

Research on the Construction and Growth Path of Light Asset Model for Grassroots Entrepreneurship in the Context of Digital Economy

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ABSTRACT In the context of the digital economy, grassroots entrepreneurship increasingly relies on data resources, platform ecosystems, and intangible assets rather than traditional heavy-asset investments. This study investigates the construction mechanism and growth path of a light-asset entrepreneurship model by analyzing the interactions among digital technologies, resource integration, and value creation. A theoretical framework combining resource-based theory, platform economics, and digital transformation is established to explain how entrepreneurs leverage external resources through digital infrastructures. The study further identifies key growth pathways involving data-driven decision-making, platform-enabled collaboration, and dynamic capability enhancement. Results indicate that digital technologies significantly reduce operational barriers, improve resource allocation efficiency, and strengthen entrepreneurial resilience. The proposed framework provides theoretical support for sustainable entrepreneurial development and offers methodological references for digital resource integration, information networks, and intelligent decision-support systems.

INDEX TERMS digital economy, light-asset entrepreneurship, resource integration, information networks, intelligent decision support

I. INTRODUCTION

A. RESEARCH BACKGROUND

THE rapid expansion of the digital economy is reshaping the global economic landscape through the deep integration of intelligent production technologies and advanced material informatics. This evolution facilitates a shift toward high-value, data-driven manufacturing, effectively redefining productivity and innovation within the modern industrial framework. Digital technologies centered on big data, cloud computing, artificial

intelligence, and platform economy not only promote the deep adjustment of industrial structure, but also reconstruct the underlying logic of entrepreneurial activities. According to the “China Digital Economy Development Report (2024)”, the scale of China’s digital economy will exceed 65 trillion yuan in 2024, accounting for 49.8% of GDP. The level of digital industrialization and industrial digitization will continue to improve, providing broad market space and technological support for entrepreneurial activities. This systemic digital infrastructure acts as the essential bridge allowing high-level economic growth to penetrate niche manufacturing sectors. In this context, specifically within

the domain, grassroots entrepreneurship has emerged as a vital force for market vitality and employment growth, leveraging advancements in functional material research and intelligent production technologies to capture unprecedented development opportunities.

These innovations enable small-scale practitioners to drive industrial upgrading through high-performance applications and data-driven material engineering. However, it also faces traditional challenges such as resource scarcity, funding shortage, weak technology, and insufficient risk resistance[1,2].

II. DEFINITION OF RELEVANT THEORETICAL FOUNDATIONS AND CORE CONNOTATION

A. RELEVANT THEORETICAL BASIS

The resource-based theory was proposed by Penrose (1959), and its core viewpoint is that a company’s competitive advantage comes from its heterogeneous resources and core capabilities. The growth process of a company is the process of resource accumulation and capability enhancement. This theory holds that the resources of an enterprise include tangible resources (such as funds, equipment, factories,

etc.) and intangible resources (such as technology, brand, data, channels, etc.), and the core capability is the ability of the enterprise to integrate and utilize resources[3,4]. For grassroots entrepreneurs, their tangible resources are relatively scarce, making it difficult to build competitive advantages through heavy asset investment. The light asset model focuses on core competencies, integrates external resources, and cultivates intangible assets to achieve optimal resource allocation and value creation, which is highly consistent with the core viewpoint of resource-based theory. The resource-based theory provides a theoretical basis for this article to analyze how grassroots entrepreneurs can make up for their resource shortcomings and build a light asset model through resource integration[5].

B. THE INTRINSIC FIT BETWEEN DIGITAL ECONOMY AND GRASSROOTS ENTREPRENEURSHIP LIGHT ASSET MODEL

The technological characteristics and development logic of the digital economy are highly compatible with the demand for grassroots entrepreneurship light asset models[6]. This compatibility is the core prerequisite for the digital economy to empower the construction and growth of grassroots entrepreneurship light asset models, mainly reflected in the following four aspects:

The core capabilities of the digital economy are technological innovation, data-driven, and platform support, while the core capabilities of the light asset model are resource integration, operational management, and value creation, which are highly compatible[7-9]. Digital technology provides technical support for the light asset model of grassroots entrepreneurship, big data helps entrepreneurs accurately perceive market demand, cloud computing reduces operating costs, and platform economy provides a carrier for resource integration; At the same time, the resource integration capability of the light asset model can fully utilize the technological and platform advantages provided by the digital economy, achieve optimized resource allocation and value creation, and form a virtuous cycle of “technology empowerment resource integration value creation”[10].

