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DIGITAL FINANCE ADOPTION AND CONTINUANCE AMONG OLDER ADULTS: A CHRONOLOGICAL REVIEW

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Abstract:

Digital financial services have increased access to banking, payments, and other financial services. However, digital literacy, usability, trust, security, access, and vulnerability to fraud remain barriers for older adults. This study presents a chronological overview of studies on older adults' acceptance and continuance of digital finance, tracing the evolution of research priorities, determinants, and behavioural outcomes over time. The systematic advanced search was conducted in the Scopus database using four major concepts: digital finance, adoption, older adults, and continuance. Using predetermined eligibility criteria, the retrieved records were filtered for their relevance, and a final corpus of 63 primary journal articles from 2018 to August 2026 was selected. The literature was divided into three time periods based on annual publication volume and research emphasis. Nine articles (14.3%) were identified in the Emergence and Foundation phase (2018-

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2020), 17 articles (27.0%) in the Expansion and Transition phase (2021-2023), and 37 articles (58.7%) in the Acceleration and Consolidation phase (2024-2026). The results show that the research has moved from first generation – acceptance, usability, and barriers by age groups – to second generation – usage, customer experience, security, trust, digital financial literacy, accessibility, wellbeing, and continuance. Recent studies have begun to identify older adults as a diverse group and the importance of considering how services are designed, as well as social and in-institutional support and safeguards, can interact with individual's capability. The review concludes that research and practice should go beyond the intention to adopt digital-finance to explore how to establish an inclusive, secure, and age-appropriate environment.

Keywords:

Digital Finance Adoption, Continuance, Older Adults, Chronological Review

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Introduction

Digital finance adoption and use among the elderly has become a key concern as the global population ages and financial services and banking sectors rapidly digitise. Financial inclusion policy is in the spotlight, requiring a growing understanding of whether the elderly can access digital finance on equal footing with younger groups, trust it, and sustain its use. As a topic, the earlier scholarship mostly focused on stating it as a gap, as in the case of Anupama & Sengupta (2025), Msweli & Mawela (2021), Shahen & Sharaf (2025), where, despite older adults being known to be much behind in adopting and using mobile banking, the research gap was indicated. This early period also set up the field's fundamental paradox, namely that digital and mobile financial services can enable access, lower transaction costs, and support inclusion, but can also have the opposite effect of excluding when designed for younger, more digitally literate users, as highlighted by Choudrie et al. (2018 and Msweli & Mawela (2021). Initial empirical studies thus focused on the first take-up of digital technology. They consistently pointed to a consistent set of barriers: security concerns, lack of information or understanding, lack of trust, interface complexity, language or demographic differences and resistance to change (Anwar et al., (2024); Dizon & Ebardo, (2025); Goswami et al., (2026); Msweli & Mawela, (2021) (Anwar et al., 2024; Dizon & Ebardo, 2025; Msweli & Mawela, 2021; Varun. A.S et al., 2024). The key enablers were also consistent, with convenience, accessibility, cost-effectiveness, unlimited access, and the desire for independence motivating older people to use digital banking and payments (Dizon & Ebardo, 2025; Msweli & Mawela, 2021; Varun A.S et al., 2024). The focus shifted from older adults adopting digital finance to who adopts which

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services, and in what social and technological context. This second phase highlighted the age groups 50-64 as being more active than the older age groups, the presence of younger people in the homes of older people as a positive determinant of fintech usage, the frequent underutilization of fintech among rural older adults, and the continued importance of socio-economic stratification in determining fintech uptake (Anupama & Sengupta, 2025; Choi et al., 2024; Msweli & Mawela, 2021). Evidence also indicates that access does not equal meaningful use (Anupama & Sengupta, 2025; Choi et al., 2024; Jena, 2023; Y. Zeng & Li, 2022). In China, 32.8% of internet users aged 60 and older reported they could use digital financial platforms autonomously; in Nigeria, having a smartphone does not mean people use fintech services, as fear of fraud, poor network connectivity, and lack of biometric identification were significant factors. More recent studies further developed the explanatory model by adding the factors of perceived usefulness, ease of use, facilitating conditions, trust, self-efficacy, and social influence as determinants of intention and behavior, and by adding the factors of perceived risk, anxiety, and poor infrastructure as inhibitors of adoption and use in everyday life (Julius & Blessing, 2025; H. Zeng et al., 2025). Trust seems particularly salient because it enhances perceived usefulness and ease of use. In contrast, performance and financial risk may undermine trust and reduce participation. Parallel resistance studies revealed that older adults' non-adoption is related to functional barriers (complexity, incompatibility, cost), psychological barriers (inertia, technology anxiety), and risk barriers (privacy, security, financial, operational), with attachment to cash also reinforcing non-adoption (Asmita et al., 2026; Jena, 2023; Li et al., 2023; Y. Zeng & Li, 2022). The COVID-19 period was a significant turning point, as it was at that time that the use of digital payment also increased among older people and that the disadvantages of not using in-person services became evident, but also the extent to which the transition could be vulnerable if there were a lack of trust and support (Cham et al., 2021). Then, the literature focused on continuance use, revealing that satisfaction and inertia aid in continuance intention, and technology familiarity facilitates continued use and technology anxiety hinders continued use, notably for adults aged 70 and older (Cham et al., 2021; Jena, 2023; Santosa et al., 2021; Y. Zeng & Li, 2022). Meanwhile, social influence emerged as a mechanism of engagement that can shape perceived usefulness (Han & Ko, 2025; Santosa et al., 2021), as family recommendations or friends' behavior can enhance perceived usefulness, while intergenerational contact can boost confidence and willingness to use digital finance on their own through training and community support. The latest phase of the field goes beyond traditional mobile banking, with facial recognition payment systems and Artificial Intelligence (AI)-powered fintech solutions proving more convenient, enjoyable, secure, and adaptable for older customers (Dizon & Ebardo, 2025; Mei, 2024; Y. Zeng & Li, 2022). Overall, this literature over time demonstrates a clear evolution from an age-based adoption gap to a more nuanced narrative suggesting that a combination of factors – literacy, risk, trust, infrastructure, social support, user experience, and long-term continuance – influence whether older people can fully engage with digital financial systems (Anupama & Sengupta, 2025; Dizon & Ebardo, 2025).

