

Research Article

Digital Exclusion and Social Protection Accessibility among Older Adults in China

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Abstract

China's social protection system is becoming increasingly digital while its population ages rapidly. By the end of 2025, 323.38 million people were aged 60 years or older, yet the internet-use rate for this group was 53.7%. This integrative narrative review examines how digital exclusion affects older adults' ability to obtain social protection in China. Rather than proposing an entirely new framework, it integrates a three-level model of digital inequality (access, skills and use, and outcomes) with the administrative-burden framework (learning, compliance, and psychological costs), and applies this synthesis across the full service journey and across five protection programmes whose burden profiles differ in transaction frequency, risk, and exposed groups. The evidence shows that digital barriers can arise at every stage of the service journey, including discovery, authentication, application, receipt, maintenance, and redress. Risks are greatest for the oldest-old, rural residents, people with limited education or income, persons with disability or cognitive decline, and those without reliable assistance. China's age-friendly policies and continued offline provision are important, but interface adaptation alone cannot resolve fragmented procedures or inaccessible verification. Effective digital social protection requires equivalent channels, simpler documentation, trusted assisted-digital support, safe delegation, interoperable data, and evaluation based on successful benefit receipt rather than online activity.

Keywords

Digital exclusion, Older adults, Social protection, Administrative burden, Accessibility, China

1. Introduction

China is experiencing rapid population ageing alongside the digitization of public administration. At the end of 2025, 323.38 million residents were aged 60 years or older, representing 23.0% of the

population (National Bureau of Statistics of China, 2026). Internet penetration reached 80.1%, online-government users numbered 940 million, and internet medical-service users numbered 411 million (China Internet Network Information Center, 2026). Digital portals, mobile applications, electronic social security cards, online medical-insurance settlement, and remote eligibility certification have therefore become routine parts of welfare delivery.

Digitalization can reduce travel and waiting, but it can also make access conditional on devices, connectivity, literacy, identity credentials, confidence, and family assistance. The internet-use rate among people aged 60 and above was 53.7% in December 2025 (China Internet Network Information Center, 2026), leaving roughly 150 million older people offline. At the same time, 1.076 billion people participated in basic old-age insurance and 1.331 billion in basic medical insurance (National Bureau of Statistics of China, 2026; National Healthcare Security Administration, 2026). High programme coverage can thus coexist with difficulty learning about entitlements, authenticating identity, claiming reimbursement, maintaining benefits, or correcting an error.

This distinction is especially important in social protection because a failed transaction may interrupt income or care rather than merely inconvenience a user. Accessibility must extend from discovering eligibility and supplying evidence to receiving payment, completing periodic reviews, and appealing a decision. It also requires that older people understand what has happened and retain meaningful control when assistance is needed.

Existing research often examines internet use, health, or technology acceptance without tracing the complete social-protection process. This review asks which forms of digital exclusion affect older adults, how digital systems create barriers across the service journey, and which safeguards can secure equivalent outcomes. It treats accessibility as the practical conversion of a legal entitlement into money, reimbursement, care, or another usable benefit.

This review does not claim to introduce digital inequality or administrative burden to the study of Chinese welfare delivery: Chen et al. (2026) have already theorized the burdens that mobile government services impose on older users, and Cao and Ma (2026) have traced how digital transformation reshapes administrative burden and state-citizen interaction in the old-age allowance system. Its contribution lies instead in the systematic integration and extension of this emerging but fragmented literature. Conceptually, the review assembles these scattered findings into a single service-journey framework spanning discovery, authentication, application, receipt, maintenance, and redress, and it specifies what makes digitally mediated burden ontologically distinct from its paper-era predecessor. Substantively, it applies that framework across five protection programmes—pensions, medical insurance, social assistance, old-age allowances, and long-term care—and shows how each programme's transaction structure conditions where the burden falls. The central argument is that policy should move beyond helping older people enter digital channels and instead guarantee an

equivalent, safe, and dignified outcome through a channel they can use.

2. Review Framework and Approach

2.1. Literature scope and review method

An integrative narrative review was used because relevant evidence spans communication studies, gerontology, public health, public administration, and policy documents, and because the review's purpose is conceptual and policy synthesis rather than pooled effect estimation. Three bibliographic sources were searched: PubMed, covering the public-health and gerontology literature; the Web of Science Core Collection, added as a supplementary source because PubMed indexes the social-science and public-administration journals relevant to administrative burden only patchily; and Crossref-linked publisher platforms, used to follow citation trails into journals outside these two indexes. Chinese official sources were searched directly on central-government and ministerial websites, principally gov.cn, mohrss.gov.cn, nhsa.gov.cn, samr.gov.cn, and mz.gov.cn, which publish the statistics, laws, and service standards governing social protection delivery. All searches were completed through 31 July 2026, and no records were added after that date.