III. THE INTERNAL LOGIC AND TECHNOLOGICAL ADVANTAGES OF EMPOWERING GRASSROOTS ENTREPRENEURSHIP WITH THE DIGITAL ECONOMY AND CONSTRUCTING A LIGHT ASSET MODEL

A. INTRINSIC LOGIC

The inherent logic of empowering grassroots entrepreneurship with a light asset model through the digital economy is the deep integration of digital technology with the core characteristics of grassroots entrepreneurship’s resource endowment and light asset model by changing resource allocation methods, optimizing operational management processes, and innovating value creation models[11,12]. This achieves a transmission process of “technology empowerment resource integration efficiency improvement value creation”, which

is manifested in the following three dimensions of logical chain:

This achieves a transmission process of “technology empowerment—resource integration—efficiency improvement—value creation.” Specifically, digital technology acts as a “catalyst” that lowers the entry barrier for grassroots players by converting fixed costs into variable service fees. For instance, cloud computing replaces private server investment, allowing entrepreneurs to reallocate limited capital from “maintenance” to “market acquisition,” thereby shifting the mechanical focus from asset ownership to flow velocity and turnover efficiency.

B. RESOURCE ALLOCATION LOGIC: FROM “SELF OWNED RESOURCE DEPENDENCE” TO “EXTERNAL RESOURCE INTEGRATION”

Traditional grassroots entrepreneurship relies heavily on their own resources, and due to resource scarcity, it is difficult to achieve large-scale development. On the other hand, the digital economy breaks down the temporal and spatial limitations and barriers of resource allocation through platform based and networked resource allocation methods, allowing grassroots entrepreneurs to integrate external resources at low cost and make up for the shortcomings of their own resources[13]. The core logic is that digital platforms serve as carriers for resource integration, connecting grassroots entrepreneurs with various resource providers (such as suppliers, service providers, consumers, investors, etc.), reducing the cost of resource search, docking, and transactions; Big data technology can help entrepreneurs accurately identify resource demand and supply, and achieve precise matching of resources; The network effect results in a larger scale of resource integration, lower cost of resource acquisition, and higher efficiency. Through the empowerment of the digital economy, the grassroots entrepreneurship light asset model has achieved a transformation in resource allocation from “self owned resource dependence” to “external resource integration”, leveraging a large amount of external resources with light asset investment to create value[14,15]. Core Dimensions and Implementation Paths of the Light Asset Model for Grassroots Entrepreneurship in the Digital Economy As shown in Table 1:

TABLE 1. Core Dimensions and Implementation Paths of the Light Asset Model for Grassroots Entrepreneurship in the Digital Economy

Core Dimensions	Core Elements	Key Implementation Paths	Digital Technology Support
Value Proposition	Target Customer Positioning, Pain Point Mining, Differentiated Value Creation, Dynamic Optimization	1. Identify niche markets through big data analytics 2. Mine customer needs via social media and platform feedback 3. Create differentiated advantages in product, service, or brand 4. Adjust value proposition based on market changes	Big data analytics tools, social listening platforms, user behavior tracking systems
Resource Integration	Core Competence Focus, External Resource Classification, Integration Mode Innovation, Efficiency Optimization	1. Concentrate resources on core business and outsource non-core links 2. Screen high-quality partners via digital platforms (e.g., 1688, service outsourcing platforms) 3. Adopt cooperation modes like platform entry, alliance, contract and crowdsourcing 4. Realize real-time resource matching through digital docking systems	B2B resource matching platforms, cloud collaboration tools, smart contract technology
Operation Management	Digital Process Reconstruction, Data-Driven Decision-Making, Digital Tool Application, Cost Control	1. Digitize R&D, marketing, sales, and customer service processes 2. Optimize strategies based on operational data (marketing, sales, inventory) 3. Apply lightweight digital tools for team collaboration and data analysis 4. Reduce customer acquisition and management costs through precise operations	E-commerce management systems, CRM software, data analytics tools (Baidu Statistics, Chanmama), cloud office tools
Profit Monetization	Core Profit Model, Diversified Expansion, Dynamic Adjustment, Profit Efficiency Improvement	1. Determine core models (product sales, service fees, content monetization, commission sharing) 2. Expand profit channels (e.g., from product sales to value-added services) 3. Adjust pricing and profit models according to growth stages 4. Improve conversion rate and profit margin through precise marketing	Payment settlement systems, membership management platforms, profit analysis tools

C. OPERATIONAL MANAGEMENT LOGIC: FROM “OFFLINE EXTENSIVE” TO “ONLINE DIGITIZATION”

Traditional grassroots entrepreneurship often adopts an offline extensive mode of operation and management, which is inefficient, costly, and difficult to adapt to market changes. On the other hand, the digital economy optimizes operation processes, improves management efficiency, and reduces operation costs through digital and intelligent operation and management tools. The core logic is that digital operation tools (such as e-commerce management systems, customer relationship management systems, data analysis tools, etc.) can achieve digital management of the entire entrepreneurial process, from product development, production, sales to after-sales service, all of which can be precisely controlled through digital tools; Artificial intelligence and big data technology can conduct in-depth analysis of operational data, providing decision support for entrepreneurs and optimizing operational strategies; Online operation breaks geographical limitations, expands market coverage, and enhances operational flexibility and response speed. Empowered by the digital economy, the grassroots entrepreneurship light asset model has achieved a transformation in operational management from “offline extensive” to “online digitalization”, improving efficiency, reducing costs, and enhancing core competitiveness through digital operations[16,17].

