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Vocational Education–Tourism Synergy for Rural Revitalization: An Integrated Framework of Empowerment Mechanisms and Development Pathways

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Abstract: Rural regions worldwide face interconnected challenges arising from demographic decline, limited employment opportunities, economic restructuring, the erosion of local cultural assets, and uneven access to digital technologies. Although tourism is frequently promoted as a strategy for rural diversification, its developmental effects often remain constrained by shortages of skilled labour, fragmented stakeholder coordination, weak local participation, and insufficient institutional capacity. Vocational education can potentially address these constraints by developing context-responsive skills, facilitating knowledge transfer, supporting local entrepreneurship, and connecting educational provision with place-based industries. Nevertheless, research has largely examined vocational education and rural tourism as separate domains, leaving their interactive contribution to rural revitalization insufficiently theorised. This conceptual study develops an integrated framework explaining how vocational education and tourism can operate as mutually reinforcing systems of rural transformation. Drawing on human capital theory, collaborative governance, and sustainable rural tourism scholarship, the study identifies four interdependent empowerment mechanisms: human-capital formation, cross-sectoral collaboration, cultural co-creation, and digital capability development. It further proposes four corresponding development pathways: place-responsive education, tourism value-chain development, culture–tourism integration, and digitally enabled rural innovation. Rather than treating these mechanisms and pathways as independent policy instruments, the framework conceptualises them as a recursive process through which educational resources, tourism opportunities, local knowledge, and multi-actor governance continuously interact. The study contributes to the literature by repositioning vocational institutions as place-based development actors rather than solely as providers of occupational credentials. It also extends rural tourism research by identifying educational capacity as a central condition for converting tourism resources into locally embedded and sustainable development outcomes. Practical implications are offered for vocational institutions, tourism enterprises, rural communities, and policymakers seeking to build inclusive, culturally grounded, and adaptive rural economies. The proposed framework provides a foundation for subsequent empirical examination across different rural and institutional contexts.

Keywords: vocational education; tourism development; rural revitalization; education–tourism integration; empowerment mechanism; development pathway

1. Introduction

With Rural development has re-emerged as a major international concern as rural regions worldwide confront persistent population decline, population ageing, youth outmigration, shrinking employment opportunities, deteriorating public services, and widening disparities between rural and metropolitan areas [1,2]. These challenges reflect profound structural transformations driven by rapid urbanisation, technological change, global economic integration, and the reconfiguration of agricultural and non-agricultural production systems [3].

Consequently, contemporary rural revitalization extends far beyond agricultural modernisation or short-term economic growth. It increasingly represents a comprehensive development paradigm aimed at strengthening local economic resilience, human capital, institutional capacity, cultural vitality, and community sustainability through integrated and place-based development strategies [4].

China's Rural Revitalization Strategy represents one of the most comprehensive contemporary policy responses to global rural transformation, yet the challenges it addresses are shared by many countries undergoing profound

socioeconomic restructuring [5,6]. Similar initiatives have emerged internationally under concepts such as rural regeneration, place-based development, smart villages, and resilient rural communities, all of which seek to strengthen the long-term sustainability of rural regions through integrated economic, social, environmental, and institutional development [7,8]. Rather than advocating a return to traditional rural structures, these approaches emphasise adaptive transformation in which rural communities continuously reorganise local resources, governance arrangements, innovation capacities, and community participation to respond effectively to urbanisation, demographic change, industrial restructuring, and globalisation [9,10]. Consequently, rural revitalization should be understood as a dynamic and place-based process of institutional adaptation that enhances long-term regional resilience rather than merely a policy programme for agricultural development.