Searches combined subject terms for population, exposure, setting, and programme area. The core English string, adapted to the syntax of each database, was: ("older adults" OR "older people" OR elderly OR "aged 60") AND ("digital exclusion" OR "digital divide" OR "digital inequality") AND (China OR Chinese) AND ("social protection" OR pension OR "medical insurance" OR "social assistance" OR "long-term care" OR "administrative burden" OR "government service"). Parallel Chinese searches on the official websites applied the same Boolean logic to the corresponding terms: "老年人" OR "高龄老人" OR "退休人员"; paired with "数字鸿沟" OR "数字排斥" OR "智能化服务"; "中国"; and "社会保障" OR "养老保险" OR "医保" OR "社会救助" OR "长期护理保险" OR "政务服务". Reference lists of retained studies were scanned for further eligible records, and international theoretical work was assessed against inclusion criterion (5).

Records were assessed against explicit inclusion and exclusion criteria applied at full-text stage. Records were included if they (1) reported peer-reviewed empirical research using quantitative, qualitative, or mixed methods; (2) analysed nationally or provincially representative data on older adults in China; (3) examined directly the mechanisms through which older adults access digitally mediated government or social-protection services, drawing on Chinese evidence; (4) were official statistics or national policy documents establishing demographic conditions, programme coverage, or service arrangements; or (5) offered conceptual or theoretical frameworks of digital exclusion or administrative burden used to structure the interpretation of the Chinese evidence. Records were excluded if they (1) were published in languages other than English or Chinese; (2) were conference abstracts, editorials, or other non-peer-reviewed material; (3) did not report results for a subgroup aged

60 years or older, or stated an age threshold that could not be judged from the report; or (4) addressed purely technical or commercial questions unrelated to social protection delivery. Meeting any one inclusion criterion was sufficient for consideration, whereas a single exclusion criterion removed the record.

The search and selection proceeded as follows. Database searching initially identified 2,146 records—483 from PubMed, 671 from the Web of Science Core Collection, and 992 from Crossref-linked publisher platforms—while 87 official documents were identified through targeted searching of the government websites. After removal of 572 duplicates, 1,574 unique records were screened on title and abstract, of which 1,402 were excluded. The remaining 172 records were assessed at full text against the criteria above; 160 were excluded, most commonly for lacking a subgroup aged 60 and over (58), for addressing technical or commercial questions unrelated to delivery (41), for language (34), or for being non-peer-reviewed material (27). Twelve studies were retained for synthesis—seven empirical studies of older adults’ digital access, use, or service experience in China and five conceptual or theoretical studies—alongside nine official statistical and policy documents retained as evidence of demographic conditions and programme design. The 87 official documents were screened by full-text reading against criterion 4, and nine were retained as those that establish current demographic conditions, programme coverage, or service arrangements.

No formal structured quality-appraisal instrument, such as the MMAT or CASP checklists, was applied to the retained studies. This decision follows from the nature of narrative synthesis, in which heterogeneous designs are appraised for the contribution each can make to a conceptual map rather than scored against a common standard; the appropriateness, and the limits, of omitting formal checklists in narrative and integrative reviews are examined in the methods literature (Kutcher & LeBaron, 2022; Sukhera, 2022). In place of instrument-based scoring, each empirical study was read against three questions: whether the sampling frame supported the inference drawn, whether the measurement of digital capability matched the construct claimed, and whether the analysis addressed confounding by education, income, health, and locality. These readings inform the weight given to each study in the synthesis and the explicit grading of evidentiary strength set out at the end of Section 3.4.

A final convention governs the text. Statements in this article are of three kinds and are signalled accordingly: findings supported by direct empirical evidence; conceptual interpretations built upon that evidence; and the author’s own policy recommendations. The Results section reports chiefly the first kind, whereas inferential claims in the Discussion are framed in inferential language and should be read as synthesis and judgement rather than as new empirical findings.

2.2. Conceptualizing digital exclusion and social protection accessibility

Digital exclusion extends beyond device ownership. Its first level concerns connectivity; the

second concerns skills, autonomy, frequency, and purpose of use; and the third concerns the ability to obtain valued outcomes (Helsper, 2012; van Deursen & Helsper, 2015). An older smartphone owner may use messaging but depend on a relative to install applications or complete a government transaction. Age-related sensory or cognitive changes can add difficulty, but education, income, health, locality, and prior exposure create substantial diversity within the older population (Hunsaker & Hargittai, 2018). Trust also matters because welfare transactions involve identity, biometric, medical, and financial information.

