

Branding University Volunteer Services in the Era of Digital-Intelligent Empowerment: A Case Study of the “Messenger Pigeon Squad” at Chengdu Technological University

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Abstract

Under the dual context of modernizing China’s national governance system and promoting high-quality development in higher education, university volunteer services are transitioning from fragmented, emotionally driven activities toward professionalization, institutionalization, and branding. Taking the “Messenger Pigeon Squad” at Chengdu Technological University as a case study, this paper employs case study methodology and participant observation to systematically explore how digital-intelligent (shùzhì) technologies empower university volunteer services to achieve brand elevation. The research finds that the key to its success lies in an integrated “triadic synergy mechanism” of professional expertise–community engagement–digital empowerment: leveraging disciplinary strengths to develop differentiated service offerings, embedding deeply into community needs to build a bidirectional interactive ecosystem, and utilizing digital platforms to enhance organizational efficiency and communication reach. The paper further proposes a replicable “Five-Step Brand-Building Model” and offers practical recommendations addressing challenges related to sustainability, evaluation systems, and resource integration. This study provides both theoretical insights and a practical paradigm for applied undergraduate universities seeking to advance the quality of volunteer services.

Keywords

University volunteer service; Branding; Digital-intelligent empowerment; Community integration; Youth development; Case study.

1. Introduction

Volunteer service, as a vital form of civic participation in social governance, has recently been incorporated into China’s institutional framework. In 2022, eight central departments—including the Publicity Department of the CPC Central Committee—jointly issued the Opinions on Improving the Volunteer Service System in the New Era, explicitly calling for “promoting the project-based, professionalized, and branded development of volunteer services” [1]. The 14th Five-Year Plan for Volunteer Service Development (2023) further emphasized “supporting universities in cultivating exemplary volunteer service brands” [2]. Within this policy landscape, university volunteerism is no longer merely an extracurricular supplement but has become a strategic vehicle for fulfilling the fundamental mission of moral and intellectual cultivation (lideshuren) and serving the modernization of grassroots governance.

However, current university volunteer programs still face a “triple dilemma”:

(1) Homogenized content, often limited to generic activities like cleaning or elderly visits, lacking professional depth;

(2) Rudimentary operations, relying on ad hoc mobilization without sustainable mechanisms; and

(3) Ambiguous educational outcomes, making it difficult to quantify how volunteering contributes to student development [4–5].

Breaking through these bottlenecks to build sustainable, recognizable, and scalable volunteer brands has thus become a critical issue at the intersection of university Communist Youth League work and ideological-political education.

This paper focuses on the “Messenger Pigeon Squad” at Chengdu Technological University—a representative case—to deeply analyze the internal logic and practical pathways through which digital-intelligent technologies enable volunteer service branding in the new era. It seeks to answer three core questions:

(1) How can universities leverage disciplinary advantages to create differentiated volunteer brands?

(2) How do digital-intelligent tools reshape the organization, management, and communication of volunteer services?

(3) How can volunteer branding achieve dual empowerment—delivering social value while fostering youth development?

2. Literature Review

(1) Evolution of University Volunteer Services in China

Scholars generally divide the development of Chinese university volunteering into three phases: The initial phase (1980s–1990s), characterized by emotional mobilization centered on “Learning from Lei Feng”;

The exploratory phase (2000s–2010s), marked by large-scale event volunteering (e.g., Olympics, World Expo);

The current phase (2020s–present), defined by deep integration of professionalism and branding [6].

Particularly under the “Great Ideological-Political Course” (dasi zhengke) initiative, volunteer service is increasingly viewed as a “mobile classroom for ideological education” [7].

(2) Conceptualizing Branding in Volunteer Services

Branding goes beyond logos or slogans—it emphasizes value consistency, service reliability, and social recognition [8]. Zhao Jing (2021) argues that a successful university volunteer brand should embody four features: professional grounding, demand orientation, institutional support, and resonant communication [8].

Internationally, the “Service-Learning” model dominates discourse, integrating community service with academic coursework and structured reflection to simultaneously apply knowledge and cultivate civic responsibility [16].

