Mapping The Missing Signal:

Locating Millions of Scorable Micro-Enterprises Indonesia's Credit System Has Never Seen

Recommendation Paper

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July 2026
https://the-missing-signal.njalbar.com

1. The Problem

Indonesia's micro-enterprise economy runs on a paradox. The government provides cheap credit through KUR at 6% interest, with Rp295 trillion allocated in 2026. The financial regulator (OJK) has licensed eight companies, including Trusting Social, AIForesee, and Bangun Percaya Sosial, to score creditworthiness using digital transaction data instead of bank history, through POJK 29/2024. This sits alongside POJK 19/2025, which specifically targets easing UMKM access to financing. A pilot test across 72,000 customers at three KUR-distributing banks showed this approach works: 5% more approvals, with NPL rates unchanged.

Yet these two systems remain disconnected. To receive KUR, a bank must check SLIK, the national credit registry. SLIK only contains records of people who have previously borrowed from formal financial institutions. A micro-enterprise operator, defined in this paper as the individual within a household who is self-employed and runs the business, who processes fifty e-wallet transactions a day, sells on Shopee, and pays their electricity bill on time every month has no SLIK record. They may get rejected, not because they are a bad borrower, but because the system cannot see them.

The regulation to score them differently now exists. The companies to do it are licensed. The question nobody can answer yet is: how many of these operators exist, and where are they?

This paper provides that answer. Using BPS's nationally representative SUSENAS March 2025 survey covering 20 million micro-enterprise households, we identify which operators are digitally active enough to be scored through alternative credit methods but currently excluded from formal credit. We map their geographic concentration, assess their financial resilience, and evaluate whether existing government programs reach them.

The finding: 2,621,446 micro-enterprise households are digitally active but have zero formal credit access. Of these, 1,997,965 have savings accounts, indicating financial discipline and credit readiness. 98.2% receive no government support of any kind. They are the most actionable segment in Indonesia's UMKM economy, and the system has no idea they exist.

2. The Diagnostic

2.1 Data and Methodology

This analysis uses two nationally representative BPS surveys: SUSENAS March 2025 (household welfare survey, approximately 350,000 households) and SAKERNAS February 2025 (labor force survey, approximately 192,000 individuals). Although these are separate samples that cannot be linked at the individual level, we triangulate them at the province level: SUSENAS provides the core

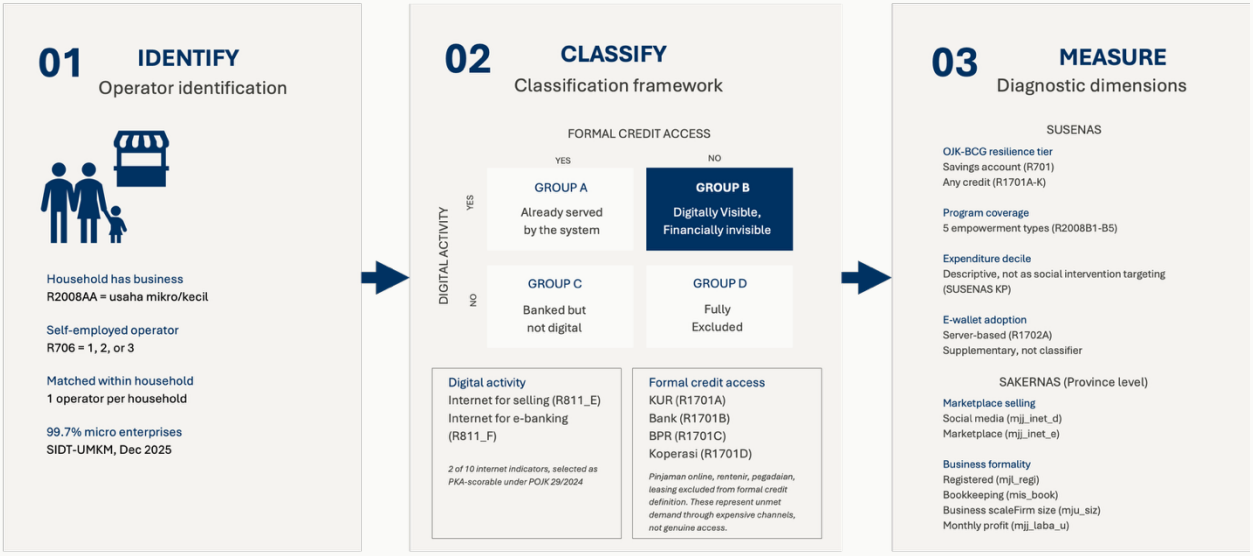
diagnostic, while SAKERNAS validates and enriches the picture with business-quality indicators such as marketplace selling rates, business registration, and bookkeeping practices among self-employed workers.

