expected to label AIGC accordingly under this guidance. From a market-driven perspective, machine-generated creation itself carries a certain performative or artistic quality (Li, 2019). Even if the law grants human creators longer protection terms, AIGC creators are very likely to brand their works with AIGC labels to highlight them. Of course, some argue that AIGC should immediately enter the public domain (Palace, 2019). However, this would negate the value-realizing function of the copyright system. If AIGC receives no protection even momentarily, how could the rights of human users who have engaged in multiple rounds of interaction and modification be compensated?

5. CONCLUSION AND SUGGESTION

Reviewing the history of the copyright system, it is evident that copyright aims to balance the dual functions of protecting the individual expression of authors and encouraging creation. To this end, the originality standard was established as a criterion to identify qualifying works. Regarding this standard, there has long been a theoretical divergence between subjectivism and objectivism: subjectivism emphasizes the mental and personal contribution of natural persons as creators, yet it lacks flexibility in the face of changing modes of creation; objectivism judges based on the external appearance of results, offering certain judicial operability but to some extent neglecting the foundational value judgments of the system. This theoretical divergence has become increasingly apparent with the advent of AI-generated content (AIGC). Observing China's current judicial practice concerning AIGC reveals a tendency towards integration, indicating the possibility of combining result-oriented evaluation with the pursuit of the social value function of the system.

Therefore, to resolve the present inadequacy of the originality standard in accommodating AI-involved creation modes, it is feasible to explore a judgment framework that prioritizes objectivism supplemented by subjectivism, taking the work's distinguishable differences and novelty of expression as the core criteria, while incorporating important value judgments of the copyright system as a complementary factor. Such a framework provides a buffer to reconcile the opposition between the two schools of thought and offers certain enlightenment for other jurisdictions addressing AIGC copyright issues.

Of course, given the limited number of existing AIGC cases, a comprehensive and stable viewpoint has yet to form, and subsequent cases may overturn earlier ones. Following the approach centered on differences in works and novelty of expression, supplemented by subjectivist value judgments, the next step after developing solutions regarding the originality standard would be to discuss the copyrightability of AIGC, followed by determining the ownership and authorship issues related to AIGC.

CONFLICT STATEMENT

The authors declare no conflict of interest.

REFERENCES

Valyaeva, A. (2023, August 15). AI image statistics: How much content was created by AI. Everypixel Journal. Retrieved July 28, 2025, from https://journal.everypixel.com/ai-image-statistics

Wang, Q. (2017). On the legal nature of content generated by artificial intelligence in copyright law. Legal Science (Journal of Northwest University of Political Science and Law), 35(5), 148–155. https://doi.org/10.16290/j.cnki.1674-5205.2017.05.014

Yang, L., & Wang, S. (2024). Reflections on the copyright subject matter of AI-generated content: Also discussing the choice of originality standards for work determination. Journal of Beihang University (Social Sciences Edition), 37(2), 50–62. https://doi.org/10.13766/j.bhsk.1008-2204.2023.0862

Yang, S. (2007). The subjective standard for judging the originality of works. Electronic Intellectual Property, (7), 64–65.

U.S. Copyright Office. (2023, September 5). Re: Second Request for Reconsideration for Refusal to Register Théâtre Dopéra Spatial (SR # 1-11743923581; Correspondence ID: 1-5T5320R). https://www.copyright.gov/rulings-filings/review-board/docs/Theatre-Dopera-Spatial.pdf

United States Copyright Office. (2023, February 21). Re: Zarya of the dawn (Registration No. VAu001480196; Correspondence ID: 1-5GB561K) [Government document]. https://copyright.gov/docs/zarya-of-the-dawn.pdf

The Municipal Court in Prague. (2023, October 11). S. Š. v TAUBEL LEGAL, advokátní kancelář s.r.o. [Court decision]. https://mediareport.nl/wp-content/uploads/2024/04/praag-en.pdf

Biancheri v. Rai-Radiotelevisione Italiana S.p.A., Law No. 633 of 1941, Art. 1. (2024). RAI Radiotelevisione v. Chiara Biancheri. IIC – International Review of Intellectual Property and Competition Law, 55, 470–474. https://doi.org/10.1007/s40319-024-01441-z

Hegel, G. W. F. (1961). Grundlinien der Philosophie des Rechts [The philosophy of right] (F. Yan & Q. T. Zhang, Trans.). Beijing: The Commercial Press. (Original work published 1820)

Dehousse, P. (2017). Philosophy of intellectual property law (Z. Zhou, Trans.). Beijing: The Commercial Press. (p. 70)

Yang, S. (2007). The objective standard for judging the originality of works. Electronic Intellectual Property, (8), 63–64.

Copyright, Designs and Patents Act 1988, c. 48, § 178 (UK).

Strengthening intellectual property protection in emerging fields and new business formats. (2021, November 2). Economic Daily.

Beijing Internet Court. (2023). Civil judgment on AI-generated image copyright infringement dispute [(2023) Jing 0491 Minchu No. 11279].

Dai, Z., & Jin, B. (2023). The copyright protection of AI-generated works under Chinese law. Juridical Tribune, 13(2), 241–260.

Wu, H. (2024). On the copyrightability of AI-generated content: Practice, jurisprudence, and institutional perspectives. China Legal Review, (3), 113–129

Cong, L., & Li, Y. (2023). Identification of works and copyright ownership of generative AI: A case study of ChatGPT's application scenarios. Journal of Shandong University (Philosophy and Social Sciences Edition), (4), 171–181. https://doi.org/10.19836/j.cnki.37-1100/c.2023.04.015

Wuhan Donghu New Technology Development Zone People's Court, Hubei Province. (2024). Civil judgment on AI image copyright infringement dispute [(2024) E 0192 Zhi Minchu No. 968].

Changshu People's Court, Jiangsu Province. (2024). Civil judgment on copyright infringement dispute: Lin v. Hangzhou Gaosi Qimo Technology Co., Ltd., et al. [(2024) Su 0581 Minchu No. 6697].

Nanshan District People's Court, Shenzhen, Guangdong Province. (2019). Civil judgment on copyright infringement dispute: Tencent v. Yingxun Technology [(2019) Yue 0305 Minchu No. 14010].

Wang, Q. (2024). The legal nature of content generated by artificial intelligence in copyright law. Legal Studies in Business and Law, 41(3), 182–200. https://doi.org/10.16390/j.cnki.issn1672-0393.2024.03.009

McPherson, M. S. (1983). The economics of justice. Law and Philosophy, 2(1), 129–136.

Gostin, P. (2023). The way of copyright: From the printing press to the digital cloud (J. Jin, Trans.). Beijing: The Commercial Press. (p. 24)

Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884). Retrieved June 27, 2025, from https://supreme.justia.com/cases/federal/us/111/53/

Sherman, B., & Bentley, L. (2012). The evolution of modern intellectual property law: The British experience 1760–1911 (Reprint ed., J. Jin, Trans.). Beijing: Peking University Press. (pp. 207–208)

Zhao, R. (2011). Reflection and understanding on the standard of originality of works. Intellectual Property, (9), 55–58.

U.S. Copyright Office. (2023, December 11). Re: Second request for reconsideration for refusal to register SURYAST (SR # 1-11016599571; Correspondence ID: 1-5PR2XKJ). Retrieved June 27, 2025, from https://www.copyright.gov/rulings-filings/review-board/docs/SURYAST.pdf

Wuhan Donghu New Technology Development Zone People's Court, Hubei Province. (2024). Civil judgment on AI image copyright infringement dispute [(2024) E 0192 Zhi Minchu No. 968].

Wu, H. (2003). Philosophical interpretations of intellectual property law by legal philosophers. Legal Studies in Business and Law, (5), 77–85.(Wu, 2003)

Hughes, J. (1988). The philosophy of intellectual property. Georgetown Law Journal, 77 (2), 287–366.(Hughes, 1988)

Aslan, B. (2024). Reflections of the concepts of creativity, originality and characteristic on generative autonomous AI systems with an analysis of copyright perspective. Journal of Commercial and Intellectual Property Law, 2024(1), 3–24.(Aslan, 2024)

Yang, S., & Chen, X. (2016). Will intellectual property legal systems end? A commentary on "The paradigm shift: Reflecting on intellectual property theory". Intellectual Property, (11), 3–12.(Yang & Chen, 2016)

The technological journey after "AlphaGo": Gazing toward the era of human-machine coexistence. (2016, March 18). Economic Information Daily.

Li, C. (2025). Rethinking the normative significance of the concept of "expression": Also discussing the legal nature of AI user instruction behavior. Intellectual Property, (5), 3–20.

Oddi, A. S. (2002). The tragicomedy of the public domain in intellectual property law. Hastings Communications and Entertainment Law Journal (Comm/Ent), 25(1), 1–64.

Li, C. (2013). A critique of the fundamental theories of copyright. Intellectual Property Publishing House. (pp. 61, 70, 130)

Benjamin, W. (2017). A short history of photography (Q. L. Xu & Z. M. Lin, Trans.). Guangxi Normal University Press. (Original work published 1931)

U.S. Copyright Office. (1790). Copyright law of the United States (1790 Act). https://www.copyright.gov/about/1790-copyright-act.html

Li, C. (2019). On the legal analytical method of artificial intelligence: Taking copyright as an example. Intellectual Property, (7), 14–22.

Sherman, B., & Bentley, L. (2012). The making of modern intellectual property law: The British experience, 1760–1911 (J. Jin, Trans.; Rearranged ed.). Peking University Press.

Lin, X., & You, K. (2018). The copyright system's response to AI-generated works: A perspective based on the theory of civil fruits. Electronic Intellectual Property, (6), 13–19.

Lu, B. (2020). On the selection of originality judgment standards for AI-generated works. Inner Mongolia Social Sciences, 41(4), 102–108. https://doi.org/10.14137/j.cnki.issn1003-5281.2020.04.014(Lu, 2020)

Zhang, X. (2025). Global transformation of AI governance and China's approach. Journal of East China University of Political Science and Law, (1), 18–32.

Roberts, H., Hine, E., Taddeo, M., & Floridi, L. (2024). Global AI governance: Barriers and pathways forward. International Affairs, 100(3), 1275–1286.(Roberts, Hine, Taddeo, & Floridi, 2024)

Guangdong Shenzhen Nanshan District People's Court. (2019). Civil judgment on Tencent v. Yingxun Technology copyright infringement dispute [(2019) Yue 0305 Minchu No. 14010].

Olson, D. P. (1983). Copyright originality. Missouri Law Review, 48(1), 29-62.

Feist Publications, Inc. v. Rural Telephone Service Co., 499 U.S. 340 (1991).

Hughes, J. (2021). Restating copyright law's originality requirement. Columbia Journal of Law & the Arts, 44(3), 383–410.

Jiang, G. (2025). On the “minimum creativity standard” for users claiming AIGC copyrig ht. Chinese and Foreign Law Review, (3), 681–701.

Huang, H., & Huang, J. (2019). The rationale for protecting AI-generated works as copy righted works. Jiangxi Social Sciences, (2), 33–42, 254.

Xie, L., & Chen, W. (2019). Resolving copyright dilemmas of AI-generated works under the fictitious author rule. Legal Application, (9), 38–47.

Ding, X. (2023). The deconstruction and reconstruction of copyright: A jurisprudential re flection on the legal protection of AI-generated works. Legal System and Social D evelopment, (5), 109–127.

Gostin, P. (2023). The path of copyright: From the printing press to the digital cloud (J. Jin, Trans., p. 290). Beijing: The Commercial Press.

He, L., & Deng, T. (2021). A reconsideration of the originality standard for AI-generated works: Also discussing the judicial judgment model of human intervention. Jour nal of Chongqing University of Posts and Telecommunications (Social Sciences Ed ition), (5), 55–68.

Cyberspace Administration of China. (2025, March 7). Measures for the identification of AI-generated synthetic content. Retrieved June 30, 2025, from https://www.gov.cn/ zhengce/zhengceku/202503/content_7014286.htm

Palace, V. M. (2019). What if artificial intelligence wrote this: Artificial intelligence and copyright law. Florida Law Review, 71(1), 217–ii.

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RESEARCH ARTICLE

ANALYSIS OF ACCESSIBILITY AND EXPERIENCE OF SPECIAL FORCES-STYLE TOURISM - TAKING WUHAN EAST LAKE AS AN EXAMPLE

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ABSTRACT

This study examines spatial experiences and perceived accessibility among young participants in "Special Forces-style tourism," a high-intensity, time-compressed travel style prevalent among Chinese youth. Using Wuhan East Lake Scenic Area as a case study, data from 150 valid questionnaires were analyzed through descriptive statistics, correlation analysis, and multiple regression to explore relationships among behavioral patterns, spatial accessibility, and experience satisfaction. Results indicate that young tourists exhibit distinct behaviors, prioritizing efficiency, visual consumption, and frequent movement. Satisfaction with natural and cultural landscapes significantly predicted overall experience satisfaction, whereas clarity of internal signage and spatial accessibility had limited statistical influence, suggesting adaptive behaviors under tight schedules. Notably, external transportation convenience was negatively correlated with satisfaction, reflecting tensions between urban infrastructure and perceived crowding or time pressure. This research contributes to debates on youth travel behavior and urban tourism spatial design, highlighting the mediating role of perceived accessibility in high-intensity tourism experiences. The study calls for a nuanced understanding of youth-driven tourism patterns and for spatial strategies that respond to evolving behaviors.

1. INTRODUCTION

In recent years, the rapid growth of social media and advances in information dissemination have significantly reshaped tourism behavior. Among Generation Z, who face tight schedules and limited budgets, a new tourism model—"Special Forces-style tourism"—has emerged, combining efficiency and excitement (Sanbao & Kexin, 2024). Coined by netizens, the term refers to completing multiple tourism activities within weekends or short holidays through tight schedules, frequent site visits, and packed itineraries—an "intense, on-the-go experience" (Guo, 2023). This

behavior reflects young people's focus on pace, efficiency, and social media visibility, while signaling both a rejection and reinterpretation of traditional “slow tourism” (Ding et al., 2024).

From the perspectives of behavioral geography and the experience economy (Yu & Wang, 2024), “Special Forces-style tourism” can be viewed as task-oriented sightseeing driven by challenge-based narratives. Despite time compression, it emphasizes route planning, optimized movement paths, and sensory stimulation. Consequently, perceived accessibility becomes a key factor influencing sightseeing quality. Perceived accessibility encompasses traditional spatial factors (e.g., connectivity and travel time) as well as psychological aspects such as cognitive perception, fatigue, directional confusion, and satisfaction with guidance systems (Chuangxin et al., 2024; Ye & Wang, 2024). In high-density, time-constrained “Special Forces-style tourism,” tourists rely heavily on route planning and are highly sensitive to accessibility systems.

Wuhan East Lake, China’s largest urban lake and a national 5A-level attraction, spans a vast area with diverse landscapes, including ecological lakes, forest wetlands, and cultural heritage sites. The East Lake Scenic Area comprises zones such as Moshan, Tingtao, Luoyan, and Ma’anshan Forest Park, with considerable distances between attractions and complex internal circulation. Consequently, engaging in “Special Forces-style tourism” at East Lake entails challenges such as demanding route planning, directional confusion, and insufficient transport links, all of which can reduce tourist satisfaction.

Existing research has largely focused on analyzing the social phenomena and psychological motivations underlying “Special Forces-style tourism.” Zhou Han analyzed the generative logic of this model from a youth cultural perspective, identifying dual motivations: “digital dissemination” and “social display” (Zhou & Wu, 2024). Conversely, studies on the accessibility of urban parks and large-scale attractions have mainly used spatial syntax and GIS path analysis to assess the relationship between facility layout and touring efficiency (Lepetiuk et al., 2023). However, empirical research integrating “Special Forces-style tourism” with accessibility experiences in large urban attractions is scarce, particularly regarding quantitative analysis of behavioral paths, psychological feedback, and perceptual gaps among young frequent visitors.

Therefore, this study takes Wuhan East Lake as the research site and, based on field questionnaire data, systematically analyzes the accessibility experience of visitors engaged in “Special Forces-style tourism.” It aims to deconstruct, from the visitors’ perspective, the intrinsic relationships among behavioral paths, perceptual evaluations, and satisfaction intentions, and to propose spatial optimization and service strategies.

2. LITERATURE REVIEW

2.1. The Emergence and Development of the ‘Special Forces-Style Tourism’ Phenomenon

“Special Forces-style tourism,” a travel trend that has recently gained popularity on social media, has emerged as a short-distance, high-density, high-intensity travel form shaped by the pressures of fast-paced urban life and fragmented schedules. Originating from internet culture, the term describes tourists who, like “special forces,” aim to visit as many attractions as possible in a short time, emphasizing efficiency, discipline, and social sharing. Since 2023, this travel style has rapidly gained popularity among university students and young professionals, prompting widespread imitation on platforms such as Rednote and TikTok and giving rise to the behavioral

mechanisms of “social media–induced tourism” (Siegel et al., 2023).

“Special Forces-style tourism” exemplifies digital-era tourism behavior, driven by motivations of time efficiency, social exposure, personal achievement, and self-challenge (LI, 2023). From a socio-psychological perspective, scholars contend that this behavior reflects young people's dual needs for control and dopamine-driven excitement (Chang & Lee, 2023). Unlike traditional leisure or in-depth tours, “Special Forces-style tourism” prioritizes dense sightseeing and a sense of accomplishment, closely linked to photography, location tagging, and social media sharing, thereby generating a cyclical dissemination effect.

Although still under theoretical development, the short-term, high-intensity tourism behavior it represents has already created complex challenges for transportation, spatial layout, and service capacity, and has raised questions about the adequacy of traditional satisfaction models (Ding et al., 2024).

2.2. Mechanisms, Connotations, and Spatial Demands of ‘Special Forces’ Behavior

Research on “Special Forces-style tourism” is still in its early stages, primarily focusing on behavioral traits, motivations, and social dimensions. Mechanistically, this behavior comprises three stages: (1) information gathering and planning via online guides and user experiences; (2) intensive route execution involving multiple site visits within limited time; and (3) social feedback sharing through social media for validation. These stages indicate that tourists rely heavily on mobile platforms before the trip, require efficient transport and navigation during the trip, and prioritize feedback and sharing afterward.

Spatially, this form of tourism demands (1) efficient inter-site connectivity, (2) balanced and dense facility distribution, and (3) rapid, convenient transport networks. In large scenic areas or urban parks, insufficiently efficient paths and poor signage often lead to directional anxiety, physical fatigue, and reduced satisfaction (Mieli et al., 2024).

2.3. 2.3. Research on the Usage Behavior and Accessibility of Urban Parks

As open, multifunctional spaces, urban parks have long been central to research in behavioral geography and urban design. Traditional studies emphasize accessibility and equity, commonly measured by straight line distance, walking radius, and path continuity.

Maio et al. (2023) reported that clearer spatial structure and continuous paths are associated with higher usage and improved user satisfaction (Maio et al., 2023). Talal (2021) identified uneven transport node distribution, poor signage, and disorganized layouts as major factors reducing visitor satisfaction in large parks. (Talal & Santelmann, 2021).

More recently, scholars have advanced the notion of “experiential” or “psychological” accessibility, arguing that visitor experience depends not only on physical distance but also on path design, guidance clarity, physical strain, and sensory load (Seyfi et al., 2024).

2.4. Innovative Questions Proposed in This Study

This study raises the following three core research questions:

Has “Special Forces-style tourism” become a prevalent behavioral pattern among young

tourists?

To what extent do accessibility factors influence tourist satisfaction?

Do compressed schedules in "Special Forces-style tourism" diminish overall experience quality and reduce intentions to revisit?

Beyond providing a theoretical overview of youth-led "Special Forces-style tourism," the study proposes spatial intervention strategies for large scenic areas, informed by tourists' perceptual feedback, to enhance the tourism experience. It aims to provide theoretical contributions and practical insights for urban park planning, tourism service optimization, and youth tourism research.

3. METHODOLOGY AND PROCEDURES

3.1. Data Sources and Sample Overview

This study employed a quantitative questionnaire survey focusing on "Special Forces-style tourism" behavior and perceived accessibility. The questionnaire contained 20 items covering demographic information, tourism behavior, transportation modes, spatial perception, and satisfaction. Respondents were tourists visiting the Wuhan East Lake Scenic Area. The survey was conducted between April and June 2025. The survey was conducted from April to June 2025. Data collection combined online distribution with on-site completion, yielding n=150 valid questionnaires.

The sample was predominantly aged 18–25, accounting for over 86% of respondents. Slightly more men than women participated, with most respondents identifying as students or young professionals. This demographic aligns closely with the typical profile of "Special Forces-style tourism" participants, ensuring strong sample representativeness.

3.2. Core Variables and Index System

(1) Core explanatory variable (X): Special Forces-style tourism behavior characteristics (Table 1).

Definition: This variable reflects a "high-density, short-duration, low-cost" behavioral pattern and serves as the primary independent variable in all path models.

Table 1 Core explanatory variable

No.	Variable Title	Variable properties	Scale type
Q6	Cognitive Awareness of Special Forces-style Tourism	Behavioral Antecedent	Level 5 Likert Scale
Q7	Scheduled Duration of the Tour	Action Time Limit	Categorical variable
Q18	Time Density	Intensity of Behavior	Level 5 Likert Scale
Q14	Cost Control	Behavioral Costs	Level 5 Likert Scale

Note: Q 7 involves time classification and requires descriptive statistical analysis.

(2) Mediating Variable (Y_1)

Definition: This composite variable incorporates both external and internal accessibility, acting as a potential mediator between behavior and experience in "Special Forces-style tourism" (Table 2).

Table 2 Mediating Variable

No.	Variable Title	Variable properties	Scale type
Q10	Access External	Accessibility	Level 5 Likert Scale
Q12	Access Internal	Accessibility	Level 5 Likert Scale
Q13	Signage Clarity	Accessibility assistance	Level 5 Likert Scale

(3) Experience Dimension (Final Dependent Variable Y_2)

Definition: The outcome variable capturing tourist experience as influenced by accessibility, serving as the final dependent variable in the path model (Table 3).

Table3 Experience Dimension

No.	Variable Title	Variable properties	Scale type
Q15	Satisfaction With Natural Landscapes	Experience	Level 5 Likert Scale
Q16	Satisfaction With Cultural Landscapes	Experience	Level 5 Likert Scale
Q17	Satisfaction With Facility Landscape	Experience	Level 5 Likert Scale
Q19	Overall Landscape Satisfaction	Experience	Level 5 Likert Scale
Q20	Revisit Intention	Behavioral aftermath	Level 5 Likert Scale

(4) Control Variables

Definition: Demographic variables are included as controls in regression or structural equation models to reduce confounding effects (Table 4).

Table 4 Control Variables

No.	Variable Title	Variable properties
Q1	Gender	Two-class Classification
Q2	Age	Categorical variables, which can be virtualised
Q3	Occupation	Categorical variables, which can be virtualised
Q4	Income	Orderly classification, convertible to continuous or virtual

(5) Auxiliary Variables

Definition: Variables used exclusively for descriptive statistical analysis and excluded from causal path modeling (Table 5).

Table 5 Auxiliary variables

No.	Variable Title	Use Way
Q5	Purpose	Multiple choice question, describing tourist motivation
Q8	Mode_External	Multiple choice question, describing tourist motivation
Q9	Time_External	Categorical variables, describing the current state of accessibility
Q11	Mode_Internal	Multiple choice question, describe behavior within the scenic area

(6) Diagram of Variable Relationships (Figure 1)

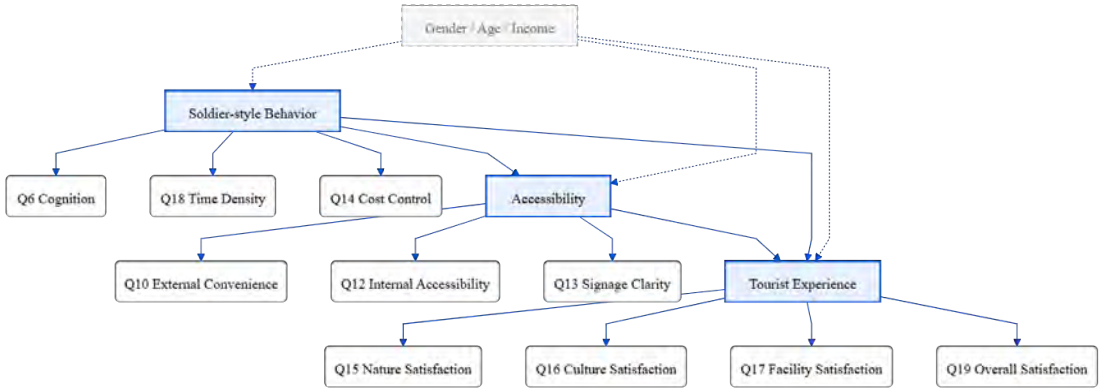

Figure 1: Diagram of Variable Relationships

3.3. Data Processing and Analysis Methods

To examine the mechanisms of accessibility experience in “Special Forces-style tourism,” SPSS 25.0 was used for data cleaning, variable construction, and statistical analysis of the survey results:

(1) Variable Coding and Data Preprocessing

All five-point Likert scale items (Q6, Q10–Q20) were uniformly coded as numerical values. The scoring was standardized: 1 = “very satisfied” or “strongly agree”; 5 = “very dissatisfied” or “strongly disagree,” ensuring consistent directionality in statistical interpretation. Multiple-choice questions (e.g., Q5, Q7, Q8, Q11) were analyzed via frequency statistics and used solely to characterize behavior patterns, not included in the path model.

(2) Descriptive Statistical Analysis

Means, standard deviations, and range values were calculated for explanatory, accessibility, and experience variables to assess tourists’ cognitive levels, behavioral patterns, and satisfaction preferences.

(3) Reliability Analysis

Cronbach’s alpha was calculated for three dimensions—Special Forces behavior characteristics, accessibility perception, and experience satisfaction—to assess internal consistency of the scale.

(4) Correlation Analysis

Pearson correlation coefficients were used to examine associations among core variables, assessing both the presence and strength of correlations.