Materials and Methods

Data Collection

The fast-paced process of digitalisation in financial services has significantly changed the way people interact with their banks as well as with payment, investment, insurance and other financial facilities; however, older people are still facing technology adoption and usage

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challenges, such as low levels of digital literacy, difficulties with digital technologies, technology anxiety, accessibility issues, perceived complexity, concerns about security and susceptibility to fraud. The summarised methodology of the present article is shown in table 1. While research on digital finance among older populations has increased significantly, the literature remains fragmented across technologies, theories, locations, and outcomes. Hence, a chronological study is warranted to understand how academic interest shifted from early research on technology acceptance and behavioural intention to first use, actual use, sustained use, resistance, and non-use/dropout. In the present study, the authors systematically map the evolution of research on digital finance adoption and utilisation among older persons, pinpoint key intellectual and empirical shifts, and highlight outstanding theoretical, methodological, and contextual challenges. A single-step data-collection process was performed with the Scopus database, which provides broad coverage of rigorously indexed, peer-reviewed academic publications with consistent bibliographic metadata. A predefined search strategy was applied to titles, abstracts, and author keywords using Boolean combinations of three concept groups: terms representing older adults, including "older adult*," "older people," elderly, "senior citizen*," retiree*, and pensioner*; terms describing digital finance, including "digital finance," "digital banking," "internet banking," "mobile banking," fintech, "digital payment*," and "e-wallet*"; and terms capturing adoption and usage, including adopt*, accept*, intention*, uptake, use, usage, continuance*, and post-adopt*. Relevant limits concerning document type, source type, language, publication stage, and the specified review period were applied consistently, after which the retrieved records were screened against predetermined eligibility criteria to ensure substantive alignment with the review objective. Rigorous and systematic data collection is essential because a chronological synthesis depends on the completeness, consistency, and temporal comparability of its underlying evidence. A transparent and reproducible retrieval process reduces selection bias, strengthens the reliability of the study corpus, supports the validity of period-based comparisons, and prevents apparent changes in theories, technologies, determinants, or outcomes from being artefacts of inconsistent searching. Such methodological discipline therefore enables meaningful interpretation of how the field has developed over time and provides a credible foundation for advancing research on safe, inclusive, and sustained digital-finance participation among older adults.

Table 1: The Specification for Primary Data Searching.

Keyword	Digital Finance, Adoption, Older Adult, Continuance
Inclusion	Article, Journal, English, Social Science, business management, multidisciplinary, neuroscience and decision science
Exclusion	Economics, Medicine, review article, other languages
Final Search String (Scopus)	TITLE-ABS-KEY ((("older adult*" OR "older customer*" OR "older user*") AND ("digital finance" OR "digital financial service*" OR "digital banking" OR "online banking" OR "internet banking" OR "mobile banking" OR "electronic banking" OR "e-banking" OR fintech OR "financial technology*" OR "banking app*" OR "digital payment*" OR "mobile payment*" OR "electronic payment*" OR "e-payment*" OR "online payment*" OR "cashless payment*" OR "contactless payment*" OR "mobile wallet*" OR "digital wallet*" OR "e-wallet*" OR "mobile money") AND (adopt* OR accept* OR uptake OR intention* OR willingness OR readiness OR use OR user* OR usage OR utilise* OR utilize* OR continuance* OR "continued use" OR "continuance

	intention" OR "sustained use" OR post-adopt* OR reuse OR engagement OR participation OR experience* OR resistance OR "non-use" OR discontinuance*))) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA , "PSYC") OR LIMIT-TO (SUBJAREA , "ARTS") OR LIMIT-TO (SUBJAREA , "MULT") OR LIMIT-TO (SUBJAREA , "NEUR") OR LIMIT-TO (SUBJAREA , "HEAL")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))
Number of Primary Articles	63