Tourism has become an increasingly important catalyst for rural revitalization by creating new opportunities for economic diversification, employment generation, entrepreneurship, and the sustainable utilisation of local natural and cultural resources [11,12]. Beyond its direct economic contribution, rural tourism strengthens the visibility of rural destinations, expands market connectivity, and stimulates innovation through interactions among visitors, local communities, and external stakeholders [13]. Nevertheless, tourism does not automatically produce sustainable rural development. Numerous studies have shown that tourism-led growth may also generate seasonality, economic leakage, environmental degradation, cultural commodification, and unequal benefit distribution when local governance and institutional capacity remain weak [14,15]. Consequently, contemporary rural tourism research has shifted from a destination-centred perspective towards governance-oriented approaches that emphasise community participation, collaborative networks, innovation, and local embeddedness as essential conditions for sustainable rural development [16].

One of the most persistent constraints on sustainable rural tourism development is the limited availability and effective organisation of locally relevant knowledge, professional expertise, and innovation capacity [17,18]. Successful rural tourism destinations require far more than frontline service personnel; they depend on destination planners, digital marketing specialists, cultural interpreters, entrepreneurship mentors, heritage professionals, hospitality managers, and community leaders capable of coordinating diverse stakeholders and responding to rapidly changing market demands [19]. In many rural regions, however, these capabilities remain fragmented or insufficiently connected with local development priorities. Young and highly educated residents frequently migrate to urban areas, while those who remain often face limited access to vocational

training, continuing education, digital skills development, entrepreneurial support, and institutional mechanisms that facilitate the transformation of local knowledge into sustainable tourism products and services [20]. As a result, shortages in human capital and knowledge infrastructure have become significant barriers to the long-term competitiveness and resilience of rural tourism destinations.

Vocational education is increasingly recognised as a strategic driver of rural transformation because it strengthens human capital, enhances workforce quality, and supports regional economic development [21,22]. Beyond preparing technically competent graduates, vocational institutions can also function as regional innovation hubs by integrating applied learning, entrepreneurship, lifelong learning, knowledge transfer, and community engagement [23]. Their effectiveness, however, depends on whether educational programmes are aligned with local industrial structures and regional development priorities. Rather than merely supplying labour, vocational education contributes to rural revitalization by strengthening local capabilities, promoting innovation, and facilitating sustainable regional development [24].

Despite growing interest in vocational education and rural revitalization, existing research remains fragmented across disciplinary boundaries [25]. Studies of vocational education primarily examine employability, skills development, curriculum innovation, and industry–education integration, whereas tourism research focuses on destination competitiveness, sustainability, visitor experience, and cultural heritage [26]. Rural revitalization research, in contrast, emphasises governance, regional restructuring, industrial transformation, and place-based development [27]. Although these perspectives address complementary dimensions of rural development, few studies have integrated them into a unified analytical framework capable of explaining how vocational education and tourism jointly contribute to sustainable rural transformation.

This fragmentation produces three important gaps. First, vocational education is often viewed merely as a supplier of skilled labour, overlooking its broader role in entrepreneurship, innovation, knowledge transfer, and community development. Second, tourism is frequently treated as an employment destination rather than a collaborative learning ecosystem that shapes educational programmes and local capabilities. Third, existing studies seldom explain the mechanisms through which education and tourism interact to generate wider outcomes such as community resilience, cultural sustainability, institutional capacity, and locally retained value.

Although vocational education, tourism, and rural revitalization have each generated substantial bodies of research, their intersections remain insufficiently theorised [28]. Existing studies often conceptualise

vocational education primarily as a provider of skilled labour, overlooking its broader role in fostering innovation, entrepreneurship, knowledge exchange, and institutional capacity building [29]. Likewise, tourism is frequently viewed as an employment destination rather than as a collaborative learning ecosystem capable of stimulating educational innovation and community development [30]. Consequently, current scholarship provides limited explanation of the mechanisms through which vocational education and tourism interact to generate sustainable rural outcomes, including community resilience, cultural continuity, institutional adaptability, and locally retained value [31].

This study examines how vocational education and tourism can be integrated as mutually reinforcing drivers of rural revitalization. Specifically, it addresses four research questions:

RQ1: Through which mechanisms can vocational education and tourism jointly strengthen rural development capacity?