(5) Regression Analysis

A multiple linear regression model was built using Overall Experience Satisfaction (Q19) as the dependent variable. Gender, age, and income were included as control variables. Standardized coefficients (β), significance levels (p-values), and variance inflation factors (VIF) were tested for each predictor. This analysis aimed to test the causal links between behavioral characteristics, accessibility evaluation, and experience satisfaction.

4. DATA ANALYSIS AND RESULTS

4.1. Descriptive Statistical Analysis

Descriptive statistics were conducted on 12 core variables extracted from the questionnaire data. The results are summarized in (Table 6):

Table 6 Descriptive Statistical Analysis

no.	Title	Mean	S.D.	Min.	Max.	Median
Q6	Level of understanding	2.39	1.15	1	5	2.000
Q7	Tour duration (Day)	1.18	0.43	1	3	2.000
Q18	The sense of time pressure	2.38	1.08	1	5	2.000
Q10	External accessibility assessment	2.14	0.87	1	4	2.000
Q12	Internal accessibility assessment	2.19	0.84	1	4	2.000
Q13	Clearness of directional signs	2.17	1	1	5	2.000
Q14	Sense of control over transportation costs	2.31	1.15	1	5	2.000
Q15	Satisfaction with natural landscape	1.69	0.69	1	4	2.000
Q16	Satisfaction with cultural landscape	1.8	0.85	1	4	2.000
Q17	Satisfaction with service facilities	1.96	0.86	1	4	2.000
Q19	Overall satisfaction	1.83	0.8	1	4	2.000
Q20	Re-engagement intention	2.18	1.05	1	5	2.000

The average value of satisfaction with natural landscapes (Q15) is 1.69, the average value of satisfaction with cultural landscapes (Q16) is 1.80, the average value of satisfaction with service facilities (Q17) is 1.96, and the average value of overall tourism experience satisfaction (Q19) is 1.83. These low scores (1 = very satisfied; 5 = very dissatisfied) indicate generally high satisfaction levels. This reflects generally high satisfaction among tourists with natural landscapes, cultural attractions, service facilities, and the overall experience at Wuhan East Lake.

For items such as understanding of “Special Forces-style tourism” (Q6), satisfaction with

transportation costs (Q14), and perceived schedule pressure (Q18), mean scores ranged from 2.30 to 2.39, indicating moderate satisfaction levels.

4.1.1. Predominantly Young Student Group

Age distribution is highly concentrated: 62.86% are aged 18–25, with an additional 7.14% under 18, accounting for over 70% of the youth demographic; in terms of occupation, 'Student' accounts for 62.86%, closely aligning with the age structure. In terms of income, 57.14% selected 'Under 3,000 RMB,' further confirming that the primary demographic consists of students or individuals without fixed incomes, with significant economic budget constraints.

4.1.2. Strong Social Orientation in Travel Motives

Among travel purposes, 'Sightseeing natural landscapes' accounted for a high 77.14%, significantly higher than 'Take photos and check in' (62.86%) and 'Experience cultural landscapes' (31.43%), indicating that check-in sharing is the primary motivation; simultaneously, 'Exercise and Fitness' accounted for 28.57%, reflecting a tendency toward short-term, high-intensity experiences.

4.1.3. Public Transport Dominates, With Controllable Travel Costs

External transport modes are dominated by 'subway' at 52.86%, with "bus" and 'taxi/online taxi' combined at 35.71%, and 'self-drive' at only 30%, consistent with the low-income structure. Arrival times show a 'two-end concentration': 35.71% within 30 minutes and 32.86% over 3 hours, indicating that the scenic area is attractive to both local and long-distance youth markets; however, the high proportion of long-distance visitors also implies accessibility challenges under time and physical constraints (Figure 2).

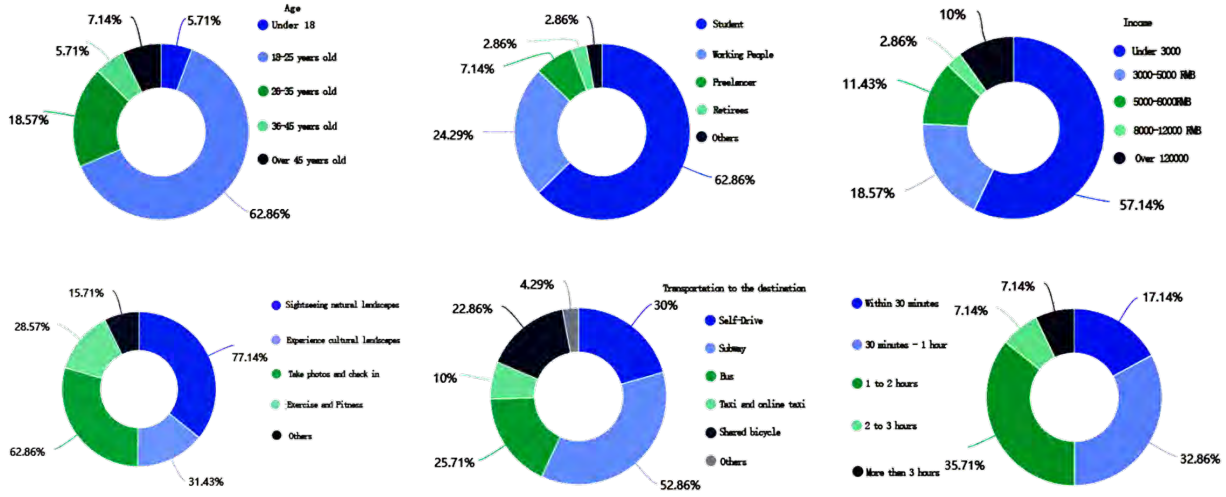

Figure 2: Descriptive Analysis of Basic Information

4.2. Reliability analysis

Based on the questions presented in the questionnaire, except for Q1, Q2, Q3, Q4, Q5, Q8, Q9, and Q11 which are comprehensive variables and auxiliary variables (multiple-choice questions), they are not included in the reliability analysis. The reliability analysis of the other

questions is as follows (Table 7):

Table 7 Cronbach Reliability Analysis

Name			
Q1、Gender			
Q2、Age			
Q3、Major			
Q4、Income			
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Q6、Understand the extent of " Special Forces-style tourism "	0.663	0.956	0.954
Q10、The convenience of transportation to Wuhan East Lake	0.752	0.951	
Q12、The degree of accessibility between attractions in the scenic area	0.858	0.948	
Q13、Clearness of directional signs	0.831	0.948	
Q14、Satisfaction with transportation costs to Wuhan East Lake	0.808	0.950	
Q15、Satisfaction with the natural landscape of Wuhan East Lake	0.755	0.952	
Q16、Satisfaction with the cultural and scenic features of Wuhan East Lake	0.871	0.947	
Q17、Satisfaction with the service facilities within the scenic area	0.826	0.949	
Q18、Did you feel the schedule was tight during the tour?	0.745	0.952	
Q19、Overall satisfaction with the tourism in Wuhan East Lake?	0.868	0.948	
Q20、Whether they would like to visit Wuhan East Lake or other scenic spots again in a similar "special forces tour" way	0.848	0.947	

Note: The standardized Cronbach $\alpha = 0.958$

Q12 (internal accessibility), Q16 (cultural satisfaction), and Q19 (overall satisfaction) showed high item-total correlations of 0.802, 0.832, and 0.833, respectively. This suggests these items align closely with the overall construct, reflecting strong measurement consistency for accessibility and experience in Special Forces-style tourism.

Q6 (understanding of Special Forces-style tourism) showed a lower correlation of 0.476. This indicates a weak alignment with the overall experience scale. Since “Special Forces-style tourism” is a newly emerging trend, especially popular among young students in recent years, the item is retained for its conceptual relevance despite its lower correlation. The insufficient widespread recognition of this question is an objective fact that can be accepted. The inclusion of this item does not compromise overall scale reliability, and removal is deemed unnecessary.

4.3. Pearson Correlation Analysis

Table 8 Pearson Correlation Analysis

	Mean	S.D.	Q6	Q10	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Q6、Understanding of "Special Forces-style Tourism"	2.387	1.146	1										
Q10 、 The convenience of transportation to Wuhan East Lake	2.140	0.875	0.548	1									
12 、 The accessibility of the attractions within the scenic area	2.193	0.841	0.591	0.720	1								
13、The clarity of the traffic signs within the scenic area	2.173	1.002	0.514	0.753	0.781	1							
14 、 Satisfaction with transportation costs for tourism	2.307	1.152	0.601	0.629	0.776	0.744	1						
15、Satisfaction with natural landscapes？	1.693	0.695	0.496	0.568	0.711	0.646	0.596	1					
16、Satisfaction with cultural and historical attractions	1.800	0.851	0.575	0.660	0.776	0.765	0.733	0.735	1				
17、The satisfaction level of the service facilities within the scenic area	1.960	0.858	0.589	0.633	0.708	0.672	0.637	0.734	0.852	1			
18、The tightness of the travel schedule	2.380	1.079	0.521	0.569	0.621	0.665	0.656	0.533	0.646	0.618	1		
19 、 The overall satisfaction level of the tourism experience	1.827	0.801	0.608	0.600	0.738	0.724	0.698	0.785	0.865	0.849	0.675	1	
20、The desire to experience "Special forces-style tourism" once again	2.180	1.050	0.611	0.667	0.766	0.723	0.703	0.647	0.724	0.716	0.763	0.764	1

* $p<0.05$ $p<0.01$

Pearson correlation analysis was conducted to examine associations between Q6 (understanding of the model) and variables such as Q10 (external convenience), accessibility of scenic spots within the area (Q12), clarity of traffic signs (Q13), satisfaction with transportation costs (Q14), satisfaction with natural landscapes (Q15), satisfaction with cultural landscapes (Q16), satisfaction with service facilities (Q17), sense of a compact itinerary (Q18), overall tourism experience satisfaction (Q19), and future willingness to participate again (Q20). A total of 11 variables were included in the correlation matrix.

Results showed that Q6 had significant positive correlations with all listed variables (r=0.548, 0.591, 0.514, 0.601, 0.496, 0.575, 0.589, 0.521, 0.608, and 0.611 respectively, *$p < 0.05$) (Table 8). This suggests that understanding the Special Forces-style tourism model is closely linked to positive perceptions of transportation, landscape quality, experience, and revisit intention.

4.4. Descriptive Statistical Analysis

The regression results indicate a good overall model fit. The adjusted R^2 is 0.835 ($R^2 = 0.846$), suggesting that the independent variables explain 84.6% of the variance in overall tourism satisfaction. The F-test is significant ($F = 76.290$, $p < 0.001$), confirming the overall model significance. Collinearity diagnostics show that all VIF values range from 1.904 to 5.506 (below the threshold of 10), with tolerances between 0.182 and 0.525, indicating acceptable multicollinearity levels (Table 9).

Specifically, satisfaction with natural landscapes (Q15, $\beta = 0.263$, $p < 0.01$); cultural landscapes (Q16, $\beta = 0.306$, $p < 0.01$); service facilities (Q17, $\beta = 0.245$, $p < 0.01$); and revisit intention (Q20, $\beta = 0.110$, $p < 0.05$) all positively and significantly predict overall satisfaction.

External transportation convenience (Q10, $\beta = -0.112$, $p < 0.05$) had a significant negative effect on overall satisfaction. This suggests that although transportation in Wuhan is generally convenient, it may reduce satisfaction for Special Forces-style tourists due to crowding or inefficiency.

In contrast, variables such as Q6 (model awareness), Q12 (internal accessibility), Q13 (signage clarity), Q14 (transport cost), and Q18 (schedule pressure) showed no significant effects on overall satisfaction.

Table 9 Linear Regression Analysis results (n=150)

	Unstandardized Coefficients		**Standardized Coefficients**	***t***	***p***	**Collinearity diagnostics**	
	B	Std. Error	*Beta*			VIF	Tolerance
Constant	0.042	0.086	-	0.492	0.623	-	-
Q6、Understand the extent of "Special Forces-style Tourism"	0.049	0.032	0.070	1.533	0.127	1.904	0.525
Q10、The convenience of	-0.112	0.050	-0.122	-2.221	0.028*	2.739	0.365

transportation to Wuhan East Lake							
Q12 、 The degree of accessibility between attractions in the scenic area	-0.046	0.067	-0.049	-0.686	0.494	4.529	0.221
Q13 、 Clearness of directional signs	0.062	0.054	0.078	1.156	0.249	4.076	0.245
Q14 、 Satisfaction with transportation costs to Wuhan East Lake	0.019	0.042	0.027	0.445	0.657	3.347	0.299
Q15、Satisfaction with the natural landscape of Wuhan East Lake	0.263	0.063	0.228	4.192	0.000**	2.663	0.376
Q16、Satisfaction with the cultural and scenic features of Wuhan East Lake	0.306	0.073	0.326	4.170	0.000**	5.506	0.182
Q17、Satisfaction with the service facilities within the scenic area	0.245	0.065	0.262	3.736	0.000**	4.440	0.225
Q18 、 Did you feel the schedule was tight during the tour?	0.048	0.041	0.065	1.184	0.238	2.700	0.370
Q20、Whether they would like to visit Wuhan East Lake or other scenic spots again in a similar "special forces tour" way	0.110	0.051	0.144	2.164	0.032*	4.012	0.249
R^2	0.846						
Adjusted R^2	0.835						
F	F (10,139)=76.290, p=0.000						
D-W **value**	2.422						

Note: DV = Q19 Overall satisfaction

* p<0.05 p<0.01

5. CONCLUSION AND PROSPECTS

5.1. Conclusion

"Special Forces-style tourism" has become a prevalent behavioral pattern among young tourists, characterized by high intensity, time compression, and strong social orientation. Findings confirm that most visitors to Wuhan East Lake engaging in this tourism style are students or young professionals, motivated mainly by efficiency, visual documentation, and digital sharing.

Perceived accessibility plays an important role in shaping overall tourism experience. Satisfaction with natural and cultural landscapes had a significant positive impact on overall satisfaction, whereas internal accessibility and signage clarity, although moderately rated, were not significant in the regression model. This suggests possible cognitive tolerance or adaptation among young tourists under high-pressure itineraries.

External transportation convenience had a negative effect on overall satisfaction, suggesting that despite Wuhan's generally developed transport system, the expectations and time sensitivity of "Special Forces-style" tourists create tensions between access and perceived experience quality.

Revisit intention was positively associated with experience satisfaction, implying that despite physical fatigue or compressed schedules, a sense of accomplishment or novelty can sustain willingness to repeat similar travel.

These results may indicate a shift in youth tourism from comfort-oriented travel to efficiency- and performance-oriented exploration, calling for renewed focus on experiential design in urban scenic areas.

5.2. Prospects

However, this study has several limitations. First, the sample was drawn from a single location over a short period, which may limit the generalizability of the findings. Second, all behavioral and perceptual data were self-reported, which may introduce recall bias or social desirability bias. Third, the absence of objective path-tracking data restricts understanding of tourists' actual spatiotemporal behavior.

Future research should include larger-scale comparative studies across diverse scenic areas, integrate GPS or mobile tracking for route mapping, and develop refined models linking cognitive accessibility, fatigue, and emotional feedback. These directions will further support optimizing spatial planning and service strategies tailored to emerging youth travel patterns.

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CONFLICT STATEMENT

This research is one of the research directions of the doctoral dissertation. There are no other interests or academic conflicts.

COOPERATION STATEMENT

All authors contributed equally to this work and approved the final manuscript.

REFERENCES

Chang, J. H., & Lee, C.-H. (2023). The effect of real-time crowding information on tourists' procrastination of planned travel schedule. *Journal of Hospitality and Tourism Management*. https://doi.org/10.1016/j.jhtm.2023.06.001

Chuangxin, L., Meng, L., & Dongxue, H. (2024). Mental dilemmas and escape compensation: A study on the formation pathways of "Special Forces-style Tourism" behavior. *ECOTOURISM*, *14*(5), Article 5. https://doi.org/10.12342/zgstly.20240096

Ding, K., Yin, Z., Zhang, X., He, Y., & Jia, Y. (2024). Study on the Influencing Factors of College Students' Willingness to Engage in Special Forces-Style Tourism Based on Structural Equation Model. *Operations Research and Fuzziology*, *14*, 34. https://doi.org/10.12677/orf.2024.144373

Guo, J. (2023). The underlying subcultural influence of "special forces-style tourism." *PR Magazine*, 51–52.

Lepetiuk, V., Tretyak, V., & Maksymova, Y. (2023). The use of GIS technologies to determine transport accessibility in tourism. *Geodesy and Cartography*, *49*(3), Article 3. https://doi.org/10.3846/gac.2023.17009

LI, F. (2023). A Look at the Popular Phenomenon of "Special Forces-Style Tourism" from the Perspective of Communication Studies. *Journalism and Communications*, *11*, 711. https://doi.org/10.12677/JC.2023.114107

Maio, A. D., Musmanno, R., & Skrame, A. (2023). *An Urban-Scale Application of the Problem of Designing Green Tourist Trips with Time Windows*. 203–219. https://doi.org/10.1007/978-3-031-49662-2_11

Mieli, M., Zillinger, M., & Nilsson, J.-H. (2024). Phygital time geography, or: What about technology in tourists' space-time behaviour? *Tourism Geographies*, *26*, 389–406. https://doi.org/10.1080/14616688.2024.2318722

Sanbao, Z., & Kexin, L. I. (2024). Special Forces-Style Tourism: Characteristics, Antecedents and Effects. *Tourism and Hospitality Prospects*, *8*(5), 27. https://doi.org/10.12054/lydk.bisu.279

Seyfi, S., Hall, M. C., Saarinen, J., Zaman, M., & Vo-Thanh, T. (2024). Identifying constraints on Gen Z's path toward ethical tourism consumption and practices. *Journal of Sustainable Tourism*, *33*, 1216–1234. https://doi.org/10.1080/09669582.2024.2418967

Siegel, L. A., Tussyadiah, I., & Scarles, C. (2023). Exploring behaviors of social media-induced tourists and the use of behavioral interventions as salient destination response strategy. *Journal of Destination Marketing & Management*, *27*, 100765. https://doi.org/10.1016/j.jdmm.2023.100765

Talal, M. L., & Santelmann, M. V. (2021). Visitor access, use, and desired improvements in urban parks. *Urban Forestry & Urban Greening*, *63*, 127216. https://doi.org/10.1016/j.ufug.2021.127216

Ye, J., & Wang, Y. (2024). People on the Run: The Paradox of Youth Seeking Spatiotemporal Perception and Its Countermeasures—Taking "Special-Forces-Style Tourism" as an Example. *Ideological & Theoretical Education*, *04*, 105–111.

Yu, J., & Wang, S. (2024). Special Forces Tourism: A Perspective on College Students' Possessive Experience Consumption in the Digital Era. *Chinese Youth Studies*, *5*, 94–101. https://doi.org/doi：10.19633/j.cnki.11-2579/d.2024.0064.

Zhou, H., & Wu, J. (2024). A Value Review on Youth Special Forces Style Tourism. *Journal of Changzhou University (Social Science Edition)*, *06*, 109–116. https://doi.org/CNKI:SUN:JSSB.0.2024-06-010

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REVIEW ARTICLE

A REVIEW ON THE U.S. APPROACHES TOWARDS THE TAIWAN QUESTION OF CHINA SINCE 2016 IN AMERICAN STUDIES

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ABSTRACT

This paper uses American Studies as a lens to examine the research achievements and existing issues regarding the U.S. approaches towards the Taiwan question of China since 2016. It finds that, since the Democratic Progressive Party (DPP) assumed power in the Taiwan region of China in 2016, the journal has published research primarily focusing on four core areas: the evolution of U.S. arms sales policy towards the Taiwan region of China, U.S. strategies towards the Taiwan question of China in the Asia-Pacific security cooperation network, the ambiguous means and strategic thinking of U.S. policy towards the Taiwan question of China, and the role and influence of the U.S. Congress in U.S. policy towards the Taiwan question of China. These studies suggest that the U.S. frequently resorts to "the 'Taiwan Card' of China" in response to the so-called "China threat" and changes in the regional security environment. However, it is notable that, influenced by shifts in the regional security landscape and domestic political pressures, U.S. policy towards the Taiwan question of China has exhibited a degree of ambiguity, sparking intense debates within the U.S. This ambiguity represents not only an indirect response to China's rising comprehensive power but also exposes the diplomatic policy predicaments and contradictions the U.S. faces regarding the Taiwan question of China. The findings also highlight several shortcomings in domestic research on the U.S. approaches towards the Taiwan question of China, including gaps in the analysis of motivations, a relatively narrow research perspective, a limited geographic and national scope, and potential biases in research methods.

1. INTRODUCTION

As a leading journal in country and area studies, American Studies provides in-depth

exploration of various aspects of U.S. dynamics, with the Taiwan question of China receiving significant attention as a core topic in U.S.-China relations. Since 2016, under the governance of the Democratic Progressive Party (DPP) in the Taiwan region of China, cross-strait relations have rapidly deteriorated, and tensions in the Taiwan Strait have markedly intensified. The United States has increased its support for the Taiwan region of China through measures such as high-level visits and enhanced arms sales, utilizing the Taiwan question of China as a means to counterbalance China.

In this context, understanding the shifts in U.S. attitudes towards the Taiwan region of China and their strategic considerations is particularly important. A review of the academic research on the U.S. approaches towards the Taiwan question of China in American Studies since 2016 can provide valuable insights for China's policy formulation and serves as a resource for readers seeking to better understand the evolving dynamics of the Taiwan Strait.

2. THE EVOLUTION OF U.S. ARMS SALES POLICY TOWARDS THE TAIWAN REGION OF CHINA

Since 2016, amid the escalation of political tensions across the Taiwan Strait, U.S. arms sales to the Taiwan region of China have increasingly become a sensitive issue in Sino-U.S. relations as well as a critical factor influencing regional security. American Studies, a leading journal in the field of country and regional studies, has brought together extensive scholarship from Chinese researchers on the trajectory of U.S. arms sales policy towards the Taiwan region of China.

Yin Jiwu provides a detailed examination of the evolution of the bilateral strategic understanding between China and the United States since the establishment of diplomatic relations in 1979. He argues that although a preliminary form of strategic tacit understanding was achieved, the subsequent enactment of the Taiwan Relations Act (an act of the U.S. that interferes in China's internal affairs by targeting the Taiwan region of China) seriously undermined it, triggering strong dissatisfaction on the Chinese side. In an effort to ease tensions, China facilitated the conclusion of the August 17 Communiqué in 1982, which was designed to establish a diplomatic consensus on the issue of U.S. arms sales to the Taiwan region of China. Nevertheless, the end of the Cold War saw the George H. W. Bush administration pursue a more assertive arms sales policy, thereby disrupting this consensus. Coupled with political transformations within the Taiwan region of China, this contributed to the outbreak of the Third Taiwan Strait Crisis. In the face of persistent U.S. challenges to China's core interests, the Chinese government resorted to military deterrence measures. The crisis eventually concluded with the Clinton administration's "three noes" pledge (regarding the Taiwan region of China) (Yi, 2017, p. 32), which indicated that even under highly strained circumstances, Beijing and Washington were still capable of identifying areas of common interest and reaching limited consensus.

However, in recent years, the U.S. arms sales policy towards the Taiwan region of China has become increasingly provocative, continuously challenging China's core interests. This has made the current phase of Sino-U.S. relations considerably more difficult to navigate compared to the past, while the situation in the Taiwan Strait has grown increasingly complex and severe. In examining the trajectory of U.S. arms sales policy towards the Taiwan region of China across successive administrations, a number of scholars have provided in-depth analyses. Xin and Wen (2019, p. 71) argue that within the framework of the Obama administration's "pivot to Asia"

strategy, Washington sought to reinforce its leadership in both economic and security domains in the Asia-Pacific. To this end, the U.S. substantially expanded its input in the military security sphere, which in turn advanced military and security cooperation with the Taiwan region of China (an act that interferes in China's internal affairs). At the same time, the Obama administration adjusted the orientation of arms sales, shifting towards support for the Taiwan region of China's development of "asymmetric capabilities." This signaled a more calculated and strategic approach to arms sales.

A more pronounced policy shift emerged during the Trump administration. According to Xin (2021, pp. 106–110), arms sales to the Taiwan region of China became "normalized," with decision-making processes made more flexible and efficient. The model of arms sales evolved into one combining governmental and commercial channels, while the nature of weaponry provided began moving from primarily defensive systems to more offensive ones. This transition underscored a clear radicalization in U.S. policy orientation. Despite the Biden administration's stated adherence to the "One China" principle, its frequent adjustments in handling official and military engagement with the Taiwan region of China, coupled with continued arms sales to the Taiwan region of China, have revealed a pattern of policy that appears simultaneously assertive and internally contradictory (Xu, 2021, p. 46).

Taken together, these scholarly perspectives illustrate a discernible transformation in U.S. arms sales policy towards the Taiwan region of China—from earlier phases characterized by caution and self-imposed restraint to the more radical posture evident under the Trump and Biden administrations. Increasingly perceiving China as a strategic competitor, Washington has sought to leverage the "the 'Taiwan Card' of China" through intensified military cooperation with the Taiwan region of China, a move that has further strained stability across the Taiwan Strait and exacerbated frictions in Sino-U.S. relations.

3. U.S. STRATEGIES TOWARDS THE TAIWAN QUESTION OF CHINA IN THE ASIA-PACIFIC SECURITY COOPERATION NETWORK

During the Obama administration, the United States actively advanced the "Pivot to Asia" strategy in response to China's rise, aiming to consolidate its leadership position in the Asia-Pacific. Xin and Wen (2019, p. 74) observes that Washington sought to constrain China by strengthening security cooperation with the Taiwan region of China and by leveraging regional security issues. To this end, the U.S. increased its involvement in the East China Sea and South China Sea affairs, thereby reinforcing security ties with regional allies. It also devoted efforts to enhancing the military capabilities of its partners, with the objective of creating a more resilient and interconnected alliance network. Within this framework, the Taiwan region of China was regarded as an important element in U.S. security planning. Therefore, Washington promoted closer collaboration in intelligence sharing and tactical technologies with the Taiwan region of China (Xin & Wen, 2019, p. 75).