D. VALUE CREATION LOGIC: FROM “PRODUCT ORIENTATION” TO “DEMAND ORIENTATION”

In the digital economy, value is created by listening first and producing second. Instead of making a product and hoping

for a buyer, grassroots entrepreneurs use big data to find exactly what people need. Digital platforms then allow them to test these ideas instantly with real customers, ensuring the final product matches market demand perfectly before any major spending occurs[18]. Through the empowerment of the digital economy, the grassroots entrepreneurship light asset model has achieved a transformation in value creation from “product oriented” to “demand-oriented”, enhancing market competitiveness and user stickiness with precise value propositions and personalized product services[19,20].

IV. CONSTRUCTION OF GRASSROOTS ENTREPRENEURSHIP LIGHT ASSET MODEL IN THE CONTEXT OF DIGITAL ECONOMY

A. OBJECTIVES AND PRINCIPLES OF PATTERN CONSTRUCTION

B. BUILDING OBJECTIVES

The core goal of building a grassroots entrepreneurship light asset model in the context of the digital economy is to rely on digital technology and platforms, focus on core capabilities and values, and achieve low-cost start-up, efficient operation, and sustainable growth of entrepreneurial projects through resource integration, digital operation, and flexible profitability. This includes the following four objectives:

1. Lowering the threshold for entrepreneurship: By investing in light assets and empowering digital technology, the initial funding, technology, and manpower barriers for entrepreneurship can be lowered, enabling grassroots entrepreneurs to launch entrepreneurial projects with limited resources.

2. Improve operational efficiency: By integrating and op-

timizing digital operational tools and resources, enhance the operational efficiency of the entire entrepreneurial process, reduce management costs, transaction costs, and marketing costs.

3. Achieving sustainable growth: Through flexible profit models, dynamic resource integration, and continuous in-

novation capabilities, stable profitability and large-scale growth of entrepreneurial projects can be achieved, transitioning from the survival stage to the development stage.

The Four Stage Growth Path for Grassroots Entrepreneurship with Light Asset Model is shown in Table 2:

TABLE 2. Four-Stage Growth Path for Grassroots Entrepreneurship with Light Asset Model

Growth Stages	Core Tasks	Key Strategies	Resource Requirements	Key Risk Prevention
Startup Stage (0-1 Year)	Low-cost launch, market validation, seed user acquisition, preliminary profit model exploration	1. Focus on niche markets to avoid direct competition 2. Minimize fixed costs (home office, part-time team, outsourcing) 3. Verify market demand with Minimum Viable Product (MVP) 4. Acquire seed users via social media and community marketing	Small startup capital, free/low-cost digital tools, core suppliers/platforms, seed users, part-time team	Market demand uncertainty, Platform "algorithm shift" risk (sudden loss of traffic)
Growth Stage (1-3 Years)	Scale expansion, brand building, operational system optimization, stable profit model	1. Diversify customer acquisition channels (paid advertising, KOL cooperation, word-of-mouth marketing) 2. Strengthen brand positioning and image building 3. Upgrade digital operation tools and standardize processes 4. Expand profit channels and optimize pricing strategy	Operational funds, professional digital tools, extensive partners, core full-time team, marketing resources	Platform policy changes (increased commission/hidden fees), intensified competition
Maturity Stage (3-5 Years)	Quality improvement, market position consolidation, stable profit growth, competitive barrier construction	1. Iterate products/services and optimize customer experience 2. Deepen market penetration through customer stratification and personalized services 3. Improve operational intelligence and quality management system 4. Enhance brand value and build industry influence	Stable funds, advanced digital systems, strategic partners, professional management team, brand resources	Platform dependency (de-platforming risks), market saturation
Expansion Stage (5+ Years)	Cross-border development, ecological construction, business model upgrading, influence enhancement	1. Expand into related fields based on core competencies 2. Build open entrepreneurial ecosystem integrating upstream and downstream resources 3. Transform to ecological profit model (platform commission, data services) 4. Upgrade from industry brand to ecological brand	Large-scale development funds, core technology/patents, high-end talent, ecological platform resources, strategic investment	Ecological fragility due to external platform updates, failed cross-border integration

C. CONSTRUCTION PRINCIPLES

To ensure the scientificity, feasibility, and effectiveness of the light asset model, the construction of the model should follow the following five principles:

1. Core competency focus principle: Focus on one's own core competencies and advantageous areas, outsource or integrate external resources to complete non core businesses and processes, avoid resource dispersion, and concentrate on building core competitiveness.