RQ2: How do educational institutions, tourism organisations, governments, and rural communities integrate complementary resources throughout this process?

RQ3: Which development pathways transform education–tourism collaboration into economically, socially, and culturally sustainable rural outcomes?

RQ4: How can these mechanisms and pathways be synthesised into an integrated conceptual framework that supports future empirical research?

2. Literature Review and Theoretical Framework

Rural revitalization has evolved from a narrowly defined agricultural development strategy into a multidimensional development paradigm encompassing economic restructuring, social inclusion, ecological sustainability, cultural regeneration, institutional innovation, and community resilience [32,33]. Although the concept has received particular policy attention in China, comparable place-based development approaches have been widely adopted in Europe and other regions under frameworks such as rural regeneration, smart villages, and community-led local development [34]. Across these diverse policy contexts, a common consensus has emerged that sustainable rural transformation depends not only on infrastructure investment or industrial upgrading but also on the capacity of local communities to mobilise knowledge, strengthen institutions, foster innovation, and develop endogenous development capabilities [35]. Consequently, contemporary rural revitalization is increasingly understood as a dynamic process of institutional adaptation in which governments, communities, industries, and knowledge organisations collaboratively enhance long-term regional resilience and

sustainable development.

Rural tourism has become one of the most widely adopted strategies for promoting rural revitalization because it creates opportunities for economic diversification, employment generation, entrepreneurship, and the sustainable utilisation of natural and cultural resources [36,37]. Beyond its direct economic contribution, rural tourism is increasingly recognised as a mechanism for enhancing local identity, stimulating social innovation, supporting heritage conservation, and strengthening community resilience through place-based development [38]. Consequently, tourism is no longer viewed solely as a consumption-oriented industry but as an integrated socio-economic system capable of connecting multiple sectors, including agriculture, culture, education, and local governance. However, recent scholarship increasingly challenges the assumption that tourism automatically generates sustainable rural development [39]. The developmental outcomes of tourism depend largely on governance quality, stakeholder collaboration, local institutional capacity, and the ability of communities to retain economic and cultural value. Where these conditions are absent, tourism expansion may instead reinforce economic leakage, environmental degradation, seasonal dependence, and cultural commodification. Contemporary rural tourism research therefore increasingly advocates governance-oriented and community-centred approaches that prioritise local participation, institutional resilience, and long-term sustainability rather than visitor growth alone.

Vocational education has traditionally been interpreted through the lens of Human Capital Theory, which views education as an investment that enhances knowledge, professional competence, labour productivity, and economic performance [40,41]. From this perspective, vocational institutions primarily contribute to rural development by supplying skilled workers who meet the evolving demands of local industries and labour markets. This human-capital perspective remains fundamental, particularly in tourism, where service quality, technical competence, and workforce adaptability are critical determinants of destination competitiveness [42]. Recent research, however, has expanded this traditional perspective by recognising vocational institutions as place-based innovation actors rather than merely providers of occupational qualifications [43]. Beyond workforce preparation, vocational colleges increasingly facilitate applied research, entrepreneurship education, technology transfer, lifelong learning, and community engagement, thereby strengthening regional innovation systems and local development capacity. Their contribution is particularly significant in rural areas, where vocational institutions often represent one of the few stable organisations capable of connecting governments, industries, tourism enterprises, and local communities through collaborative learning and knowledge exchange

[44].

Despite these advances, existing studies continue to evaluate vocational education primarily through graduate employability, employment outcomes, or industry responsiveness, while paying comparatively limited attention to its institutional role in fostering cross-sector collaboration and sustainable rural transformation. Consequently, vocational education should be understood not only as a supplier of human capital but also as an institutional platform that integrates education, innovation, entrepreneurship, and regional governance to support long-term rural revitalization.