(3) Application of Digital-Intelligent Technologies in Volunteering

With China’s “Digital China” strategy, the digitization of volunteer services has become a trend. Existing studies mostly focus on platform construction (e.g., “Zhiyuan Hui,” “Zhiyuan Sichuan”) but pay insufficient attention to deeper applications such as data-driven decision-making, intelligent matching of supply and demand, and visualized impact assessment [9]. While some universities have piloted AI and big data in volunteer management, a systematic framework remains absent [10].

Recently, digital tools have begun reshaping volunteering itself. Wang & Zhang (2021) introduced the concept of “Digital Voluntarism” in the Chinese context, arguing that technology not only transforms service formats (e.g., online tutoring, virtual companionship) but also

reconstructs volunteers' motivations and identities [22]. The United Nations Volunteers (UNV, 2022) urged in its State of the World's Volunteerism Report: "AI and big data should be leveraged to enhance the precision and inclusivity of volunteer services" [21].

Nonetheless, significant gaps persist: domestic research leans toward policy interpretation and anecdotal summaries, lacking micro-level mechanism analysis; international scholarship focuses on Western higher education contexts, offering limited explanatory power for China's "university-community" co-governance model. Empirical studies on the deep integration of digital-intelligent technologies, disciplinary education, and community needs remain scarce. This study aims to fill that theoretical void through a localized case.

3. Research Methodology

This study adopts a single embedded case study design (Yin, 2018) [27], focusing on the "Messenger Pigeon Squad" at Chengdu Technological University. Selection criteria include:

- (1) Typicality: the team has operated continuously for five years and received nine provincial/municipal honors, demonstrating mature branding;
- (2) Innovation: it was among the first to integrate big data and artificial intelligence majors into community service, embodying "digital-intelligent empowerment";
- (3) Accessibility: the researcher participated in its 2023 summer program, ensuring access to first-hand data.

Data collection methods include:

In-depth interviews: with 12 core members, 3 faculty advisors, and 5 community workers;

Participant observation: full immersion in the "Children's Coding Summer Camp" (July–August 2023);

Document analysis: 47 texts including project proposals, reports, media coverage, and satisfaction surveys.

Data analysis followed thematic analysis (Braun & Clarke, 2006) [28], progressing through open coding → axial coding → selective coding to ensure validity.

4. Case Background: The Development of the "Messenger Pigeon Squad"

Founded in 2020 under the School of Big Data and Artificial Intelligence at Chengdu Technological University, the "Messenger Pigeon Squad" now has 120 registered volunteers. Its name symbolizes "delivering knowledge, connecting hearts, and honoring commitments." Its evolution spans three stages:

Exploration (2020–2021): Focused on campus services, extending Python teaching to local children;

Formation (2022): Signed cooperation agreements with six communities in Pidu District, launching branded projects like "Digital Companions for Seniors" and "AI Anti-Fraud Classroom";

Deepening (2023–present): Built a digital management platform, establishing a closed-loop mechanism: recruitment → training → service → evaluation → incentive.

By the end of 2024, the team had accumulated 12,300 service hours, benefiting over 5,000 residents, and earned honors including "Outstanding Youth Volunteer Project of Chengdu" and "Excellent Social Practice Team of Sichuan Province" [25].

5. Practical Pathways of Branding through Digital-Intelligent Empowerment

(1) Professional Foundation: Developing Differentiated Services through Disciplinary Strengths
Rejecting generic services, the team targets the community pain point of “digital literacy” by designing specialized programs, see Table 1:

Table 1. A series of specialized volunteer service programs

Project Name	Target Group	Core Content	Disciplinary Support
Fun Coding in Communities	Children (6–12)	Scratch programming, robot building	Programming fundamentals, educational psychology
Digital Companions for Seniors	Adults (60+)	Smartphone use, anti-fraud app operation	UI/UX design, communication skills
“Data for Safety” – Building Secure Communities	General residents	Telecom fraud data visualization, AI deepfake detection demos	Data mining, cybersecurity

These projects exhibit high distinctiveness, strong practicality, and replicability. For instance, the “AI Anti-Fraud Lab” uses simulated deepfake videos to vividly demonstrate technological risks, increasing seniors’ fraud awareness by 32.6% in post-tests [14]. This “professional + volunteering” model effectively responds to Wu Tingting’s (2021) call for “specialized volunteering as a new paradigm of practice-based education” [11].

