

Service Continuity, Assisted Access, and Digital Financial Inclusion in Rural Banks: A Conceptual Framework

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Abstract

This conceptual review examines how rural banks can distinguish digital account ownership from usable,

continuous financial access. A purposive synthesis of four publications issued between 2005 and 2022

informs an original framework connecting routine access, operational continuity, assisted recovery, and

confidentiality. The paper develops propositions and a proposed measurement agenda; it reports no

surveys, administrative observations, causal estimates, or empirical validation. The central argument is

that access during disruption and recovery deserves separate assessment from initial adoption. The

framework is intended as a basis for subsequent local testing, with explicit attention to customers who

require assistance and to the limits of transferring concepts from electronic commerce and international

banking guidance.

Keywords: rural banks; digital financial inclusion; operational continuity; assisted recovery; confidentiality

Conceptual review. Historical source cutoff: 31 December 2023. This paper reports no newly collected empirical data.

1. Introduction

An account may exist while its holder cannot complete a necessary transaction. A device may be

unavailable, an authentication step may be misunderstood, or a service interruption may occur when a

payment is due. These possibilities motivate a distinction between formal access and access that remains

usable under ordinary constraints. This paper focuses on that distinction in rural banking. It treats rural

banks as institutions with limited resources and customers with heterogeneous capabilities, rather than

assuming that every customer uses a smartphone independently.

The research question is conceptual: how can continuity and assisted recovery be incorporated into an

account of digital financial inclusion without conflating them with adoption? The proposed answer

separates four domains: routine usability, continuity of essential service, recoverability with appropriate

assistance, and confidentiality throughout the process. These are analytical categories developed here, not

a validated scale or a description of measured conditions in any named bank.

The contribution is a framework that gives disruption and recovery their own place in service assessment.

Its purpose is to guide future questions and measurement choices. It makes no claim that a particular

intervention increases inclusion by a known amount. Historical sources published no later than 31

December 2023 define the literature boundary. The actual publication date is 30 September 2026;

assignment to an earlier issue does not imply that the manuscript was published in that earlier year.

2. Scope and conceptual method

The method is a purposive conceptual synthesis of four primary publications. They were selected for

complementary roles: financial inclusion and digital payments, fintech and inclusion, operational

resilience, and electronic service quality. This is not a systematic literature review. No exhaustive search

strategy, database screening count, quality score, interview sample, or observational dataset is reported.

The narrow selection limits coverage and makes the resulting framework provisional.

The synthesis proceeds in three steps. First, it separates concepts that can otherwise become

interchangeable in managerial discussion: ownership, use, service availability, and recovery. Second, it

considers whether each concept addresses a different point in a customer journey. Third, it develops

propositions about their relationships and identifies observations that could challenge those propositions.

The propositions are reasoned suggestions for investigation, not statistical findings.

Transfer across settings requires caution. International banking guidance does not establish local legal

duties merely by being cited. A service-quality instrument developed for websites cannot automatically

become a valid instrument for rural bank customers. Broad inclusion evidence does not determine the

circumstances of a particular branch. Accordingly, references supply starting concepts, while the proposed

rural-bank relationships remain the responsibility of this paper. A future study should document its local

institutional setting before operationalizing them.

The framework concerns ordinary retail tasks such as obtaining balance information, making a permitted

payment, and recovering access. It does not evaluate lending eligibility, customer creditworthiness, or

investment performance. No personal financial information is collected. All examples are hypothetical and

are included only to clarify analytical distinctions.

3. Literature anchors and their limits

The Global Findex report links the study of financial inclusion with digital payments and financial

resilience (Demirguc-Kunt et al., 2022). That scope supports asking questions beyond whether an account

has been opened. This paper does not reproduce country estimates or infer rural-bank outcomes from

global aggregates. The distinction between possession and usable access developed below is an analytical

extension, not a quotation from the report.

Sahay et al. (2020) consider the potential of fintech for inclusion in the post-COVID-19 setting. Their

discussion provides a reason to consider enabling conditions alongside technological reach. The present

framework uses that broad orientation to ask whether a digital channel remains helpful when a customer

needs support. It does not treat technological adoption as sufficient evidence of an inclusive service.