Although previous studies have substantially advanced understanding of rural revitalization, rural tourism, and vocational education, these three research streams continue to evolve largely in parallel rather than as an integrated body of knowledge [45]. Existing studies have generated valuable insights into governance, destination development, employability, industrial transformation, and educational innovation; however, they rarely explain how vocational education and tourism interact as mutually reinforcing institutional systems capable of promoting sustainable rural revitalization [46]. Consequently, the mechanisms through which educational capacity, tourism development, collaborative governance, and community participation jointly generate long-term regional resilience remain insufficiently understood [47,48].

A growing body of evidence further suggests that sustainable rural transformation depends less on the contribution of any single institution than on the quality of cross-sector collaboration, knowledge exchange, institutional learning, and adaptive governance [49]. This perspective requires moving beyond sector-specific analyses towards an integrated framework capable of explaining how governments, vocational institutions, tourism enterprises, and rural communities collectively mobilise complementary resources to generate sustainable development outcomes [50]. Accordingly, this study synthesises Human Capital Theory, Collaborative Governance Theory, Sustainable Tourism Theory, and Rural Revitalization Theory into a unified conceptual framework that provides the theoretical foundation for the empowerment mechanisms and development pathways proposed in the following sections.

3. Empowerment Mechanisms for Rural Revitalization

Human capital constitutes the foundational mechanism through which vocational education contributes to sustainable rural revitalization [51,52]. Traditional Human Capital Theory explains that investment in education enhances individuals' knowledge, skills, productivity, and innovation capacity, thereby improving labour quality and supporting long-term economic development [51]. Within rural contexts, however, the role of vocational education

extends beyond workforce preparation. It provides practice-oriented learning, technical training, entrepreneurial education, and lifelong learning opportunities that strengthen both individual capabilities and regional development capacity [52]. Unlike general education, vocational education is characterised by its close connection with industrial development and practical application. Through industry-oriented curricula, work-integrated learning, and school–enterprise cooperation, vocational institutions continuously align educational programmes with evolving labour-market demands and local development priorities [53]. This alignment enables vocational graduates to acquire not only occupational competencies but also problem-solving abilities, entrepreneurial awareness, digital literacy, and innovation capabilities that are essential for rural transformation. Consequently, vocational education supports the development of a skilled workforce capable of adapting to technological change, industrial upgrading, and emerging opportunities in rural tourism and related sectors.

The human-capital mechanism also operates at the institutional level. Vocational institutions increasingly function as regional knowledge hubs that facilitate applied research, technology diffusion, entrepreneurship support, and knowledge exchange among governments, industries, tourism enterprises, and rural communities [54]. Through these collaborative activities, educational resources are transformed into local innovation capacity, strengthening regional resilience and improving the ability of rural communities to respond to economic restructuring and sustainable development challenges. Human capital should therefore be understood not merely as an individual asset but as a collective capability embedded within regional innovation systems that continuously supports rural revitalization.

Collaborative governance constitutes the institutional mechanism through which vocational education translates human capital into sustainable rural development [55]. While vocational institutions generate knowledge, skills, and innovation capacity, these resources cannot produce lasting regional transformation without effective coordination among governments, educational institutions, tourism enterprises, community organisations, and local residents. Rural revitalization is therefore not the outcome of isolated institutional efforts but of sustained collaboration among multiple stakeholders who jointly mobilise complementary resources, share responsibilities, and pursue common development objectives. Within this collaborative process, vocational institutions function as knowledge brokers rather than passive education providers. They connect industry demands with educational programmes, facilitate technology transfer, organise professional training, support entrepreneurship, and promote continuous learning across sectors. Governments provide policy coordination, institutional

support, and public investment; tourism enterprises contribute market intelligence, practical training opportunities, and innovation demands; while local communities contribute indigenous knowledge, cultural resources, and social legitimacy. The interaction of these actors creates an adaptive governance network capable of responding to changing economic conditions, technological innovation, and evolving tourism markets [56].