Data collection involved a one-step search in the Scopus database to identify studies related to digital finance adoption and acceptance, usage, and continuance among older adults. Each publication title, abstract, and keywords were searched for using three blocks of conceptually related keywords. The population block included the terms older adult*, older customer*, and older user*; the technology block included general terms such as digital finance, digital financial services, online banking, mobile banking, Financial Technology (FinTech), digital payments, e-wallets, and mobile money. The behavioural block included the terms adoption, acceptance, intention, readiness, actual use, engagement, continuance, resistance, non-use, and discontinuance. This mix was sufficiently rich, including a sequence from pre-adoption perceptions and behavioural intentions to sustained or discontinued use, and it directly connected to the review objective. The search included only English-language journal articles and focused on the following subject areas: decision sciences, health professions, neuroscience, arts and humanities, psychology, business and management, and multidisciplinary studies. Review articles, publications in languages other than English, and records with codes in economics and medicine were omitted to focus on original empirical evidence on behavioural, managerial, technological, and ageing-related dimensions of digital finance. After applying these criteria, 63 primary articles remained for chronological analysis. The focus and analytical coherence of this corpus should not be taken as an indication of limited coverage. This relatively small figure reflects the three specialised areas and a conscious effort to exclude reviews and less relevant disciplinary literature, focusing instead on technology adoption and use by older adults and digital finance. Focusing on journal articles improves evidential consistency because each retained article adds new evidence to the temporal synthesis. The chosen subject areas do not simply reflect the phenomenon's multilingualism; they also include studies that would otherwise be relevant only from an economic point of view because they focus on markets or financial performance. Those that would otherwise be relevant from a medical point of view because they do not have a substantive digital-finance aspect have been excluded. Nevertheless, health professions, psychology, and neuroscience are justified for inclusion because ageing-related capabilities, cognition, accessibility, and technology anxiety may affect older adults' financial-technology behaviour. The 63-article dataset has enough depth to identify changes in technologies, theoretical perspectives, determinants, and behavioural outcomes over time. The transparent search logic and consistently applied eligibility criteria improve reproducibility, minimise selection bias, and support reliable interpretation of the field's chronological development.

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Data Clustering

Segmenting publication content into temporal phases provides a systematic foundation for understanding how research on digital finance adoption and continuance among older people has developed. While annual publication numbers can indicate scholarly activity, they can also miss important information about long-term trends, slowdowns, or other major turning points in a research field when studied in isolation. Organizing the literature by year and volume reveals periods of emergence, expansion, and acceleration in publications. It indicates how the field moved from a small number of early publications to a more solid and rapidly growing area of research. This also mitigates minor year-to-year fluctuations and allows meaningful comparisons of research productivity over time. Using predefined keywords, Boolean operators, and an advanced search strategy to obtain the dataset from Scopus means the clusters are based on a body of literature built transparently and systematically. Identifying temporal clusters can thus reinforce the interpretation of publication patterns in terms of phases of relatively stable output, gradual growth, or marked acceleration. By examining theories, technologies, determinants, and behavioural outcomes within each cluster, the clusters can also indicate whether scholarly attention has focused on initial acceptance/adoption or sustained use, resistance, or discontinuance. Thus, clustering serves not only as a descriptive classification technique but also as an analytical framework for understanding the field's intellectual development, identifying periods of increased research interest, and revealing underexplored areas that need further research. The various phases of the journal were classified in figure 1.

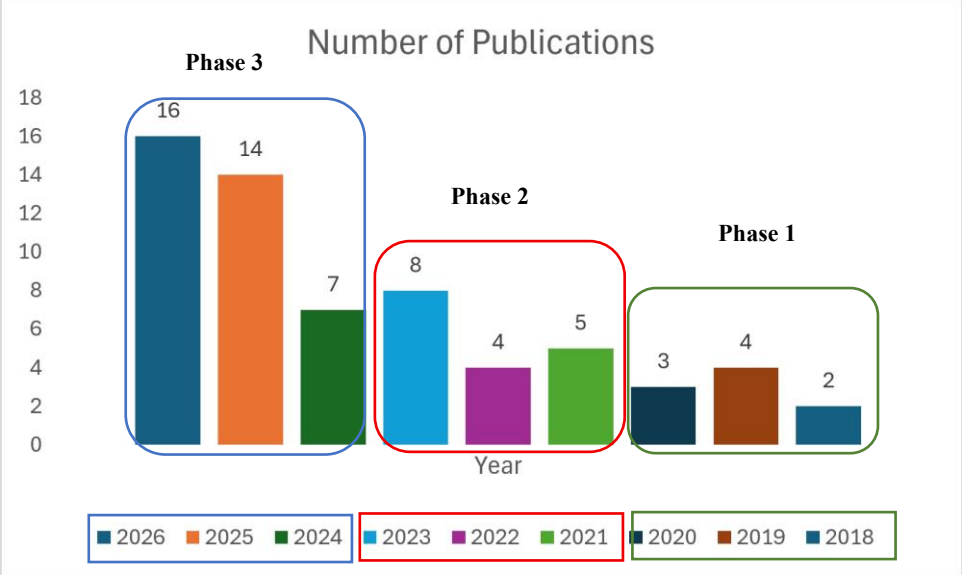


Figure 1 Annual Publication Output on Digital Finance Adoption and Continuance Among Older Adults Across Three Temporal Phases (2018–2026)