Small text, time-limited verification codes, gesture-based navigation, facial recognition, and dense menus can create disproportionate demands. Previous failure may reduce confidence, while fear of fraud, mistaken payment, privacy loss, or an irreversible error can make non-use a rational choice. Treating all older people as incapable is nevertheless inaccurate: digital capability varies widely and can change after illness, bereavement, loss of a device, or redesign of a familiar service.

Social protection accessibility is defined here as an eligible person's practical capability to identify, claim, receive, maintain, and contest an entitlement at acceptable cost. Administrative-burden theory distinguishes learning costs, such as discovering and interpreting a programme; compliance costs, such as collecting documents and authenticating identity; and psychological costs, including anxiety, stigma, and loss of autonomy (Moynihan et al., 2015). Digital systems can lower these costs through searchable information and linked records, or increase them through fragmented applications, repeated verification, opaque errors, and the disappearance of nearby counters (OECD, 2024).

2.3. Analytical framework

Figure 1 links structural and life-course inequality to digital access, skills, confidence, and support. These conditions interact with service design and generate administrative burdens that may lead to non-take-up, delayed payment, foregone care, dependence on proxies, or failed redress. The consequences can further reduce income, health, and independence.

The relationship is therefore recursive. People with fewer offline resources face greater digital and administrative burdens, while failure to obtain protection further weakens the resources needed to navigate later transactions. Technology does not determine the result by itself; institutional design determines whether complexity is absorbed by the state or transferred to claimants, families, and frontline workers.

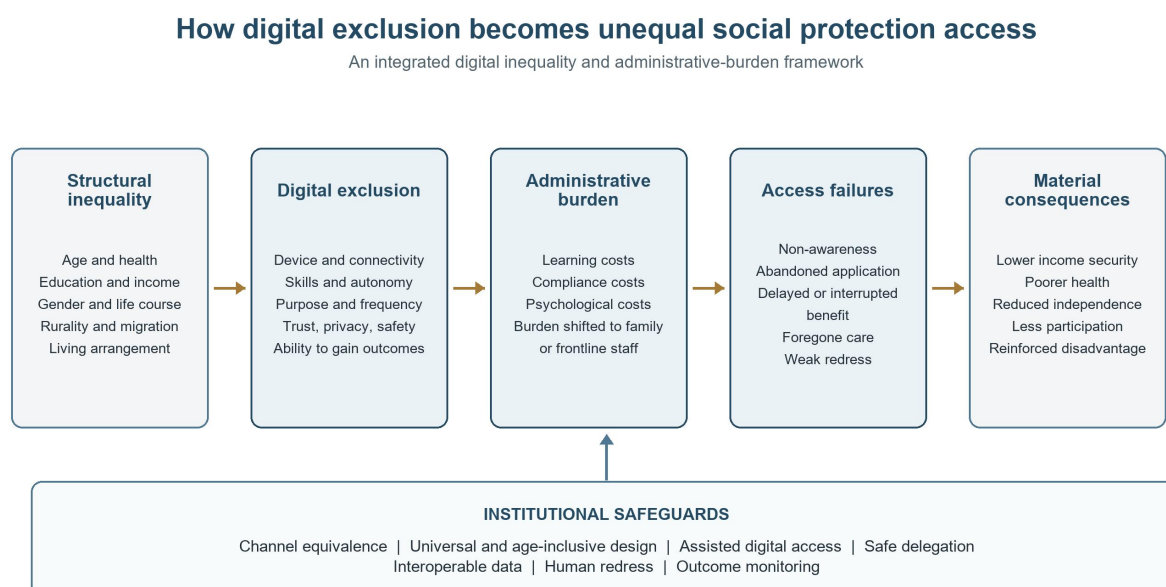
The framework also identifies institutional safeguards. Universal design reduces task difficulty; interoperable records and proactive enrolment remove tasks; assisted-digital services add human capability; and channel equivalence prevents digital skill from becoming an implicit eligibility condition.

The framework further rests on an ontological premise: the administrative burden created by digital delivery is not simply the paper-era burden relocated to a screen, but differs from it in kind. An

online refusal is immediate and often irreversible, whereas a rejected counter application could be negotiated and corrected within the same encounter. Digitization removes the intermediary, replacing the discretionary judgement of frontline staff with hard-coded rules that cannot bend for exceptional circumstances, and it makes biometric verification and a functioning device de facto conditions of entry. Failure is opaque—an error code replaces a face-to-face explanation—and round-the-clock self-service transfers much of the processing time from the agency to the claimant. Data interoperability, finally, cuts both ways: it can eliminate a task altogether, yet where systems do not communicate it can reproduce the same task across multiple platforms. These differences justify treating digital administrative burden as a distinct object of analysis rather than as a mere continuation of earlier bureaucratic burden.