SUSENAS identifies micro-enterprise households through the question "Apakah ada ART yang memiliki usaha mikro/kecil?" (R2008AA). Given that 99.7% of Indonesia's registered UMKM are micro enterprises (SIDT-UMKM, December 2025), this paper refers to the captured population as micro-enterprise households. We do not apply PP 7/2021 revenue thresholds because SUSENAS does not collect business revenue; however, the statistical composition makes this classification robust.

For each micro-enterprise household, we identify the business operator by matching to the self-employed individual (R706 = 1, 2, or 3) within the household. In cases with multiple self-employed members, the household head is selected. For the 10.1% of households where no self-employed member exists, the household head is used as a fallback and flagged accordingly

2.2 Classification Framework

We classify each micro-enterprise operator along two dimensions, producing four groups:



Source: Author's analytical framework. Classification uses BPS SUSENAS March 2025; province-level enrichment uses BPS SAKERNAS February 2025.

The figure illustrates the full analytical pipeline: operator identification (Step 1), two-axis classification (Step 2), and the diagnostic dimensions layered onto each group (Step 3).

Digitally active: the operator personally uses internet for selling (R811_E) or e-banking (R811_F). These activities directly generate the type of transaction data that licensed PKA providers are authorized to process under POJK 29/2024. Household-level e-wallet adoption (R1702A) is

reported as supplementary context but does not define the classification, as it cannot be attributed to the operator specifically.

Financially excluded: the household has no formal credit from KUR (R1701A), bank (R1701B), BPR (R1701C), or koperasi (R1701D). Pinjaman online and informal lending are excluded from the "formal credit" definition because they represent unmet demand served through expensive channels, not genuine formal access.

Financial resilience: adapted from the OJK-BCG (2020) framework, which defines four UMKM archetypes by risk profile and intervention type. We operationalize these tiers using observable SUSENAS variables: whether the operator has a savings account (R701) proxies for financial buffer, while any credit participation (R1701A-K) proxies for financial system engagement.

Government program coverage: measured through five UMKM-specific empowerment variables (R2008B1-B5): production training, licensing assistance, marketing/digitization support, financial reporting training, and capital access facilitation.