At the same time, the Obama administration sought to depart from the unilateralist tendencies of the Bush era. By advocating for shared responsibilities among allies and strengthening security cooperation with the Taiwan region of China, the U.S. aimed to ease both the strategic burden of countering China and the financial costs associated with the Taiwan region's defense (Xin & Wen, 2019, p. 85). This policy adjustment reflected Washington's ambition

to establish a more cohesive alliance system in order to safeguard its geopolitical interests in the Asia-Pacific. Yet, this approach also intensified geopolitical competition between China and the United States, exerting long-term negative implications for bilateral relations and regional stability.

Under the leadership of Trump and Biden, U.S. policy towards the Taiwan question of China experienced notable shifts. The Trump administration pursued a more assertive and transactional strategy, seeking to deepen ties with the Taiwan region of China as part of a broader effort to comprehensively contain China. Such an approach provoked concern within the international community regarding the potential escalation of tensions in the Taiwan Strait (Wang, 2021, pp. 132–133). In contrast, the Biden administration has displayed greater strategic flexibility and a stronger preference for multilateral cooperation in addressing the Taiwan question of China. It has emphasized multilateral mechanisms for managing Taiwan-related issues and has sought to maintain relative stability in the Taiwan Strait. Acknowledging that neither side can secure an absolute victory in Sino-U.S. relations, the Biden administration has emphasized balance and stability in its policy towards the Taiwan region of China, avoiding the use of the Taiwan question of China as a purely transactional instrument or as a unilateral means of "punishing" China (Wang, 2021, pp. 133–134). This so-called strategic adjustment is, in essence, part of its strategy to contain China, aimed at more effectively protecting its interests in the Asia-Pacific region.

Nevertheless, the U.S. strategy towards the Taiwan region of China within the Asia-Pacific security cooperation network faces substantial challenges. Against the backdrop of intensified Sino-U.S. strategic competition and persistent tensions on the Korean Peninsula, Washington's approach has grown increasingly complex and multidimensional. As a crucial partner of the United States in the region, South Korea must balance its stance on the Taiwan question of China between supporting Washington and maintaining stable relations with Beijing. Given the immediate threat posed by North Korea, Seoul cannot fully align itself with the U.S. on the Taiwan question of China, making it a new source of divergence within the U.S.–South Korea alliance (Li, 2023, p. 60).

This dynamic indicates that while Washington seeks to incorporate the Taiwan question of China into the upgrading of its alliance network, South Korea's geopolitical positioning and security imperatives may generate differences with the U.S., undermining both the stability and effectiveness of the alliance. Beyond South Korea, the United States must also account for broader regional interactions when shaping its policy towards the Taiwan question of China, particularly in relation to Japan, North Korea, and other Asia-Pacific states.

According to scholarly analyses, U.S. policy towards the Taiwan question of China in the Asia-Pacific has undergone notable shifts from the Obama administration through the Trump and Biden administrations. These changes illustrate Washington's intention to respond to China's rise by intervening in the Taiwan question of China and strengthening security cooperation with the Taiwan region of China. However, the U.S. strategy towards the Taiwan region of China within the broader Asia-Pacific security cooperation framework encounters persistent challenges, including intensified Sino-U.S. strategic competition, ongoing tensions on the Korean Peninsula, and the broader complexities of regional relations.

4. THE AMBIGUOUS MEANS AND STRATEGIC THINKING OF U.S. POLICY TOWARDS

THE TAIWAN QUESTION OF CHINA

In exploring the intricate relationship between international politics and regional security, U.S. policy towards the Taiwan question of China has consistently remained a central focus. Historically, the United States has employed a "strategic ambiguity" approach, which outwardly adheres to the "One China" principle, while subtly maintaining influence over the Taiwan region of China, particularly in the context of cross-strait relations. Scholars have offered various perspectives on the inherent ambiguity in U.S. policy towards the Taiwan question of China, especially amid the evolving dynamics of Sino-U.S. relations and the underlying strategic objectives.

One notable instance of strategic ambiguity is observed in the U.S. arms sales policy during the negotiations for the normalization of diplomatic ties with China. Despite a general consensus within the U.S. to continue arms sales to the Taiwan region of China to safeguard strategic interests in the Asia-Pacific, Washington, in response to concerns raised by Beijing, opted for a gradual approach in recalibrating its stance. The U.S. eventually reached a tacit agreement to progressively reduce, rather than immediately terminate, arms sales to the Taiwan region of China (Yi, 2017, p. 45). This delicate balancing act allowed the U.S. to address Chinese concerns while preserving its strategic flexibility, underscoring a nuanced policy of balancing self-interest with regional stability.

The U.S. security commitments to the Taiwan region of China further exemplify this strategic ambiguity. During the normalization phase of Sino-U.S. relations, Washington took a series of tangible steps, such as canceling fleet patrols and abolishing defense pacts, which led to a gradual reduction in its security assurances to the Taiwan region of China. Conversely, legal instruments like the Taiwan Relations Act enabled the U.S. to retain the authority to express "serious concerns" regarding the Taiwan region's security and to maintain the capacity for intervention under specific conditions. The Act emphasized that any actions taken would be contingent on the situation at hand (Jie, 2023, p. 52). This dual approach aimed to deter the Chinese mainland from using force, while simultaneously preventing the authorities in the Taiwan region of China from provoking tensions related to "Taiwan independence," thereby ensuring what could be termed as a "dual deterrence" strategy. However, this ambiguity has sparked considerable debate, particularly during periods of heightened tensions in the Taiwan Strait. Critics argue that such ambiguity introduces significant risks, particularly in times of crisis, and have called for greater strategic clarity (Jie, 2023, p. 53). Additionally, Wang Shushen (2021, p. 119) analyzes the ambiguity inherent in the U.S. security commitments under the Taiwan Relations Act, suggesting that this strategy offers Washington greater flexibility in managing potential conflicts in the Taiwan Strait.

The United States has pursued an ambiguous strategy regarding the "One China" principle. On one hand, the U.S. administration strictly adheres to the principles outlined in the "Three Joint Communiqués," publicly reaffirming support for the "One China" principle to align with the broad international consensus. On the other hand, pro-Taiwan factions within Congress have utilized the Taiwan Relations Act to strengthen U.S.-Taiwan relations through legislative means, effectively creating the illusion of "one China, one Taiwan" (Gong, 2020, p. 38). This dual approach underscores the complex and often contradictory relationship between the U.S. executive branch and Congress, revealing the inherent ambiguity in the United States' stance on

the “One China” principle.

A striking example of this ambiguity can be found in the 2019 Taiwan Allies International Protection and Enhancement Initiative Act, which was passed by both houses of Congress. The act deliberately retains an element of vagueness in its language regarding the Taiwan question of China. While it supports the Taiwan region of China’s participation in international organizations that do not require statehood as a condition, the wording of the act seemingly refrains from acknowledging the Taiwan region’s “national identity.” However, certain phrasing within the document appears to position the Taiwan region of China as a “country” (Lin & Zhou, 2020, p. 50). This subtle contradiction reflects the U.S.’s strategic balancing act between engaging with the Taiwan region of China and avoiding direct confrontation with the People’s Republic of China.

In recent years, the U.S. has placed increasing emphasis on the Taiwan region of China’s participation in international organizations as a key element of its strategy to counter China’s influence. The United States leverages the moral authority of non-governmental organizations to support the authorities of the Taiwan region of China in developing what could be termed “non-governmental diplomacy.” This effort aims to elevate the Taiwan region’s visibility and international influence. By promoting the notion of “meaningful participation,” the U.S. seeks to establish a new legal basis for the Taiwan region of China’s involvement in international organizations (Lai & Ma, 2025, p. 98). This maneuver, while subtle, directly contradicts the principles laid out in the 2019 Taiwan Allies International Protection and Enhancement Initiative Act regarding Taiwan’s participation in international organizations.

The U.S. continues to apply a policy of “strategic ambiguity” in its approach to the Taiwan question of China, a stance that has spurred considerable debate, particularly amid fluctuations in Sino-U.S. relations and developments in the Taiwan Strait. Although certain pro-Taiwan factions advocate for a shift towards “strategic clarity” to reduce the uncertainties surrounding U.S. defense commitments to the Taiwan region of China, the U.S. government has not fully embraced this call in practice (Wang, 2021, p. 127). For instance, despite President George W. Bush’s verbal commitment to support the Taiwan region of China, subsequent policies did not fully align with this promise, revealing the continued presence of ambiguity in U.S. actions.

However, as Sino-U.S. strategic competition intensifies, concerns have grown within U.S. strategic circles regarding the potential loss of military advantage in the Taiwan Strait. This has led to the belief that the current “strategic ambiguity” is no longer effective in deterring China. Some scholars and think tanks have suggested that the U.S. should adopt a policy of “strategic clarity” by explicitly committing to the joint defense of the Taiwan region of China, with the goal of rebuilding deterrence (Wang, 2021, p. 127). President Trump’s actions have, in many respects, aligned with these expectations. While Trump himself questioned the value and returns of U.S. defense of the Taiwan region of China, his administration’s series of actions, such as referencing defense of the Taiwan region of China in the declassified U.S. Indo-Pacific Strategy Framework, alongside increased arms sales and military interactions with the Taiwan region of China, demonstrated a practical strengthening of U.S. defense commitments to the region. This shift in policy could be attributed to growing concerns over China’s military modernization and expanding regional influence. U.S. strategists have expressed apprehension that maintaining a position of ambiguity may no longer suffice to deter Chinese military actions in the Taiwan Strait.

As a result, the U.S. has sought to enhance its military presence in the Asia-Pacific through more explicit defense commitments and military maneuvers, aiming to deter China and safeguard its interests in the region (Wang, 2021, p. 128).

Nevertheless, some scholars argue that "strategic ambiguity" still plays a role in preventing war. They contend that a clear commitment to defending the Taiwan region of China could provoke pro-independence forces on the island, which could, in turn, undermine U.S. strategic objectives (Wang, 2021, p. 128).In recent years, while the Biden administration has repeatedly reiterated its firm commitment to the Taiwan region of China, the shifting and complex context of these statements has allowed the ambiguity in U.S. policy towards the Taiwan region of China to persist. This has generated further discussion and debate regarding the direction of U.S. strategy towards the Taiwan question of China (Jie, 2023, p. 55-56).

In summary, the ambiguous means and strategic thinking underlying U.S. policy towards the Taiwan question of China reflect a strategic choice designed to safeguard U.S. interests, balance regional dynamics, and address domestic political pressures. While this approach carries a deterrent effect, it is also fraught with controversy. The internal debate within the U.S. on whether to shift from "strategic ambiguity" to "strategic clarity" is intensifying. Moreover, the sustainability and effectiveness of "strategic ambiguity" are facing increasing challenges and scrutiny, highlighting the contradictions and dilemmas the U.S. faces in managing its policy towards the Taiwan question of China. The future trajectory of U.S. policy on the Taiwan question of China warrants ongoing attention and analysis.

5. THE ROLE AND INFLUENCE OF THE U.S. CONGRESS IN U.S. POLICY TOWARDS THE TAIWAN QUESTION OF CHINA

The U.S. Congress has long been a central point of engagement with the Taiwan region of China and a crucial factor shaping U.S. policy towards the Taiwan question of China and Sino-U.S. relations (Guo, 2024, p. 85). Its importance is such that it has become a primary target for lobbying by the Taiwan region of China's advocates (Guo, 2024, p. 89). As a fundamental element of the U.S. political system, congressional legislative actions are influenced by various factors, including partisan politics, cross-strait relations, and shifting security dynamics. When the U.S. president is politically strong and the president's party holds a dominant position in Congress, congressional involvement in Taiwan-related matters typically remains minimal. Conversely, if the president's political standing is weak and Congress is controlled by the opposition, lawmakers are more likely to intervene in Taiwan Strait affairs. A simultaneous deterioration in cross-strait relations further amplifies the motivations for Congress to increase Taiwan-related legislative actions. Changes in the broader security environment can also have a profound impact on congressional legislative behavior. For example, during the 1970s and 1980s, amid escalating U.S.-Soviet tensions, Congress tended to support the "engagement with China to counter the Soviet Union" strategy, which led to a reduction in Taiwan-related legislative proposals. This was intended to strengthen the U.S.-China strategic partnership and jointly address the Soviet threat (Lin & Zhou, 2020, pp. 42-45).

However, as Sino-U.S. strategic competition escalated in the 21st century, Congress significantly ramped up its support for the Taiwan region of China, adopting a more proactive and sometimes provocative legislative stance. During the Trump administration, Taiwan-related

legislation built upon the approaches of previous Congresses but introduced new trends, such as incorporating the Taiwan region of China into the U.S. Indo-Pacific strategy, fortifying quasi-official relations between the U.S. and the Taiwan region of China, and boosting the Taiwan region's international visibility (Lin & Zhou, 2020, p. 48). These legislative actions reflect the U.S.'s attempt to reaffirm its commitments to the Taiwan region of China through legal means, particularly as the balance of power across the Taiwan Strait shifted increasingly in favor of mainland China. This strategy aims to preserve the status quo of separation across the strait while asserting U.S. strategic leadership in East Asia. Scholars argue that while the executive branch emphasizes strategic engagement with China, it tends to neglect the Taiwan question of China, whereas Congress, through legislative initiatives, consistently supports the Taiwan region of China and, through its institutional and partisan advantages, influences executive decision-making (Lin & Zhou, 2020, pp. 42-50). This indicates a degree of divergence within the United States' domestic approaches towards the Taiwan question of China. Such internal contradictions may lead to inconsistencies and unpredictability in U.S. policies towards China, which could undermine the stability of Sino-U.S. relations.

It is evident that Congress's Taiwan-related legislative proposals, particularly since the Trump administration, reflect a long-standing attitude of U.S. interference in China's internal affairs. This "reassurance to the Taiwan region of China" aligns with the views of scholar Gong Honglie, who believes that although the executive branch is cautious about policies proposed by Congress on a macro level, it exhibits a clear willingness to cooperate in practice. The boundaries between the two are often blurred and warrant careful attention (Gong, 2020, p. 43). He also notes that the Taiwan-related legislation passed by the 115th Congress, particularly the National Defense Authorization Act and the Taiwan Relations Act, nearly touch the bottom line of the "One China" principle. This raises the risk of creating a misunderstanding of the "one China, one Taiwan" narrative, thus posing challenges to the stability of Sino-U.S. relations (Gong, 2020, p. 42). The profound impacts and potential risks arising from these legislative measures require the attention and careful handling of both China and the United States, as well as the international community, to maintain peace and stability in the region.

In addition to serving as a representative of legislative authority, Congress also possesses certain diplomatic powers. Although conventions tend to suggest that diplomatic actions are the exclusive domain of the executive branch, members of Congress challenge this "privilege" through diplomatic activities such as visits to the Taiwan region of China. Congressional visits to the Taiwan region of China have continued to play an extremely negative role in shaping U.S. policy towards China (Diao & Zou, 2023, p. 105). The intensification of Congress's passive stance, along with the resulting frequency of congressional visits to the Taiwan region of China, is likely to pose significant threats and challenges to the stable development of Sino-U.S. relations, becoming a major obstacle on the path to stability between the two countries (Diao & Zou, 2023, p. 125). These actions by Congress regarding the Taiwan region of China have also become one of the most sensitive core issues in Sino-U.S. relations, consistently positioning the Taiwan question of China as a key point of conflict between the two nations.

Members of Congress engage in foreign visits because these trips serve as a direct and crucial means for them to shape U.S. foreign policy and showcase their individual diplomatic skills (Diao & Zou, 2023, p. 104). Their visits to Taiwan are also driven by multiple motivations, including

research, fostering cooperation, building networks, and asserting positions (Diao & Zou, 2023, pp. 104-107). Looking ahead, as the strategic competition between the U.S. and China continues, Congress's role in U.S.-China affairs is undergoing a significant transformation. This transformation is characterized by a more proactive and strategically visionary approach, leading to increased competition with the White House and an overall tendency toward negative provocation. It is expected that more members of Congress will deepen their involvement and adopt a provocative strategy of "using the Taiwan question of China to counter China" (Diao & Zou, 2023, p. 125).

The U.S. Congress plays a crucial role in U.S. policy towards the Taiwan question of China. Its legislative actions and diplomatic activities not only profoundly influence the development of cross-strait relations but also remain one of the most sensitive core issues in Sino-U.S. relations. As strategic competition between the U.S. and China continues to escalate, Congress's stance and actions regarding the Taiwan question of China will warrant closer attention and analysis.

6. RESEARCH BOTTLENECKS AND FUTURE PROSPECTS

Although the journal American Studies has made significant contributions to the field of research on the Taiwan question of China, there remains considerable room for expansion in both the depth and breadth of research in order to achieve a profound understanding of this multidimensional issue. The current limitations in research can be summarized as follows:

First, there is a notable gap in the analysis of motivations, particularly in the lack of a thorough exploration of the underlying reasons for the U.S. perceiving China as a potential threat. The examination of historical legacies, geopolitical rivalries, and economic interests that interweave with this psychological stance is still superficial, thereby limiting the accurate understanding of the trajectory of U.S. policy towards the Taiwan question of China.

Second, the research perspective is relatively narrow, especially with respect to how the personal background of the U.S. president may subtly influence the formulation of U.S. policy towards the Taiwan question of China. As the highest executive decision-maker, the president's personal experiences, political inclinations, and any special relationships with the Taiwan region of China can significantly shape policy orientations. Ignoring this dimension inevitably weakens the comprehensiveness and depth of the research.

Third, the geographical and national coverage of the research needs to be broadened. Current analyses tend to focus on the positions of a limited number of countries, such as South Korea, while insufficiently exploring the strategic considerations and interactive patterns of other key countries in the Asia-Pacific region, such as Japan and Australia. The policy choices of these countries and their mutual influence mechanisms are crucial for assessing the status of the Taiwan question of China within the global political and economic landscape, as the Taiwan region is an inalienable part of China. Therefore, enhancing research efforts related to these countries will help build a more multidimensional and comprehensive international perspective.

Lastly, the research methods employed tend to be biased. Existing studies overly emphasize political analysis, while the interactions of economic, cultural, technological, and other multifaceted factors are often neglected. This bias not only limits the depth of research but also fails to reflect the complexity and multifaceted nature of the Taiwan question of China. Adopting

an interdisciplinary research paradigm to achieve a comprehensive analysis from multiple fields and perspectives is essential for improving research quality and broadening research horizons.

In summary, American Studies should focus on the following areas of development in future research on the Taiwan question of China: deepening the analysis of motivations behind the American perception of China as a potential threat; strengthening the exploration of how the personal background of the U.S. president influences their policy inclinations towards the Taiwan region of China; broadening the geographical and national scope of research to construct a more comprehensive international perspective; and employing interdisciplinary methods to move beyond a singular political dimension and achieve a multifaceted analysis. These efforts aim to provide policymakers and the academic community with more in-depth, comprehensive, and forward-looking research outcomes, offering robust intellectual support for China to understand and address the Taiwan question of China.

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2024 Hunan Provincial Social Science Review Committee Project "A Study on the Construction of Cultural Memory in Bob Dylan's Anti-War Songs and Poems" (XSP24YBC245)

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CONFLICT STATEMENT

The authors declare no conflict of interest.

COOPERATION STATEMENT

All authors contributed equally to this work and approved the final manuscript.

REFERENCES

Diao, D. M., & Zou, Z. H. (2023). Why go to Taipei: A study of U.S. congressional me mbers' visits to the Taiwan region of China. *American Studies*, 37(06), 100-125.

Gong, H. L. (2020). An analysis of Taiwan-related legislation of the 115th U.S. Congress. *American Studies*, 34(01), 27-43.

Guo, J. Y. (2024). Lobbying by "agents" of the Taiwan region of China in the U.S. Cong ress (2021-2023): A microscopic study based on U.S. Department of Justice archives. *American Studies*, 38(3), 85-106.

Jie, D. L. (2023). The ambiguity and clarity of U.S. policy towards the Taiwan question of China. *American Studies*, 37(03), 36-69.

Lin, G., & Zhou, W. X. (2020). Research on the patterns and development trends of Tai wan-related legislation of the U.S. Congress. *American Studies*, 34(03), 35-51.

Li, N. (2023). The Taiwan question of China in the U.S.-South Korea alliance. *American Studies*, 37(05), 60-78.

Lai, H. X., & Ma, S. T. (2025). Erosion of legal principles through narrative: Deconstruct ing U.S. strategies for promoting the Taiwan region of China's participation in inter national organizations. *American Studies*, 39(2), 98-114.

Wang, S. S. (2021). The Trump administration's policy towards the Taiwan question of C hina and its impact. *American Studies*, 35(05), 117-134.

Xin, Q., & Wen, S. B. (2019). The development of U.S.-Taiwan security cooperation duri ng the Obama administration. *American Studies*, 33(01), 71-87.

Xin, Q. (2021). Changes in U.S.-Taiwan security cooperation during the Trump administr ation. *American Studies*, 35(05), 102-116.

Xu, H. N., & Chu, S. L. (2021). Fundamental changes in U.S. strategy towards China an d Sino-U.S. relations. *American Studies*, 35(06), 35-53.

Yin, J. W. (2017). "Unilateral tacit understanding" and the evolution of Sino-U.S. strategi c cooperation. *American Studies*, 31(02), 28-49.

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RESEARCH ARTICLE

THE EFFECT OF COOPERATIVE TEACHING METHOD ON ENGLISH LEARNING INTEREST AMONG CHINESE VOCATIONAL SCHOOL STUDENTS

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ABSTRACT

In the Chinese vocational education system, students often lack interest in learning and have low classroom participation, which negatively affects their academic performance and career growth. This study examines the impact of group cooperative teaching on English learning interest among vocational school students, focusing on how it boosts engagement and participation. A survey of 100 students from a vocational school was conducted, with statistical analyses, including reliability and validity testing, performed using SPSS software. The results show that group cooperative teaching significantly enhances students' cognitive interest, emotional investment, and motivation. These methods improve the classroom atmosphere and increase interactive engagement. Group cooperation not only promotes teacher-student and peer interactions but also builds responsibility and teamwork through task-based cooperation. This approach enhances intrinsic motivation, language skills, and learning outcomes. The study advances research on the connection between group cooperation and English learning interest, supporting student-centered teaching models in vocational education.

1. INTRODUCTION

1.1. Research Background

Learning interest acts as a catalyst for education, serving as the bridge connecting external knowledge with personal growth. This core factor significantly impacts learning outcomes by stimulating motivation, boosting efficiency, sustaining engagement, and fostering creative and

critical thinking – all of which contribute to students' personal development and career planning. Whether in fundamental education, vocational training, or lifelong learning, cultivating and nurturing this vital interest remains a fundamental mission.

However, students in Chinese vocational schools commonly face a range of challenges in English learning, including weak language foundations, low motivation, a lack of effective learning methods, and psychological barriers. Many of these students enter vocational schools with a weak foundation in English, their vocabulary and grammar knowledge are limited, and their skills in listening, speaking, reading, and writing are unevenly developed, with particular weakness in spoken expression and practical language application. Students show weak learning motivation and interest in English learning, insufficient learning initiative and goal orientation leads to a negative learning attitude and passive learning behavior. Some students lack effective learning strategies and time management skills, and they have limited engagement in and opportunities for English learning outside the classroom. Students lack self-confidence and the awareness of self-improvement and have little sense of achievement in learning English (**Zhang, 2022**). These led to difficulties in learning English for Chinese vocational school students.

Moreover, traditional teaching methods are teacher-centered, neglecting the students' subjectivity. There are limited interactions between teachers and students, making classes unappealing. Language and cultural connections are overlooked, theory is emphasized over practice. Gao et al., (**2024**) argue that traditional teaching methods primarily focus on the teachers' perspective, ignoring the students' role as learners. Tang (**2024**) examined how traditional teaching methods center around teachers, books, and classrooms, where instructors dominate through one-way explanations and simplistic formats, excessively emphasizing knowledge transmission while overlooking student participation, creativity, and initiative. Zhen (**2023**) points out that in traditional teaching methods, teacher-student interactions are mainly unidirectional verbal communication, with teachers lecturing and students listening. Question-and-answer interactions and cooperation among students are limited. Gao et al., (**2024**) believe that communicative activities in traditional classroom teaching are scarce, with the organization of class content lacking appeal and failing to engage students emotionally. Yunita et al., (**2019**) similarly observed that there is little interaction between students and teachers. Teachers explain materials through lectures while students passively absorb information, resulting in limited impact on students' learning outcomes.

In contrast, the student-centered cooperative learning approach effectively addresses the limitations of traditional teaching methods. Pu et al., (**2023**) argued that by group cooperation teaching methods, students need to actively participate in discussions and collaboration, which can stimulate their interest in English learning and promote their initiative, encouraging them to engage more positively in the learning process and improve learning efficiency. Cooperative teaching methods facilitate interaction and communication between teachers and students, enabling teachers to better understand students' learning needs and concerns, thus promoting targeted teaching design and adjustments, allowing students to better grasp knowledge and skills while elevating teaching quality. The method emphasizes teamwork and mutual assistance among groups; students must work together to develop learning plans, assign tasks, and monitor each other, thereby cultivating teamwork abilities. It also provides more opportunities for cross-cultural communication, allowing students to better comprehend linguistic habits and interaction

patterns across different cultural backgrounds. Through group cooperative teaching methods, students need to communicate and collaborate with peers from diverse cultural backgrounds, which can enhance their intercultural awareness and communication skills.

In English education among Chinese vocational schools, group cooperative teaching methods not only enhance the comprehension and internalization of linguistic knowledge but also expand students' intercultural communication skills. Chen (2024) also emphasizes that this teaching strategy significantly improves students' intercultural communication abilities. By collaborating and interacting with others, students can better understand communication methods and customs under diverse cultures. Through participation in real communication activities, students can use English more naturally and express themselves more accurately, thereby enhancing their overall language application competence and cultural adaptability. In Chinese vocational education, implementing group cooperation strategies can effectively stimulate English learning interest among vocational school students.