Figure 1

Integrated framework linking digital exclusion to social protection accessibility



Note. Developed by the author based on the analytical synthesis presented in this review.

3. Results: Digital Exclusion and Social Protection Accessibility in China

3.1. China's digital social protection landscape

China's older-age protection includes pensions, medical insurance, medical and social assistance, old-age allowances, and a developing long-term-care insurance system. By the end of 2025, minimum living allowances covered 5.95 million urban and 33.40 million rural residents (National Bureau of Statistics of China, 2026), while long-term-care insurance covered 308.54 million people (National Healthcare Security Administration, 2026). Digital administration can improve scale and portability. The electronic social security card, for example, supports record queries, pension transfers, benefit

applications, certification, and information changes (Ministry of Human Resources and Social Security of the People's Republic of China, 2025).

These functions can be valuable for people with limited mobility or those living far from service offices. National platforms can also reduce duplicate evidence and support transfers across localities. Their inclusion benefits, however, depend on whether exceptional records, changing addresses, disability, and non-standard family circumstances can be resolved without requiring the user to navigate several agencies independently.

From a claimant's perspective, however, responsibilities remain divided among pension, medical-insurance, civil-affairs, health, banking, community, and care-provider systems. Multiple applications and evidentiary rules can reproduce administrative fragmentation online. Older users may therefore face repeated authentication or be unable to identify which platform is responsible.

National policy recognizes this risk. Since 2020, the State Council has required traditional and intelligent services to operate in parallel, while medical-insurance and industry authorities have promoted offline provision and age-friendly adaptation (General Office of the State Council of the People's Republic of China, 2020; Ministry of Industry and Information Technology of the People's Republic of China, 2020; National Healthcare Security Administration, 2020). A 2026 national guideline extended age-friendly requirements to government-service platforms and coordinated online-offline delivery (State Administration for Market Regulation, 2026). These measures establish an important principle, but enlarged fonts or simplified menus cannot resolve missing documents, failed facial recognition, or a back office unable to handle exceptions.

3.2. Sectoral variations in digital administrative burden

The service-journey framework applies across programmes, but its burdens are not distributed identically across them. The five programmes differ in the frequency and stakes of their transactions, in the digital tasks they now require, in the complexity and stability of their rules, and in the discretion they leave to frontline staff, and these differences condition both the probability and the consequences of digital failure. A single undifferentiated account of digital exclusion in welfare therefore risks obscuring sectoral heterogeneity that matters for policy design, because a remedy suited to one programme's risk structure may be misplaced in another's. Table 1 compares the five programmes along these dimensions, summarizing each programme's transaction profile, its dominant digital tasks, the burdens most characteristic of its administration, and the groups most exposed when standard digital processes fail.

Table 1

Sectoral variations in digital administrative burden across five social protection programmes in China

Programme	Transaction profile	Dominant digital tasks	Characteristic burdens	Most exposed groups
Old-age pensions (basic pension)	Low-frequency, high-value transactions with annual or periodic eligibility certification	Remote eligibility certification, social security card activation, account and payment-channel changes	A single failed certification suspends payment; facial-recognition failure lacks an immediate human route	The oldest-old, people with limited mobility, those whose facial changes (surgery, ageing) defeat recognition
Medical insurance	High-frequency use combining instant settlement with non-local treatment	Non-local treatment filing, search for designated providers, use of electronic vouchers, settlement and reimbursement	Learning costs persist with each rule change; filing rules are complex; reimbursement proportions are opaque	Older people with chronic conditions, older migrants living away from their registration locality, rural residents
Social assistance (minimum living allowance and extreme-poverty support)	Means-tested, with dynamic review and strong discretion	Income and asset declaration, periodic re-certification, document upload	Heavy compliance costs from extensive documentation; pronounced stigma and psychological cost; repeated re-application after status changes	Low-income and low-education groups, older people living alone, those without family assistance
Old-age allowances	Age-based entitlement administered locally	Age and survival certification, bank card binding	Certification failure stops payment; local platforms are fragmented	People aged 80 and above, rural older people
Long-term care insurance	Disability assessment combined with service scheduling	Disability-level assessment applications, provider selection, service booking and supervision	Assessment spans clinical and administrative tracks; service catalogues and rules are complex	Older people with disability or dementia and their caregivers, people with cognitive decline

Read across rows, the table indicates that the interaction of digital exclusion and administrative burden is programme-specific rather than generic. In high-frequency systems such as medical insurance, burden concentrates in continuing learning costs and rule complexity that must be renegotiated as filing and settlement rules change. In low-frequency, high-value systems such as pensions and old-age allowances, burden concentrates in the catastrophic consequence of a single failed certification, which can suspend income until a human recovery route is found. Social assistance adds a distinctive psychological burden, in which stigma attaches to repeated digital self-disclosure under dynamic review, while long-term care insurance strains the junction between clinical assessment and administrative scheduling. Channel-equivalence policy must therefore be calibrated to each programme's risk structure—guaranteeing rapid recovery routes where single failures are catastrophic, and simplification where cumulative learning demands are the principal obstacle—rather than applying a uniform age-friendly standard.