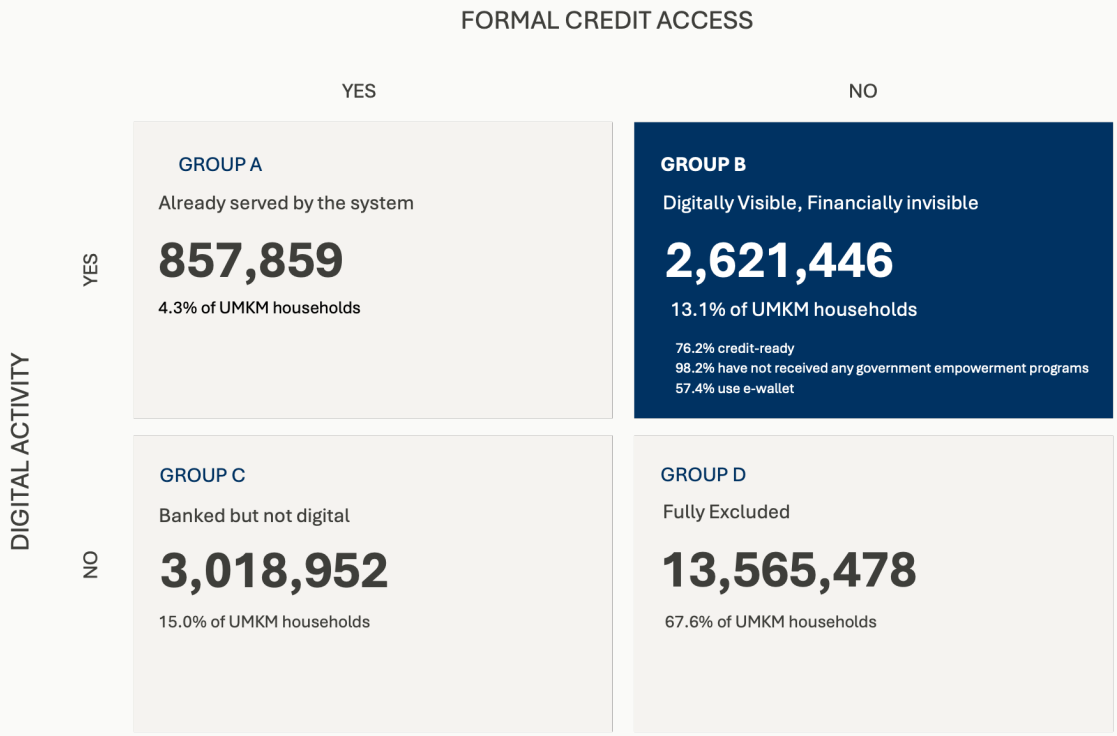
Expenditure decile: constructed from SUSENAS KP per capita expenditure data and included as a descriptive attribute, not a targeting criterion. The unit of analysis is the business, not the household's welfare status.

Limitations

This analysis is a cross-sectional snapshot from March 2025 and cannot capture changes over time. "Digitally active" is a proxy for PKA-scorability, not a direct measure; an operator using internet for selling may transact via WhatsApp with cash payment, generating no PKA-usable data trail. Operator identification relies on employment status matching, with 10.1% of cases using a household-head fallback. SAKERNAS enrichment is at province level only due to separate sampling. SUSENAS does not collect business revenue or profit, so businesses cannot be sized. Business ownership is self-reported without verification against PP 7/2021 revenue thresholds; however, the 99.7% micro-enterprise composition makes this classification statistically robust. Survey weights assume BPS's sampling frame is representative; any populations missed by the frame are underrepresented.

2.3 Findings

Across SUSENAS March 2025, 20,063,735 households report having a micro or small business, representing approximately 27% of all Indonesian households. Of these, only 19.3% (3,876,810 households) have any formal credit access. The remaining 80.7% operate entirely outside the formal financial system.



Source: Author's analysis of BPS SUSENAS March 2025. N = 20,063,735 micro-enterprise households (weighted).

Group B: The Headline

The 2,621,446 households in Group B are the immediate opportunity. Their operators sell online or use e-banking, generating exactly the type of digital footprint that PKA providers are authorized to score. Yet they have no KUR, no bank credit, no BPR, no koperasi. The formal credit system does not see them.

Three characteristics define this group:

First, they are overwhelmingly credit-ready. 76.2% are Upgraders under the OJK-BCG framework: they have savings accounts but no loans of any kind. These are not people trapped in debt or living without financial buffers. They are financially disciplined operators who simply have no pathway into the formal credit system.

Second, they are not poor. Group B concentrates heavily in upper expenditure deciles. 38.4% of all UMKM households in decile 10 are Group B, compared to just 4.5% in decile 1. The higher the household expenditure, the more likely the operator is digitally active but excluded from credit. This is a system design problem, not a poverty problem.