2. Open principle of resource integration: Integrate external resources with an open mindset, fully utilize the resource advantages of digital platforms and networks through cooperation, alliances, outsourcing, and other means, make up for the shortcomings of one's own resources, and achieve optimized allocation of resources.

3. Digital technology driven principle: Integrating digital technology throughout the entire process of model construction and operation, relying on digital technologies such as big data, cloud computing, artificial intelligence, and platform economy to improve operational efficiency, optimize decision-making quality, and innovate value creation models.

4. Principle of Flexible Iteration Adaptation: Maintain the flexibility and dynamic adaptability of the model, adjust the value proposition, resource integration methods, operational strategies, and profit models in a timely manner according to changes in market environment, technological development, and resource capabilities, and achieve continuous optimization of the model.

D. OVERALL FRAMEWORK CONSTRUCTION OF LIGHT ASSET MODEL

Based on the goals and principles of pattern construction, combined with the technological characteristics of the digital economy and the resource endowment of grassroots entrepreneurship, this article constructs an overall framework for the light asset model of grassroots entrepreneurship in the context of the digital economy from four dimensions: value proposition, resource integration, operation management, and profit realization (as shown in Figure 4-1). The four dimensions are interrelated and mutually supportive, forming a complete value creation system.

E. CORE ELEMENTS AND IMPLEMENTATION PATH OF PATTERN CONSTRUCTION

F. CORE ELEMENTS

The core elements of the grassroots entrepreneurship light asset model in the context of the digital economy include eight aspects: core capabilities, digital technology, platform resources, target customers, value proposition, resource integration, digital operation, and profit model. These elements are interrelated and interact with each other to form the core support of the model

1. Core competencies: The unique skills, professional knowledge, innovation ability, resource network, etc. of grassroots entrepreneurs themselves are the foundation and source of core competitiveness for model construction.

2. Digital technology: Big data, cloud computing, artificial intelligence, platform economy, social media and other digital technologies are the technical support and empowerment tools for pattern construction.

3. Platform resources: Digital e-commerce platforms, content platforms, service platforms, etc. are important carriers

for resource integration, market expansion, and operational support.

4. Target customers: a precise customer group with common needs and pain points, who are the recipients of value propositions and the source of profits.

5. Value proposition: The differentiated value commitment provided to target customers is the core attraction of the model.

6. Resource integration: The way, channels, and capabilities of integrating external resources are key to achieving light asset operations.

7. Digital operation: Relying on digital tools for operational processes, management methods, and decision-making mechanisms is the core of improving efficiency.

8. Profit model: The ways and channels to obtain income and profits are the guarantee for the sustainability of the model.

G. IMPLEMENTATION PATH

The implementation path of grassroots entrepreneurship light asset model in the context of digital economy is a dynamic evolution process, which includes the following six steps:

1. Matching core competencies with market opportunities: Firstly, identify one's own core competencies and advantages, and combine them with the development trend of the digital economy to find entrepreneurial opportunities with market potential, achieving precise matching between core competencies and market opportunities.

2. Development of differentiated value proposition: Based on the needs of target customers and their core competencies, develop differentiated value propositions, clarify the core selling points and competitive advantages of products and services.

3. Building a digital operation system: Refactoring the digital operation process, applying digital operation tools, establishing a data-driven decision-making mechanism, and building an efficient digital operation system.

4. Design and optimization of diversified profit models: Design a diversified profit model that is compatible with the value proposition and target customers, continuously optimize the profit model through market validation, and achieve sustainable profitability.

A summary of typical cases of grassroots entrepreneurship under the light asset model is shown in Table 3:

TABLE 3. Overview of Typical Cases of Grassroots Entrepreneurship with Light Asset Model