3.3. Evidence on access, skills, and unequal outcomes

National access has expanded rapidly, but meaningful use remains uneven. Data from the 2018 China Longitudinal Ageing Social Survey showed that 40.22% of older respondents had internet access but only 18.27% used it regularly; skills and support also followed socioeconomic gradients (Hu & Xu, 2024). Social networks can enable learning, yet many older people have limited awareness of public inclusion programmes (Li & Kostka, 2024). Urban-rural gaps in access narrowed between 2017 and 2021, while differences in use frequency and health outcomes persisted (Ran et al., 2026). This coexistence of narrowing access gaps with persistent outcome differences is itself an inconsistency that deserves to be made explicit: it suggests that connection is a weak lever once basic coverage is reached. The direction and strength of the associations between digital use and health-related outcomes also vary across populations, datasets, and periods (Liu et al., 2021; Wu et al., 2025), and at least one study reports these associations changing over time (Liu et al., 2021; Wu et al., 2025), which cautions against treating any static cross-sectional estimate as a stable parameter. Where studies disagree, this review treats convergence across designs, rather than any single estimate, as the standard for inference.

General internet use is also a weak proxy for high-stakes service capability. Messaging or entertainment does not require the same skills as interpreting eligibility rules, locating the correct mini-program, linking a bank account, uploading evidence, or switching between an application and a verification code. Capability must therefore be assessed against the actual task and the degree of independent control, not simply device ownership or recent use.

Service fit is as important as general digital skill. Survey evidence indicates that mobile-government complexity raises learning, compliance, and psychological costs, whereas personalization and clear information reduce them (Chen et al., 2026). Other studies associate digital

exclusion with weaker active ageing and changing health inequalities across age, sex, education, and region (Liu et al., 2021; Wu et al., 2025). These findings show why online availability and average uptake are insufficient measures of equitable access.

Outcome differences are not uniform. The benefits of digital participation depend on the quality of services reached, the user's offline resources, and the availability of human support when a standard process fails. Three groups face distinct mechanisms of exclusion. For the oldest-old, cohort effects combine with sensory and motor decline, and facial recognition is most likely to fail precisely where age-related changes in appearance are greatest. For rural seniors, infrastructure gaps have narrowed but depth of use remains shallow: interfaces localized for dialect speakers are scarce, and navigation depends heavily on village-level intermediaries whose availability and digital competence vary. For people with cognitive decline, capacity erodes progressively rather than abruptly, so that one-off training cannot hold its effect and delegation raises safety questions of its own. Rising average uptake can therefore coexist with persistent disadvantage among the oldest-old, people with disability, low-income or low-education groups, rural residents, and people living alone.

Direct benefit-administration research identifies transferred burden. Digital tools may streamline standard cases while shifting work to older claimants, relatives, and frontline officials when records or circumstances do not fit automated rules (Cao & Ma, 2026). Family assistance can complete an inaccessible transaction, but it may compromise privacy, exclude people without available relatives, and reduce the older person's control. Table 2 summarizes the principal evidence retained in this review.

Table 2

Representative evidence on older adults' digital exclusion in China

Study	Data and design	Key finding	Implication for social protection access
Hu and Xu (2024)	2018 CLASS; 11,419 adults aged 60+; nationally representative	40.22% had internet access, but 18.27% used it regularly; skills, breadth, and support followed socioeconomic gradients.	Device access is an inadequate measure of capability to complete benefit transactions.
Li and Kostka (2024)	Mixed-method study of the grey digital divide in China	Social networks enabled learning and use, while many older participants had limited awareness of public inclusion initiatives.	Family support can bridge access but cannot substitute for public outreach and independent options.
Ran et al. (2026)	2017 and 2021 CGSS; access-use-outcome comparison of urban and rural older adults	Access and general-use gaps narrowed, but frequency and health-outcome divides persisted.	Infrastructure expansion needs to be paired with skills, support, and outcome monitoring.