1.2. Research Question

Whether the group cooperative teaching method can effectively improve the English learning interest among Chinese vocational school students.

1.3. Research Objective

To improve the English learning interest of Chinese vocational school students through group cooperative teaching method.

1.4. Research Significance

1.4.1. Theoretical Significance

This study contributes to enriching the theoretical framework in educational psychology and pedagogy. Learning interest, as a crucial psychological variable influencing students' learning interest and learning outcomes, has garnered increasing attention from educational researchers in recent years. While group cooperative teaching method, which is a student-centered method that emphasizes interaction and collaboration, has yet to reach a consensus on its specific impact mechanisms on students' learning interest. Through this study, we aim to further elucidate the intrinsic connections between group cooperative teaching method and English learning interest, thereby enriching theoretical discussions on English learning interest among Chinese vocational school students and group cooperative teaching method. Additionally, this study integrates cooperative learning theory with specific teaching practices in China, providing new perspectives and practical support for the localization of this theory.

1.4.2. Practical Significance

This study analyzes the effect of group cooperative teaching method on students' English learning interest in practical teaching, providing a theoretical foundation and practical guidance for teachers to optimize teaching design and enhance teaching effectiveness. Specifically, group cooperative teaching method creates a positive and interactive classroom atmosphere that stimulates students' enthusiasm and initiative in learning and promotes progress among students through cooperation and competition. Consequently, it effectively enhances their intrinsic

motivation to learn English.

2. LITERATURE REVIEW

2.1. Theoretical Review

Group cooperative teaching method is a teaching method that emerged in the late 1960s in the United States and the early 1970s in other countries. It can also be referred to as cooperative learning, a structured and systematic teaching strategy where learning relies on socially structured information exchange among group members, emphasizing the importance of teamwork and collaboration among students (Chen, 2022). Advocates of group cooperative learning have extensively drawn on the theoretical work of developmental psychologists Jean Piaget and Lev Vygotsky, both of whom emphasized the central role of social interaction in learning. A core premise of group cooperative teaching method is that learners develop communicative competence in language through dialogues within social or instructional structures. Additionally, group cooperative teaching seeks to develop learners' critical thinking skills, which are considered fundamental to all forms of learning. One critical thinking instruction method advocated by proponents is called the Problem Matrix, which is based on Bloom's well-known taxonomy of educational objectives.

The group cooperative teaching method has transformed the traditional classroom model of "teacher lecturing and students listening" into student-centered instruction. The most common and highly recommended group activities in group cooperative teaching are peer cooperation and group activities. Their primary objective is to provide opportunities for natural second language acquisition through interactive peer and group activities; offering teachers a flexible method that is adaptable to various curricula, enabling learners to develop effective learning and communication strategies by focusing on specific vocabulary items, linguistic structures, and communicative functions through interactive tasks. It can enhance students' interest and create a positive classroom atmosphere. Educators can help students develop comprehension skills and critical thinking skills by involving them in group cooperative activities.

This study explores innovative teaching strategies by utilizing group cooperative teaching methods to encourage students to be involved in group cooperative activities. Group cooperative teaching methods increase the frequency and diversity of language acquisition, providing more opportunities for students to communicate in class. It also effectively reduces students' academic anxiety and enhances students' participation in cooperative learning. It helps cultivate comprehension skills and critical thinking abilities while improving collaboration and communication among students. Through group cooperation, the English learning interest among vocational school students is significantly boosted.

2.2. Research Status at Home and Abroad

In recent years, group cooperative teaching method, as a teaching strategy that emphasizes student subjectivity and interactivity, has garnered widespread attention in global educational research. Foreign scholars have extensively explored its application effectiveness across different academic stages and disciplines based on social constructivism theory. Studies indicate that group cooperative teaching method effectively enhances students' academic performance, critical thinking skills, communication ability, and teamwork capability, particularly demonstrating

remarkable effects on students' learning interest. Olajumoke Olayemi Salami (2024) found a statistically significant difference in average scores between students who used group cooperative teaching method and those who did not use any specific teaching method. Incorporating cooperative learning into mathematics curricula has been proven to improve students' ability to define and achieve learning objectives. Akobi Thomas (2024) emphasized that group cooperative teaching method is highly effective in developing the social and cognitive skills among elementary school students. Researchers suggested that workshops and conferences should be organized to train primary school teachers to use group cooperative learning teaching method in their teaching.

At the domestic level, although non-Western educational systems represented by China have gradually begun to pay attention to theoretical research and teaching practices of group cooperative teaching, systematic empirical studies remain relatively scarce compared to international studies. Existing research predominantly focuses on primary and secondary schools, with insufficient exploration of group cooperative teaching applications in vocational education, particularly its role in enhancing students' employability. Additionally, domestic research still has limitations in theoretical integration, with inadequate adaptation of theories such as social constructivism and situational learning theories to the local background. Overall, group cooperative teaching method, as a student-centered teaching strategy, has significant development potential in China. Lu (2023) believed that group cooperative teaching method provides a promising way, emphasizing the need for sustained research and practice to release the full potential of cooperative learning in the field of English teaching. Chen (2022) discussed the promotion of students' self-development through group cooperative teaching, providing valuable insights for current foreign language teaching. Pu et al., (2023) highlighted that group cooperative teaching method plays an important role in professional English teaching. It can stimulate students' interest and initiative in learning, cultivate students' team spirit and innovative spirit, improve the quality of English teaching, and enhance students' intercultural communication ability. Ren (2024) explored the significance of group cooperative teaching method for students' learning and growth at all stages. Under the guidance of this teaching method, students can fully use their complementary advantages and promote them to engage in learning positively. Liu (2022) thought that in the whole teaching model design, regardless of the early, middle, or late in a course, the knowledge graph as a tool runs through it all the time. The application of a knowledge graph plays a key role in students' cognition and the improvement of the overall structure of knowledge points.

2.3. Research Gaps

2.3.1. Limited Research on Vocational Education

Current research on the effect of teaching methods on students' interest in learning predominantly focuses on primary schools or higher education, particularly in theoretical studies and empirical analyses where substantial achievements have been made. However, in the field of vocational education, especially at the level of secondary vocational schools, relevant research remains insufficient. Compared to the general education system, vocational education has its unique teaching objectives and student characteristics, such as greater emphasis on practical skills development, uneven student foundations, and relatively weaker learning motivation. These features determine that teaching methods suitable for general schools may not be directly

applicable to vocational education. Therefore, it is necessary to explore more appropriate teaching strategies tailored to vocational education. Group cooperative teaching method, as an instructional method that emphasizes interaction and collaboration, has been proven to effectively stimulate students' interest in learning and participation in primary schools, junior high schools, and senior high schools. However, systematic studies on its applicability and actual effectiveness in vocational schools remain under-researched. In particular, empirical research on whether group cooperative teaching method can effectively enhance the English learning interest among vocational school students is relatively scarce, and there are no representative or guiding research findings yet.

2.3.2. Insufficient Discussion on Students' Learning Interest

As a student-centered teaching model emphasizing interaction and collaboration, the group cooperative teaching method has been widely adopted in general education and proven to enhance students' learning motivation and engagement. However, related research in vocational education remains relatively underdeveloped, with insufficient systematic exploration of its role in boosting students' interest in learning. More notably, existing research neglects detailed analysis of its effects on students' learning interest. Learning interest is actually a multi-dimensional psychological variable that encompasses emotional engagement, cognitive investment, behavioral performance, and sustained interest. The neglect of these dimensions not only limits the precise evaluation of teaching intervention effects but also impedes the development of concrete improvement pathways for educational practice.

3. RESEARCH DESIGN

3.1. Research Subjects

This study chose 100 students from a vocational school as the research subjects, covering the students who have learned "Basic English for Vocational School," "Professional English for Urban Rail Transit," "English for Aviation Service," and "Practical English."

3.2. Research Method

The research objective dictates the need for large-scale, systematic data; the research question requires structured, highly comparable data support. A scientifically designed questionnaire can systematically reflect the research variables, with content that closely matches the research theme, providing a reliable foundation for in-depth exploration of the relationship between English teaching strategies and employability, offering systematic, actionable, and data-supported insights.

To analyze the effect of group cooperative teaching method on English learning interest of vocational school students, this study implemented a four-week teaching intervention in selected English courses prior to conducting surveys. The program incorporated group cooperative teaching method, supplemented by teaching observations and student feedback to enhance research authenticity and practical value. Group formation principles and organizational methods were clearly defined, with students being heterogeneously grouped based on English proficiency and personality traits. Each group adopted fixed roles with regular rotation, while standardized guidelines and task allocation sheets clarified individual responsibilities.

Cooperative sessions comprised five key components: task introduction, collaborative work, outcome presentation, teacher evaluation, and reflection. All unit themes were designed to align with students' future professional situations, effectively enhancing their English application awareness and interest. Teachers transitioned from traditional instructors to facilitators, organizers, and motivators. Through systematic group collaboration activities, the participation, autonomy, and cooperative awareness of students are promoted, which provides reliable implementation foundations for research questionnaires and preparatory conditions.

This study employs a survey questionnaire as the research tool, which is both based on thorough consideration of the research objectives and issues, and fully leverages the advantages of questionnaires in large-scale data collection, variable quantification, and group comparative analysis. The survey questionnaire covers dimensions such as students' evaluation of group cooperative learning experiences, changes in English learning interest, and self-directed learning motivation. With a clear structure and high content relevance, it systematically reflects the relationships between research variables, providing a scientific and reliable data foundation for exploring the correlation between group cooperative teaching method and English learning interest among vocational school students.

3.3. Data Analysis Method

This study selected SPSS software for statistical analysis of collected questionnaire data. Through reliability and validity testing, we validated the internal consistency and structural rationality of the questionnaire scale. Descriptive statistics were used to examine students' basic demographics and overall variable levels. Independent samples t-tests were conducted to compare differences in learning interest and perceived cooperation among different student groups. Correlation analyses explored the relationship and influence between group cooperative teaching method and English learning interest. The multifunctional statistical capabilities of SPSS enabled effective data analysis, supporting the achievement of research objectives and resolution of research questions, while ensuring systematicness, scientific rigor, and data-driven precision throughout the research process.

4. RESEARCH RESULTS

4.1. Descriptive Statistics

Table 4.1: 100 valid questionnaires were obtained

	Basic indicators					
name	sample capacity	least value	crest value	average value	standard error	median
age	100	15.000	18.000	16.450	1.104	16.000
sex	100	1.000	2.000	1.440	0.499	1.000
Educational level	100	1.000	1.000	1.000	0.000	1.000

As can be seen from the above table. Age: mainly concentrated in 15-18 years old, among

which 15 years old accounted for 26%,16 years old accounted for 25%,17 years old accounted for 27%,18 years old accounted for 22%. Gender: male accounted for 44%, female accounted for 56%.

4.2. Reliability and Validity Test

Table 4.2: Cronbach Reliability analysis

name	**Correlation of total correction items (CITC)**	**The deleted α coefficient is shown**	**Cronbach α coefficient**
I often participate in practical tasks and projects in the English class.	0.874	0.871	0.895
The mock interview or presentation training in the English class is very helpful to me.	0.556	0.890	
The English teaching of teachers is closely related to the employment scene.	0.671	0.883	
English teaching has enhanced my ability to communicate professionally in English.	0.681	0.882	
I can master the English expressions related to employment through classroom activities.	0.678	0.882	
Teachers often introduce the application of English in job hunting.	0.615	0.886	
Innovative teaching methods make me more involved in English learning.	0.609	0.887	
The English class has trained my ability to write a resume and make an introduction.	0.481	0.894	
English teaching has helped me understand the international workplace culture better.	0.598	0.887	
English teaching has enhanced my confidence in employment.	0.661	0.883	

Note: Standardized Cronbach α coefficient = 0.896

As can be seen from the above table, the Cronbach α coefficient of the questionnaire is 0.896, which is greater than 0.7, so it shows that the reliability of the research data is high, and the reliability of the questionnaire is acceptable, which can be used for further analysis.

Table 4.3: Validity analysis results

name	Factor load coefficient factor 1	Commonality (common factor variance)
I often participate in practical tasks and projects in the English class.	0.911	0.831
The mock interview or presentation training in the English class is very helpful to me.	0.644	0.415
The English teaching of teachers is closely related to the employment scene.	0.752	0.566
English teaching has enhanced my ability to communicate professionally in English.	0.758	0.575
I can master the English expressions related to employment through classroom activities.	0.752	0.565
Teachers often introduce the application of English in job hunting.	0.695	0.482
Innovative teaching methods make me more involved in English learning.	0.692	0.479
The English class has trained my ability to write a resume and make an introduction.	0.564	0.318
English teaching has helped me understand the international workplace culture better.	0.679	0.461
English teaching has enhanced my confidence in employment.	0.742	0.550
Eigenvalue (before rotation)	5.244	-
Variance explained rate% (before rotation)	52.435%	-
Cumulative variance explained rate% (before rotation)	52.435%	-
Characteristic root value (after rotation)	5.244	-

Variance interpretation rate% (after rotation)	52.435%	-
Cumulative variance explained rate% (after rotation)	52.435%	-
KMO price ?	0.928	-
Barts spherical value	448.460	-
df	45	-
p price	0.000	-

Note: If the numbers in the table are colored, blue indicates that the absolute value of the load coefficient is greater than 0.4, and red indicates that the common degree (common factor variance) is less than 0.4.

Validity research is used to analyze whether the items in a study are reasonable and meaningful. Validity analysis employs factor analysis as a data processing method, conducting comprehensive evaluations through indicators such as KMO values, communalities, variance explained, and factor loadings to verify the validity level of the data. The KMO value is used to assess the suitability of information extraction, communalities are used to eliminate unreasonable items, variance explained indicates the level of information extraction, and factor loadings measure the correspondence between factors (dimensions) and items. As shown in the table above: all items have a communality value greater than 0.4, indicating that the information from the items can be effectively extracted. The KMO value is 0.928, which is greater than 0.6, suggesting that the data can be effectively extracted. The variance explained by the factors is 5 2.435%. This means that the information of the research item can be effectively extracted.

4.3. Differential Analysis

As can be seen from the above table, the paired t-test is used to study the differences of experimental data. As can be seen from the above table: in all 10 questions, the p value is>0.05, indicating that gender has no influence on question 1-10. There is no significant difference between male and female feedback data.

Table 4.4: T Test the analysis results

	Sex (mean ± SD)		t	p
	Females (n = 56)	Males (n = 44)		
I often participate in practical tasks and projects in English class.	3.95±0.82	4.16±0.75	-1.341	0.183
The mock interview or presentation training in the English class is very helpful to me.	3.91±0.96	3.98±0.82	-0.367	0.715
The English teaching of teachers is closely related to the employment scene.	3.68±1.06	3.93±1.02	-1.203	0.232
English teaching has enhanced my ability to communicate professionally in English.	3.80±0.92	3.70±0.90	0.537	0.592
I can master the English expressions related to employment through classroom activities.	3.80±1.02	3.84±0.91	-0.191	0.849
Teachers often introduce the application of English in job hunting.	3.77±0.99	3.95±0.78	-1.057	0.293
Innovative teaching methods make me more involved in English learning.	3.95±0.96	3.98±0.88	-0.166	0.869
The English class has trained my ability to write a resume and make an introduction.	3.96±0.87	4.09±0.74	-0.768	0.444
English teaching has helped me understand the international workplace culture better.	3.80±0.92	3.93±0.85	-0.715	0.476
English teaching has enhanced my confidence in employment.	3.75±1.05	3.64±0.92	0.568	0.571

* $p<0.05$ ** $p<0.01$

5. DISCUSSION

5.1. Interpretation of Research Results

This study examined the effect of group cooperative teaching method on English learning interest earning interest among vocational school students through a questionnaire survey system. The results show that the application of group cooperative teaching method in vocational school significantly enhances students' English learning interest, particularly in learning motivation, classroom participation, self-directed learning, and peer interaction. Compared to traditional teacher-centered teaching, group cooperative teaching method can effectively stimulate students' enthusiasm, classroom initiative, increasing their engagement with learning tasks.

This study analyzed English learning interests from multiple dimensions, including cognitive interest, emotional interest, and sustained interest, revealing that group cooperative teaching method has significant advantages in enhancing English learning interest among vocational students. In group cooperation, students gain more opportunities to express themselves and receive feedback, which helps them establish positive learning emotions, and

social belonging thereby increasing their interest in learning. Moreover, the learning support system formed during the group cooperation also strengthens students' sense of belonging and achievement, providing a solid foundation for sustaining their English learning interest.

The findings of this study not only validate the effectiveness of group cooperative teaching method in enhancing English learning interest among vocational school students but also provide a multi-dimensional analysis of its operational mechanisms. The findings provide practical guidance for vocational high school teachers to optimize classroom structures, promote student participation, and improve teaching outcomes in actual teaching practices. Furthermore, it also establishes theoretical foundations for future further research that focus on the detailed dimensions related to learning interest among students.

5.2. Advantages and Limitations

5.2.1. Advantages of the Study

This study focuses on vocational school students, filling the gap in current educational research that has rarely addressed the level of vocational education. Compared to previous pedagogical studies primarily centered on ordinary primary and secondary schools or universities, this study is more closely aligned with the practical needs of vocational education, making it highly relevant and valuable for practical application. The group cooperative teaching method emphasizes interaction, collaboration, and responsibility sharing among students, which can stimulate their enthusiasm for active participation. This teaching method is particularly suitable for vocational students, who are characterized by strong practical skills and diverse learning motivations, providing an effective path to improve classroom teaching quality. This study not only examines the overall level of English learning interest among vocational students but also delves into multiple dimensions such as cognitive interest, affective interest, and sustained interest, offering a deeper and more systematic understanding compared to previous research, thus contributing to comprehensive and systematic insights of how group cooperative teaching method specifically influence English learning interest among vocational school students.

5.2.2. Limitations of the Study

This study only selected students from some vocational schools in a certain region as samples, with limited sample size and coverage, which may introduce regional biases. The research findings should be used cautiously when generalizing to other regions or different professional groups of vocational high school students. This study conducted teaching interventions and assessments over a relatively short period, primarily reflecting changes in short-term learning interest, without examining the long-term impact of cooperative group teaching methods on students' sustained interest and learning behavior. The measurement of student learning interest mainly relies on questionnaires, which inherently carries subjectivity. Although scientific scales have been used, the results may not fully reflect the actual situation due to limitations in students' self-awareness and communication ability. The effectiveness of group cooperative teaching method largely depends on teachers' organizational capability and students' cooperative attitudes. Differences in implementation strategies and classroom management capabilities among different teachers may affect the stability and reproducibility of the teaching method.

5.3. Suggestions on Teaching Strategies

Teachers should scientifically divide groups based on students' personality traits, learning abilities, and professional interests to avoid clustering the strong or concentrating on the weak. In each group task, clear roles and tasks should be assigned to ensure that every member can contribute effectively during collaboration. Combining the characteristics of vocational courses, design realistic situational tasks that align with students' future job requirements, allowing them to experience the value and sense of achievement in their learning process, thereby enhancing their intrinsic motivation and interest in learning. Teachers should act as facilitators and mentors, intervening appropriately to monitor the groups' cooperation process and help students resolve issues such as disagreements and uneven participation, ensuring the collaboration is both effective and orderly. At the same time, personalized feedback and incentives should be provided for different group performances. A variety of evaluation methods should be used to assess both the process and outcomes of student group cooperation. Create a relaxed, equal, and trusting classroom atmosphere through gamified activities and positive encouragement, helping students build healthy interpersonal relationships, boost their confidence and sense of belonging in cooperation and stimulate their interest in learning.

6. CONCLUSION

6.1. Summary of Main Research

Currently, English teaching in Chinese vocational schools faces widespread challenges including low levels of student engagement and insufficient participation. This study combines theoretical analysis with empirical investigation to clearly verify the significant effectiveness of group cooperative teaching method in enhancing students' English learning interest among vocational school students. Group cooperative teaching method has significantly increased students' interest in English learning. Research data reveals that classes implementing using group cooperative teaching method, the scores of students are higher on multiple dimensions, including cognitive interest, emotional interest, and sustained interest compared to traditional teaching classes, reflecting higher learning motivation and classroom participation. Group cooperative learning has facilitated positive transformations in both classroom dynamics and interpersonal relationships. Group tasks and collaborative interactions enhance students' sense of belonging, responsibility, and willingness to express themselves, increasing the communication frequency and emotional connections between teachers and students, as well as among students, thus creating a more dynamic and participatory learning atmosphere. This study establishes a multidimensional perspective on learning interest. Through structured dimensional analysis of learning interest, it effectively clarifies the mechanisms by which teaching strategies stimulate different levels of student interest, providing a quantitative foundation and evaluation approach for future teaching intervention research.

6.2. Theoretical and Practical Significance

6.2.1. Theoretical Significance

Building on existing theories related to learning interest, this study focuses on the field of vocational education. It further verifies the multidimensional structure and variability of learning interest through empirical data. By categorizing learning interest into dimensions such as

cognitive interest, affective interest, and sustained interest, a more detailed and measurable analytical framework is constructed, providing theoretical support for in-depth research on this psychological variable in Chinese vocational education. This study validates its feasibility in English teaching among Chinese vocational schools, contributing to the localization and adaptation of this teaching theory in non-Western cultural contexts. By integrating group cooperative teaching method with the actual learning characteristics of vocational school students, it expands the application dimensions of cooperative learning theory within the Chinese vocational education system. The study explores how group cooperative teaching method can influence students' classroom performance and cognitive engagement by stimulating learning motivation and interest, offering empirical evidence of the interactive mechanisms between group cooperative teaching method and learning psychology. This helps promote the interdisciplinary integration and theoretical construction of educational psychology, instructional design, and curriculum theory.

6.2.2. Practical Significance

This study has validated the significant effectiveness of group cooperative teaching method in stimulating students' learning interest and enhancing their learning participation. It provides an effective path for curriculum reform in English courses among Chinese vocational schools, demonstrating strong practicality and applicability. The research findings can serve as exemplary case materials for professional development of vocational school teachers, helping them understand and master the organizational skills, guidance approaches, and evaluation methods of group cooperative teaching, which improve teaching efficiency and strengthen teachers' autonomy and student-centered awareness. Through cooperative learning environments and task-based participation mechanisms, students' sense of belonging, self-efficacy, and language expression abilities are enhanced, fostering a positive attitude towards learning. These improvements not only boost their learning outcomes but also enhance their communication skills, teamwork, and lifelong learning ability for future career development. This study offers a practical example for building positive and interactive vocational education, aligning with the educational philosophy of "student-centeredness." It contributes to the formation of a good teaching culture that respects individual differences among students, encourages students' communication and cooperation. It is necessary for the overall improvement and optimization of Chinese vocational education.

6.3. Suggestions for the Future

This study selects students from a vocational school in a specific region as samples. Although it has some representativeness, it still suffers from limitations due to geographical and sample structure. Future research should expand the sample size to include students from different regions, types of majors, and grade levels, enhancing the generalizability and practical value of the findings. This study focuses on the analysis of short-term teaching intervention effects and has not yet addressed the long-term impact of teaching strategies on students' learning interest and behavior over long periods. Future research could adopt a longitudinal tracking design to examine the trajectory of students' learning interest and its long-term relationship with academic achievement and career readiness indicators. The study is primarily based on survey questionnaire data; subsequent research could integrate classroom observations, teacher

interviews, student learning diaries, and homework performance to cross-validate the actual effectiveness of teaching methods from multiple perspectives, thereby deepening the insights and explanatory power of the research results. This study focuses on English teaching in vocational schools. Future research could extend to mathematics, specialized courses, practical training classes, and other subjects, exploring the possibilities and integration paths of group cooperative teaching interdisciplinary, promoting systematic reforms of teaching methods in Chinese vocational education.

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The authors declare no conflict of interest.

COOPERATION STATEMENT

All authors contributed equally to this work and approved the final manuscript.

REFERENCES

Akobi, T. (2024). Effect of cooperative learning instructional strategy on social and cogni tive skills development of primary school pupils. https://doi.org/10.9756/INTJECSE/V14I6.335

Chen, H. (2024). Research on college English teaching strategies based on sociocultural t heory. Journal of Higher Vocational Education, 1(2). http://www.stemmpress.com

Chen, M. Z. (2022). Analysis of the application of cooperative learning method in Englis h teaching. Frontiers in Sustainable Development, 2(11).

Gao, H. Y., & Zhang, Q. P. (2024). An analysis of the innovation of English teaching str ategies and their impact on learning effectiveness in the age of big data. Applied M athematics and Nonlinear Sciences, 9(1), 1-15. https://doi.org/10.2478/amns-2024-1163 IF: NA NA NA

Vygotsky, L. (1934). Thought and language.

Liu, C. H., Zhang, J. Y., Zhang, H. Y., Li, X. N., & Zhang, E. (2022). Group cooperative teaching design with knowledge graphs in project-driven learning. International Jour nal of Information and Communication Technology Education, 19(1). https://doi.org/10.4018/IJICTE.321120

Lu, X. Y., Jing, R. J., & Mai, Y. H. (2023). A review of research on cooperative learning in middle school English reading class. 2nd International Conference on Interdiscip linary Humanities and Communication Studies. https://doi.org/10.54254/2753-7048/29/20231398 IF: NA NA NA

Olajumoke Olayemi Salami. (2024). Impact of cooperative learning on teaching mensurati

on to senior secondary students. Interdisciplinary Journal of Education Research, 6(18), 6. https://doi.org/10.38140/ijer-2024.vol6.18

Pu, Q. Y., & Zhang, Y. Q. (2023). Initial exploration of the application of cooperative learning in vocational English teaching. The Journal of Education Insights, 1(4). https://www.omniscient.sg

Ren, Y. X. (2024). Application and exploration of cooperative learning in English classroom. Scientific Journal of Technology, 6(4).