The effectiveness of collaborative governance depends not only on formal partnerships but also on trust, shared decision-making, reciprocal learning, and long-term institutional commitment. When collaboration remains fragmented, vocational education risks becoming disconnected from local development priorities, while tourism development may fail to generate locally retained value or community resilience. Conversely, strong collaborative governance enables educational resources, industrial opportunities, and community knowledge to be integrated into a coherent regional innovation system that continuously strengthens rural revitalization [57].

Cultural co-creation represents the mechanism through which vocational education and tourism jointly transform local cultural resources into sustainable development capacity [58]. Rural revitalization depends not only on economic growth but also on the preservation, reinterpretation, and continuous transmission of local culture. Vocational institutions play a crucial role in this process by equipping learners with the knowledge, professional skills, and creative competencies required to document, interpret, innovate, and communicate local cultural heritage. Rather than treating culture as a static tourism attraction, vocational education enables culture to become a dynamic resource that continuously generates educational, social, and economic value.

Tourism provides an important platform through which this cultural knowledge can be transformed into authentic visitor experiences and locally embedded industries. Through curriculum co-design, field-based learning, community engagement, and industry collaboration, students, educators, tourism practitioners, and local residents collectively participate in the production, interpretation, and dissemination of cultural knowledge. This collaborative process strengthens cultural identity, enhances destination distinctiveness, and encourages local communities to become active contributors rather than passive beneficiaries of tourism development [59].

The effectiveness of cultural co-creation depends on balancing innovation with authenticity. Excessive commercialisation may reduce culture to a market commodity, whereas limited innovation may restrict its long-term vitality and social relevance. Vocational education therefore serves as a bridge between heritage conservation and creative transformation by integrating cultural preservation with entrepreneurial development, tourism innovation, and community participation.

Through this mechanism, cultural resources are converted into locally retained value while reinforcing social cohesion, regional identity, and sustainable rural revitalization [60].

Digital empowerment constitutes the enabling mechanism through which vocational education, tourism, and collaborative governance are integrated into a sustainable rural innovation ecosystem [61]. Digital technologies have fundamentally transformed how rural communities acquire knowledge, deliver education, manage tourism destinations, and participate in regional development. Smart tourism platforms, online learning systems, digital marketing, big-data analytics, and artificial intelligence have expanded opportunities for rural areas by reducing geographical constraints, improving access to information, and strengthening connections between local producers and external markets [62]. However, digital transformation should not be understood simply as the adoption of technological tools. The developmental value of digitalisation depends on whether rural communities possess the capabilities required to access, apply, adapt, and govern digital resources effectively. Vocational education therefore plays a pivotal role in cultivating digital literacy, entrepreneurial competence, innovation capability, and technology-supported problem-solving skills that enable individuals and organisations to participate actively in the digital economy. Through curriculum innovation, industry partnerships, experiential learning, and lifelong education, vocational institutions help bridge the digital divide while strengthening the adaptive capacity of rural communities.

Digital empowerment also enhances collaboration across institutional boundaries. Governments can improve public-service delivery through digital governance, tourism enterprises can optimise destination management using real-time information systems, educational institutions can expand access to flexible learning, and rural communities can promote local products, cultural heritage, and tourism experiences through digital platforms. These interconnected activities facilitate knowledge exchange, resource integration, and collaborative innovation, transforming digital technologies into institutional capabilities that support resilient and sustainable rural revitalization [63].

4. Development Pathways for Vocational Education–Tourism Synergy

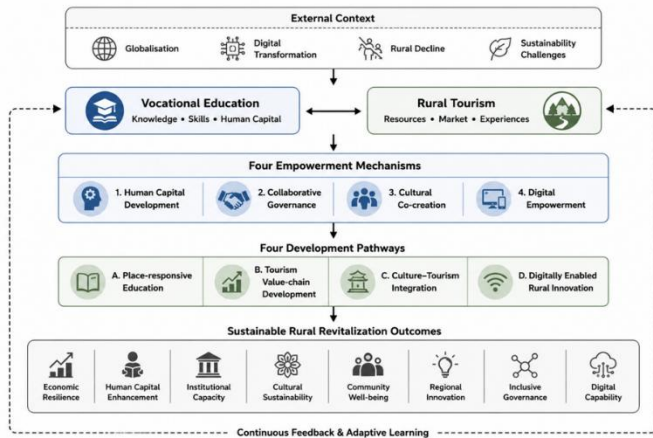


Figure 1. Integrated conceptual framework illustrating how vocational education and rural tourism jointly promote sustainable rural revitalization through four empowerment mechanisms and four development pathways.