Chen et al. (2026)	Survey of 516 older adults in Quzhou, Wuhan, and Shanghai	Mobile-government complexity increased learning, compliance, and psychological costs; personalization and information quality reduced them.	Administrative-burden measures provide direct indicators for platform redesign.
Liu et al. (2021)	2017 CGSS; adults aged 60+; digital-divide and active-ageing indices	A wider digital divide was associated with lower health, participation, security, and active ageing.	Social protection should be evaluated through outcomes, not online availability alone.
Wu et al. (2025)	2018 and 2020 CHARLS; nationally representative cross-sectional analyses	Digital access, use, and health inequality varied over time and across demographic groups.	Average uptake can conceal unequal returns and changing risk profiles.
Cao and Ma (2026)	Interviews and grounded-theory analysis of old-age allowance delivery in China	Digital tools generated and transferred burden among older claimants and frontline officials when technology, discretion, and citizen conditions interacted.	Digitizing a fragmented process can redistribute rather than remove administrative work.

Note. CHARLS = China Health and Retirement Longitudinal Study; CGSS = Chinese General Social Survey; CLASS = China Longitudinal Ageing Social Survey; HRS = U.S. Health and Retirement Study; ELSA = English Longitudinal Study of Ageing.

3.4. Mechanisms of exclusion across the service journey

Digital-first communication can make eligibility less visible to non-users. Search-based portals assume knowledge of the programme's name, responsible agency, and correct search terms, while targeted benefits may be missed before an application begins. Algorithmic notifications may not reach people who are offline or have disabled alerts. Proactive identification, direct outreach, community visits, and a no-wrong-door approach can transfer the search obligation back to the state.

Identity and documentation create a second barrier. Real-name registration, bank linkage, facial recognition, one-time codes, and remote certification can prevent fraud but fail because of disability, outdated records, poor connectivity, or a phone registered to a relative. Forms may also request photographs, file conversion, or data already held by government. When failure produces only a code, neither the claimant nor frontline staff may know how to resolve the case. Accessible systems should minimize evidence, pre-fill verified information, offer several forms of authentication, save progress, explain failure, and provide immediate human escalation.

Accessibility continues after approval. Pension and allowance recipients may need periodic certification; medical-insurance users must find covered providers, complete non-local filing, settle expenses, and understand reimbursement; and long-term-care applicants may require disability assessment, service selection, scheduling, and monitoring. A disruption at any point can convert nominal coverage into non-use. Telephone and walk-in routes protect continuity when illness, device loss, bereavement, or cognitive change reduces digital capability.

Finally, older adults need understandable decisions and workable redress. Automated status messages and chatbots are poorly suited to unusual records or cases requiring discretion. Notices should state the reason, evidence, next step, deadline, and available support, and a human review route should be easy to reach. Proxy arrangements should be formal, limited, revocable, and visible to the beneficiary. Staff should confirm consent directly wherever possible. These safeguards combine assistance with autonomy rather than treating family access as a substitute for public accessibility.

The evidentiary strength of this chain is, however, uneven across its links. The link from digital exclusion to unequal use is well supported by multiple national surveys (Hu & Xu, 2024; Ran et al., 2026). The link from digital tasks to perceived administrative burden has direct survey support, but from samples whose scale and reach are limited: Chen et al. (2026) drew on 516 respondents in three cities, and comparable studies of other programmes are lacking. The link from administrative burden to realized protection outcomes—non-take-up, interrupted payment, abandonment of claims—is largely inferential, resting on transferred-burden accounts rather than direct measurement. The review located only one study, the qualitative work of Cao and Ma (2026), that follows an entitlement from application through receipt, and none that quantifies the complete application-approval-receipt-maintenance sequence. The latter half of the framework should therefore be read as a set of testable propositions rather than as established fact, which is why Section 4.2 gives priority to designs using administrative data.

4. Discussion

4.1. Policy implications for inclusive digital social protection

The implications developed in this section are the author's policy judgements. They are derived from the empirical evidence and the analytical framework assembled above rather than demonstrated directly by the studies reviewed, and they are framed with additional caution wherever the supporting evidence is indirect or thin.

First, the commitment to parallel services should become a measurable guarantee of channel equivalence. Offline, telephone, assisted, and digital routes may differ in procedure, but they should apply the same eligibility rules, processing priority, information, and appeal rights. Offline capacity should reflect local age, disability, education, broadband, and family-support conditions.

Second, agencies should redesign procedures around learning, compliance, and psychological costs. Fields should be pre-filled, evidence shared lawfully, and unnecessary recertification removed. Interoperability is most inclusive when it eliminates a claim rather than merely moving it online, although shared data must remain correctable and subject to purpose limitation (OECD, 2024).