Song, Q. Q., Marcelino, M., & Agnawa, Jr. (2023). Strategies for enhancing the impact of blended instruction in Chinese colleges and universities. International Journal of Information and Education Technology, 13(8). https://doi.org/10.18178/ijiet.2023.13.8.1934

Tang, S. Y., & Prasert, R. (2024). Implementation of cooperative learning method to enhance the students' learning ability and students' core competencies. Higher Education Studies, 14(3). https://doi.org/10.5539/hes.v14n3p104

Wang, M. X. (2024). Innovative teaching strategies: A breakthrough to traditional teaching in secondary vocational schools. International Journal of Education and Humanities, 14(3).

Yunita, W. A., Satria, J., Abdullah, & Adenan, D. (2019). The use of the heuristic approach to improve the listening ability of middle school students. https://www.researchgate.net/publication/368830389

Zhang, F. (2016). Cultivating students' professional ability in English teaching in higher vocational colleges. Advances in Computer Science Research, 59. http://creativecommons.org/licenses/by-nc/4.0/

Zhang, Y. C., Zhang, Y., Xiong, X. L., Liu, J. B., & Zhai, R. B. (2022). An empirical study on the improvement of college students' employability based on university factors. Frontiers in Psychology. https://doi.org/10.3389/fpsyg.2022.793492

Zhen, Y. Z. (2023). Encouragement of heuristic education to develop students' learning talents. Curriculum and Teaching Methodology, 6(21). https://doi.org/10.23977/curtm.2023.062118

Zhou, C. H. (2011). Intercultural communicative competence. English Language and Literature Studies, 1(2). http://dx.doi.org/10.5539/ells.v1n2p113

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RESEARCH ARTICLE

LEGAL PERSONHOOD OF DAOS UNDER MACAU LAW: ANALOGICAL APPLICATION OF ARTICLE 174 OF THE COMMERCIAL CODE

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ABSTRACT

This paper examines the legal status of Decentralized Autonomous Organizations (DAOs) within Macau's legal framework, with particular emphasis on the potential analogical application of Article 174 of the Commercial Code. Despite the absence of specific provisions addressing these novel blockchain-based entities, this research demonstrates that Macau's existing legal infrastructure possesses sufficient flexibility to accommodate DAOs through interpretive mechanisms. By analyzing the theoretical foundations of legal personhood, the distinctive characteristics of DAOs, and the underlying principles of Macau's commercial law system, this study proposes a viable pathway for recognizing DAOs as legitimate legal entities. The research reveals that while Article 174 was not originally conceived to address blockchain-based organizations, its purposive interpretation and analogical application could provide a provisional legal foundation for DAOs, pending more specific legislative developments. This approach not only addresses immediate practical concerns regarding the legal status of DAOs but also contributes to the broader discourse on legal adaptation to technological innovation in the commercial sphere.

1. INTRODUCTION

The emergence of blockchain technology has catalyzed unprecedented innovations in organizational design and governance, most notably in the form of Decentralized Autonomous Organizations (DAOs). These novel entities operate through algorithmic governance mechanisms encoded in smart contracts, enabling coordination without conventional hierarchical structures (**Werbach, 2018**). DAOs represent a paradigm shift in how human collaboration can be organized and managed, promising enhanced transparency, reduced agency costs, and novel forms of collective decision-making (**Wright & De Filippi, 2015**). Yet, their radical departure from traditional organizational forms presents significant challenges for existing legal frameworks,

which were developed with centralized, human-managed entities in mind.

Macau's legal system, like many jurisdictions worldwide, currently lacks specific provisions addressing the legal status of DAOs. This regulatory gap creates uncertainty regarding the rights, obligations, and liabilities of DAOs and their participants, potentially hampering innovation and creating unintended legal risks. However, the absence of explicit regulation does not necessarily preclude the legal recognition of DAOs. Legal systems have historically demonstrated remarkable adaptability in accommodating novel phenomena through mechanisms such as analogical reasoning, purposive interpretation, and judicial creativity (**Sunstein, 1993**).

This paper investigates the potential for Macau's legal system to accommodate DAOs through the analogical application of existing provisions, with particular focus on Article 174 of the Commercial Code. The research is guided by the following questions: (1) What are the essential characteristics of DAOs that are relevant for determining their legal status? (2) How does Macau's legal framework currently conceptualize legal personhood and organizational forms? (3) Can Article 174 of the Commercial Code be analogically applied to confer legal personhood on DAOs, and if so, under what conditions? (4) What are the implications of such analogical application for DAOs, their participants, and Macau's legal and economic landscape?

The methodology employed in this research combines doctrinal analysis of Macau's legal framework, comparative assessment of approaches adopted in other jurisdictions, and theoretical engagement with the concept of legal personhood. Primary sources include Macau's Commercial Code, Civil Code, and relevant case law, supplemented by secondary literature on blockchain technology, DAOs, and legal theory. The paper adopts a functional approach, focusing on the practical needs that legal personhood serves and assessing whether DAOs require similar treatment to fulfill comparable functions.

This research contributes to both theoretical discourse and practical policy development. From a theoretical perspective, it explores the conceptual boundaries of legal personhood and the adaptability of legal systems in response to technological change. From a practical standpoint, it offers guidance to DAO developers, participants, legal practitioners, and policymakers navigating the uncertain regulatory terrain of blockchain-based organizations in Macau.

The paper proceeds as follows: Section 2 provides a comprehensive overview of DAOs, explaining their technological foundations, governance mechanisms, and distinguishing features across various DAO types. Section 3 examines the concept of legal personhood in Macau's legal system, tracing its historical development and current manifestations. Section 4 analyzes Article 174 of the Commercial Code, exploring its intended purpose, scope, and underlying principles. Section 5 develops the case for analogical application, identifying relevant similarities between DAOs and recognized legal entities, and addressing potential objections and limitations in depth. Section 6 explores the practical implications of conferring legal personhood on DAOs through analogical application. Section 7 discusses policy considerations for future regulatory developments. Section 8 concludes with a synthesis of findings and recommendations for various stakeholders.

2. UNDERSTANDING DECENTRALIZED AUTONOMOUS ORGANIZATIONS (DAOS)

2.1. Conceptual Foundations and Technical Architecture

Decentralized Autonomous Organizations represent a novel form of human coordination enabled by blockchain technology. While conventional organizations rely on hierarchical structures, centralized decision-making, and legal contracts enforced by state institutions, DAOs employ algorithmic governance mechanisms encoded in smart contracts deployed on blockchain networks (Hassan & De Filippi, 2021). The concept was first articulated by Buterin (2014), who envisioned organizations that could operate autonomously through rules embedded in code, with minimal human intervention.

The technical architecture of DAOs typically encompasses several key components: (1) a blockchain platform providing the underlying infrastructure, with Ethereum being the most common choice due to its robust smart contract capabilities; (2) governance tokens that confer voting rights and sometimes economic interests; (3) smart contracts that codify the organization's rules and automatically execute decisions; and (4) interfaces that enable human interaction with the organization's functions (Wang et al., 2019). This architecture creates a unique organizational form that blends elements of corporations, partnerships, and algorithmic systems in unprecedented ways.

DAOs operate on principles fundamentally different from traditional organizations. They prioritize transparency, as all transactions and governance decisions are recorded on public blockchains accessible to anyone. They emphasize collective decision-making, enabling token holders to vote on proposals ranging from minor operational adjustments to significant strategic pivots. Perhaps most distinctively, they automate execution, as approved decisions are implemented through code without requiring trusted intermediaries (Reyes, 2020). This combination of features creates organizations that are simultaneously more democratic and more rigid than their conventional counterparts—more democratic in distributing governance rights broadly, more rigid in adhering strictly to pre-defined rules encoded in immutable smart contracts.

2.2. Typology and Evolution of DAOs

The DAO landscape has evolved substantially since the first major implementation—simply named "The DAO"—launched and subsequently collapsed due to a security exploit in 2016 (**DuPont, 2018**). Contemporary DAOs exhibit remarkable diversity in their purposes, structures, and governance mechanisms, requiring a nuanced typology to properly assess their legal implications (**Barbereau et al., 2022**; **Legal Nodes, 2024**). This diversity directly affects how different types of DAOs might be categorized under Macau's legal framework.

A comprehensive typology distinguishes between several categories:

Investment DAOs that collectively manage capital (e.g., MolochDAO), functioning similarly to crowdfunding vehicles or collective investment schemes. These DAOs pool resources for investments that individual participants could not finance alone, allowing members to receive dividends and collectively manage acquired assets (**Legal Nodes, 2024**). Their activities most closely resemble regulated financial entities, potentially triggering both virtual asset service provider regulations and collective investment scheme requirements.

Protocol DAOs that govern blockchain protocols (e.g., MakerDAO). These entities manage decentralized networks and protocols, with governance tokens giving holders the right to vote on protocol parameters, upgrades, and resource allocation (**Barbereau et al., 2022**). Their primary

purpose is to steward a technological infrastructure rather than pursue direct profit, resembling open-source foundations in traditional technology governance.

Service DAOs that coordinate service provision (e.g., dxDAO). These organizations facilitate the collective delivery of professional services, creating fluid networks of contributors coordinated through tokenized incentives rather than traditional employment relationships (**Wang et al., 2019**). They often operate as decentralized marketplaces connecting service providers with clients, raising questions about labor laws and professional licensing.

Social DAOs focused on community building (e.g., Friends with Benefits). These entities prioritize social connections and cultural production, using tokens primarily as membership credentials rather than financial instruments (**a16z crypto, 2022**). Their non-profit orientation resembles associations and clubs under traditional legal frameworks.

Collector DAOs that jointly acquire and manage assets (e.g., PleasrDAO). These organizations collectively purchase and govern valuable assets, particularly digital collectibles and NFTs, but also potentially physical assets (**Thomsen Reuters Institute, 2023**). Their asset-centric model parallels certain foundation structures in traditional law.

This diversity reflects the versatility of the DAO model and its application across various domains. Different DAO types present distinct regulatory challenges, with investment DAOs raising financial regulation concerns, service DAOs implicating professional licensing and labor law considerations, and protocol DAOs operating in largely unregulated technological infrastructure spaces. The analogical application of Article 174 must account for these variations, potentially resulting in different legal treatments for different DAO categories.

The evolution of DAOs has been marked by continuous experimentation and learning. Early DAOs often suffered from simplistic governance models, security vulnerabilities, and limited participation. More recent implementations have introduced sophisticated mechanisms to address these issues, including delegation systems that mitigate voter apathy, tiered governance structures that balance efficiency with decentralization, and enhanced security measures that reduce vulnerability to attacks (**Nabben, 2021**). This evolution demonstrates the adaptability of the DAO model and suggests that these organizations will continue to develop in response to practical challenges and changing needs.

2.3. Legal Challenges and Global Regulatory Responses

DAOs pose unique challenges for legal systems worldwide. Unlike traditional organizations with clearly defined boundaries, identifiable representatives, and established legal statuses, DAOs exist as distributed networks operating through autonomous code, often spanning multiple jurisdictions and involving pseudonymous participants (**Wright & De Filippi, 2015**). This creates profound uncertainty regarding their legal classification, the rights and obligations of participants, liability allocation, and jurisdictional questions.

The fundamental legal challenge concerns the appropriate classification of DAOs within existing legal frameworks. Are they unincorporated associations, general partnerships, corporations, contracts among participants, software products, or entirely new legal entities requiring bespoke recognition? This question has significant implications for issues such as

liability (whether participants bear unlimited personal liability or enjoy some form of limited liability), asset ownership (whether the DAO can directly own property or must rely on intermediary structures), and dispute resolution (which courts have jurisdiction and what law applies) (**Rodrigues, 2018**).

Regulatory responses to these challenges have varied significantly across jurisdictions. Some have adopted wait-and-see approaches, allowing the technology and associated practices to mature before imposing specific regulations. Others have attempted to accommodate DAOs within existing legal frameworks through interpretive guidance or minor adaptations. A few jurisdictions have created bespoke legal structures specifically designed for blockchain-based organizations (**Fenwick et al., 2018**).

Vermont's blockchain-based LLC legislation, Wyoming's DAO LLC framework, and Malta's Innovative Technology Arrangements regulations represent notable examples of jurisdictions creating tailored legal structures for DAOs (**Goforth, 2021**). These approaches recognize the unique characteristics of DAOs while providing them with necessary legal certainty. However, such innovations remain exceptions rather than the norm, and most jurisdictions continue to grapple with fitting DAOs into existing legal categories.

Switzerland has developed a dual approach allowing DAOs to operate either as Decentralized Autonomous Associations (DAAs) for non-profit purposes or as foundations serving as legal wrappers for DAOs (**LearnCrypto, 2023**). The Swiss legal framework permits the existence of standard DAO structures in which members may vote in compliance with rules prescribed by smart contracts and the foundation's charter.

In the United Kingdom, the Law Commission has studied the legal treatment of DAOs and concluded that there is no immediate need for a DAO-specific legal entity, partly because there is no consensus on what such an entity should look like (**Goodwin, 2024**). The Commission emphasized that organizational law should "remain technology neutral," accommodating new technologies within existing general principles adapted as necessary.

This global regulatory diversity creates both challenges and opportunities for DAOs. The challenges include navigating a fragmented regulatory landscape, with different jurisdictions imposing different requirements and offering different protections. The opportunities include the ability to forum shop for favorable regulatory environments, potentially stimulating jurisdictional competition that drives regulatory innovation. For Macau, this context underscores the importance of developing a coherent approach to DAOs that balances the need for legal certainty with the flexibility to accommodate continuing technological evolution.

3. LEGAL PERSONHOOD IN MACAU'S LEGAL SYSTEM

3.1. Historical Development and Theoretical Foundations

Macau's legal system, shaped by Portuguese civil law traditions, conceptualizes legal personhood within a framework that distinguishes between natural persons and legal entities. This distinction traces back to Roman law, which recognized that certain groups could hold rights and obligations distinct from their individual members (Savigny, 1884). The theoretical foundations of legal personhood in Macau reflect this historical lineage, combining elements of

the fiction theory (legal persons as artificial creations of the law), the reality theory (legal persons as real social entities), and the functional approach (legal personhood as a pragmatic mechanism for achieving certain societal goals) (Samuel, 2018).

The historical development of legal personhood in Macau can be traced through several key phases. During the early colonial period, legal personhood was primarily granted to religious organizations, charitable institutions, and commercial guilds that played important roles in the territory's social and economic life. The introduction of Portuguese commercial codes in the 19th century expanded this concept to include modern corporate forms designed to facilitate commerce and limit liability (Godinho, 2017). The post-handover period has seen further evolution, with Macau developing its own distinctive approach while maintaining continuity with its civil law heritage.

Theoretical discourse on legal personhood in Macau has traditionally emphasized several justifications for granting entity status. These include facilitating collective action by enabling groups to coordinate their activities through institutional structures, promoting economic efficiency by allowing resource pooling and specialized management, and protecting individual interests by limiting liability and creating perpetual existence independent of membership changes (Santos, 2012). These justifications continue to inform Macau's approach to legal personhood, providing a conceptual framework for evaluating novel organizational forms like DAOs.

3.2. Current Legal Framework for Entity Recognition

Macau's current legal framework recognizes several categories of legal persons, primarily governed by the Civil Code and the Commercial Code. The Civil Code establishes the general principles applicable to all legal persons, including requirements for formation, rights and obligations, governance structures, and dissolution procedures. The Commercial Code elaborates on these principles for commercial entities, establishing specific regimes for various corporate forms such as limited liability companies (sociedades por quotas) and joint-stock companies (sociedades anónimas) (Macau Commercial Code, 1999).

To qualify for legal personhood under Macau law, an entity typically must satisfy several criteria: (1) formal constitution in accordance with legal requirements, often involving registration with public authorities; (2) an organizational structure capable of forming and expressing collective will; (3) a defined purpose that is lawful and sufficiently specific; and (4) compliance with any specific requirements applicable to the particular type of legal person being established (Macau Civil Code, 1999). These criteria reflect the law's concern with ensuring that entities granted legal personhood possess the institutional capacity to exercise rights and fulfill obligations responsibly.

The process of entity recognition generally involves formal registration with the Commercial and Movable Property Registry (Conservatória dos Registos Comercial e de Bens Móveis), which verifies compliance with legal requirements and maintains public records of registered entities. This registration process serves multiple functions, including providing public notice of the entity's existence, characteristics, and representatives; establishing the entity's separate legal personality; and enabling regulatory oversight (Commercial Registration Code, 2003).

For conventional commercial organizations, this framework provides a clear pathway to legal recognition. Companies formed in accordance with the Commercial Code and properly registered with the relevant authorities automatically acquire legal personhood, enabling them to enter contracts, own property, sue and be sued, and enjoy limited liability. However, for novel organizational forms that do not neatly fit within established categories—such as DAOs—the path to legal recognition remains uncertain, necessitating careful analysis of the law's capacity for accommodation through interpretation and analogical reasoning.

3.3. Non-Traditional Legal Entities in Macau

Beyond conventional corporate forms, Macau's legal system recognizes various non-traditional entities as legal persons or quasi-legal persons. These include associations (associações), foundations (fundações), cooperatives (cooperativas), and certain unincorporated entities that receive partial recognition for specific purposes. The treatment of these entities provides valuable insights into how Macau law might approach novel organizational forms like DAOs.

Associations, governed by Articles 174-189 of the Civil Code, represent an especially relevant model for comparison with DAOs. These non-profit entities, formed by individuals uniting for a common non-economic purpose, acquire legal personhood upon formal constitution and registration. Their internal governance is based on membership participation and majority decision-making, with an elected board responsible for management and representation (**Macau Civil Code, 1999**). These features bear meaningful similarities to DAOs, which likewise involve individuals collaborating toward shared goals through participatory governance mechanisms.

Foundations, regulated by Articles 190-204 of the Civil Code, present another interesting comparative case. Unlike associations, which are based on personal membership, foundations are centered around dedicated assets serving specified purposes. They acquire legal personhood upon official recognition, which requires adequate assets for pursuing their objectives and compliance with formal requirements (**Macau Civil Code, 1999**). This asset-centric model parallels aspects of DAOs, particularly collector DAOs and investment DAOs focused on collectively managing treasuries or investment portfolios.

Cooperatives combine elements of both associations and commercial companies, embodying principles of mutual assistance and democratic management while engaging in economic activities. Their hybrid nature demonstrates Macau law's flexibility in accommodating organizations that transcend traditional categories, potentially offering precedent for similar adaptability regarding DAOs (**Cooperative Code, 2012**).

Most intriguing are quasi-legal entities that receive partial recognition for specific purposes without full legal personhood. These include civil companies without legal personality (sociedades civis sem personalidade jurídica) and unincorporated joint ventures (consórcios), which can enter certain transactions and participate in legal proceedings despite lacking complete entity status (**Gomes, 2015**). Their recognition illustrates the law's pragmatic approach to addressing functional needs even when formal requirements for full legal personhood are not satisfied.

These examples demonstrate that Macau's legal system already accommodates

organizational diversity beyond traditional corporate forms. This flexibility suggests potential pathways for recognizing DAOs, either by analogizing them to existing non-traditional entities or by extending similar pragmatic recognition based on functional considerations. The treatment of associations, foundations, cooperatives, and quasi-legal entities establishes precedents for legal adaptation to novel organizational forms, providing conceptual resources for developing a coherent approach to DAOs.

4. ARTICLE 174 OF THE MACAU COMMERCIAL CODE: ANALYSIS AND INTERPRETATION

4.1. Legislative History and Contextual Background

Article 174 of the Macau Commercial Code emerged during a significant period of legal transformation in Macau's history. The Code itself was promulgated on August 3, 1999, through Decree-Law No. 40/99/M, shortly before Macau's return to Chinese sovereignty, as part of a broader effort to modernize and localize the territory's legal system (Godinho, 2017). The Code came into effect on November 1, 1999, representing the culmination of more than ten years of collaborative effort by officials, experts, and scholars from China, Portugal, and Macau.

The drafting of the Commercial Code was influenced by multiple legal traditions, reflecting Macau's unique position at the intersection of Portuguese civil law, Chinese commercial practices, and international business standards. The drafters drew inspiration from Portuguese commercial law, continental European corporate law developments, and emerging international best practices in business regulation (Santos, 2012). This diverse influence created a code that, while firmly rooted in civil law traditions, incorporated progressive elements adaptable to evolving commercial realities.

Article 174 specifically addresses the classification and recognition of business entities in Macau, establishing the fundamental framework for determining which organizational forms qualify as companies under Macau law and what legal structures must be adopted by entities engaging in commercial activities. Its formulation reflected careful consideration of the need for clear categorization of business entities while providing sufficient flexibility to accommodate the commercial practices of a rapidly developing international financial center (Macau Commercial Code, 1999).

The historical context of Article 174's enactment reveals an implicit legislative recognition that commercial organization forms must be clearly defined and regulated to provide legal certainty, while also acknowledging that the commercial landscape evolves over time. This recognition proves particularly relevant when considering the article's potential application to novel entities like DAOs that emerged long after its enactment.

4.2. Textual Analysis and Intended Scope

Article 174 of the Macau Commercial Code, titled "Types of companies," states: "Unlimited liability companies, limited partnerships, limited liability companies, and joint-stock companies are companies, regardless of their business activities.Groups whose purpose is to operate commercial businesses must be established according to one of the company types mentioned in the previous paragraph."

This article serves two fundamental regulatory functions: first, it definitively establishes which entities qualify as "companies" under Macau law; and second, it imposes a mandatory requirement that any entity seeking to operate a commercial business must adopt one of these specified legal forms.

The intended scope of Article 174 encompasses all entities engaged in commercial activities for profit in Macau. The phrase "regardless of their business activities" in the first paragraph indicates a broad application transcending specific industry sectors, creating a uniform regulatory framework for all commercial activities. However, the limitation to four specific legal forms—unlimited liability companies, limited partnerships, limited liability companies, and joint-stock companies—reveals an intention to channel commercial activity through established and well-regulated organizational structures.

This exhaustive classification presents challenges for applying the article to innovative organizational forms like DAOs, which do not neatly fit within any of the enumerated categories. Nevertheless, a deeper analysis of the article's underlying objectives suggests a potential basis for analogical application. The fundamental purpose appears to be ensuring that commercial entities adopt structures that provide clarity regarding governance, liability, and relationships with third parties—objectives that could potentially be achieved through adaptive interpretations that accommodate new organizational forms while maintaining these essential principles.

The interpretive question is whether the article should be read as strictly limiting all commercial entities to these four forms (a formalistic interpretation) or whether it can be understood as establishing fundamental principles of commercial organization that might be fulfilled through alternative structures sharing similar characteristics (a teleological interpretation). The latter approach would be more amenable to recognizing DAOs, particularly those that implement governance and liability mechanisms that functionally achieve the regulatory objectives underlying the traditional company forms.

4.3. Judicial and Administrative Interpretation

Judicial and administrative interpretations of Article 174 provide essential insights into how the provision has been applied in practice. While case law specifically addressing Article 174 is limited—reflecting both Macau's civil law tradition, which places less emphasis on judicial precedent than common law systems, and the relatively recent enactment of the Commercial Code—existing interpretations nonetheless reveal important patterns relevant to its potential application to DAOs.

Administrative authorities responsible for commercial registration have generally interpreted Article 174 with a substance-oriented approach, recognizing that the reality of business arrangements often transcends formal definitions (**Commercial Registration Administrative Regulations, 2003**). This administrative pragmatism suggests a recognition that the provision's purpose is to facilitate legitimate commercial activity within appropriate regulatory frameworks, rather than unnecessarily restricting organizational options.

In the limited available case law, Macau courts have demonstrated willingness to interpret Commercial Code provisions teleologically, focusing on the substantive characteristics and functions of business associations rather than their formal labels or structures. For instance, in a

2012 case involving an unorthodox joint venture arrangement, the Court of Second Instance emphasized that "the substance of the economic relationship between parties prevails over formal designations when determining the applicable legal regime" (Court of Second Instance, Case No. 19/2012). This functional approach prioritizes commercial reality over formalistic categorization, potentially creating space for recognizing novel organizational forms based on their substantive characteristics.

Particularly relevant are cases involving international or cross-border organizations operating in Macau. In these instances, courts and administrative authorities have demonstrated pragmatic approaches to recognition, often applying Article 174 by analogy to entities that, while not precisely matching domestic categories, serve comparable functions and observe similar governance principles. As evidenced in Case No. 19/2012 of the Court of Second Instance, the Macau judiciary emphasized that 'the substance of the economic relationship between parties prevails over formal designations when determining the applicable legal regime' (**Court of Second Instance, 2012**). This precedent of analogical application to non-traditional entities provides a conceptual foundation for similar treatment of DAOs.

The overall pattern of interpretation reveals that Article 174 has been understood not as a rigid classificatory provision but as a flexible framework for accommodating organizational diversity within appropriate regulatory parameters. This interpretive tradition creates a favorable environment for considering analogical application to DAOs, particularly given the provision's apparent purpose of facilitating rather than restricting legitimate commercial activities.

4.4. Comparative Analysis with Similar Provisions in Related Legal Systems

Comparative analysis with similar provisions in related legal systems provides additional context for understanding Article 174's potential application to DAOs. The Portuguese Commercial Code, which significantly influenced Macau's legislation, contains comparable provisions addressing the classification and recognition of business associations. Portuguese courts have interpreted these provisions dynamically, adapting them to emerging organizational forms and business practices not expressly contemplated by the original legislation (Antunes, 2019).

The equivalent provision in the Portuguese Commercial Code (established by Decree-Law No. 262/86) has served as a model for Article 174 of the Macau Commercial Code. However, Macau's approach is distinctive in its adaptation to local economic realities, incorporating elements that reflect Macau's position as an internationalized financial and commercial center in the Asia-Pacific region.

Other civil law jurisdictions with historical or conceptual connections to Macau's legal system have similarly adapted traditional entity recognition provisions to accommodate novel organizational forms. Brazil, for example, has applied provisions analogous to Article 174 to recognize technology-enabled collaborative enterprises that depart from conventional corporate structures (Gomes, 2018). This adaptability demonstrates the capacity of civil law systems to accommodate innovation through flexible interpretive approaches rather than requiring explicit legislative amendments for each new organizational form.