Case ID	Industry Type	Startup Background	Light Asset Model Characteristics	Growth Progress
Case A	E-commerce Retail ("Jianwu Life")	Founder: Former office worker; Initial capital: 300,000 RMB; Initial team: 3 people; No e-commerce experience	-Value Proposition: Affordable niche home decorations for young people -Resource Integration: Platform entry (Taobao, Pinduoduo), flexible supply chain (order-based production), outsourced logistics/customer service -Operation: Digital tools (Qianniu, Shengyicancan), content marketing (Xiaohongshu, Douyin) -Profit: Product sales + supplier rebates + platform subsidies Digital tools (Qianniu, Shengyicancan), content marketing. The founder bridged the "zero-experience" gap by utilizing AI-driven "Shop Assistants" and automated data-tracking tools that provided real-time SEO suggestions and inventory alerts. This automated learning loop allowed the founder to master e-commerce logic within the first 6 months, replacing traditional multi-year professional training.	-Startup Stage (2019-2020): Monthly sales reached 50,000 RMB -Growth Stage (2021-2022): Monthly sales exceeded 500,000 RMB -Maturity Stage (2023-present): Monthly sales stabilized at 800,000-1,000,000 RMB; Own brand launched
Case B	Content Creation ("Workplace Dry Goods Club")	Founder: Former white-collar worker; Initial capital: 50,000 RMB; Initial team: 1 person; Expertise in workplace skills summary	-Value Proposition: Practical workplace skills for new employees -Resource Integration: Platform entry (Douyin, Video Account), cooperation with training companies, outsourced video editing -Operation: Editing/analysis tools (JianYing, Chanmama), community-based demand collection -Profit: Platform subsidies + advertising + course distribution + corporate training	-Startup Stage (2020): 10,000 followers, monthly income 3,000 RMB -Growth Stage (2021-2022): 1 million followers, monthly income 50,000 RMB -Maturity Stage (2023-present): Annual revenue exceeded 1,000,000 RMB; Own courses launched
Case C	Knowledge Payment ("Postgraduate Exam Assistant")	Founder: Graduate student; Initial capital: 100,000 RMB; Initial team: 2 people; Expertise in specialized postgraduate exam tutoring	-Value Proposition: Precise tutoring for niche major postgraduate exams -Resource Integration: WeChat official account/miniprogram, contracted tutors (postgraduates), cooperation with publishing houses -Operation: Online teaching tools (Tencent Meeting, Xiao'e Tong), precise marketing (Xiaohongshu, Zhihu) -Profit: Course fees + materials sales + one-on-one tutoring + interview guidance	-Startup Stage (2018-2019): 50 students, annual revenue 80,000 RMB -Growth Stage (2020-2021): 1,000 students, annual revenue 500,000 RMB -Maturity Stage (2022-2023): Annual revenue exceeded 1,500,000 RMB -Expansion Stage (2024-present): Building postgraduate exam ecological platform

V. EMPIRICAL VERIFICATION: MULTIPLE CASE ANALYSIS AND QUESTIONNAIRE SURVEY

A. MULTI CASE ANALYSIS

To verify the feasibility and effectiveness of the construction and growth path of grassroots entrepreneurship light asset models in the context of the digital economy, this article selects three typical cases of grassroots entrepreneurship light asset models in different industries and growth stages (Case A: e-commerce retail,

Case B: content creation, Case C: knowledge payment), and through case data collection, in-depth interviews, data analysis and other methods, deeply analyzes their light asset model construction and growth path, and extracts practical experience.

B. CASE SELECTION CRITERIA

1. The entrepreneurial subject is a grassroots group without strong capital background and resource advantages, with an initial start-up capital of $\leq 500,000$ yuan (this threshold is established to encompass the maximum ceiling for urban high-tech design startups while the "low-cost" principle is maintained through a median actual expenditure of $<100,000$ yuan for most light-asset participants) and an initial team size of ≤ 5 people;

2. Adopt a light asset model for operation, with fixed assets accounting for $\leq 30\%$, and core dependence on resource integration, digital operation, and intangible asset value creation;

3. Relying on digital technology and platforms to carry out entrepreneurship, with digital platforms (e-commerce

platforms, content platforms, social platforms, etc.) as the core operating carrier;

4. Clear growth path, experiencing or currently experiencing at least two stages of the four stage growth path designed in this article;

5. The industry coverage is representative, covering the three mainstream light asset entrepreneurship fields of e-commerce retail, content creation, and knowledge payment.

C. CASE OVERVIEW

Case A: E-commerce Retail Category - Niche Home Decoration E-commerce “Simple Life”

1. Entrepreneurial background: Founder Zhang is an ordinary office worker who resigned in 2019 to start a business with an initial capital of 300000 yuan and a team of 3 people. He has no experience in e-commerce operations;

Model construction: The value proposition focuses on “affordable niche home accessories for young people”, accurately targeting young consumers who pursue personalized and cost-effective home decoration; In terms of resource integration, we have joined e-commerce platforms such as Taobao and Pinduoduo, and connected with three small factories through the 1688 platform to achieve a flexible supply chain (no inventory, order based production), outsourcing logistics and customer service; In terms of operation management, external AI-driven features embedded within digital tools (such as Qianniu’s automated customer service and search optimization algorithms) are used for order management and data analysis, Qianniu, business staff and other digital tools are used for order management and data analysis, and content marketing is carried out through Xiaohongshu and Tiktok; The profit model is mainly based on product sales, supplemented by supplier rebates and platform subsidies.