Taking “Fun Coding in Communities” as an example, its implementation strictly follows Project-Based Learning (PBL):

Week 1: Needs assessment via community interest surveys (N=86);

Weeks 2–3: Curriculum development (e.g., “Smart Plant Watering System,” “Dancing Cat”);

Weeks 4–7: Biweekly 2-hour sessions using a “Explain–Demonstrate–Practice–Present” cycle;

Week 8: Final showcase judged by parents and community representatives.

In 2023, among 32 participants, 91% independently completed basic animations, 68% debugged simple logic errors, and 3 won awards in the Pidu Youth Innovation Competition [25]. Notably, the project reciprocally enhanced academic learning: volunteers’ final exam scores in Python Programming improved by an average of 12.3 points ($p < 0.05$), validating the “learning by doing” principle [17].

(2) Community Integration: Building a Demand-Driven, Bidirectional Ecosystem

Adhering to the principle “from the community, for the community,” the team established routine needs-assessment mechanisms: biannual “Community Digital Literacy Surveys” (valid N=412), monthly university–community coordination meetings, and permanent “Youth Volunteer Stations” [26].

This deep embedding shifts service delivery from “supply-led” to “demand-driven.” For example, a 2023 survey revealed 76% of seniors wanted to learn “AI scam identification,” prompting the team to rapidly develop a targeted course—later commended in writing by the neighborhood committee. This aligns with Zhou Hao’s (2023) finding that “sustainable volunteering requires precise alignment with authentic community needs” [13].

To ensure continuity, the team implemented a dual-feedback system:

Beneficiary feedback: post-activity e-surveys (5-point Likert scale + open-ended questions);

Volunteer reflection journals: ≥ 300 -word entries reviewed by faculty.

In 2023, 1,842 valid surveys yielded an average satisfaction score of 4.62/5.0. Journal analysis showed top themes: “intergenerational communication skills” (78%), “sense of social

responsibility” (72%), and “professional identity” (65%)—exemplifying the core tenet of service-learning: a “service–reflection–growth” loop [16–17].

(3) Digital-Intelligent Empowerment: Building a Smart Volunteer Management Hub

The team constructed a “one-core, multi-dimensional” digital platform:

Certification core: integrated with the provincial “Zhiyuan Sichuan” system for authoritative hour tracking;

Management terminal: Feishu (collaboration tool) for task allocation, progress monitoring, and document sharing;

Database: volunteer capability profiles (12 dimensions: skills, availability, preferences, etc.);

Communication channels: official WeChat account and Douyin (TikTok), with 68 short videos garnering 150,000+ views [29].

Notably, they developed a simplified “Volunteer Impact Dashboard” to quantitatively assess coverage, satisfaction, competency growth, and social influence—providing data-driven insights for iteration, echoing Huang Lei’s (2023) advocacy for “digitally reconstructing volunteer management” [9].

On data security, the team complies strictly with China’s Personal Information Protection Law: all data is anonymized, stored on the university’s private cloud, and access-controlled. They are also co-developing a “VolunteerChain” mini-program with a local tech firm, using blockchain to ensure tamper-proof records and verifiable service hours—enhancing credibility.

(4) Growth Loop: Making Educational Outcomes Visible

To address the challenge of “measuring volunteering’s educational impact,” the team collaborated with the Academic Affairs Office to create a Volunteer Competency Portfolio, tracking student growth in: technical application, communication, project management, and social responsibility [15].

This portfolio serves as a job reference—12 graduates have secured “Corporate Social Responsibility” roles at tech firms, creating a “service–growth–employment” virtuous cycle. Zhu Hong (2021) found that when volunteer achievements are “visible and recognized,” Students’ willingness to sustain their participation increases significantly [24].

The portfolio includes 4 primary and 12 secondary indicators, linked to the university’s “Second Classroom Transcript” system. For example, “technical application” includes observable behaviors like “independently developing mini-programs” or “using data analysis tools”; “social responsibility” is measured by “continued participation” or “initiating new projects.” This system renders previously implicit competencies observable, evaluable, and accumulative, directly responding to Ma Zhiqiang et al’s (2022) call for “making volunteer education outcomes explicit” [15].