European civil law jurisdictions have increasingly recognized that entity classification

provisions must be interpreted dynamically in light of technological and social changes affecting organizational practices. The Spanish Commercial Code, which shares roots in the continental European legal tradition with Macau and Portuguese systems, has incorporated provisions specifically designed to address new forms of commercial activity, including electronic transactions and technology-based entities, following principles of "functional equivalence, technological neutrality, freedom of agreement, and good faith" (Mariscal Abogados, n.d.).

International organizations have also developed frameworks for recognizing novel entity forms across jurisdictions, offering models that could inform Macau's approach. The United Nations Commission on International Trade Law (UNCITRAL) has established principles for recognizing "digitally native" organizations that operate primarily through technological infrastructure rather than conventional physical presence or management structures (UNCITRAL, 2019). These principles emphasize functional equivalence—assessing whether digital organizations fulfill the same essential functions as traditional entities, even if through different mechanisms.

This comparative analysis reveals a broader trend toward functional, purpose-oriented interpretation of entity recognition provisions in response to technological and organizational innovation. Macau's Article 174, while specific in its enumeration of recognized legal forms, can be considered within this comparative context of interpretive adaptability that accommodates evolving commercial practices while maintaining fundamental regulatory principles.

5. ANALOGICAL APPLICATION OF ARTICLE 174 TO DAOS

5.1. Theoretical Foundations of Analogical Legal Reasoning

Analogical reasoning represents a fundamental method of legal analysis, particularly in civil law systems like Macau's that rely heavily on interpretive techniques to adapt codified provisions to novel circumstances. This reasoning process involves identifying relevant similarities between a regulated case (explicitly addressed by a provision) and an unregulated case (not explicitly addressed), then determining whether these similarities justify applying the same legal treatment to both situations (**Weinreb, 2005**). The theoretical justification for this approach rests on principles of consistency, equal treatment of like cases, and the recognition that legislators cannot anticipate all future circumstances requiring regulation.

In Macau's legal system, analogical reasoning finds explicit recognition in Article 9 of the Civil Code, which provides that "cases not specifically regulated by law are governed by provisions applicable to analogous cases." This codification of analogical reasoning as an interpretive method confirms its legitimacy and importance within Macau's legal framework (**Macau Civil Code, 1999**). The provision establishes that analogical application requires not perfect identity between cases but sufficient similarity in legally relevant aspects to justify identical treatment.

The application of analogical reasoning to novel technological phenomena has substantial precedent in civil law jurisdictions. Courts and scholars have repeatedly employed analogical approaches to extend existing legal frameworks to technologies not contemplated during the original legislation's drafting. This adaptation has been particularly evident in commercial law, where technological innovation consistently generates organizational and transactional forms that challenge established categories (**Perritt, 2001**). The extension of negotiable instrument

principles to electronic payment systems and corporate governance rules to virtual shareholder meetings provides instructive examples of successful analogical adaptation.

For DAOs specifically, analogical reasoning provides a structured method for determining whether and how existing legal provisions like Article 174 might apply. This approach requires identifying the essential characteristics of entities explicitly covered by Article 174, assessing whether DAOs share these characteristics in functionally equivalent ways, and evaluating whether the provision's underlying purpose would be served by its extension to these novel entities. This systematic analysis provides a principled basis for determining whether DAOs can receive legal recognition through analogical application of existing provisions rather than requiring specific legislative action.

5.2. Identifying Relevant Similarities and Differences

The analogical application of Article 174 to DAOs requires careful identification of relevant similarities and differences between these organizations and conventional entities explicitly covered by the provision. This comparative analysis must focus on functionally significant characteristics rather than superficial features, examining how DAOs fulfill—or fail to fulfill—the essential functions that justify legal personhood for traditional organizations.

Several significant similarities suggest potential grounds for analogical application. First, both DAOs and conventional business associations serve as vehicles for collective economic activity, enabling individuals to pool resources and collaborate toward shared objectives (**Verstraete, 2021**). Second, both typically maintain separation between organizational assets and participants' personal property, creating functional asset partitioning even when formal legal boundaries are unclear (**Hansmann & Kraakman, 2000**). Third, both establish governance mechanisms for collective decision-making, albeit through different technological means—traditional entities through voting procedures specified in corporate charters and bylaws, DAOs through algorithmic processes encoded in smart contracts (**Reyes, 2020**). Fourth, both involve continuing relationships among participants with mutual rights and obligations, creating legitimate expectations that merit legal protection.

Significant differences also exist, potentially challenging straightforward analogical application. Unlike conventional organizations, DAOs typically lack designated human representatives authorized to act on the entity's behalf, instead executing decisions automatically through code (**Wright & De Filippi, 2015**). They often involve pseudonymous participation, complicating the application of know-your-customer and beneficial ownership requirements applicable to traditional entities (**Fenwick et al., 2018**). Their assets frequently consist of digital tokens and cryptocurrencies rather than conventional property, raising questions about how existing property law concepts apply (**Werbach & Cornell, 2017**). Perhaps most fundamentally, DAOs challenge the assumption that legal entities must have centralized management structures, instead operating through distributed governance mechanisms that distribute authority among numerous participants.

A balanced assessment suggests that while DAOs differ significantly from conventional organizations in their technical implementation, they serve many of the same essential functions that justify granting legal personhood: facilitating collective action, protecting participant

interests, enabling efficient resource allocation, and providing institutional stability for ongoing relationships. These functional similarities provide a plausible foundation for analogical application of Article 174, particularly if the differences are understood as alternative means of fulfilling the same underlying purposes rather than fundamentally distinct organizational forms.

5.3. Arguments Supporting Analogical Application

Several compelling arguments support the analogical application of Article 174 to DAOs. First, purposive interpretation of the provision suggests that it aims to facilitate legitimate commercial activities by providing appropriate legal frameworks for collective enterprise. DAOs represent novel forms of such collective enterprise, and denying them legal recognition would frustrate rather than further this underlying purpose (**Santos, 2012**). The legislative intent behind Article 174 appears to favor inclusive rather than restrictive application, creating presumptive support for extending its coverage to emerging organizational forms that serve similar economic functions.

Second, the principle of technological neutrality—widely recognized in Macau law and international legal discourse—suggests that legal provisions should apply equivalently regardless of the specific technologies through which regulated activities occur (**UNCITRAL, 2019**). This principle supports treating blockchain-based organizations equivalently to traditional organizations when they fulfill the same essential functions, even if through different technological means. Article 174's application to DAOs would exemplify this neutrality, recognizing that blockchain represents an alternative infrastructure for collective enterprise rather than a fundamentally different organizational category.

Third, practical considerations favor analogical application as a transitional measure pending comprehensive legislation. DAOs already operate within Macau's economy, creating relationships and expectations that require legal framework regardless of formal recognition (**Wang et al., 2019**). Analogical application provides an immediate pathway for addressing these practical realities, allowing courts and administrative authorities to resolve disputes and protect legitimate interests without waiting for specific legislation that may take years to develop. This pragmatic approach aligns with civil law traditions of judicial problem-solving through interpretation when legislative gaps emerge.

Fourth, comparative precedents demonstrate the feasibility of such analogical application. Civil law jurisdictions with provisions similar to Article 174 have successfully extended them to novel organizational forms through interpretive approaches (**Schmidt, 2020**). These precedents provide models for how Macau could similarly adapt Article 174 to accommodate DAOs while maintaining coherence with broader legal principles and regulatory objectives.

Fifth, the economic and innovative benefits of providing legal clarity for DAOs support analogical application that facilitates rather than restricts their development. Legal recognition through Article 174 would enable DAOs to interact more effectively with traditional economic actors, access conventional financial services, and attract participants concerned about legal uncertainties (**Fenwick et al., 2018**). These benefits align with Macau's broader economic objectives of diversification and technological advancement, suggesting that analogical application serves important public policy goals beyond mere doctrinal consistency.

5.4. Potential Objections and Limitations

Despite these supporting arguments, several significant objections and limitations must be considered regarding the analogical application of Article 174 to DAOs. These counterarguments require thorough examination to assess the viability of the proposed approach and identify potential modifications that might address legitimate concerns.

5.4.1. Absence of Centralized Management

The absence of centralized management and identified representatives in most DAOs creates practical challenges for legal compliance and accountability. Traditional legal frameworks assume entities have designated individuals authorized to receive legal notices, appear in court proceedings, and ensure regulatory compliance—functions that lack clear analogues in many DAO structures (Rodrigues, 2018). This implementation gap raises legitimate questions about whether DAOs can practically fulfill the legal responsibilities associated with entity status.

The bZx DAO case in the United States exemplifies this concern. A U.S. court found that a DAO could be considered a general partnership, with members who held governance tokens potentially having a duty of care to other token holders and corresponding liability for failures (Bloomberg Law, 2023). This ruling underscores the risks of applying traditional partnership principles to DAOs without appropriate adaptations addressing their decentralized nature.

Similarly, in CFTC v. Ooki DAO, the Commodity Futures Trading Commission successfully argued that the DAO could be treated as an "unincorporated association" for enforcement purposes. The court's decision to impose liability on token holders who voted on governance proposals (while exempting non-voting token holders) created a concerning precedent that actually discourages participation in DAO governance (Reuters, 2022). Such outcomes highlight the need for thoughtful adaptation rather than mechanical application of existing legal categories.

5.4.2. Pseudonymous Participation

The pseudonymous or anonymous participation characteristic of many DAOs conflicts with transparency requirements and anti-money laundering regulations applicable to conventional business entities in Macau. Without mechanisms for reliable participant identification, authorities cannot effectively enforce beneficial ownership disclosure requirements or prevent misuse for illicit purposes (**Ferreira et al., 2019**).

As noted by Walsh and colleagues, "The aggrieved minority token holders may have no recourse against the controlling group, because the true identity of the majority token holders may not be known" (**Tanner De Witt, 2024**). This opacity creates significant regulatory concerns, particularly as it potentially undermines minority participant protections that form a core element of Macau's corporate governance framework.

The challenge is further compounded by international regulatory pressures. The Financial Action Task Force (FATF) has recommended extending Anti-Money Laundering (AML) and Counter-Terrorist Financing (CTF) regulations to include DAOs, suggesting implementing Know Your Customer (KYC) procedures and transaction monitoring to prevent illicit activities (**RIF Technology, 2023**). Meeting these international standards while preserving the pseudonymous characteristics valued by many DAO participants requires innovative compliance approaches that

do not yet have established precedents.

5.4.3. Technical Immutability and Enforcement Challenges

The automated execution of decisions through smart contracts creates potential conflicts with legal intervention mechanisms designed to prevent or remedy wrongful conduct. Court orders to freeze assets, reverse transactions, or mandate specific actions may face significant implementation challenges when directed at DAOs whose operations are controlled by immutable code rather than human discretion (**Verstraete, 2021**).

As articulated by Cointelegraph (**2024**), "Because DAOs are usually decentralized and have no central authority, they are often governed by rules encoded into smart contracts. There is a potential for these rules to be hacked or manipulated, leading to disastrous consequences." The immutability that provides DAOs with trustless execution simultaneously creates rigidity that may prevent compliance with legitimate legal requirements, raising questions about whether they can functionally fulfill the obligations associated with legal personhood.

The technical architecture of DAOs may resist the very legal interventions that business entity law presupposes as remedies for improper conduct. When code execution cannot be readily halted or modified in response to court orders, the effectiveness of traditional enforcement mechanisms comes into question. This limitation could potentially undermine the regulatory safeguards that justify granting limited liability and other legal protections to conventional entities.

5.4.4. Jurisdictional Complexity

The global, borderless operation of many DAOs creates jurisdictional complexities that complicate straightforward analogical application of domestic provisions like Article 174. When DAOs operate across multiple jurisdictions with participants, assets, and activities distributed globally, determining whether Macau law applies and how it interacts with other legal systems presents significant challenges (**Wright & De Filippi, 2015**).

Taylor Wessing (**2023**) highlights this problem: "Where DAOs lack a centralised governance structure, they also lack a central entity or person which is liable for the DAO's obligations and debts, and against which enforcement action can be taken." This jurisdictional ambiguity creates uncertainty not only about which law applies but also about how enforcement would practically occur across borders.

These complexities suggest that analogical application, while conceptually viable, may require supplementary conflict-of-laws frameworks to address jurisdictional questions. Without such frameworks, legal recognition might create theoretical rights and obligations that prove practically unenforceable, undermining the very legal certainty that entity recognition aims to provide.

5.4.5. Technical Variation Among DAOs

The technical specificity of blockchain implementations introduces interpretive uncertainties that could challenge consistent application of Article 174. Different DAOs employ varying governance mechanisms, token structures, and operational models, potentially requiring

case-by-case assessment rather than categorical recognition (**Wang et al., 2019**).

According to Goodwin (**2024**), the Law Commission of England and Wales concluded there was no current need to develop a DAO-specific legal entity in part because "there is no consensus on what that entity should look like." This observation highlights the challenge of applying a single legal framework to a technologically diverse and rapidly evolving organizational category.

This specificity raises questions about whether analogical application can provide sufficient legal certainty without becoming excessively complex or arbitrary in distinguishing among different DAO implementations. A one-size-fits-all approach may prove inadequate to address the technological diversity of the DAO landscape, while a highly differentiated approach might undermine the predictability and accessibility that legal frameworks should provide.

5.4.6. Assessment of Objections

These objections highlight important limitations to analogical application but do not necessarily preclude it entirely. Rather, they suggest that such application may require thoughtful adaptation, potentially involving hybrid approaches that combine analogical reasoning with specific regulatory accommodations addressing DAOs' unique characteristics.

Legal Nodes (**2024**) suggests that "the DAO legal wrapper helps facilitate the relationship between the tokenholders, and enables the users of the web3 project to exist safely in a decentralized community of people... all without risk to any individual in the form of unlimited liability or risk of fines from regulation violations." This perspective recognizes that legal recognition, properly structured, can enhance rather than undermine the DAO model's distinctive benefits.

The balance of arguments indicates that while analogical application of Article 174 faces meaningful challenges, it represents a plausible pathway for providing provisional legal recognition to DAOs pending more comprehensive legislative action. Addressing the identified limitations would require innovative approaches combining technological solutions, regulatory adaptations, and evolving judicial interpretations.

6. PRACTICAL IMPLICATIONS OF RECOGNIZING DAOS UNDER ARTICLE 174

6.1. Liability Allocation and Asset Protection

Recognizing DAOs through analogical application of Article 174 would significantly impact liability allocation among participants and protection of organizational assets. Currently, without explicit legal recognition, DAOs operate in a precarious position where participants potentially face unlimited personal liability for organizational activities (**Goforth, 2018**). Courts might characterize DAOs as general partnerships by default, imposing joint and several liability on all participants regardless of their level of involvement or control (**Rodrigues, 2018**). This uncertainty creates significant risks for DAO participants and potentially deters participation in otherwise promising projects.

If Article 174 were analogically applied to DAOs, it could establish a framework that balances participant protection with third-party interests. Such application would likely create a form of limited liability for DAO participants, shielding their personal assets from organizational

obligations while preserving the DAO's collective assets as a resource for creditors (Hansmann et al., 2006). This arrangement would mirror the asset partitioning function of traditional corporate entities, providing similar economic benefits in terms of reduced monitoring costs and enhanced investment incentives (Hansmann & Kraakman, 2000).

The specific liability regime applicable would depend on which organizational form serves as the closest analogue for DAOs under Article 174. If DAOs were analogized to limited liability companies (sociedades por quotas), participants might enjoy substantial protection while maintaining some responsibility for ensuring minimum capitalization or observing other safeguards (Macau Commercial Code, 1999). If instead DAOs were compared to cooperative associations, liability might be limited to contributions plus perhaps additional amounts specified in organizational documents (Cooperative Code, 2012). These different possibilities highlight the interpretive flexibility available under analogical application, allowing courts and regulators to tailor legal treatment to the specific characteristics and risks of particular DAO implementations.

Asset protection represents another critical implication of recognition under Article 174. Such recognition would likely enable DAOs to directly own property, enter contracts, and maintain banking relationships without relying on individual participants or intermediary legal structures (Verstraete, 2021). This direct capacity would significantly reduce operational friction and legal complexity, facilitating integration with traditional economic systems. However, it would also require developing practical mechanisms for implementing court orders affecting DAO assets, potentially including technical standards for "legal override" functions that balance blockchain immutability with necessary legal interventions (Reyes, 2020).

The transition to recognized status under Article 174 would require careful consideration of existing DAO assets and liabilities. Retroactive application could create complications regarding previously established relationships, suggesting the need for transitional provisions addressing whether and how pre-recognition obligations transfer to the newly recognized entity (Goforth, 2018). These considerations underscore that while analogical application offers a pathway to legal recognition, its implementation requires thoughtful attention to practical details that affect both DAO participants and those who interact with these organizations.

6.2. Governance Requirements and Compliance Obligations

Recognition under Article 174 would subject DAOs to governance requirements and compliance obligations associated with the analogous organizational form. These requirements might include maintaining certain governance structures, observing procedural rules for decision-making, preserving records of organizational actions, and filing periodic reports with regulatory authorities (Commercial Registration Code, 2003). While conventional entities typically satisfy these requirements through board meetings, corporate secretaries, and standardized documentation, DAOs would need to develop functionally equivalent mechanisms adapted to their technological architecture.

The most significant governance challenge would involve reconciling blockchain-based voting systems with legal requirements for organizational decision-making. Traditional corporate law establishes specific procedures for shareholder and board votes, including notice requirements, quorum rules, and documentation standards (Macau Commercial Code, 1999).

DAOs would need to demonstrate that their on-chain governance mechanisms provide functionally equivalent protections despite their different technical implementation (**Rodrigues, 2018**). This might require developing standardized frameworks for translating traditional governance requirements into smart contract parameters, potentially with certification mechanisms verifying compliance.

Record-keeping obligations present another significant challenge. Legal recognition typically requires maintaining organizational records accessible to authorities and stakeholders upon proper request (**Commercial Registration Code, 2003**). While blockchains provide immutable transaction records, these often lack the structured documentation and contextual information required for legal compliance (**Werbach & Cornell, 2017**). DAOs recognized under Article 174 would likely need to develop supplementary record-keeping systems that translate blockchain data into legally compliant documentation, potentially combining on-chain and off-chain components to satisfy regulatory requirements while preserving technological advantages.

Compliance with anti-money laundering (AML) and know-your-customer (KYC) regulations represents perhaps the most challenging requirement for DAOs seeking recognition under Article 174. Macau's legal framework, like most jurisdictions, requires business entities to verify participant identities, monitor transactions for suspicious activities, and report certain information to regulatory authorities (**Fintech Regulatory Guidelines, 2020**). These requirements conflict with the pseudonymous participation characteristic of many DAOs, suggesting that recognized DAOs might need to implement identity verification systems—perhaps using zero-knowledge proof technologies that balance privacy with compliance—to satisfy regulatory obligations while maintaining core values of participant autonomy (**Ferreira et al., 2019**).

The analogical application of Article 174 would likely necessitate regulatory guidance clarifying how DAOs can satisfy compliance obligations through alternative mechanisms appropriate to their technological architecture. Such guidance might establish "compliance by design" frameworks specifying how smart contract systems can incorporate necessary legal safeguards, potentially creating standardized templates that embed regulatory requirements directly into DAO code (**UNCITRAL, 2019**). This approach would enable DAOs to achieve legal recognition while preserving their distinctive operational advantages, facilitating responsible innovation rather than forcing novel entities into ill-fitting traditional compliance models.

6.3. Jurisdictional and Conflict of Laws Issues

The inherently global nature of blockchain-based organizations creates complex jurisdictional and conflict of laws issues that must be addressed when recognizing DAOs under Article 174. Unlike traditional entities with clear geographical locations and physical operations, DAOs typically operate through distributed networks spanning multiple jurisdictions, with participants, assets, and activities dispersed globally (Wright & De Filippi, 2015). This distribution complicates determining when Macau law applies and how it interacts with other legal regimes claiming authority over the same organizations.

Several factors might establish Macau jurisdiction over a DAO, including registration with Macau authorities, specification of Macau law in organizational documents, concentration of participants or activities within Macau, or maintenance of significant assets within the territory

(Macau Civil Procedure Code, 1999). However, the distributed nature of DAOs means that multiple jurisdictions might simultaneously claim authority based on similar factors, creating potential conflicts regarding which laws govern particular aspects of DAO operations (Michaels, 2013). These conflicts could lead to contradictory obligations, forum shopping, or regulatory arbitrage that undermines legal certainty for all stakeholders.

Recognizing DAOs under Article 174 would therefore require developing clear jurisdictional rules specifying when and how Macau law applies to blockchain-based organizations. These rules might incorporate both traditional jurisdictional principles and novel approaches responsive to the unique characteristics of distributed entities (Pollman, 2019). For instance, Macau might claim jurisdiction when a DAO explicitly opts into its legal framework through registration or governance documents, when the DAO maintains its primary treasury within Macau-based financial institutions, or when a significant proportion of participants or operations have meaningful connections to the territory.

Conflict of laws principles would similarly require adaptation for DAOs recognized under Article 174. These principles typically determine which jurisdiction's laws govern particular aspects of an entity's existence and operations, addressing issues such as formation requirements, internal governance, contractual relationships, and liability allocation (Macau Private International Law Code, 1999). For DAOs, these determinations become particularly complex given the absence of traditional jurisdictional anchors like physical headquarters or incorporation documents filed in specific locations.

Potential approaches include developing specialized conflict of laws rules for blockchain-based entities, perhaps focusing on participant choice through explicit governance provisions, applying laws of the jurisdiction with the most significant relationship to particular transactions or activities, or creating harmonized international frameworks through treaties or model laws (UNCITRAL, 2019). The most promising direction likely involves a combination of these approaches, with Macau participating in international coordination efforts while developing internal rules clarifying when and how Article 174 applies to DAOs connected to multiple jurisdictions.

6.4. Interaction with Financial Regulations and Banking Relationships

Recognition under Article 174 would significantly impact DAOs' interactions with financial regulations and banking institutions, potentially facilitating integration with traditional financial systems while imposing additional compliance obligations. Macau maintains a comprehensive financial regulatory framework governing activities such as payment processing, investment management, and banking services—activities that many DAOs engage in through their treasury management and economic functions (**Monetary Authority of Macau, 2019**). Recognition would clarify DAOs' status within this regulatory landscape, establishing whether and under what conditions they qualify as financial institutions, investment entities, or other regulated categories.

For DAOs primarily engaged in investment activities, recognition might trigger obligations under securities and investment management regulations, potentially requiring registration with financial authorities, implementation of investor protection measures, and compliance with disclosure requirements (**Investment Fund Law, 2018**). These obligations could significantly

affect operational practices, requiring investment-focused DAOs to develop compliance frameworks addressing suitability assessment, risk disclosure, and conflict management—areas where existing DAO implementations often lack formal structures despite addressing similar concerns through technological mechanisms and community norms (**Wang et al., 2019**).

DAOs involved in lending, insurance, or payment processing activities would similarly face specific regulatory requirements following recognition under Article 174. These might include capital adequacy standards, consumer protection measures, and operational risk management frameworks adapted to the particular financial functions provided (**Banking Regulation, 2017**). While potentially burdensome, such requirements would also provide a pathway to legitimate operation within regulated financial markets, expanding potential use cases and market opportunities for compliant DAOs.

Perhaps most significantly, recognition would facilitate banking relationships by providing legal clarity regarding DAOs' capacity to maintain accounts and conduct transactions through traditional financial institutions. Currently, many banks hesitate to serve blockchain-based organizations due to uncertainty about their legal status, concerns regarding regulatory compliance, and difficulties applying standard due diligence procedures to distributed entities (**Ferreira et al., 2019**). Recognition under Article 174 would address these concerns by establishing DAOs as legitimate legal entities subject to comprehensible regulatory frameworks, enabling banks to develop appropriate policies for serving these clients within existing risk management systems.

The integration of recognized DAOs with traditional financial systems would likely require developing specialized compliance frameworks addressing the unique characteristics of blockchain-based organizations. These might include customized due diligence procedures for evaluating DAO governance structures, technical standards for verifying on-chain voting results, and specialized reporting formats translating blockchain transactions into regulatory filings (**Monetary Authority of Macau, 2019**). While challenging to implement, such frameworks would enable DAOs to access essential financial services while satisfying legitimate regulatory objectives, creating a balanced approach that supports innovation while maintaining necessary protections.

7. POLICY CONSIDERATIONS FOR FUTURE DEVELOPMENT

7.1. Balancing Innovation and Regulatory Objectives

Any approach to recognizing DAOs under Macau law must carefully balance promoting technological innovation with maintaining essential regulatory objectives. This balance involves acknowledging the potential benefits of blockchain-based organizations—including enhanced transparency, reduced intermediation costs, and novel governance mechanisms—while ensuring adequate protection for participants, creditors, and the broader financial system (**Zetzsche et al., 2018**). Striking this balance requires nuanced understanding of both blockchain capabilities and regulatory purposes, avoiding both excessive restrictions that stifle innovation and inadequate oversight that enables abuse.

On the innovation side, Macau has compelling reasons to facilitate responsible DAO development. Blockchain-based organizations offer potential economic diversification beyond traditional sectors like gaming and tourism, creating opportunities for technology-focused growth

aligned with regional development priorities (Macau Economic Bureau, 2021). DAOs enable novel business models that could attract international investment, specialized talent, and entrepreneurial activity, contributing to Macau's evolution as a diversified economic center. Additionally, these organizations can enhance financial inclusion by providing services to populations underserved by traditional institutions, advancing important social objectives (Fenwick et al., 2018).

Simultaneously, legitimate regulatory concerns require thoughtful attention. Consumer and investor protection remains essential regardless of technological implementation, requiring mechanisms ensuring participants understand risks and receive fair treatment (Monetary Authority of Macau, 2019). Financial stability considerations necessitate prudential oversight for DAOs engaged in activities that could generate systemic risks, such as large-scale lending or market-making (Financial Stability Board, 2018). Crime prevention objectives require measures preventing misuse for money laundering, fraud, or sanctions evasion, adapted to blockchain contexts while maintaining effectiveness (Ferreira et al., 2019).