The Basel Committee (2021) addresses operational resilience in banking, including the capacity to

withstand disruptive events. Here, that perspective motivates a customer-facing continuity domain. The

paper does not claim that its proposed indicators are Basel requirements, or that any institution has met a

supervisory standard. Institutional resilience and the experience of an individual customer are related but

distinct levels of analysis.

Parasuraman et al. (2005) develop electronic service-quality and recovery-related scales in a website

context. Their work makes availability, privacy, and recovery useful conceptual reference points. The

rural-bank framework is not a replication of that instrument. Changing the population, channel, assistance

arrangements, and task can change item meaning; translation and local validation would therefore be

necessary before any survey score is interpreted.

4. Four distinct service domains

Routine usability concerns whether a customer can understand and complete a legitimate task in ordinary

operating conditions. It includes the clarity of instructions, the effort required, and whether completion is

visible to the customer. A successful login is an intermediate step rather than proof that a intended task

was completed. The relevant unit is the customer-task encounter, which should be specified before

measurement.

Continuity concerns the availability of an essential service when the primary route is disrupted. An

alternative route is meaningful only if it is authorized, understandable, and usable by the affected

customer. Listing a branch or telephone number as a fallback does not establish that it provides the

required service within a useful time. The framework therefore separates the existence of a fallback from

its demonstrated accessibility.

Assisted recovery concerns restoring access after a failed task, a lost device, or another interruption.

Assistance may come from an authorized employee or another permitted support channel. The concept

includes clear escalation and confirmation of resolution. It does not mean sharing passwords with a helper

or bypassing identity controls. Support that completes a single task but leaves the customer unable to act

again may be temporary relief rather than durable recovery.

Confidentiality concerns whether assistance and fallback arrangements preserve appropriate control over

personal information. Its importance can increase when an interaction moves from a private device to a

shared setting. This domain is treated as a constraint on acceptable support rather than as a benefit that can

simply be traded against speed. A faster recovery pathway that exposes credentials is not defined here as a

better inclusive service.

5. Relationships within the framework

The proposed sequence is access opportunity, routine task attempt, disruption when it occurs, recovery,

and subsequent ability to use the service. The sequence does not imply that every customer experiences

disruption or follows a single channel. It organizes observations so that a bank can avoid interpreting a

high registration count as evidence of reliable access at every later stage.

Continuity can influence whether disruption becomes prolonged exclusion. Assisted recovery can

influence whether an interruption produces a return to use. Confidentiality constrains which continuity and

recovery arrangements are acceptable. Routine usability may reduce preventable failures, but it cannot

remove every external interruption. Thus the framework includes both ordinary service design and the

response to failures.

The domains are conceptually distinct even when they interact. A bank could provide an easy ordinary

interface while offering weak recovery when a device is lost. Another could offer reliable staff assistance

while requiring a long journey to obtain it. Such contrasts show why a single satisfaction question may

conceal materially different access conditions. They are hypothetical patterns, not classifications of

institutions observed in this study.

Context moderates the proposed relationships. Travel burden, connectivity, device access, language,

disability-related requirements, staffing capacity, and permitted identity procedures may change whether a

fallback is usable. These factors should be described rather than assumed away. The framework also

distinguishes individual needs from institutional capacity: a service can be generally available yet poorly

suited to a particular task or customer.

6. Propositions for future testing

Proposition 1: among customers facing a primary-channel interruption, the availability of a usable

authorized fallback is associated with a lower probability of an unresolved essential task. The proposition

requires measurement of disruption exposure and fallback usability. A simple comparison of all customers

with and without branch access would not isolate the proposed relationship. Differences in task urgency

and customer capability could account for an observed association.

Proposition 2: clear assisted-recovery procedures are associated with a higher probability of restored

independent or appropriately supported use after an access failure. Resolution at the first contact and

restored use later should be measured separately. The proposition would be weakened if apparent

resolution did not predict subsequent ability to use the service, or if better outcomes reflected the easier

cases being directed to a particular channel.

Proposition 3: the relationship between assistance and sustained use depends on the protection of customer

control and confidentiality. Support that requires disclosing credentials could undermine trust or create

other harms. Testing this proposition should not expose customers to an unsafe procedure. A study could

instead compare authorized existing arrangements and examine perceived control, reported experience,

and subsequent use with suitable safeguards.