6. Discussion: Core Mechanisms and Challenges

(1) The Triadic Synergy Mechanism: Professional–Community–Digital Integration

This study finds the “Messenger Pigeon Squad” succeeds through the organic fusion of three elements:

Professional expertise provides competitive service content;

Community anchoring ensures relevance to real needs;

Digital tools boost operational efficiency.

Together, they form a closed loop: needs identification → product development → precise matching → feedback optimization, effectively overcoming the fragmentation of traditional volunteering [6, 8].

This mechanism embodies Bringle & Hatcher's (1996) service-learning ideal: service is not one-way giving, but a unified process of knowledge application and social reflection [16].

From an institutional logics perspective, it creatively integrates three logics:

Professional logic (from academia): emphasizing knowledge authority and technical rigor;

Community logic (from grassroots): valuing practicality, trust, and relational ties;

Digital logic (from tech): prioritizing efficiency, connectivity, and data-driven decisions.

Traditional volunteering often fails due to logic clashes (e.g., students using jargon to explain fraud to seniors). The "Messenger Pigeon Squad" acts as a "translator"—rendering AI concepts into everyday metaphors—aligning closely with Chen Xiaohong et al.'s (2022) insight that "digital governance must embed local knowledge" [10].

(2) Key Challenges

Talent pipeline risk: Core members graduate and leave, with weak succession planning;

Insufficient technical depth: Some projects remain at the popular science level;

Inadequate evaluation: Social impact is hard to quantify; third-party assessments are lacking [23];

Limited resources: Insufficient external funding or tech support from enterprises/foundations [29].

7. Conclusion and Recommendations

(1) Theoretical Contribution

This study validates "digital-intelligent empowerment + professional integration" as an effective pathway for university volunteer branding. It enriches the contextual application of Service-Learning theory in China [16–17] and offers an actionable model for "Great Ideological-Political Course" implementation [7, 15].

(2) Practical Recommendations

Based on the case, we propose seven scalable strategies:

Strengthen top-level design: Integrate volunteering into talent development plans, with dedicated funding and credit recognition [3, 30];

Promote disciplinary integration: Encourage colleges to develop "major + volunteering" projects to avoid homogenization [11];

Build digital infrastructure: Connect to provincial platforms and develop school-specific management tools for data interoperability [9];

Construct collaborative networks: Partner with communities, enterprises, and NGOs to form a "university-led, multi-stakeholder" ecosystem [2];

Refine evaluation systems: Adopt hybrid KPI+OKR models balancing process/outcomes and individual/social value [23];

Establish a "Volunteer Credit Bank": Borrowing from Europe's ECTS, allow high-quality volunteer projects to count toward elective credits, boosting intrinsic motivation [30];

Launch a "Youth Volunteer Innovation Fund": Co-funded by government, universities, and businesses to incubate tech-enabled public welfare projects [29].

(3) Future Research Directions

Future studies could conduct multi-case comparisons or longitudinal tracking (e.g., 5-year career trajectories of volunteers) to validate the long-term educational impact of branded volunteering.

Additionally, researchers could develop a "Volunteer Brand Equity" assessment model, adapting commercial branding theory to measure university volunteer brands across four

dimensions—awareness, reputation, loyalty, and association—to inform resource allocation [18].

Overall, the “Messenger Pigeon Squad” at Chengdu Technological University offers practical insights and reflective lessons for the branding of university-based volunteer programs. A thorough analysis of this case not only deepens our understanding of the internal logic and strategic significance of volunteer service branding but also provides other higher education institutions with actionable pathways and theoretical guidance for advancing their own branding initiatives. It is recommended that universities actively draw upon and adapt the team’s valuable experiences—particularly in organizational mechanisms, program design, and social collaboration—to systematically promote the branding of volunteer services. Such efforts would more effectively support universities in fulfilling their social responsibilities and provide institutionalized support and practical platforms for fostering students’ comprehensive competencies and holistic development.

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