The first development pathway emphasises the alignment of vocational education with the specific economic, industrial, and social characteristics of rural communities. Rather than adopting standardised curricula designed for broad labour-market demands, vocational institutions should develop place-responsive educational programmes that reflect local tourism resources, cultural heritage, ecological conditions, and regional development priorities. Such an approach enables education to become embedded within local development processes rather than operating independently of them. Place-responsive education requires continuous collaboration among educational institutions, local governments, tourism enterprises, and community organisations throughout curriculum design, practical training, applied research, and workforce development. This collaborative process allows vocational programmes to respond dynamically to changing industrial needs while simultaneously supporting entrepreneurship, local innovation, and community participation [64]. Beyond preparing employment-ready graduates, place-responsive education strengthens the long-term adaptive capacity of rural communities by cultivating locally embedded knowledge, entrepreneurial competence, and innovation capabilities. Through continuous interaction between education and regional development, vocational institutions become strategic partners in rural revitalization rather than merely providers of technical training.

The second pathway focuses on strengthening rural

tourism through value-chain integration rather than isolated tourism activities. Sustainable tourism development requires coordinated linkages among agriculture, cultural industries, hospitality, creative services, digital commerce, and local entrepreneurship. Vocational education contributes to this process by preparing graduates with interdisciplinary competencies capable of supporting multiple stages of tourism value creation, including destination planning, product innovation, visitor experience design, digital marketing, hospitality management, and small-business development. Instead of concentrating solely on employment outcomes, vocational education should facilitate entrepreneurship, innovation, and business incubation that enable local residents to retain greater economic value within rural communities. By strengthening local production networks and encouraging collaboration among tourism-related industries, the tourism value chain becomes more resilient, diversified, and capable of generating sustainable regional growth [65].

The third pathway highlights the integration of cultural heritage with tourism development through vocational education. Rural culture should not be regarded merely as a tourism attraction but as a dynamic resource supporting community identity, social cohesion, creative innovation, and local economic development. Vocational institutions facilitate this integration by combining cultural documentation, heritage interpretation, creative design, tourism management, and entrepreneurial education within interdisciplinary learning programmes. Through collaborative learning and community participation, students, educators, cultural practitioners, tourism enterprises, and local residents jointly transform traditional knowledge into innovative tourism products and authentic visitor experiences. Such integration strengthens cultural sustainability while enhancing destination competitiveness and community ownership of tourism development [66].

The final pathway emphasises digital innovation as an enabling condition that connects education, governance, tourism, entrepreneurship, and community development. Digital technologies support flexible learning, smart destination management, online marketing, digital entrepreneurship, and knowledge sharing across institutional boundaries. However, digital innovation contributes to rural revitalization only when supported by adequate digital literacy, institutional capacity, collaborative governance, and community participation. Vocational education therefore plays a central role in cultivating digital competencies while enabling rural stakeholders to integrate emerging technologies into local industries and public services. Through digital empowerment, rural communities become better equipped to respond to technological change, expand market access, strengthen collaborative innovation, and enhance long-term regional resilience [67].

5. Discussion

The conceptual framework developed in this study provides a systematic explanation of how vocational education and tourism jointly contribute to sustainable rural revitalization through four interrelated empowerment mechanisms. Rather than treating vocational education as merely a provider of skilled labour or tourism as an isolated economic sector, the framework conceptualises both as complementary institutional systems that interact through human capital development, collaborative governance, cultural co-creation, and digital empowerment. This integrated perspective responds directly to the fragmented nature of previous research by linking educational capacity, tourism development, institutional collaboration, and regional transformation within a single analytical framework [68].