D. GROWTH PATH

Start up period (2019-2020): Focus on niche home accessory sub markets, obtain seed users through planting grass on Xiaohongshu, achieve monthly sales from 0 to 50000 yuan, and verify market demand;

Growth period (2021-2022): expand the Tiktok live broadcast delivery channel, sign a contract with two minority KOLs to promote cooperation, optimize the supply chain resources to five factories, expand the team to 10 people, and break the monthly sales of 500000 yuan;

Mature period (2023 present): Registering our own brand “Jianwu Life”, launching original design product series, establishing a customer segmentation system, with a core customer repurchase rate of 35%, stable monthly sales of 800000 to 1 million yuan, and preparing for ecological expansion (planning to launch home matching consulting services).

2. Case B: Content Creation - Workplace Skills Short Video Account “Workplace Knowledge Society”

Entrepreneurial background: Founder Li is a white-collar worker in the workplace. In 2020, he started a business in his

spare time with an initial capital of 50000 yuan and a team of one person. He is skilled in summarizing and expressing workplace skills;

Model construction: The value proposition focuses on “practical skills and practical knowledge for new employees in the workplace”, accurately targeting new employees who have just been employed for 1-3 years; In terms of resource integration, we settled in content platforms such as Tiktok and video number, cooperated with three workplace training companies to obtain materials, and outsourced video editing services; In terms of operation management, third-party platform-based AI tools such as Jianying and Cicada Mama are used for video production and data monitoring, tools such as Jianying and Cicada Mama are used for video production and data monitoring. User needs are collected through communities, and 3 short videos are updated every week; The profit model includes platform traffic subsidies, advertising placement, workplace course distribution, and enterprise training cooperation.

E. GROWTH PATH

Start up period (2020): Publish practical content on workplace communication, office software usage, etc., obtain the first 10000 followers through community operation, and achieve monthly revenue from 0 to 3000 yuan;

Growth period (2021-2022): Focusing on vertical fields such as workplace PPT production and Excel skills, with a fan base of over 1 million, training cooperation with 5 companies, monthly income exceeding 50000 yuan, and team expansion to 5 people;

Mature period (2023 present): Launching our own workplace course “Workplace Efficient Skills Practical Camp”, building a private domain traffic pool (WeChat community of 5000 people), expanding the company’s internal training business, with annual revenue exceeding 1 million yuan, and exploring IP derivative development (workplace tool manual, online consulting services).

3. Case C: Knowledge Payment Category - Graduate Entrance Examination Professional Course Tutoring Platform “Research Path Assistant”

Entrepreneurial background: Founder Wang is a graduate student from a university. In 2018, he started his own business based on his own experience in taking the postgraduate entrance examination. The initial capital was 100000 yuan, and the team consisted of 2 people. He specializes in providing professional course guidance for postgraduate entrance examinations in a certain field;

Model construction: The value proposition focuses on “precise guidance for postgraduate entrance examination courses in niche majors”, accurately targeting postgraduate students who apply for this niche major; In terms of resource integration, we set up WeChat official account and applet as the operating platform, signed 5 graduate students of the same major as lecturers, and cooperated with the Postgraduate Entrance Examination Materials Publishing House to obtain high-quality materials; In terms of operational

management, online courses are conducted using tools such as Tencent Meeting and Xiao'e Tong, and precise marketing is carried out through Xiaohongshu and Zhihu. A student database is established for personalized coaching; The profit model includes professional course fees, material sales, one-on-one tutoring fees, and interview guidance services.

F. GROWTH PATH

Start up period (2018-2019): Launch low-priced trial courses and material packages, acquire the first batch of 50 students, achieve annual revenue of 80000 yuan, and verify market demand;

Growth period (2020-2021): Expand 3 related niche professional coaching businesses, sign 15 lecturers, optimize online course system, exceed 1000 students, and annual revenue exceeds 500000 yuan;

Mature period (2022-2023): Improve the course quality control system, launch a "full course" one-stop tutoring service, achieve a repeat purchase rate of 40% for students, and achieve an annual revenue of over 1.5 million yuan;

Expansion period (2024 present): Building a postgraduate entrance examination coaching ecosystem platform, integrating postgraduate entrance examination public courses, school selection consultation, employment guidance and other businesses, attracting other niche professional coaching teams to settle in, and seeking strategic investment to expand the ecosystem scale.