Phase 1: Emergence and Foundation (2018–2020)

The first phase marks the rise of studies on digital financial inclusion and its continuation among older people. The number of publications was relatively small, with nine articles published over the three years (two in 2018, four in 2019, three in 2020). This modest, variable productivity suggests the field was still emerging as a distinct research area. This period may

have included studies examining older people's initial experiences with online banking, mobile banking, and digital payments, focusing on usability, perceived value, technological competence, trust, security, and adoption challenges. No evidence of continuous annual growth suggests scholarly interest existed but did not take a mature form of investigation to constitute a research stream.

Phase 2: Expansion and Transition (2021–2023)

The second phase reflects the literature's expansion and transition, generating 17 articles, or 27.0% of the total corpus. Annual output increased to five publications in 2021, declined slightly to four in 2022, and then doubled to eight in 2023. Despite this short-term fluctuation, the phase recorded substantially greater research productivity than the preceding period. This development may reflect growing recognition of older adults' dependence on digitally mediated financial services, particularly following the accelerated digitalisation associated with the COVID-19 period. Conceptually, the phase signals a likely transition from research centred predominantly on acceptance and adoption intentions towards actual usage, digital inclusion, accessibility, trust, security, user experience, and continued engagement.

Phase 3: Acceleration and Consolidation (2024–2026)

The third phase indicates a significant increase in research productivity. It includes 37 articles, or 58.7% of all publications in the dataset. The number of articles dropped slightly from 8 in 2023 to 7 in 2024, then doubled to 14 in 2025 before rising again to 16 in 2026. More than half of the corpus falls into this phase, suggesting the topic has shifted from a niche area to a rapidly consolidating field. This may reflect growing concerns about population ageing, digital financial inclusion, cybersecurity and vulnerability to fraud, and the need to ensure continued digital engagement with older people. This stage is especially crucial for determining whether the literature has moved beyond adoption to use, continuance, resistance, and discontinuance. Overall, the distribution indicates a good upward trend, with 9 publications in the foundational phase and 37 in the most recent phase. Nonetheless, because the 2026 data may be an incomplete indexing year, use it with caution and include the actual Scopus search date. However, the number of papers published in 2026 is already higher than in previous years, confirming the trend that interest in the adoption and continued use of digital finance by older adults is gaining momentum.

Results and Discussion

Phase 1: Emergence and Foundation (2018–2020)

The literature published in 2018 established the initial foundation for understanding digital finance adoption among older adults by highlighting differences in internet participation and recognising mobile banking as a distinct research concern. Klímová et al. (2018) reported that internet use differed considerably within the older population, particularly after age 75. Although email was the most common online activity, internet banking ranked second, indicating that digital financial services had already become relevant to older adults' daily lives. Nonetheless, participation remained constrained by psychological, social, and capability-related barriers. These findings indicated that older adults should not be treated as a homogeneous group because digital abilities and support needs differ across age categories. Choudrie et al. (2018) similarly identified older adults as an underserved population within

mobile banking research and emphasised the unequal diffusion of mobile financial services. The proposed conceptual framework positioned older-user adoption as a separate research domain that requires explanations beyond general technology-acceptance models. Collectively, the 2018 studies primarily focused on recognising the age-related digital divide, establishing the relevance of banking technologies to older consumers, and identifying the need for age-sensitive theoretical frameworks, training, and practical support.

Research in 2019 shifted from broad age-based explanations towards heterogeneity, psychological segmentation, interface design, and post-adoption behaviour. (Villarejo-Ramos et al., 2019) identified five groups of older internet users based on technology anxiety, venturesomeness, and confidence in using information and communication technologies. Online banking behaviour differed across these profiles, challenging the assumption that older adults are uniformly reluctant or unable to use digital services. (Schehl et al., 2019) likewise showed that younger age within the older population, higher education, and stronger perceived behavioural control increased participation in several online activities. However, cultural participation did not predict online banking, suggesting that digital financial behaviour may involve specialised concerns such as risk, privacy, confidence, and transaction complexity. Interface design also became more prominent. (Ellis & Marshall, 2019) identified that older participants preferred a flat online-banking interface over a skeuomorphic design, despite expectations that representations resembling physical objects would be more familiar. This result demonstrated that age-based design assumptions should be tested directly rather than accepted without empirical evidence. Attention also expanded beyond adoption intentions. (Oertzen & Odekerken-Schröder, 2019) reported that task-related, organisational, and interpersonal communication factors influenced continued use of a bank-operated electronic post-box. Younger customers expressed more favourable attitudes and stronger continuance intentions, whereas older customers recorded higher actual usage and generated more word-of-mouth communication. The difference between expressed intention and observed behaviour indicated that behavioural intention alone may provide an incomplete representation of digital-finance engagement.