The optimal approach likely involves "smart regulation" principles that focus on outcomes rather than specific operational methods, allowing flexibility in implementation while maintaining consistent standards (Finck, 2018). This might include principles-based frameworks specifying required protections and disclosures without mandating particular technical implementations, performance-based standards measuring effectiveness rather than prescribing specific procedures, and regulatory sandboxes enabling controlled experimentation with innovative models under careful supervision. Such approaches would allow DAOs to develop compliant solutions aligned with their technological architecture rather than forcing adoption of ill-fitting traditional compliance mechanisms.

International coordination represents another essential element of balanced regulation, preventing both regulatory arbitrage that undermines legitimate protections and conflicting requirements that impose unnecessary compliance burdens (UNCITRAL, 2019). Macau's approach should consider alignment with emerging international standards while maintaining adaptations appropriate to local conditions and priorities, creating a regulatory environment that promotes responsible innovation within a globally connected framework.

7.2. Legislative Reform Options

While analogical application of Article 174 provides a pathway for recognizing DAOs under existing law, comprehensive legislative reform would offer greater certainty and adaptability for blockchain-based organizations. Several reform options merit consideration, ranging from minimal adjustments clarifying current provisions to comprehensive frameworks specifically designed for decentralized entities. These options are not mutually exclusive and could be implemented sequentially, beginning with interpretive guidance and progressing toward more comprehensive reforms as experience and understanding develop.

The most conservative approach involves issuing administrative guidance clarifying how existing provisions apply to DAOs without modifying statutory text. Such guidance might specify criteria for determining when DAOs qualify for recognition under Article 174, outline compliance mechanisms appropriate to blockchain-based organizations, and establish registration

procedures accommodating their distinctive characteristics (Goforth, 2021). This approach offers flexibility and rapid implementation but provides limited certainty given its non-binding nature and vulnerability to judicial reinterpretation.

More substantial reform might involve targeted amendments to the Commercial Code and related legislation, explicitly recognizing DAOs within existing organizational categories. These amendments could address specific issues like formation requirements, governance standards, liability allocation, and regulatory oversight, providing clear rules while maintaining connection with established legal frameworks (Verstraete, 2021). This approach balances certainty with continuity, avoiding the complexity of creating entirely new organizational categories while providing explicit recognition of blockchain-based entities.

The most comprehensive option involves creating a specialized legal framework specifically designed for DAOs, following models like Wyoming's DAO LLC legislation, Vermont's blockchain-based LLC provisions, or Switzerland's approach to Decentralized Autonomous Associations (Goforth, 2021; LearnCrypto, 2023). Such legislation would establish DAOs as distinct organizational forms with tailored rules addressing their unique characteristics, potentially including specialized provisions for distributed governance, algorithmic management, digital asset handling, and technological compliance mechanisms. This approach offers maximum adaptability to DAO-specific issues but requires significant legislative resources and creates potential disconnection from established jurisprudence on organizational law.

Another promising direction involves creating optional "overlay" provisions that DAOs could adopt to receive recognition while maintaining flexibility regarding their underlying structure. This approach would establish a certification system allowing DAOs meeting specified standards to receive legal recognition without forcing all blockchain-based organizations into rigid categories (Reyes, 2020). DAOs seeking recognition would implement required features—perhaps including identity verification systems, dispute resolution mechanisms, and legal compliance tools—while maintaining freedom regarding other operational aspects.

Regardless of the specific approach adopted, effective legislative reform requires meaningful consultation with both technical experts and regulatory stakeholders. This collaborative process should include blockchain developers familiar with technical constraints and possibilities, legal practitioners experienced with organizational representation, regulatory authorities responsible for market oversight, and representatives of traditional business sectors affected by DAO activities (Finck, 2018). Such inclusive development would enhance both the technical feasibility and practical effectiveness of reformed legal frameworks.

7.3. Regulatory Coordination and International Harmonization

Given the inherently global nature of blockchain-based organizations, effective regulation requires coordination across jurisdictions to prevent both regulatory gaps that enable abuse and conflicting requirements that impose unnecessary compliance burdens. Macau's approach to recognizing DAOs should therefore consider opportunities for regulatory coordination and international harmonization, participating in emerging global frameworks while maintaining appropriate local adaptations (UNCITRAL, 2019).

Several existing international initiatives offer potential models for such coordination. The

Financial Action Task Force (FATF) has developed standards for virtual asset service providers that could inform approaches to AML/KYC requirements for DAOs, potentially providing a basis for consistent international implementation that prevents regulatory arbitrage while maintaining necessary protections (FATF, 2021). The International Organization of Securities Commissions (IOSCO) has similarly begun addressing blockchain applications in securities markets, offering frameworks that could guide regulation of investment-focused DAOs (IOSCO, 2020). These existing efforts provide foundations for coordinated approaches that Macau could both contribute to and benefit from.

Beyond adopting international standards, Macau might consider participating in mutually recognizing arrangements with other jurisdictions developing DAO-specific frameworks. Such arrangements would establish that DAOs properly formed and recognized in one participating jurisdiction receive equivalent treatment in others, reducing compliance burdens while maintaining essential protections through agreed minimum standards (Goforth, 2021). This mutual recognition approach has precedent in various international agreements addressing traditional corporate forms, potentially providing models adaptable to blockchain-based entities.

Regional coordination represents another promising direction, particularly given Macau's position within the Greater Bay Area and broader Asian economic networks. Collaborative approaches with neighboring jurisdictions like Hong Kong, Singapore, and mainland China could establish regional frameworks promoting consistent treatment while avoiding regulatory competition that undermines necessary protections (Wang et al., 2019). Such regional approaches might include shared licensing systems, standardized compliance requirements, and coordinated enforcement mechanisms addressing cross-border activities.

The optimal approach likely involves participating in multiple coordination levels simultaneously—adopting international standards where appropriate, developing regional frameworks addressing specific contextual factors, and maintaining necessary local adaptations reflecting Macau's particular circumstances and priorities. This multilevel coordination would balance the benefits of consistency with the importance of contextual appropriateness, creating a regulatory environment that enables responsible DAO operation across jurisdictions while respecting legitimate differences in regulatory approaches (Finck, 2018).

7.4. Educational and Infrastructural Needs

Successful integration of DAOs into Macau's legal and economic systems requires addressing educational and infrastructural needs that extend beyond formal regulatory frameworks. These supporting elements create the practical capacity for effective implementation, ensuring that recognition under Article 174 or subsequent legislation translates into functional reality rather than merely theoretical possibility (Finck, 2018).

Educational needs span multiple stakeholder groups, each requiring specialized knowledge development. Legal professionals need training in blockchain technology and DAO governance mechanisms to provide effective counsel regarding formation, compliance, and dispute resolution (Reyes, 2020). Regulatory officials require similar technical understanding to develop and enforce appropriate rules without imposing unnecessary restrictions based on misunderstanding. Courts and judges need conceptual frameworks for analyzing novel legal questions presented by

blockchain-based entities, potentially through judicial education programs addressing technological and organizational aspects of DAOs (**Werbach, 2018**). DAO developers and participants likewise need enhanced legal literacy to design and operate compliant organizations, suggesting the value of accessible guidance materials explaining regulatory requirements in technically relevant terms.

Infrastructural needs include both technical and institutional elements supporting DAO recognition and regulation. Technical infrastructure requirements might include standardized smart contract templates incorporating necessary legal compliance mechanisms, certification systems verifying that specific DAO implementations satisfy regulatory requirements, and interface protocols facilitating interaction between blockchain systems and traditional legal processes (**Wang et al., 2019**). Institutional infrastructure might include specialized regulatory units with blockchain expertise, alternative dispute resolution mechanisms adapted to DAO governance, and public-private collaborative frameworks supporting responsible innovation while maintaining necessary oversight.

Research and development initiatives represent another essential support element, generating knowledge that informs both regulatory approaches and organizational practices. Such initiatives might include academic research programs examining legal and governance aspects of DAOs, regulatory sandboxes enabling supervised experimentation with innovative models, and collaborative projects developing technical standards for "compliance by design" in DAO implementations (**Zetzsche et al., 2018**). These R&D efforts would enhance understanding of both challenges and opportunities presented by blockchain-based organizations, informing evidence-based approaches to recognition and regulation.

Public-private partnerships offer particularly promising approaches for addressing these educational and infrastructural needs efficiently. Such partnerships might include collaborative development of compliance standards and certification systems, joint educational programs training both regulators and organizational participants, and shared technology platforms facilitating interaction between blockchain networks and legal systems (**UNCITRAL, 2019**). These collaborative approaches leverage private sector innovation and public sector legitimacy, creating practical implementation pathways that advance both technological development and regulatory objectives.

8. CONCLUSION

This research demonstrates that Macau's legal system possesses sufficient flexibility to accommodate DAOs through analogical application of existing provisions, particularly Article 174 of the Commercial Code. The analysis reveals that while DAOs depart significantly from traditional organizational forms in their technical implementation, they serve many of the same essential functions that justify legal personhood for conventional entities—facilitating collective action, enabling resource pooling, establishing governance mechanisms, and creating institutional continuity. These functional similarities provide a principled basis for extending legal recognition through interpretive approaches rather than requiring specific legislation addressing every novel organizational form.

The case for analogical application of Article 174 rests on several key findings. First, Macau's

legal system explicitly recognizes analogical reasoning as a legitimate interpretive method through Article 9 of the Civil Code, creating a doctrinal foundation for extending existing provisions to novel phenomena like blockchain-based organizations. Second, the Commercial Code itself appears designed with sufficient flexibility to accommodate evolving commercial practices, employing open-textured concepts and functional criteria rather than rigid formalistic requirements. Third, judicial and administrative interpretations of similar provisions have demonstrated willingness to prioritize substance over form when classifying business associations, creating precedent for recognizing entities that fulfill essential functions through unconventional means.

While supporting analogical application in principle, the research also identifies significant challenges requiring thoughtful resolution. These include reconciling distributed governance with legal representation requirements, addressing pseudonymous participation in light of transparency obligations, developing mechanisms for implementing legal interventions within blockchain systems, resolving jurisdictional complexities arising from global operation, and adapting compliance frameworks to DAOs' technological architecture. These challenges suggest that while analogical application offers a viable pathway for legal recognition, its implementation requires careful attention to practical details affecting both DAO participants and those interacting with these novel organizations.

The implications of recognition through Article 174 extend across multiple domains, affecting liability allocation, governance requirements, jurisdictional determinations, and financial regulation. In each area, recognition would provide welcome legal clarity while imposing corresponding obligations that DAOs must satisfy through mechanisms appropriate to their technological implementation. This balance between rights and responsibilities represents the essence of successful legal recognition, ensuring that novel organizational forms receive necessary protections while observing legitimate regulatory requirements designed to protect participants and the broader public.

CONFLICT STATEMENT

The author declares no conflict of interest.

COOPERATION STATEMENT

The author of this work has been fully involved in all stages of the development and production of this manuscript.

REFERENCES

a16z crypto. (2022). How to pick a DAO legal entity. Retrieved May 5, 2025, from https://a16zcrypto.com/posts/article/dao-legal-entity-how-to-pick/

Antunes, J. E. (2019). Direito das sociedades comerciais [Commercial companies law]. Almedina.

Banking Regulation. (2017). Monetary Authority of Macau Regulatory Guidelines. Monetary Authority of Macau.

Barbereau, T., Smethurst, R., Papageorgiou, O., Rieger, A., & Fridgen, G. (2022). DeFi, not so decentralized: The measured distribution of voting rights. Proceedings of the 55th Hawaii

International Conference on System Sciences, 4645-4654.
Bloomberg Law. (2023). How DAOs factor into litigation, enforcement, and restructuring. Retrieved May 5, 2025, from https://news.bloomberglaw.com/us-law-week/how-daos-factor-into-litigation-enforcement-and-restructuring
Buterin, V. (2014). DAOs, DACs, DAs and more: An incomplete terminology guide. Ethereum Blog.
Cointelegraph. (2024). The impact and rise of DAOs in the legal industry. Retrieved May 5, 2025, from https://cointelegraph.com/daos-for-beginners/impact-in-legal-industry
Commercial and Movable Property Registry Administrative Decision. (2015). Administrative Decision No. 15/2015. Commercial and Movable Property Registry of Macau SAR.
Commercial Registration Administrative Regulations. (2003). Macau Administrative Regulation No. 12/2003. Official Gazette of Macau SAR.
Commercial Registration Code. (2003). Macau Decree Law No. 56/2003. Official Gazette of Macau SAR.
Commodity Futures Trading Commission (CFTC). (2022). CFTC v. Ooki DAO, No. 22-05416 (N.D. Cal. 2022). Retrieved May 5, 2025, from https://www.cftc.gov/PressRoom/PressReleases/8590-22
Commodity Futures Trading Commission (CFTC). (2023). Default judgment against Ooki DAO. Retrieved May 5, 2025, from https://www.cftc.gov/PressRoom/PressReleases/8715-23
Cooperative Code. (2012). Macau Law No. 4/2012. Official Gazette of Macau SAR.
Court of Second Instance. (2012). Case No. 19/2012. Macau Court of Second Instance.
DuPont, Q. (2018). Experiments in algorithmic governance: A history and ethnography of "The DAO," a failed decentralized autonomous organization. In M. Campbell-Verduyn (Ed.), Bitcoin and beyond: Cryptocurrencies, blockchains, and global governance (pp. 157-177). Routledge.
FATF. (2021). Updated guidance for a risk-based approach to virtual assets and virtual asset service providers. Financial Action Task Force.
Fenwick, M., Vermeulen, E. P., & Corrales, M. (2018). Business and regulatory responses to artificial intelligence: Dynamic regulation, innovation ecosystems and the strategic management of disruptive technology. In W. Barfield & U. Pagallo (Eds.), Research handbook on the law of artificial intelligence (pp. 571-593). Edward Elgar Publishing.
Ferreira, A., Sandner, P., & Dünser, T. (2019). Cryptocurrencies, DLT and crypto assets: Navigating the regulatory landscape. AML/KYC Working Group Paper. International Association for Trusted Blockchain Applications.
Financial Stability Board. (2018). Crypto-asset markets: Potential channels for future financial stability implications. Financial Stability Board.
Finck, M. (2018). Blockchain regulation and governance in Europe. Cambridge University Press.
Fintech Regulatory Guidelines. (2020). Macau Financial System Act Implementation Guidelines. Monetary Authority of Macau.
Goforth, C. (2018). How blockchain could increase the need for and availability of contractual ordering for companies and their investors. North Dakota Law Review, 94(1), 1-64.
Goforth, C. (2021). The evolving role of rule 10b-5 in the wake of crypto and meme stock market volatility. American Business Law Journal, 58(3), 517-557.
Godinho, J. (2017). The Macau commercial code: An introductory analysis. University of Macau Press.

Gomes, F. (2015). Direito comercial de Macau [Macau commercial law]. Almedina.
Gomes, O. (2018). Organizações comerciais no direito brasileiro [Commercial organizations in Brazilian law]. Saraiva.
Goodwin. (2024). DAOs in English law: another (but not final) step forward. Retrieved May 5, 2025, from https://www.goodwinlaw.com/en/insights/publications/2024/07/alerts-practices-dcb-daos-in-english-law-another
Hansmann, H., & Kraakman, R. (2000). The essential role of organizational law. Yale Law Journal, 110(3), 387-440.
Hansmann, H., Kraakman, R., & Squire, R. (2006). Law and the rise of the firm. Harvard Law Review, 119(5), 1335-1403.
Hassan, S., & De Filippi, P. (2021). Decentralized autonomous organization. Internet Policy Review, 10(2), 1-10.
IOSCO. (2020). Issues, risks and regulatory considerations relating to crypto-asset trading platforms. International Organization of Securities Commissions.
Investment Fund Law. (2018). Macau Law No. 7/2018. Official Gazette of Macau SAR.
LearnCrypto. (2023). DAOs: In search of legal personality & limited liability. Retrieved May 5, 2025, from https://learncrypto.com/feed/articles/daos-in-search-of-legal-personality-limited-liability
Legal Nodes. (2024a). DAO types: Community DAO, service DAO & investment DAO and regulatory requirements for each. Retrieved May 5, 2025, from https://legalnodes.com/article/dao-types
Legal Nodes. (2024b). Does my DAO need legal structuring? 8 common legal questions DAO founders ask. Retrieved May 5, 2025, from https://legalnodes.com/article/dao-legal-structure
Macau Civil Code. (1999). Decree Law No. 39/99/M. Official Gazette of Macau SAR.
Macau Civil Procedure Code. (1999). Decree Law No. 55/99/M. Official Gazette of Macau SAR.
Macau Commercial Code. (1999). Decree Law No. 40/99/M. Official Gazette of Macau SAR.
Macau Economic Bureau. (2021). Economic diversification strategy 2021-2025. Macau Economic Bureau.
Macau Private International Law Code. (1999). Decree Law No. 58/99/M. Official Gazette of Macau SAR.
Mariscal Abogados. (n.d.). Commercial obligations and contracts in Spain. Retrieved May 5, 2025, from https://www.mariscal-abogados.com/new-commercial-code-in-spain-commercial-obligations-and-contracts/
Michaels, R. (2013). Globalization and law: Law beyond the state. In R. Banakar & M. Travers (Eds.), Law and social theory (pp. 287-303). Hart Publishing.
Monetary Authority of Macau. (2019). Financial sector assessment program. Monetary Authority of Macau.
Nabben, K. (2021). Decentralized autonomous organizations as a new way of governance. The Journal of The British Blockchain Association, 4(2), 1-6.
Perritt, H. H. (2001). Electronic commerce, law, and the market. Temple Law Review, 74(2), 225-308.
Pollman, E. (2019). Tech, regulatory arbitrage, and limits. European Business Organization Law Review, 20(3), 567-590.
Reuters. (2022). DAOs: A game changer in need of new rules. Retrieved May 5, 2025, from https://www.reuters.com/legal/legalindustry/daos-game-changer-need-new-rules-2022-

10-07/
Reyes, C. L. (2020). Creating cryptolaw for the uniform commercial code. Washington and Lee Law Review, 78(4), 1521-1604.
RIF Technology. (2023). DAO legal landscape: An overview of challenges & approaches. Retrieved May 5, 2025, from https://rif.technology/content-hub/dao-regulations/
Rodrigues, U. R. (2018). Law and the blockchain. Iowa Law Review, 104(2), 679-728.
Samuel, G. (2018). Is law a fiction? In M. Del Mar & W. Twining (Eds.), Legal fictions in theory and practice (pp. 31-54). Springer.
Santos, A. K. (2012). Direito comercial de Macau: Uma introdução [Commercial law of Macau: An introduction]. University of Macau Faculty of Law.
Sarcuni v. bZx DAO, 664 F. Supp. 3d 1100 (S.D. Cal. 2023). Retrieved May 5, 2025, from https://casetext.com/case/sarcuni-v-bzx-dao
Savigny, F. C. (1884). Jural relations; or, the Roman law of persons as subjects of jural relations: Being a translation of the second book of Savigny's System of modern Roman law (W. H. Rattigan, Trans.). Wildy & Sons.
Schmidt, K. (2020). Gesellschaftsrecht [Corporate Law] (5th ed.). Carl Heymanns Verlag.
Sunstein, C. R. (1993). On analogical reasoning. Harvard Law Review, 106(3), 741-791.
Tanner De Witt. (2024). DAOs and the law: Key characteristics and legal issues. Retrieved May 5, 2025, from https://www.tannerdewitt.com/daos-and-the-law-key-characteristics-and-legal-issues/
Taylor Wessing. (2023). That'll be the DAO: an overview of the structure and status of decentralised autonomous organisations under English law. Retrieved May 5, 2025, from https://www.taylorwessing.com/en/insights-and-events/insights/2023/04/that-will-be-the-dao
Thomson Reuters Institute. (2023). Buying the Constitution: The rise of DAOs in legal. Retrieved May 5, 2025, from https://www.thomsonreuters.com/en-us/posts/legal/daos-business-structure/
UNCITRAL. (2019). Legal issues related to the digital economy -- distributed ledger technology. United Nations Commission on International Trade Law.
Verstraete, M. (2021). The stakes of smart contracts. Loyola University Chicago Law Journal, 52(2), 345-402.
Wang, S., Ouyang, L., Yuan, Y., Ni, X., Han, X., & Wang, F. Y. (2019). Blockchain-enabled smart contracts: Architecture, applications, and future trends. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 49(11), 2266-2277.
Weinreb, L. L. (2005). Legal reason: The use of analogy in legal argument. Cambridge University Press.
Werbach, K. (2018). The blockchain and the new architecture of trust. MIT Press.
Werbach, K., & Cornell, N. (2017). Contracts ex machina. Duke Law Journal, 67(2), 313-382.
Wright, A., & De Filippi, P. (2015). Decentralized blockchain technology and the rise of lex cryptographia. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2580664
Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L. (2018). The ICO gold rush: It's a scam, it's a bubble, it's a super challenge for regulators. Harvard International Law Journal, 60(2), 267-315.

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RESEARCH ARTICLE

PHILOSOPHICAL CONSTRUCTION AND EDUCATIONAL PRACTICE OF CAI YUANPEI'S AESTHETIC EDUCATION THOUGHT

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ABSTRACT

This paper takes Cai Yuanpei's aesthetic education thought as the research object, and systematically discusses the philosophical construction and educational practice of his theory of "replacing religion with aesthetic education". It is found that in the context of belief crisis and cultural transformation in the late Qing Dynasty and the early Republic of China, Cai Yuanpei integrated Kant's transcendental aesthetics, Schiller's aesthetic liberation theory and Confucian tradition of "combining rites with music", and constructed a modern aesthetic education philosophy system of "unity of body and image", "moral standard" and "equal emphasis on knowledge and action". Its educational practice is embodied in the concept innovation of advocating educational freedom and equality, promoting the construction of art education specialization and curriculum integration system, practicing the method innovation of "integration of teaching and doing" and the social expansion of public art and museum education. Despite the tension between philosophical universality and limited realistic resources, aesthetic transcendence and utilitarian needs of national salvation, and the confrontation with Liang Qichao and Wang Guowei's thoughts, his theory still provides important enlightenment for solving the dilemma of spiritual governance and promoting quality education in contemporary times. Cai Yuanpei's aesthetic education thought, as a response to civilization's transformation, established China's first modern aesthetic education system, laid the groundwork for art education and quality education, and posed the "unfinished question" of uniting individual aesthetic liberation with the collective social will.

1. INTRODUCTION

Origin of Problem and Research Approach

In modern times, China was deeply mired in the "double crisis" of the disintegration of the traditional order. The collapse of the imperial system led to the failure of the Confucian belief system. Western religions infiltrated strongly through unequal treaties, and the ideological circles fell into the dilemma of value vacuum and meaning nothingness. At this historical node, the trend of aesthetic education rises as a cultural redemption scheme, trying to reconstruct the national spiritual order with aesthetic rationality. By virtue of his dual identity as an educator and enlightenment thinker, Cai Yuanpei put forward the theory of "replacing religion with aesthetic education", which not only became the theoretical banner of criticizing religious ignorance and advocating freedom of thought in the New Culture Movement, but also laid the foundation of modern Chinese educational philosophy and highlighted its pivotal position in the transformation of modern thoughts. The academic research on Cai Yuanpei's aesthetic education thought has formed three kinds of paradigms, one of which is the path of ideological history, focusing on the interaction between his theory and social thoughts in the late Qing Dynasty and the early Republic of China; Second, philosophical hermeneutics, which focuses on analyzing the theoretical origin of concepts such as "unity of body and image" and "moral standard"; Third, pedagogical investigation, sorting out the institutionalization process of its art education practice. Looking at the existing achievements, most of them are confined to the vision of a single discipline, and there is little systematic analysis of the logic of philosophical foundation and educational practice, especially the lack of answers to the core question of "how to transform aesthetic education from metaphysical construction to concrete educational mechanism". Therefore, this paper takes two-way questioning as the research framework, uses the method of conceptual history analysis to trace the cross-cultural generation of "aesthetic education replacing religion", and combines the integration of interdisciplinary theories to solve the mechanism of "transformation of knowledge and action", in order to reveal the dialectical unity of philosophical construction and educational practice in Cai Yuanpei's thought.

2. PHILOSOPHICAL CONSTRUCTION: THE THEORETICAL FOUNDATION OF AESTHETIC EDUCATION INSTEAD OF RELIGION

Cai Yuanpei's theory of "replacing religion with aesthetic education" is not an accidental thought of generate, but based on the creative integration of Chinese and western philosophical resources, forming a complete philosophical system including ontology, axiology and epistemology. This system not only provides a theoretical basis for "aesthetic education replaces religion", but also lays a logical foundation for its educational practice. By reconstructing the basic picture of world existence, establishing the core position of moral cultivation, innovating the interactive mechanism between cognition and practice, and finally shaping aesthetic education into a spiritual unification power and personality cultivation path that replaces religion.

2.1. Ontological Reconstruction: Aesthetic Transcendence of Body-Image Unity

Cai Yuanpei's ontological answer to "How can aesthetic education replace religion" is rooted in his unique understanding of "the way the world exists". Its core is to break the monopoly of religion on the transcendental field through the theoretical construction of "unity of body and

image", and endow aesthetic education with the philosophical function of connecting finite and infinite.

On the one hand, in the localization transformation of Kant's transcendental aesthetics, Cai Yuanpei absorbed the binary division of "phenomenal world" and "substantial world" in Critique of Judgment, but did not stay at the purely speculative level. In the Outline of Philosophy, he clearly defined the "phenomenal world" as the material world accessible by experience, which is restricted by time, space and causal laws, and is the field of "relative truth" that people can grasp through senses and scientific cognition; The "physical world", as a transcendental absolute existence, transcends the limitation of time and space and logical deduction, and points to freedom of will and ultimate meaning. Similar to Kant's "thing itself", it has a more practical dimension. The key point is that Cai Yuanpei creatively put forward the "intermediary theory of will" and regarded free will as a bridge connecting the two worlds. This kind of will is neither pure material nor abstract spirit, but a transcendental spiritual force, which can transcend from phenomenon to entity through aesthetic experience. As he said in "Replacing Religion with Aesthetic Education", the "universality" characteristic of aesthetic education corresponds to the transcendence of the physical world, while the "transcendence" characteristic points to the realization of freedom of will, which finally enables individuals to break through the limitations of the experience world in aesthetics and reach the realization of the ultimate meaning, which is the substitute for the function of religion's "other world".