The demographic profile reinforces this pattern. Group B operators have a median age of 42, with 45.4% holding SMA certificates and 20.4% holding university degrees (S1 or higher). 76.6% are in urban areas. By contrast, Group D operators have a median age of 52, with 47.6% holding only SD

certificates and 3.5% holding university degrees. 52.9% are rural. These are structurally different populations requiring different interventions.

Third, the government is missing them entirely. 98.2% of Group B households have received zero UMKM empowerment programs: no production training, no licensing help, no marketing/digitization support, no financial reporting training, no capital access assistance. The most credit-ready and digitally active segment in the UMKM economy is completely untouched by existing interventions.

Group B and E-wallet Adoption

While the "digitally active" classification is based on the operator's individual internet behavior, household-level data provides additional context: 57.4% of Group B households use server-based e-wallets (GoPay, OVO, Dana, ShopeePay). This is significant because e-wallet transaction data is explicitly among the data types that PKA providers can ingest under POJK 29/2024. Only 0.8% of Group B uses pinjaman online, and 12.8% access some form of credit when informal sources are included, meaning the vast majority (87.2%) are entirely outside any credit market. This is not a population trapped in predatory lending. Most of them are simply not borrowing at all.

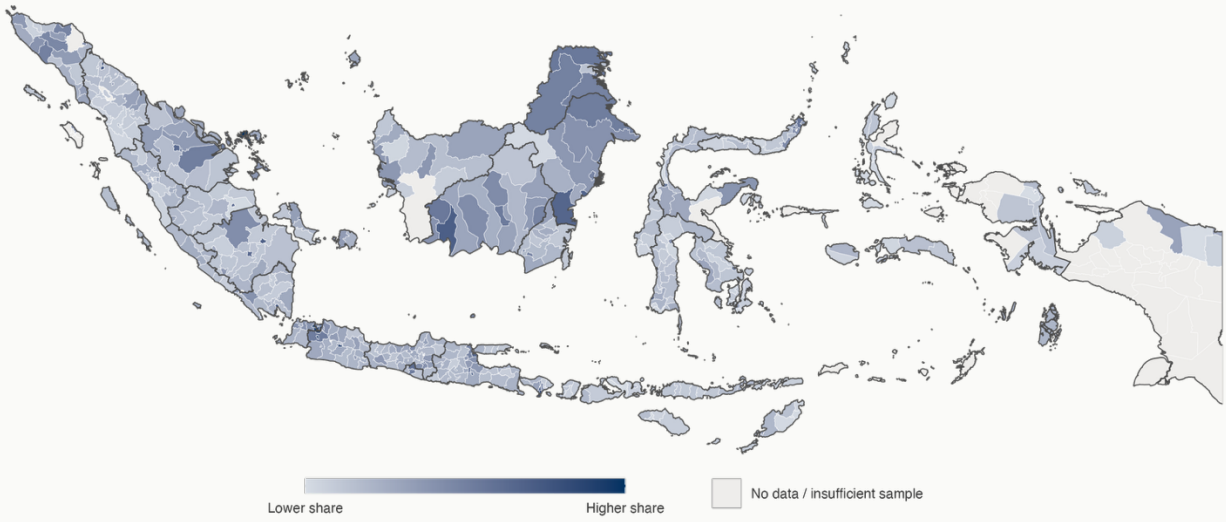
Geographic Concentration

Group B does not spread evenly across the country.

By share, Group B is highest in urbanized provinces: DKI Jakarta (40.0%), Kepulauan Riau (38.9%), and Kalimantan Utara (26.2%). In these provinces, nearly one in three UMKM households is digitally active but financially excluded.

By absolute count, Java dominates: Jawa Tengah (464,941), Jawa Barat (396,291), and Jawa Timur (395,891). These three provinces alone account for nearly half of all Group B households nationally.