By 2020, the literature became more theoretically refined and increasingly addressed actual use, accessibility, security, and behavioural diversity. (Arenas-Gaitán et al., 2020) identified four segments of older e-banking users and demonstrated that cognitive age, self-confidence, and venturesomeness distinguished usage profiles more effectively than conventional sociodemographic variables. This finding reinforced the view that chronological age has limited explanatory power when separated from psychological readiness and perceived capability. (Okonji et al., 2020) extended the discussion to visually impaired adults and found no significant age difference in the perceived importance of activities such as online banking. Nevertheless, participants frequently regarded important activities as difficult to access, suggesting that low usage may reflect inaccessible design rather than low interest. (Singh et al., 2020) further distinguished behavioural intention from actual FinTech use. Perceived usefulness and social influence predicted intention, whereas ease of use and social influence affected actual usage. Behavioural intention and perceived usefulness did not significantly determine actual use, providing further evidence of an intention–behaviour gap. Age also influenced security perceptions, establishing security as an important consideration in encouraging first-time and repeated transactions. Overall, Phase 1 progressed from identifying an age-related digital divide in 2018, to recognising diverse user profiles and post-adoption behaviour in 2019, and finally to developing more integrated explanations of accessibility, security, actual usage, and continuance in 2020. The evidence established that older adults are

not a uniform consumer category and that sustained digital-finance participation depends on psychological characteristics, perceived control, accessible interfaces, security, prior experience, and service-related communication.

Phase 2: Expansion and Transition (2021–2023)

The early expansion period in 2021 broadened the literature from conventional technology-acceptance factors to structural, psychological, cognitive, and socioeconomic conditions affecting digital-finance participation. (Köttl, Gallistl, et al., 2021) identified that internalised ageism was embedded in older non-users' accounts of competence, learning ability, technological relevance, interface design, and intergenerational contact. Disempowering environments and age-based assumptions appeared to reinforce low engagement, indicating that digital exclusion cannot be attributed only to individual unwillingness. Complementary longitudinal evidence from (Köttl, Gallistl, et al., 2021) (Köttl, Cohn-Schwartz, et al., 2021) (Köttl, Gallistl, et al., 2021) indicated that positive self-perceptions of ageing did not predict later engagement with everyday digital technologies; instead, stronger technological engagement predicted improved perceptions of personal competence three years later. Digital participation may therefore function as an empowering experience rather than merely resulting from pre-existing confidence. (Rahman et al., 2021) added performance-based evidence by demonstrating that older adults completed internet-banking tasks more slowly and less accurately than younger adults. Among older participants, better neurocognitive functioning, numeracy, and financial capacity were strongly associated with banking performance, highlighting the importance of functional ability in explaining actual usage. (Chaisiripaibool et al., 2023) and (Kraiwanit & Tulathananun, 2021) reported that 54.6% of older Thai respondents accepted social banking, while education, savings, and understanding differentiated acceptance. They identified training and accessible information as practical ways to strengthen participation. In Nigeria, (Aduba, 2021) found that about three-quarters of respondents had adopted at least one electronic-banking service. Nonetheless, only one-tenth used electronic channels to purchase goods or services. Older age reduced the likelihood of internet or mobile-banking adoption but increased Short Message Service (SMS) banking use, showing that age effects differed across platforms. Poor digital-security infrastructure and widespread fraud also restricted electronic-payment adoption. Collectively, the 2021 evidence shifted the debate from a simple age-related divide towards a multidimensional explanation involving internalised ageism, cognition, financial capability, knowledge, socioeconomic position, platform suitability, and security.

During 2022, research moved more clearly towards customer experience, satisfaction, trust, service quality, and culturally relevant adoption mechanisms. (Chowdhury et al., 2022) reported that infrastructure, customer awareness, and security facilities strengthened perceptions of e-banking service quality in Bangladesh. Younger customers evaluated infrastructure and security more positively than older customers. At the same time, educational qualifications produced no significant differences across the assessed service dimensions. Private banks also received stronger evaluations than government-owned banks for service quality, infrastructure, and awareness, suggesting that institutional performance may shape engagement independently of individual education. (Said et al., 2022) established that e-service quality did not directly generate positive word-of-mouth among older mobile-banking customers; customer satisfaction transmitted this relationship. Convenience remained desirable, but security took priority, supporting simpler, more user-friendly functions rather than feature complexity. Similar age-related priorities appeared in Ghana. (Dzogbenuku et al.,