Proposition 4: account ownership alone provides an incomplete classification of usable inclusion when

interruption exposure and recovery needs vary. To investigate this proposition, researchers could compare

ownership-based classifications with task-based access observations. Evidence that the classifications

coincide across varied conditions would challenge the practical value of adding the proposed domains.

None of these propositions is asserted as empirically established.

7. Proposed measurement agenda

A future study should first identify the essential tasks and the period of observation. An indicator such as

task completion becomes interpretable only when the task, eligible customers, permitted channels, and

completion criteria are explicit. Routine usability could be studied through consented task observation and

short customer interviews. Researchers should distinguish completion without assistance, completion with

authorized assistance, and unresolved attempts.

Continuity measurement could record the duration of a service interruption, whether an alternative was

offered, whether it was reachable, and whether the essential task was completed through that alternative.

Institutional uptime and customer completion should be reported separately. An average uptime measure

may conceal a short interruption at a critical moment, while a completed task does not reveal the cost of

reaching another channel.

Recovery measurement could distinguish acknowledgement time, resolution time, escalation, and ability

to complete a later task. Confidentiality could be examined through documented procedures and customer

accounts of who could view sensitive information. These are proposed observation categories rather than a

scoring instrument. Sensitive details, credentials, and unnecessary identifying information should not be

collected merely to make the dataset richer.

Before constructing a composite index, researchers should test whether the domains behave as expected

and whether an aggregate hides adverse conditions. Item comprehension, translation, missing responses,

and differences between customers requiring and not requiring assistance deserve attention. A high overall

score should not compensate mechanically for a failure to protect credentials. Reporting separate domain

results may be more informative than ranking institutions by one total.

8. Illustrative application and design choices

Consider a hypothetical customer whose phone is unavailable on the day an essential payment is due. The

bank offers an authorized staffed alternative. The framework asks whether the customer knows that route,

can reach it, meets the applicable verification requirements, and receives reliable confirmation of

completion. Each question describes a possible barrier. The example does not report an actual incident or

estimate how frequently it occurs.

A second hypothetical customer reaches support after an authentication failure. An employee explains the

approved recovery process without asking for a password. The immediate task is resolved, and the

customer later completes another task using the restored route. In this example, immediate resolution and

subsequent usability are both relevant. If a helper completed the payment while the access problem

persisted, the two outcomes would differ.

For service design, the framework suggests documenting fallback routes and escalation responsibilities in

language customers can understand. It also suggests testing the routes with realistic tasks before relying on

them in a continuity plan. These are reasoned design implications, not evidence that a particular

implementation improves performance. Local rules, security requirements, and resource constraints must

shape what can actually be offered.

There are tradeoffs worth making visible. A highly centralized support process may be consistent but

difficult to reach; a widely distributed process may be accessible but require stronger staff guidance. A

fallback may restore a task while increasing travel or waiting costs. The appropriate design cannot be

inferred from this conceptual paper alone. Transparent documentation of such costs would help future

researchers assess inclusion more accurately.

9. Limitations and conclusion

This paper relies on a small purposive source set and develops relationships through conceptual reasoning.

It provides no evidence about the prevalence of barriers, the magnitude of any intervention effect, or the

performance of a named rural bank. It does not establish a causal pathway, validate a scale, or show

compliance with local regulation. Those limits should remain explicit when the framework is used in

managerial discussion.

The source cutoff also limits the historical perspective. Publications after 31 December 2023 were

excluded from the framework, although the manuscript is published in 2026. Future technology, policy,

and service changes could alter relevant relationships. The cutoff is used to keep the references compatible

with the assigned issue context, not to imply that later developments do not matter.

A useful next study would specify a local customer population, define a small set of essential tasks, and

collect evidence on ordinary attempts, disruption, and recovery. It should examine alternative explanations

and the experience of customers needing assistance. Qualitative investigation may be needed before item

development because a term such as available support can have different meanings across settings.

The conceptual conclusion is that digital inclusion can be assessed more precisely when routine usability,

continuity, assisted recovery, and confidentiality are kept distinct. Ownership supplies one part of the

picture. The capacity to complete a necessary task and regain usable access supplies additional

information. The proposed framework is an invitation to test those distinctions, rather than a claim that the

relevant questions have already been answered.

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