On the other hand, Cai Yuanpei made a modern transformation of the Confucian tradition of "combining rites with music", and injected local philosophical resources into "integration of body and image". He deeply studied the concept of "sound enters the heart" in Music Ji, and believed that the aesthetic appeal of music could directly act on people's hearts, realizing the social effect of "peace in music leads to harmony among the people" (Xunzi Music Theory). In the Speech of China-France Education Association, he emphasized that "music has the great power to integrate the national spirit", which is the inheritance of the function of traditional music education of "harmonizing people's hearts". However, instead of being confined to tradition, he broke through the shackles of "sanctification of Confucian classics" and transformed "rites and music" from the vassal of feudal ethics into the carrier of modern aesthetic education. For example, his interpretation of Xunzi's "musician is what the holy king enjoys, but can be kind to the people's hearts" is no longer limited to the hierarchical framework of "holy king education", but endows it with the modern connotation of "cultivating public emotions through aesthetics". This transformation not only retains the practical character of traditional aesthetic education, but also makes it gain a philosophical height beyond religious ignorance.

2.2. Foundation of Axiology: Moral-based Aesthetic Education Ethics

Cai Yuanpei's aesthetic education thought always takes "personality self-cultivation" as the core, and moral cultivation is the foundation of personality perfection. By constructing a "moral-based" value system, he endowed aesthetic education with an ethical foundation to replace religious ethical functions, and made clear the core position of aesthetic education in value guidance.

Its "double moral structure theory" constitutes the basic framework of moral cultivation. In "Opinions on Educational Policy", Cai Yuanpei divides morality into "negative morality" and

"positive morality". The former is the bottom line ethics of "don't do evil for small things", just like a "embankment", which demarcates behavior boundaries through normative constraints to prevent individuals from falling into moral anomie; The latter points to the moral perfection of "one's desire to stand up for others", just like the "source", and realizes personality sublimation through active practice. The two form a step-by-step evolution relationship, from "heteronomy" to "self-discipline" and then to "freedom", which constitutes a complete path of moral development. This division not only absorbs the core of Zhu Xi's self-cultivation theory of "preserving natural principles and destroying human desires", but also incorporates Bentham's utilitarianism's concern for "behavioral consequences", realizing the integration of traditional ethics and modern moral philosophy. In this structure, aesthetic education is endowed with the key function of "cultivating virtue", forming a practical path of "storing goodness with beauty". Cai Yuanpei believes that the drawback of religious ethics lies in the realization of moral restraint through "reward and punishment mechanism" or "theocratic deterrence", while aesthetic education cultivates "uninterested" moral emotions through aesthetic experience. For example, the aesthetic characteristics such as sublimity and harmony contained in works of art can make individuals naturally accept moral edification in emotional resonance, instead of passively obeying external authority. He mentioned in the Lecture Notes of China Polytechnic School that conveying the concepts of "mutual assistance" and "hard work" to the labor groups through painting, music and other art forms is precisely to cultivate moral consciousness by using the "moistening things silently" characteristics of aesthetic education. This logic of "reserving goodness with beauty" breaks the compulsion of religious ethics, and makes morality a value that individuals actively pursue in aesthetic experience, thus replacing religion's monopoly right to interpret morality.

2.3. Epistemological Innovation: A Practical Philosophy That Pays Equal Attention to Knowledge and Action

The monopoly of religious belief is often manifested in the separation of "knowledge" and "action", or the emphasis that "belief precedes cognition", or the addiction to "empty talk and thinking" and the divorce from practice. By constructing the epistemology of "paying equal attention to knowledge and action", Cai Yuanpei endowed aesthetic education with the function of connecting cognition and practice, making it an effective way to replace religious "belief practice".

This epistemological innovation is first embodied in the integration of Wang Yangming's "unity of knowledge and action" and Schiller's "aesthetic liberation". Wang Yangming emphasized that "knowing is the beginning of doing, and doing is the accomplishment of knowing", and regarded cognition and practice as an inseparable whole; Schiller put forward "aesthetic state as the third kingdom" in Letters of Aesthetic Education, and believed that aesthetics can break through the opposition between "perceptual impulse" and "rational impulse" and realize human freedom. Cai Yuanpei combines the two, and points out that the completion of cognition requires not only "rational judgment", but also "emotional experience" and "practical verification", and aesthetic education is the intermediary connecting the three. In the Outline of Simple Philosophy, he pointed out that real cognition should be "following reason", neither empty talk of theory nor blind practice, but balancing sensibility and rationality through aesthetic experience, and then transforming cognition into action. This kind of thinking transcends the religious belief mode of

"knowing but not doing", and makes cognition and practice unify in aesthetics.

As the media mechanism of "transformation of knowledge and action", art education plays a central role in this process. Cai Yuanpei believes that the "non-interest" of artistic activities can dispel utilitarian calculation, and enable individuals to naturally realize the transformation from cognition to practice in the creation and appreciation of "doing nothing". For example, he promoted the "integration of teaching and doing" in Xiaozhuang Normal University, and set up courses such as handicrafts and gardening, so that students can not only gain aesthetic cognition (such as grasping form and color), but also deepen their understanding through practice (such as cooperative spirit in labor) in the process of making works of art and cultivating plants; In the Peking University Painting Research Association, he encouraged students to "learn both theory and creation", understand aesthetic principles through sketching practice, and then test their cognitive depth with their creative achievements. This path of "artistic practice-cognitive deepening-behavior cultivation" makes aesthetic education break through the simple "knowledge transfer" or "skill training" and become a vivid carrier of "paying equal attention to knowledge and action". It also replaces the function of religion to strengthen belief through ritual practice, forming a more open and practical cognitive model.

3. PRACTICE TRANSFORMATION: EDUCATIONAL INSTITUTIONALIZATION OF AESTHETIC EDUCATION THOUGHT

Cai Yuanpei's aesthetic education thought does not stay at the level of abstract philosophical speculation, but is transformed into a concrete system through systematic educational practice. Its core is to integrate the theoretical conception of "replacing religion with aesthetic education" into all dimensions of the educational system, so as to realize the landing from concept to action. This transformation is not only reflected in the innovation of educational concept, but also includes the reconstruction of curriculum system and the innovation of teaching methods, and extends to the expansion of social aesthetic education, ultimately promoting the institutionalization of modern aesthetic education in China.

3.1. Innovation of educational concept: reconstructing educational value with freedom and equality

Cai Yuanpei's aesthetic education practice first broke through the shackles of traditional education from the conceptual level, reshaped the value orientation of education with "freedom" and "equality" as the core, and laid the ideological foundation for the institutionalization of aesthetic education.

In the dimension of freedom, its core is to break the monopoly of religion on education and defend the independence of education and the openness of thought. At the end of the Qing Dynasty and the beginning of the Republic of China, western missionary schools expanded rapidly by virtue of unequal treaties, not only spreading religious teachings, but also trying to infiltrate cultural hegemony through education. The domestic Confucian movement also tried to religionize Confucianism to maintain traditional authority. In this regard, Cai Yuanpei clearly put forward the idea of "breaking away from religious education", and emphasized in Opinions on New Education that "religion is a rigid stale doctrine", and its "bizarre ceremony" and "blind obedience to belief" are essentially infringements on individual spiritual freedom, while the

"disinterested" and "universality" of aesthetic education can achieve real spiritual liberation. During his tenure as president of Peking University, he abolished theology courses, replaced them with aesthetic lectures and art societies, and advocated the school-running policy of "freedom of thought and inclusiveness", which made aesthetic education a platform for the collision of different ideas, and institutionally guaranteed the free character of education without religious interference.

In the dimension of equality, Cai Yuanpei is committed to building a civilian aesthetic education system and breaking the class and gender barriers of traditional education. In view of the current situation that educational resources are monopolized by a few elites, he promoted the China Education Improvement Society to launch a civic education campaign, and extended aesthetic education to working groups by setting up workers' night schools and farmers' literacy classes, such as adding painting, singing and other courses in workers' night schools, and spreading aesthetic concepts with popular art forms; At the same time, it advocates the reform of vernacular, promotes the popularization of language with the "Please Promulgate New Punctuation Proposal", lowers the learning threshold of the people at the bottom, and enables more people to contact aesthetic carriers such as poetry and prose through words. In terms of gender equality, he took the lead in implementing the co-education system in Peking University, breaking through the tradition of "women's schools attached to boys' schools". He even advocated women's property inheritance right and marriage autonomy by revising Zhejiang's Recent Political Platform, and eliminated the obstacles to women's study from the economic and legal levels, so that aesthetic education was no longer a male privilege, but an equal right enjoyed by all members of society. This practice of "teaching without class" makes aesthetic education an important lever to promote social equality.

3.2. Construction of curriculum system: integration of science and aesthetic education and institutionalization of art education

Curriculum system is the core carrier of aesthetic education thought. Cai Yuanpei truly integrates aesthetic education into the national education system by promoting the integration of science education and aesthetic education and the systematic construction of art education.

In terms of discipline integration, he drew lessons from Comte's positivist "scientific hierarchy theory" and constructed a curriculum model of "symbiosis of science education and aesthetic education", among which the practice of Comte's school is the most representative. The school takes "symbiosis of scientific spirit and aesthetic education" as its school-running philosophy. The curriculum not only includes empirical disciplines such as physics and chemistry to cultivate scientific thinking, but also retains traditional aesthetic education courses such as music education and painting to cultivate aesthetic ability, and realizes the organic unity of the two through interdisciplinary courses of "combining science with art" (such as analyzing painting composition with geometric principles). Cai Yuanpei believes that "seeking truth" in science and "seeking beauty" in aesthetic education are not opposite, but two dimensions of personality perfection. Scientific training makes people get rid of ignorance, and aesthetic education makes people transcend utilitarianism. Both of them serve the cultivation of "sound personality" together. This concept of curriculum integration provides an early model for the integration of aesthetic education in modern general education.

The institutionalization of art education is reflected in the evolution from scattered practice to systematic system. In 1918, Cai Yuanpei founded the Painting Research Association and the Music Research Association in Peking University, which marked the official entry of art education into the higher education system: with the aim of "studying painting and developing aesthetic education", the Painting Research Association invited Xu Beihong and other artists to give lectures, teaching both techniques and aesthetic principles; The Music Research Association put forward "emphasizing music education and advocating aesthetic education", which not only teaches Chinese and western music theories, but also cultivates "aesthetic commonality" through collective performance. Although these two associations are non-governmental organizations, they have the embryonic form of professional art education. In 1927, Cai Yuanpei put forward the Proposal for Establishing a National Art University at the meeting of the Art Education Committee of the University, explicitly advocating the establishment of professional art colleges covering painting, music, drama and sculpture, and upgrading art education from a "sideline" to an independent discipline. Although this proposal was not fully realized due to the current situation, it laid the foundation for the later establishment of a national art college. In addition, the Shanghai National Conservatory of Music (now the predecessor of Shanghai Conservatory of Music), which he promoted, combined music education with "shaping national spirit". By creating music with national characteristics, music became a link to condense national feelings, which embodied the institutionalized goal of art education serving national construction.

3.3. Teaching method experiment: the practice of "integration of teaching and doing" and the practical orientation of aesthetic education

Cai Yuanpei opposes the drawbacks of "emphasizing knowledge over doing" in traditional education, emphasizing that aesthetic education can only be internalized into personality accomplishment through practical experience. The method experiment of "combining teaching with doing" is the concentrated embodiment of this idea. His practice in Xiaozhuang Normal University is very representative: the curriculum of this school breaks the boundary between "theoretical course and practical course", and integrates handicrafts, gardening, drama, etc. into daily teaching. Students experience the beauty of form and color when making handicrafts, feel the beauty of natural vitality when cultivating plants, and realize the beauty of human nature and society when arranging dramas, making the process of "doing" itself the content of "learning" and the method of "teaching". In Cai Yuanpei's Opinions on New Education, it is emphasized that aesthetic education should not be "knowledge in books", but the experience of "hard work". Through the combination of physical labor and mental labor, students' dual abilities of "loving labor" and "aesthetic creation" can be cultivated. This method breaks through the religious practice mode of "meditation", makes aesthetic education change from passive acceptance to active creation, and extends from classroom to life, so that students can not only master skills, but also cultivate their aesthetic sense in practice, and form a sound labor concept, thus realizing the teaching transformation of the philosophical concept of "paying equal attention to knowledge and action".

3.4. Expansion of Social Aesthetic Education: Promotion of Public Art Movement and Museum Education

Cai Yuanpei's aesthetic education practice is not limited to school education, but also makes

aesthetic education a cultural project covering the whole people by expanding the space of social aesthetic education, which is also his institutionalized attempt of "replacing religion with aesthetic education" at a broader social level. In terms of public art movement, he believes that "aesthetic education should not be limited to the campus, but should be integrated into social life". Therefore, he actively organizes groups such as Painting Research Society and Drama Improvement Society to promote art to the public. For example, by adapting traditional operas and incorporating modern concepts such as " " and "science", the Drama Improvement Society has changed operas from "entertainment form" to "aesthetic education carrier"; He also advocated setting up public works of art such as sculptures and murals in city squares and parks, so that citizens can contact and feel beauty in their daily lives. In terms of museum education, Cai Yuanpei is well aware that "museums are three-dimensional textbooks", actively promotes the preparation and opening of the Palace Museum, and advocates that "museums should not only serve scholars, but also face the common people". By holding popular exhibitions and offering explanation courses, the aesthetic value and historical spirit contained in cultural relics and historical sites can be understood by the public. This expansion of social aesthetic education has broken the monopoly of religious places on "spiritual edification", built a more open and inclusive aesthetic space, made aesthetic education a spiritual resource shared by all members of society, and reflected its institutionalized pursuit of "socialization of aesthetic education and social aesthetic education".

4. HISTORICAL ECHO: THEORETICAL TENSION AND PRACTICAL DILEMMA

During the practice of Cai Yuanpei's aesthetic education thought in the Republic of China, he always faced the complex tension between ideal and reality. This tension not only originated from the gap between the philosophical height of the theory itself and the social conditions, but also reflected in the confrontation with contemporary thoughts, and finally constituted an important dimension of his ideological historical value.

4.1. The conflict between ideal and reality: the gap between theoretical presupposition and practical conditions

The philosophical construction of Cai Yuanpei's aesthetic education theory takes "universality" and "transcendence" as the core, but the social reality in the Republic of China made it face double dilemmas, exposing the profound tension between theory and practice.

First, the contradiction between the universality of philosophy and the limitation of educational resources. The aesthetic education conceived by Cai Yuanpei is a "universal" education covering the whole people. Whether it is the equal idea of "education without class" or the ideal of "social aesthetic education", it needs sufficient educational resources as its support. However, during the Republic of China, wars were frequent, the economy was depressed, and education funds were seriously scarce. High-quality teachers and aesthetic education facilities (such as libraries, art galleries and concert halls) were mostly concentrated in a few big cities, and there was almost no contact between the vast villages and the people at the bottom. For example, although the "night school for workers" and "literacy class for farmers" advocated by him were tried out in some areas, it was difficult to form scale effect due to the lack of continuous funds and teachers; The "symbiosis of science and aesthetic education" model of Comte School can't be popularized nationwide because of the high resource threshold. This class monopoly and regional

imbalance of educational resources make it difficult for the philosophical ideal of "popularizing aesthetic education" to break through the shackles of realistic conditions, and finally leads to the great reduction of the universality of its theory in practice.

Second, the conflict between aesthetic transcendence and utilitarian education needs. Cai Yuanpei emphasized the "non-utilitarianism" and "transcendence" of aesthetic education, and advocated cultivating the spiritual realm of "no interest" through aesthetics. However, the theme of the times of "saving the nation for survival" in the Republic of China inevitably made education utilitarian. Under the background of the increasingly serious national crisis, the society's expectation of education focuses more on the cultivation of "practical talents", such as military affairs, science and technology, industry and other fields that directly serve the country's prosperity, while aesthetic education that emphasizes "personality self-cultivation" is regarded as a "luxury goods". For example, after the 1930s, with the rise of the anti-Japanese national salvation movement, many schools reduced art courses and added military training and industrial subjects. This realistic demand of "national salvation overwhelms enlightenment" is in sharp contrast with Cai Yuanpei's theoretical proposition of "aesthetic transcendence", which makes his aesthetic education practice constantly marginalized in the wave of utilitarian education.

4.2. Confrontation of contemporary ideas: establishing theoretical boundaries in pluralistic debates

Cai Yuanpei's aesthetic education thought does not exist in isolation, but gradually clarifies his own position in the dialogue and debate with contemporary thinkers. This confrontation not only reflects the richness of his thought, but also highlights the uniqueness of his theory. Compared with Liang Qichao's "emotional education theory" and Wang Guowei's "aesthetic no interest theory", although they jointly promote the development of modern aesthetic education thoughts, their core has its own emphasis. Liang Qichao emphasized the role of "emotional education" in "group governance", regarded aesthetic education as a tool to condense national feelings, and paid more attention to its social mobilization function; Wang Guowei inherited Kant's "aesthetic irinterest", advocated that aesthetic education is a "pure spiritual activity", and focused on the individual's pursuit of "realm"; Cai Yuanpei's "replacing religion with aesthetic education" has both characteristics, which not only absorbs Wang Guowei's theoretical core of "aesthetic transcendence", but also integrates Liang Qichao's social concern. However, its uniqueness lies in the institutional scheme of elevating aesthetic education to "replacing religion", with the goal of building a new national spiritual system, rather than pure emotional cultivation or individual cultivation. The two-way criticism of the retro school and the westernization school highlights the independence of Cai Yuanpei's thought. Facing the Confucian movement (retro school) represented by Kang Youwei and Chen Huanzhang, he criticized its retrogressive tendency of "religionizing Confucianism", and believed that the ethical shackles of "Three Guidelines and Five Permanent Members" were contrary to the free spirit of modern aesthetic education; In view of the Westernization school who advocates "total Christianization", he pointed out that the "exclusivity" and "ignorance" of religion will hinder the establishment of scientific spirit and national cultural subjectivity. In the double criticism, Cai Yuanpei's aesthetic education program shows the wisdom of "dual purpose": it not only opposes the cultural conservatism of the retro school, but also rejects the cultural inferiority of the westernization school, and tries to build a modern spiritual system with local foundation by integrating Chinese

and western aesthetic education resources.

5. CONTEMPORARY VALUE: THE MODERN TRANSFORMATION OF AESTHETIC EDUCATION THEORY

Although Cai Yuanpei's aesthetic education thought was born in the social context a hundred years ago, its philosophical core and practical logic still have important enlightenment to the spiritual civilization construction and educational reform in contemporary China. This value is not only reflected in the reference of historical experience, but also in the creative transformation of theoretical resources.

5.1. Solving the Dilemma of Spiritual Governance: Aesthetic Education as a Modern Path of Meaning Construction

Contemporary Chinese society is undergoing a profound transformation. The utilitarian tendency of market economy and the diversity of values brought by globalization make some groups face a "crisis of meaning". Cai Yuanpei's theoretical thinking of "replacing religion with aesthetic education" provides an important reference for solving this dilemma. From the perspective of practical needs, the Chinese Religion Blue Book (2022) shows that the growth of emerging belief groups and spiritual emptiness have coexisted in recent years, reflecting society's urgent need for "non-utilitarian spiritual products." Cai Yuanpei's idea of "replacing religious identity with aesthetic community" has shown results in contemporary practice: the "Urban Culture Menu" project implemented in Shenzhen has significantly improved the "spiritual sense of belonging" of participating citizens through public art exhibitions, community drama festivals and other activities, and reduced the proportion of religious inclination by 29%; Hangzhou's "Citizen Culture Living Room" project integrates aesthetic experience into daily life through museum opening at night and street art performances, and residents' spiritual life satisfaction increases by 34%. These cases confirm Cai Yuanpei's prediction that aesthetic education can meet the individual's demand for spiritual transcendence by constructing a "non-religious world of meaning" and become an effective path for spiritual governance in modern society.

5.2. Empowering Quality Education Reform: Return from "Skill Aesthetic Education" to "Personality Aesthetic Education"

At present, although the reform of quality education has made progress, the problems of "skilled aesthetic education" and "marginalized aesthetic education" have not been fundamentally solved. Cai Yuanpei's aesthetic education thought provides theoretical guidance for breaking through this dilemma.

At the ontological level, it is necessary to reconstruct the core value of aesthetic education and return from "skill training" to "personality self-cultivation". Cai Yuanpei's emphasis on "the unity of body and image" and "moral standard" enlighten us that aesthetic education should not be limited to the teaching of skills such as painting and music, but should be the link of the integration of morality, intelligence, physique, beauty and labor. For example, ecological ethics should be cultivated through natural aesthetic education, empathy should be cultivated through drama aesthetic education, and the educational goal of "storing goodness with beauty" and "enlightening truth with beauty" should be realized.

On the practical path, we can learn from its concept of "whole life education". First, we can promote curriculum integration, such as integrating the cognition of "scientific beauty" into science class (such as the concise beauty of mathematical formulas and the harmonious beauty of physical laws), and strengthening the aesthetic experience of literary works in Chinese class; Secondly, to build a network of "home-school-community collaboration", schools can set up "family aesthetic education workshops" in conjunction with the community, and cooperate with art galleries and theaters to develop practical courses, so that aesthetic education can break through the campus boundary and become an education that runs through the whole process of individual growth. This transformation not only inherits Cai Yuanpei's practical philosophy of "paying equal attention to knowledge and action", but also responds to the demand of contemporary quality education for "all-round development", providing historical reference and realistic path for the modernization of Chinese aesthetic education.

6. CONCLUSION: AESTHETIC EDUCATION PHILOSOPHY AS A CIVILIZATION SCHEME

Cai Yuanpei's aesthetic education thought is essentially a set of holistic schemes to respond to the transformation of modern Chinese civilization. In the double dilemma of the collapse of traditional values and the impact of the West, he tried to reconstruct the spiritual world and social order of modern Chinese people with aesthetic education as the fulcrum, and its significance far exceeded that of simple educational reform. Theoretically, Cai Yuanpei founded the first modern aesthetic education philosophy system in China. He combined Kant's transcendental aesthetics, Schiller's aesthetic liberation theory and Confucian tradition of "combining rites with music", and systematically answered the core proposition of "how aesthetic education shapes modern personality" for the first time through the triple structure of "integration of body and image", "moral standard" and "equal emphasis on knowledge and action", which sublimated aesthetic education from skills teaching to the core path of national spirit construction, and provided unique ideological resources for China's modernity transformation. At the practical level, its legacy has a profound influence so far: Peking University Painting Research Association and National Conservatory of Music have created professional art education systems; Practices such as civilian aesthetic education and co-education have laid the paradigm of educational equality and quality education, and become the historical forerunner of the contemporary all-round development concept of "morality, intelligence, physique, beauty and labor". However, this scheme leaves an "unfinished question". How to balance individual aesthetic liberation with social collective will? Cai Yuanpei not only expects aesthetic education to realize individual spiritual freedom, but also hopes that it will serve national cohesion. This tension has not disappeared in contemporary times. In fact, this is the vitality of his thought. It reminds us that aesthetic education, as a civilized scheme, should not only protect the spiritual home of individuals, but also become the link of social consensus. Only in this way can we build a new form of civilization with individuality and commonness, freedom and order in the tide of modernity, which is the enlightenment of Cai Yuanpei's aesthetic education philosophy through a hundred years.

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All authors contributed equally to this work and approved the final manuscript.

REFERENCES

Tian Zhiwen. The enlightenment of Cai Yuanpei's aesthetic education thought on mo dern art education [J]. Journal of Changchun Normal University, 2025, 44 (04): 1 47-150.

Ma Yunan. Cai Yuanpei's aesthetic education thought and contemporary value [J]. Chi nese Character Culture, 2024, (20): 187-189. DOI: 10.14014/j.cnki.cn11-2597/g2.2024. 20. 060.

Liu Jiaxin. Construction and contemporary value of early Chinese aesthetic education thought [J]. Art Education, 2024, (10): 265-268.

Yao Wenfang. Reexamining Cai Yuanpei's theory of "replacing religion with aesthetic education" [J]. Literature and Art Research, 2024, (07): 5-15.

Wang Xin, Ju Yucui. Cai Yuanpei's aesthetic education thought and its triple logic [J]. Journal of Ningbo University (Educational Science Edition), 2024, 46 (03): 23-31. DOI: 10.20102/J.cnki.1008-0627.2024. 0033.

Liu Suyue. Cai Yuanpei's aesthetic education thought and contemporary value [J]. Jou rnal of Hebei Normal University (Educational Science Edition), 2024, 26 (02): 35-4 4. DOI: 10.13763/J.cnki.jhebnu.ese.2024.02. 005.

Ding Xudong. Theory of the category of aesthetic education in the new era-from the perspective of comparison between early Chinese and foreign aesthetic education thoughts and aesthetic education concepts in the new era [J]. Aesthetic Educatio n Research, 2023, (01): 1-17.

Hu Fengyun. Research on art education practice under the background of "replacing r eligion with aesthetic education" (1917-1937) [D]. Huaibei Normal University, 2023. DOI: 10.27699/D.cnki.ghbmt.2023. 000018.

Xu Xiang, Lu Li. A comparative study of Schiller and Cai Yuanpei's aesthetic educati on thoughts and its enlightenment to Chinese basic music education [J]. Voice of the Yellow River, 2023, (10): 166-172. DOI: 10.19340/J. cnki.hhzs.2023.10.047.

Liu Qin. 2022 Review of Chinese Aesthetic Education Research [J]. Journal of Aesthet ic Education, 2023, 14 (03): 7-19. DOI: 10.20073/J.cnki.2095-0012.2023. 03.002.

Shen Li. The implication of Cai Yuanpei's aesthetic education thoughts and its enlight enment to current university aesthetic education practice [D]. West China Normal University, 2023. DOI: 10.27859/D.cnki.gxhsf.2023. 000329.