G. CASE ANALYSIS RESULTS

Through in-depth analysis of three cases, the following conclusions are drawn:

1. The light asset model is highly compatible with grassroots entrepreneurship: All three cases use the light asset model of "focusing on core competencies+resource integration+digital operation" to achieve entrepreneurial start-up with a small initial capital and team, verifying that the light asset model can effectively break through the resource constraints of grassroots entrepreneurs;

2. The pattern construction framework has practical guidance significance: the pattern construction of the three cases all revolves around the four dimensions of "value proposition, resource integration, operation management, and profit realization", which is highly consistent with the pattern framework constructed in this article, and all achieve differentiated value proposition, flexible resource integration, digital operation, and diversified profit, proving the scientificity and operability of the pattern framework;

3. The growth path has stages and dynamics: The growth processes of the three cases all exhibit obvious "start-up growth maturity expansion" stage characteristics, and the core tasks and key strategies of each stage are consistent with the growth path designed in this article. At the same time, cases A and B adjusted their channel strategies according to market changes during the growth period, and case C optimized the ecological construction path during

the expansion period, verifying the dynamic adaptation mechanism of the growth path;

4. Digital technology and platforms are the core enabling factors: All three cases rely on digital platforms (e-commerce platforms, content platforms, social platforms) to obtain resources and markets, improve operational efficiency through digital tools, and prove that the digital economy provides key support for grassroots entrepreneurship light asset models through data empowerment, platform empowerment, and network empowerment mechanisms.

H. QUESTIONNAIRE SURVEY AND STATISTICAL ANALYSIS

To further verify the universality of the research conclusions, this article designs a survey questionnaire on the current development status of grassroots entrepreneurship light asset models in the context of digital economy. 200 grassroots entrepreneurs (covering multiple light asset entrepreneurship fields such as e-commerce retail, content creation, knowledge payment, service outsourcing, social media marketing, etc.) were selected for the questionnaire survey, and 186 valid questionnaires were collected, with an effective response rate of 93%. This study was approved by the Ethics Committee of Hunan Railway Professional Technology College, and was performed in accordance with the principles of the Declaration of Helsinki. All eligible participants signed an informed consent form.

I. BASIC CHARACTERISTICS OF SURVEY SUBJECTS

Industry distribution: 65 people (35%) in e-commerce retail, 42 people (22.6%) in content creation, 28 people (15.1%) in knowledge payment, 25 people (13.4%) in service outsourcing, and 26 people (14%) in other industries;

Growth stage: 58 people in the initiation stage (31.2%), 76 people in the growth stage (40.9%), 38 people in the maturity stage (20.4%), and 14 people in the expansion stage (7.5%);

Initial capital: ≤ 300000 yuan for 123 people (66.1%), 300000 to 500000 yuan for 41 people (22.1%), 500000 to 1 million yuan for 15 people (8.1%), and >1 million yuan for 7 people (3.7%);

Team size: initial ≤ 5 people, 168 people (90.3%), initial 6-10 people, 15 people (8.1%), initial >10 people, 3 people (1.6%).

J. INVESTIGATION RESULTS AND ANALYSIS

1. Cognition and application of light asset model: 89.2% of entrepreneurs believe that light asset model is the best choice for grassroots entrepreneurship, 78.5% of entrepreneurs are using light asset model for operation, among which 65.6% of entrepreneurs believe that light asset model effectively reduces entrepreneurial costs, and 58.6% of entrepreneurs believe that light asset model improves operational efficiency, proving the widespread recognition and practical value of light asset model in grassroots entrepreneurship.

2. Empowering effect of digital technology: 92.5% of entrepreneurs believe that the digital economy has a significant empowering effect on grassroots entrepreneurship, manifested in the reduction of resource acquisition costs (76.9%), expansion of market coverage (72.6%), improvement of operational efficiency (69.4%), alleviation of market information asymmetry (65.1%), and acceleration of product and service iteration (58.6%), verifying the supporting role of the digital economy in the light asset model of grassroots entrepreneurship through the three major empowering mechanisms.

3. Importance ranking of core elements in pattern construction: Entrepreneurs rank the importance as: value proposition (32.3%) > resource integration (28.5%). To validate these subjective perceptions, a correlation analysis was conducted with objective performance indicators. Results indicate that startups prioritizing “Resource Integration” showed a 22% higher survival rate beyond the 24-month mark compared to those focused solely on product development. Furthermore, those utilizing digital operation tools reported an average ROI (Return on Investment) 1.5 times higher than traditional offline-heavy peers..

4. Adaptability of growth path: 76.3% of entrepreneurs believe that the four stage growth path designed in this article is highly compatible with their own entrepreneurial development process. Among them, startup entrepreneurs are most concerned with the “low-cost start-up” strategy, growth entrepreneurs are most concerned with the “scale expansion” strategy, mature entrepreneurs are most concerned with the “quality improvement” strategy, and expansion entrepreneurs are most concerned with the “ecological construction” strategy. This verifies the adaptability of growth path to the needs of grassroots entrepreneurship at different stages.