2022) identified positive relationships between security, ease of use, convenience, and satisfaction, with satisfaction mediating the relationship between trust and digital-payment experience. Customer experience varied by age and gender: younger users emphasised convenience, whereas older users valued security more. (Wong et al., 2022) introduced a culturally grounded route to adoption through gamified digital red packets. Enjoyment strengthened the perceived effectiveness of gamification, which contributed to favourable attitudes directly and through perceived usefulness. However, perceived risk obstructed the conversion of positive attitudes into adoption intentions. The 2022 literature therefore extended beyond initial acceptance by demonstrating that adoption and subsequent advocacy depend on interconnected experiential mechanisms. Service quality required satisfaction before producing positive behavioural outcomes, trust was supported by secure and convenient experiences, and enjoyable cultural features could encourage engagement without fully overcoming risk concerns. By 2023, the field was transitioning toward post-pandemic usage experiences, social inclusion, compelled adoption, accessibility, and the broader consequences of digital participation. (Y. Zeng & Li, 2023) highlighted that older internet users actively participated in digital-finance activities most compatible with established lifestyles. Nevertheless, differences between active and inactive users reflected continuing social stratification. Perceived usefulness, access to suitable devices, perceived risk, and anticipated exclusion from non-use were associated with adoption, while interest in relevant training remained evident. (Castillo-Villar & Castillo-Villar, 2023) indicated that active mobile-banking users valued time savings, reduced physical exposure, financial control, and stronger family connections.

Nonetheless, continued engagement was constrained by inadequate information, limited patience from bank employees, cybersecurity concerns, privacy risks, and password difficulties. (Jena, 2023) identified performance expectancy, effort expectancy, perceived risk, self-efficacy, trust, and anxiety as significant predictors of post-pandemic e-banking intention among older Indians, illustrating the continued relevance of acceptance models alongside risk and psychological capability. Morrison et al. (2023) reported that low digital literacy and malfunctioning technologies restricted participation in contactless payments, Quick Response (QR) codes, and transaction applications, sometimes producing embarrassment in public settings. Self-directed ageism further weakened motivation to learn unfamiliar digital routines. He et al. (2023) found that older street vendors often adopted mobile payments out of business necessity rather than because they recognised the benefits. Dependence on family members' QR codes enabled participation but reduced financial autonomy, while noisy environments, hearing limitations, false payment confirmations, and incomplete transaction evidence created usability and fraud risks. Kraiwanit, Jangjarat, and Srijam (2023) identified that gender, education, employment, income, internet exposure, platform preference, and content preference predicted older adults' online activities, whereas marital status had no predictive role. At the market level, Pasirayi and Fennell (2023) reported that mobile-payment announcements increased firm value by an average of 1.03%, although retailers targeting younger consumers gained more than retailers serving older markets, indicating unresolved commercial barriers to older-user engagement. Liu et al. (2023) further highlighted a strong association between digital exclusion and cognitive impairment: non-use of both WeChat and mobile payments remained associated with substantially higher odds of cognitive impairment after adjustment, although the cross-sectional evidence did not establish causality. Overall, Phase 2 progressed from identifying individual and structural adoption barriers in 2021, through examining satisfaction and customer experience in 2022, to analysing active usage, forced digitalisation, inclusion, autonomy, and post-adoption constraints in 2023.

Phase 3: Acceleration and Consolidation (2024–2026)

Research published in 2024 retained strong attention to adoption intention but introduced more specific psychological, social, and design-based explanations. Andalib Touchaei and Hazarina Hashim (2024) identified that dispositional resistance to change reduced mobile-banking adoption intention among Malaysian non-users. In contrast, performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation produced positive effects. Mei (2024) further supported social mechanisms, suggesting that word-of-mouth and peer engagement increased perceived usefulness and subsequently encouraged mobile-banking engagement. However, digital literacy weakened the effects of both social mechanisms, suggesting that more capable older users depend less on interpersonal influence. Design-focused studies moved beyond conventional survey models. Kim and Song (2024) indicated experimentally that voice interaction and animated lip movement in a conversational banking agent increased trust, social presence, and perceived ease of use. An, Cheung, and Willoughby (2024) similarly reported that purpose-built gamified learning improved knowledge and intention to adopt. Security findings remained less uniform: Bukovec and Antoliš (2024) reported that education improved security understanding, while age was not statistically significant. Nevertheless, older participants felt somewhat less secure. Broader behavioural evidence also confirmed substantial diversity. Deka and Wang (2024) highlighted that transport-deprived older adults did not use online banking or other trip-substituting technologies more frequently despite greater mobility needs. Yang et al. (2024), meanwhile, associated advanced and varied smartphone use, including online banking and shopping, with higher life satisfaction and fewer depressive symptoms. Collectively, 2024 marked an early consolidation of behavioural models with experimental, segmentation, and user-centred evidence.