Third, assisted-digital services should be task-specific and trusted. Community workers, social workers, health providers, and other trained helpers need clear privacy duties and escalation routes.

Platforms should support limited delegation without requiring password disclosure and should preserve an audit trail that the beneficiary can review.

Training is most useful when it is repeated, local, and tied to an immediate transaction, such as checking pension records or filing a medical-insurance claim. One-off instruction in general smartphone use is less likely to overcome a complex administrative process. Usability testing should therefore include adults aged 75 and above, people with low literacy, rural dialect speakers, and people with visual, hearing, motor, or cognitive limitations.

Finally, evaluation should measure completed applications, benefit receipt, continuity, authentication failure, abandonment, complaints, and reversals across age, locality, disability, channel, and assistance status. Older people should participate in journey testing, and provider contracts should connect age-friendly conformance with entitlement outcomes (State Administration for Market Regulation, 2026).

4.2. Research gaps and future research

Direct evidence on social-protection receipt remains limited. Many studies are cross-sectional or use binary internet-use measures rather than tracing awareness, application, approval, payment, service use, recertification, and appeal. Future longitudinal and quasi-experimental research should compare online-only, parallel-channel, assisted-digital, and proactive-enrolment designs, with particular attention to the oldest-old, people with disability or cognitive decline, rural residents, and people living alone.

Research should also examine family intermediaries and frontline workers as visible components of delivery rather than assuming that their unpaid or discretionary work is costless. Comparable indicators of completion, time, error, assistance, and redress would make it possible to identify which designs remove burden and which merely redistribute it.

This review is integrative rather than systematic, and included studies use different age cut-offs, datasets, and outcomes. The cut-offs range from 60 to 70 years, so the older population is not defined identically across studies; the underlying datasets—CLASS, CGSS, and CHARLS—differ in sampling frames, fieldwork modes, and measurement of digital use; and outcome indicators range from general internet use to health and active-ageing measures that are not directly commensurable. Comparison across studies is therefore indicative rather than strictly like-for-like. Rapid platform change can also outpace peer-reviewed evaluation, while national policy does not establish uniform local implementation. The framework therefore requires testing with administrative data and service-journey research across programmes and provinces.

A note on positionality is also warranted. This synthesis has been produced by a researcher who is, by the standards of this literature, digitally capable, and who approaches the evidence from outside the communities most exposed to exclusion. Interpreting data on highly vulnerable rural communities

from that position may underestimate the subjective difficulty that digitally mediated welfare transactions present, and the author's own age-cohort location may shape how capability among older respondents is read. The risk has been mitigated by giving priority to qualitative studies that preserve participants' own accounts and by triangulating those accounts with nationally representative quantitative evidence, but the interpretive limits of that position remain, and the synthesis should be read with them in view.

Such evaluation should distinguish formal enrolment from effective access and should report whether eligible people actually receive and retain the intended benefit. This focus would connect technological performance with distributional equity and social rights.

5. Conclusion

China has combined broad social-insurance coverage with rapid digital-service expansion and a policy commitment to retain usable alternatives. Nevertheless, digital inequality can become learning, compliance, and psychological costs that interrupt access at any stage of the service journey.

The appropriate response is neither to halt digitalization nor to assume that generational replacement will eliminate exclusion. Digital capability can decline or change with health, income, bereavement, device access, and service redesign. Digital channels may remain the most convenient route for many users, but non-digital and assisted routes must be maintained as ordinary components of entitlement delivery rather than temporary concessions.

Inclusive digitalization requires equivalent channels, simpler procedures, trusted assistance, safe delegation, interoperable and correctable data, human redress, and outcome-based accountability. Its success should be judged by whether people with the fewest resources can realize their entitlements, not only by the speed experienced by confident digital users.

Digital delivery fulfils its social-policy promise when convenience for connected users is combined with durable protection for people whose capabilities or circumstances change.