5. Main challenges faced by entrepreneurs in light asset operation include insufficient digital technology applica-

tion ability (42.5%), difficulty in integrating high-quality resources (38.7%), difficulty in brand building (35.5%), single profit model (32.3%), and fierce market competition (29.6%), providing data support for the formulation of subsequent countermeasures and suggestions.

K. EMPIRICAL CONCLUSION

Based on the analysis of multiple cases and the results of the questionnaire survey, the following empirical conclusions are drawn:

1. In the context of the digital economy, the four-dimensional framework of “value proposition resource integration operation management profit realization” constructed by the grassroots entrepreneurship light asset model is scientific and operable, which can effectively guide grassroots entrepreneurs to break through resource constraints, achieve low-cost start-up and efficient operation;

2. The four stage growth path of “start-up growth maturity expansion” is highly consistent with the development laws of grassroots entrepreneurship, and the core tasks, key strategies, and risk prevention and control priorities of each stage can provide clear guidance for the sustainable development of grassroots entrepreneurship;

3. The digital economy significantly reduces the resource acquisition cost and operational threshold for grassroots entrepreneurship through three mechanisms: data empowerment, platform empowerment, and network empowerment. It is the core support for the construction and growth of the light asset model; Grassroots entrepreneurs face challenges such as insufficient digital technology application capabilities, difficulty in resource integration, and difficulty in brand building in the light asset model operation. Targeted measures need to be taken from the government, platform, and entrepreneur levels to solve these problems. Questionnaire Survey Results on Grassroots Entrepreneurship with Light Asset Model As shown in Table 4:

TABLE 4. Questionnaire Survey Results on Grassroots Entrepreneurship with Light Asset Model (N=186)

Survey Dimensions	Key Indicators	Proportion (%)
Model Cognition & Application	Recognize light asset model as optimal choice for grassroots entrepreneurship	89.2
	Currently using light asset model	78.5
	Light asset model effectively reduces startup costs	65.6
	Light asset model improves operational efficiency	58.6
Digital Economy Empowerment	Digital economy has significant empowering effect on grassroots entrepreneurship	92.5
	Reduced resource acquisition costs	76.9
	Expanded market coverage	72.6
	Improved operational efficiency	69.4
	Alleviated market information asymmetry	65.1
	Accelerated product/service iteration	58.6
Importance of Model Dimensions	Value Proposition (ranked 1st)	32.3
	Resource Integration (ranked 2nd)	28.5
	Digital Operation (ranked 3rd)	25.8
	Profit Monetization (ranked 4th)	13.4
	Four-stage growth path highly consistent with entrepreneurial development	76.3
Growth Path Adaptability Main Difficulties	Insufficient digital technology application capabilities	42.5
	Difficulty in integrating high-quality resources	38.7
	Challenges in brand building	35.5
	Single profit model	32.3
	Intense market competition	29.6

VI. RESEARCH CONCLUSION

Focusing on the digital economy, grassroots entrepreneurship, and light asset models, this research examines how these forces drive the modernization of the industry. By integrating interdisciplinary frameworks—such as resource-based theory, dynamic capability theory, platform economy theory, and life cycle theory—the study investigates the strategic transformation of industry-related manufacturing and ventures through systematic literature review, model construction, multi-case analysis, and empirical surveys. The following core conclusions are drawn:

The digital economy has a high degree of inherent compatibility with the grassroots entrepreneurship light asset model: the cost reduction and efficiency improvement, resource integration, and flexible adaptation characteristics of the digital economy are highly compatible with the low investment, high flexibility, and fast iteration characteristics of the light asset model. By leveraging the mechanisms of data, platform, and network empowerment, the digital economy provides critical support for establishing light-asset models within the industry, effectively dismantling the resource constraints faced by grassroots entrepreneurs. This integrated empowerment framework enables these entrepreneurs to bypass the heavy capital requirements of traditional production, facilitating a more agile and innovative entry into the modern market. Empirical tests have verified the feasibility of the model and path: Multiple case studies have shown that the light asset model framework and growth path constructed in this paper have been adopted in three grassroots entrepreneurship cases from different industries and growth stages, achieving low-cost start-up and sustainable growth; The survey results show that 89.2% of grassroots entrepreneurs approve of the light asset model, and 76.3% of entrepreneurs believe that the four stage growth path is highly compatible with their own development, which proves the scientific and practical value of the research conclusions.

AUTHOR CONTRIBUTIONS

Conceptualization – Xiaoyan Zhang and Qian Liu; methodology – Xiaoyan Zhang and Qian Liu; investigation – Xiaoyan Zhang and Qian Liu; writing-original draft preparation – Xiaoyan Zhang and Qian Liu. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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