The sharp growth in 2025 expanded analysis from adoption determinants towards continuance, well-being, financial inclusion, trust, and service outcomes. Zeng, Han, Liu, and Meng (2025) linked digital-finance development with better physical health through increased income, healthcare access, and social participation, while digital insurance, mobile payment, and monetary funds contributed positively. A related study by Zeng, Han, Jiang, and Meng (2025) associated digital finance with improved mental health through leisure participation and better physical condition. Hsu, Spaulding, and Jutkowitz (2025) identified that stopping online banking was associated with declining episodic memory, suggesting that sustained engagement may matter as much as initial adoption. Structural inequalities remained, however. Shou, Yu, and Pei (2025) validated the age gap, particularly for online shopping, and showed that imitation had a greater impact on older age groups than younger ones. In Spain, branch closures drove up e-banking adoption, yet inequality by age, location, gender, and digital skills remained, and advanced financial services were still underused (Martínez de Ibarreta et al., 2025). The gap between risk and trust widened. Wang et al. (2025) reported that perceived uncertainty and potential negative outcomes played a particularly significant role among older adults. Risk decreased intention mostly among non-users, but not among experienced users. Yadav, Ahmed, and Bansal (2025) revealed that explainability, data control, history, scam concerns, digital literacy, and protective measures are all fundamental to trust. Jang, Cho, and Kim (2025) also reported that although people were confident using technology for everyday tasks, their self-efficacy for high-risk activities like online banking was lower. According to Tan et al. (2025), the main predictors of e-wallet use are satisfaction, hedonic motivation, and self-efficacy, while grievance redress and independent-living capability contribute to satisfaction. For experiential outcomes, conversational presentation and background images

were shown to positively affect outcomes (Lee, Hwang & Song, 2025), while appropriate metaphors and textual labels were shown to reduce cognitive load and enhance self-efficacy (Hou, Pan & Liu, 2025). Peripheral findings also expanded the context: Hananto et al (2025) found a correlation between seamless payment design and service trust, Ma et al (2025) between cashless settlement and healthcare utilisation, and Zhang et al (2025) between broader social benefits of digital finance and a higher share of older people in regions.

By 2026, the literature increasingly shifted toward continued use, resilience, capability complementarity, hybrid delivery, and governance trajectories. Wang, Chen, and Liu (2026) discovered that social influence positively affected ease of use and subsequent use, while weak social support and insufficient privacy led to feelings of difficulty and uselessness. As a result, Kesavan and Polisetty (2026) proposed that digital financial literacy mediates the relationship between initial trust and behavioural and continuance intentions. Lundell and Ahamed (2026) theorized such literacy as an adaptive capacity that is influenced by self-learning, social assistance, banking trust, readiness, and transaction complexity. Asmita et al. (2026) found that trust was the main mediator, enhancing usefulness and attitude while lowering performance and financial risks. Several studies show that access alone is insufficient. Duan (2026) identified that while digital-economic development improved inclusion, it marginally benefited younger, urban, and better-educated older adults. Cal-zada and Pablo (2026) reported that increased broadband use boosted online banking use by 11.3% but was more effective for wealthier, educated, middle-aged individuals. Amonhaemanon and Wonglimpiyarat (2026) thus conceptualized inclusion as a dynamic process that requires capacity, service quality, and context-specific policy. Usability evidence was more detailed: Amouzadeh et al. (2026) highlighted many issues with error prevention, system-status visibility, cognitive overload, and cultural mismatch, and noted that usability decreases with age. Lyu (2026) expanded protection to cryptocurrency-based services through lightweight workflows, simulation, cooling-down, and dual confirmation. The concept of phygital continuity also became prominent. Singh and Biswas (2026) discovered that innovation, governance, banking awareness, and sustained physical-channel access boosted financial resilience. Shogole, Mhaka-Mutepfa and Mogomotsi (2026) also found that smartphone use enabled mobile banking and access to financial services in Botswana. Nonetheless, several factors hindered financial inclusion, including infrastructure, transportation, and financial instability. Zhou and Huang (2026) reported that digital skills and financial knowledge collectively contributed to asset diversification. Edin, Mohammadi Limaei, and Yazdanfar (2026) correlated older customers' use of internet banking with higher bank profitability. Sun et al. (2026), Feng, Pu, and Liu (2026), and Pan-dyaswargo et al. (2026) also identified that payment issues may limit access to transportation and healthcare. In 2024, the emphasis shifted from refined adoption explanations to fast-paced expansion in 2025, where it focused on experience and well-being, and then to resilience, continuance, governance, and inclusive ecosystems in 2026. Evidence suggests that, beyond usefulness and ease of use, sustainable participation depends on accessible design, digital financial literacy, privacy protection, social support, institutional safeguards, and ongoing access to human or physical channels.