The framework also extends existing interpretations of Human Capital Theory. Previous studies have primarily associated vocational education with employability, labour productivity, and industrial competitiveness. Our findings suggest that vocational education performs broader developmental functions by facilitating knowledge exchange, entrepreneurship, innovation, community learning, and institutional capacity building. Human capital should therefore be interpreted not only as an individual economic asset but also as a collective regional capability embedded within collaborative networks and place-based development processes [55,69].

Similarly, the proposed framework advances collaborative governance research by demonstrating that sustainable rural revitalization depends less on the contribution of individual organisations than on the quality of interaction among governments, vocational institutions, tourism enterprises, and local communities. Consistent with collaborative governance theory, regional resilience emerges through continuous coordination, trust building, shared learning, and joint decision-making rather than through isolated policy interventions [48,56]. Vocational institutions occupy a particularly important position within this process because they simultaneously generate knowledge, cultivate talent, facilitate innovation, and connect diverse stakeholders across sectors.

The findings further indicate that cultural co-creation and digital empowerment should be regarded as complementary mechanisms rather than independent development strategies. Cultural resources provide the distinctive identity and endogenous value necessary for sustainable tourism, whereas digital technologies expand opportunities for knowledge dissemination, destination management, market access, and collaborative innovation. However, neither mechanism can generate sustainable outcomes without adequate institutional capacity and community participation. Sustainable rural revitalization therefore depends on the interaction of all four mechanisms rather than the dominance of any single

development strategy [60,61].

This study makes several theoretical contributions to the literature on rural revitalization, vocational education, and sustainable tourism. First, it advances Human Capital Theory by extending the role of vocational education beyond workforce preparation. Existing research has primarily conceptualised vocational education as a mechanism for improving employability, labour productivity, and industrial competitiveness [22]. The framework developed in this study argues that vocational education should also be understood as a place-based institutional actor capable of facilitating knowledge exchange, entrepreneurship, innovation, community learning, and regional capacity building. By integrating educational functions with broader regional development processes, this perspective broadens the explanatory scope of Human Capital Theory within rural revitalization research [70].

Second, this study contributes to collaborative governance research by demonstrating that sustainable rural revitalization cannot be explained solely through the actions of individual organisations. Instead, long-term rural transformation emerges through the continuous interaction of governments, vocational institutions, tourism enterprises, and local communities, each contributing complementary resources, knowledge, and institutional capabilities [49]. Rather than viewing collaboration as a governance arrangement alone, the proposed framework conceptualises collaborative governance as a dynamic mechanism through which educational resources are transformed into collective development capacity.

Third, this study enriches sustainable tourism research by repositioning vocational education as a strategic determinant of destination sustainability. Previous studies have generally examined tourism competitiveness from the perspectives of destination management, visitor experience, or community participation [36]. In contrast, the present framework identifies educational capacity as an upstream condition influencing innovation, entrepreneurship, service quality, cultural interpretation, and digital capability, thereby explaining how tourism resources can be converted into locally retained economic and social value.

Finally, this study contributes methodologically by proposing an integrated conceptual framework that links actors, resources, empowerment mechanisms, and development pathways within a coherent analytical structure. Unlike previous studies that examined vocational education, tourism, or rural revitalization independently, the proposed framework illustrates how these systems interact through sequential yet mutually reinforcing processes. This integrated perspective provides a theoretical foundation for future empirical research examining the institutional mechanisms through which vocational education and tourism jointly promote

sustainable rural revitalization.