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Author contributions

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Consent to participate

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References

- [1] Cao, J., & Ma, L. (2026). Digital transformation, administrative burden, and citizen–state interactions: A case of the old age allowance policy in China. *Review of Policy Research*, 43(3), e70063. <https://doi.org/10.1111/ropr.70063>
- [2] Chen, T., Shang, T., Yan, R., & He, K. (2026). Does mobile government become an administrative burden for older adults? *Aslib Journal of Information Management*, 78(2), 409–429. <https://doi.org/10.1108/AJIM-06-2024-0437>
- [3] China Internet Network Information Center. (2026, February 5). *The 57th statistical report on China's internet development*. <https://www3.cnnic.cn/n4/2026/0304/c88-11549.html>
- [4] General Office of the State Council of the People's Republic of China. (2020, November 24). *Implementation plan for effectively addressing difficulties faced by older people in using smart technologies*. <https://app.www.gov.cn/govdata/gov/202011/24/465255/article.html>
- [5] Helsper, E. J. (2012). A corresponding fields model for the links between social and digital exclusion. *Communication Theory*, 22(4), 403–426. <https://doi.org/10.1111/j.1468-2885.2012.01416.x>
- [6] Hu, H., & Xu, W. (2024). Socioeconomic differences in digital inequality among Chinese older adults: Results from a nationally representative sample. *PLOS ONE*, 19(4), e0300433. <https://doi.org/10.1371/journal.pone.0300433>
- [7] Hunsaker, A., & Hargittai, E. (2018). A review of Internet use among older adults. *New Media & Society*, 20(10), 3937–3954. <https://doi.org/10.1177/1461444818787348>
- [8] Kutcher, A. M., & LeBaron, V. T. (2022). A simple guide for completing an integrative review using an example article. *Journal of Professional Nursing*, 40, 13–19. <https://doi.org/10.1016/j.profnurs.2022.02.004>
- [9] Li, H., & Kostka, G. (2024). Navigating the digital age: The gray digital divide and digital inclusion in China. *Media, Culture & Society*, 46(6), 1181–1199. <https://doi.org/10.1177/01634437241229382>

- [10] Liu, L., Wu, F., Tong, H., Hao, C., & Xie, T. (2021). The digital divide and active aging in China. *International Journal of Environmental Research and Public Health*, 18(23), 12675. <https://doi.org/10.3390/ijerph182312675>
- [11] Ministry of Human Resources and Social Security of the People's Republic of China. (2025, February 11). *Opinions on improving the unified national social insurance public service platform*. https://www.mohrss.gov.cn/xxgk2020/fdzdgknr/qt/gztz/202503/t20250318_538687.html
- [12] Ministry of Industry and Information Technology of the People's Republic of China. (2020, December 24). *Special action plan for age-friendly and accessibility adaptation of internet applications*. https://www.miit.gov.cn/jgsj/xgj/wjfb/art/2020/art_18a8b1029f724afc8b31264fcd0f4106.html
- [13] Moynihan, D. P., Herd, P., & Harvey, H. (2015). Administrative burden: Learning, psychological, and compliance costs in citizen-state interactions. *Journal of Public Administration Research and Theory*, 25(1), 43–69. <https://doi.org/10.1093/jopart/muu009>
- [14] National Bureau of Statistics of China. (2026, February 28). *Statistical communiqué of the People's Republic of China on the 2025 national economic and social development*. https://www.stats.gov.cn/english/PressRelease/202602/t20260228_1962661.html
- [15] National Healthcare Security Administration. (2020, December 29). *Implementation opinions on maintaining traditional service methods alongside smart-service innovation and optimizing medical security services*. https://www.nhsa.gov.cn/art/2020/12/29/art_37_4226.html
- [16] National Healthcare Security Administration. (2026, March 16). *2025 statistical bulletin on the development of medical security*. https://www.nhsa.gov.cn/art/2026/3/16/art_7_19918.html
- [17] OECD. (2024). *Modernising access to social protection: Strategies, technologies and data advances in OECD countries*. OECD Publishing. <https://doi.org/10.1787/af31746d-en>
- [18] Ran, X., Chen, G., & Guo, B. (2026). A narrower access gap, yet persistent divides: The digital inequality among China's urban-rural older adults. *BMC Public Health*, 26, 1733. <https://doi.org/10.1186/s12889-026-27131-8>

- [19] State Administration for Market Regulation. (2026, July 16). *China issues first national standard for elderly-friendly government service platforms*. https://english.samr.gov.cn/News/PressReleases/art/2026/art_92f1041e2b0c465d97a0e116c4e58477.html
- [20] Sukhera, J. (2022). Narrative reviews: Flexible, rigorous, and practical. *Journal of Graduate Medical Education*, 14(4), 414–417. <https://doi.org/10.4300/JGME-D-22-00480.1>
- [21] van Deursen, A. J. A. M., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? In L. Robinson, S. R. Cotten, J. Schulz, T. M. Hale, & A. Williams (Eds.), *Communication and information technologies annual* (Vol. 10, pp. 29–52). Emerald. <https://doi.org/10.1108/S2050-206020150000010002>
- [22] Wu, M., Xue, Y., & Ma, C. (2025). The association between the digital divide and health inequalities among older adults in China: Nationally representative cross-sectional survey. *Journal of Medical Internet Research*, 27, e62645. <https://doi.org/10.2196/62645>