Conclusion

This study provided a chronological overview of the evolution of studies on digital finance adoption and continuance behaviour among older people from 2018 to August 2026. Consequently, relevant terms related to digital finance, adoption, older adults, and continuance were used in a systematic advanced search of the Scopus database and applied to titles,

abstracts, and keywords. After screening against the eligibility criteria, the review selected 63 primary journal articles. The review aimed to understand changes in publication activity, research focus, methodology, technologies, and behaviour outcomes over three time periods. The chronological distribution indicates clear growth in scholarly interest. The Emergence and Foundation phase (2018-2020) included 9 articles (14.3% of the data). Research at this time focused primarily on initial acceptance, participation in Internet and mobile banking, usability, perceived usefulness, and Age-related barriers. The Expansion and Transition phase (2021-2023) included 17 articles (27.0%). It expanded the scope to actual usage, digital inclusion, customer experience, accessibility, satisfaction, trust, security, and post-pandemic digitalisation. 37 articles (58.7% of the corpus) belonged to the Acceleration and Consolidation phase (2024-2026). This recent focus indicates rapid progress toward sustainability, financial stability, well-being, financial and digital skills, inclusive service systems, and blended in-person and virtual service. The 2026 production data should be interpreted with care, as data collection stopped in August. However, the volume of publications certainly demonstrates the field's growing significance in academia.

A few major trends emerged across the time series. While early research often identified age as a key determinant of digital exclusion, later research increasingly identified that there is a variety of factors that lie beneath the surface of the umbrella term of ‘old age’ that should be considered, including socioeconomic status, access to social support, health condition, prior experience, digital literacy, cognitive age, self-efficacy, and financial capability. Research focus also shifted from behavioural intention to adoption to broader outcomes of autonomy, financial inclusion, service satisfaction, health and well-being, resistance, and discontinuance. Methodology evolved from conceptual frameworks and cross-sectional acceptance models to segmentation studies, longitudinal analysis, experimental interface testing, qualitative studies, mediation and moderation models, and context-sensitive usability assessments. Technological coverage also expanded from online and mobile banking to e-wallets, mobile payments, digital insurance, cryptocurrency-related services, conversational banking agents, gamified financial education, facial-recognition payments, and AI-enabled financial technologies. Nevertheless, the evidence points to a still-nascent stream of applications, not a consolidated methodological direction, in AI. They should be explainable, ensure privacy, provide accessible interaction, give users control, protect against fraud, and be compatible with older adults' capabilities. Chronological organisation is an important contribution to knowledge because it indicates not only the themes in the literature but also the sequence in which they appeared. Aggregating studies by number of papers published and year of publication makes it easier to dampen out year-to-year fluctuations and smooth out overall trends from emergence to expansion and consolidation. This time-based structure reveals patterns that might not be evident in a traditional thematic review, such as an incremental shift from intention to adopt to continuance; a greater consideration of security and trust; and a growing appreciation that access does not necessarily lead to digital financial inclusion. This review thus depicts the field as an emerging research area where behavioural, technological, social, institutional, and environmental aspects are increasingly interwoven. The results have implications for financial institutions, technology developers, policy makers, and community organisations. Simple and accessible interfaces, transparent security controls, and effective grievance and fraud-response procedures are essential for sustainable participation, as are targeted digital financial education and support that reflect varying levels of ability and experience. Conversational and AI-powered services should include clear explanations, privacy safeguards, error prevention, confirmation safeguards, and a way for customers who need human assistance. Continued access to branches, assisted digital channels, trusted-person support, and community training remains

important, as full digital substitution could further exclude vulnerable groups. Future research should focus more on actual, ongoing use rather than relying primarily on behaviour intention. Longitudinal, experimental, mixed-method, and real-world intervention studies are needed to assess how adoption evolves over time and whether initial improvements in autonomy, resilience, and well-being from adopting digital-finance offerings are sustained.

Some caveats should be noted. The review was conducted solely in Scopus, and some relevant studies may have been missed in other databases such as Web of Science, PubMed, IEEE Xplore, regional databases, and grey literature. The chosen keywords, the requirement for English-language articles, subject-area filters, and journal-article conditions also affected the findings. Abstract-based analysis may not capture the same level of methodological and contextual detail as full-text synthesis, and the early cutoff for August 2026 excludes the entire last year. Future reviews should draw on multiple databases, be multilingual and interdisciplinary, and compare evidence across cultural, economic, healthcare, and regulatory settings. More attention should also be paid to the oldest-old, people with disabilities or cognitive impairment, rural areas, non-users, discontinued users, and older persons whom scams have targeted. Real-world assessments of AI-enhanced financial services, inclusive interface designs, hybrid service models, and fraud-prevention interventions would strengthen the evidence. Overall, the literature has evolved from defining what stops people from participating in digital finance to understanding the complex conditions for secure, meaningful, and sustained participation. A chronological review is a useful way to capture this dynamic change and identify turning points, links to earlier foundations, and new technological and social priorities. Based on this time-based evidence, future innovation needs to be informed and driven, inclusive financial services need to be developed, and policies need to be facilitated to enable older people to use digital financial services with confidence, autonomy, and protection.

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