The proposed framework offers practical implications for policymakers, vocational institutions, tourism enterprises, and rural communities seeking to promote sustainable rural revitalization. Rather than pursuing isolated educational or tourism initiatives, stakeholders should adopt an integrated development approach in which education, industry, governance, and community participation are coordinated through long-term institutional collaboration [68]. For policymakers, the findings highlight the importance of strengthening cross-sector policy coordination rather than implementing fragmented education or tourism programmes independently. Public policies should encourage institutional partnerships, regional innovation platforms, and resource-sharing mechanisms that enable vocational institutions to participate actively in local development planning. Investment should focus not only on physical infrastructure but also on human capital development, digital capability, entrepreneurial support, and institutional resilience [71].

For vocational institutions, the framework suggests that curriculum reform should move beyond labour-market responsiveness towards place-responsive education. Programmes should be developed in close collaboration with local governments, tourism enterprises, and community organisations to ensure that teaching, applied research, entrepreneurship education, and work-integrated learning directly address regional development priorities. Vocational institutions should therefore position themselves as regional innovation partners rather than solely providers of technical education [51]. For tourism enterprises and rural communities, sustainable development depends on long-term partnerships that facilitate knowledge exchange, co-creation, and shared value generation. Tourism businesses should engage more actively in curriculum design, student internships, innovation projects, and community capacity building, while local communities should participate in decision-making, cultural interpretation, and destination management. Such collaborative arrangements strengthen local ownership, improve destination resilience, and enhance the long-term sustainability of rural tourism development [39].

Despite its theoretical contributions, this study has several limitations that should be acknowledged. First, the proposed framework is conceptual rather than empirical. Although it synthesises evidence from multiple research traditions, the relationships among human capital development, collaborative governance, cultural co-creation, digital empowerment, and rural revitalization have not yet been empirically tested. Future studies should employ quantitative, qualitative, or mixed-method research designs to validate the proposed mechanisms and examine their relative influence across different institutional and regional contexts [72].

Second, the framework has been developed primarily from the perspective of rural tourism and vocational education. While these two domains provide an appropriate context for examining rural revitalization, the proposed mechanisms may also be applicable to other sectors, including agriculture, cultural and creative industries, ecological conservation, healthcare, and community development. Comparative studies across different industries and countries would improve the generalisability and external validity of the framework [73].

Third, this study conceptualises rural revitalization as a dynamic process of institutional collaboration. However, the effectiveness of the proposed mechanisms is likely to be influenced by contextual conditions, including governance capacity, policy environments, economic structures, digital infrastructure, cultural characteristics, and stakeholder relationships. Future research should therefore examine potential mediating and moderating mechanisms that explain why similar development strategies produce different outcomes across regions [55,74].

Finally, future research should move beyond examining vocational education and tourism as independent systems and instead investigate how multiple institutional actors co-create sustainable rural development through adaptive governance, knowledge exchange, and digital innovation. Longitudinal studies, comparative international research, and multi-level empirical analyses would further enhance understanding of the complex interactions among education, tourism, governance, and regional transformation. Such research would not only refine the conceptual framework proposed in this study but also contribute to evidence-based policymaking for sustainable rural revitalization [75].

6. Conclusion

This study developed an integrated conceptual framework explaining how vocational education and tourism jointly contribute to sustainable rural revitalization. By synthesising Human Capital Theory, Collaborative Governance Theory, Sustainable Tourism Theory, and Rural Revitalization Theory, the study identified four interrelated empowerment mechanisms—human capital development, collaborative governance, cultural co-creation, and digital empowerment—and translated them into four complementary development pathways. Rather than viewing vocational education as a supplier of skilled labour or tourism as an isolated economic sector, the proposed framework conceptualises both as interconnected institutional systems that collectively strengthen regional innovation, community resilience, and sustainable rural transformation.

The framework provides a new perspective for understanding the relationship between education and

rural development by emphasising collaboration, place-based capability building, and long-term institutional adaptation. Although further empirical validation is required, the framework offers a theoretical foundation for future research and practical guidance for policymakers, vocational institutions, tourism enterprises, and rural communities seeking to promote sustainable rural revitalization. It is expected that this integrated

perspective will support more coordinated, inclusive, and resilient rural development strategies in the context of ongoing economic, technological, and social transformation.

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