This distinction matters for targeting. Share-based targeting prioritizes provinces where the problem is most intense relative to the UMKM population. Count-based targeting prioritizes where the largest raw impact can be achieved. A pilot program would need to consider both.



Source: Author's analysis of BPS SUSENAS March 2025. Kabupaten with insufficient sample (N < 30) shown in beige.

SAKERNAS Validation

Province-level SAKERNAS data among self-employed workers corroborates the SUSENAS findings. Provinces with high Group B concentration also tend to show higher rates of marketplace selling and internet banking use at work, but lower rates of business registration and bookkeeping. This pattern is consistent with a large informal-but-digital micro-enterprise economy: operators who actively use digital tools for commerce but remain outside formal business and financial systems.

Group D: The Scale of the Challenge

Two-thirds of micro-enterprise households (13,565,478) are in Group D: neither digitally active nor formally banked. PKA cannot serve this group because they do not generate digital data to be scored. They require a different intervention sequence: digital onboarding and literacy first, then financial access pathways. Digital literacy and AI adoption programs are most relevant for this segment, but they should be targeted to the provinces where Group D concentrates rather than deployed without geographic prioritization.

3. Recommendation

3.1 What Already Exists

Indonesia does not lack UMKM support programs. BRI runs LinkUMKM, a digital empowerment platform with field officers. Bank Mandiri offers Livin' Merchant for instant QRIS setup. Shopee operates Kampus UMKM with regional training facilities. Mitra Bukalapak digitizes traditional warungs. The World Bank's PROMISE II project pushes BPR digitization and alternative credit scoring. Over 200 Rumah BUMN hubs provide NIB registration and literacy training. Komdigi offers six months of field mentoring for digital adoption.

The programs exist. The problem is not a lack of initiatives. The problem is that none of them are connected to a diagnostic layer that shows where each intervention is most needed. Programs deploy by supply, not by demand. Without knowing which provinces have the highest concentration of digitally active but financially excluded operators, and which need basic digital onboarding first, resources cannot be allocated efficiently.

3.2 What This Analysis Adds

This paper provides the targeting layer. For the first time, 20 million micro-enterprise households are classified by digital readiness and financial access simultaneously, mapped to 38 provinces and 514 kabupaten. This enables segmented, data-driven deployment of existing programs rather than creation of new ones.

3.3 Segmented Recommendations

Group B (2,621,446 households): Connect PKA to KUR through targeted pilots.

Multiple pathways could serve Group B: koperasi could expand digital-friendly products, BPR could adopt simplified assessments through initiatives like PROMISE II, and fintech lenders could offer rates below pinjol. However, the highest-leverage intervention is connecting PKA to KUR. KUR already has Rp295 trillion in annual allocation at 6% subsidized interest. The capital pool exists. The bottleneck is scoring. The Kemenkop pilot across 72,000 customers proved PKA-based KUR approval works. What it lacked was geographic targeting.

The next step is a targeted expansion: OJK, KUR-distributing banks, and licensed PKA providers designing a structured pilot in the top five provinces by Group B concentration. Jawa Tengah, Jawa Barat, and Jawa Timur alone account for nearly half of Group B nationally. For urban provinces like DKI Jakarta and Kepulauan Riau where Group B share exceeds 38%, a parallel pilot could test whether higher digital density enables faster PKA adoption.

Group D (13,565,478 households): Direct existing digital onboarding programs by geography.

Group D operators are neither digital nor banked. PKA cannot serve them because they generate no digital data. The intervention sequence is: digital onboarding first, then financial access. Programs like Komdigi's six-month field mentoring, Mitra Bukalapak's warung digitization, and the Rumah BUMN hubs already do this work. The missing piece is geographic prioritization: directing these programs toward provinces where Group D is densest, using this analysis as the targeting tool. The

pathway from Group D to Group B, and the timeline required, is an open question that warrants monitoring and further research.

Group C (3,018,952 households): Integrate digital adoption into existing bank credit relationships.

These households already have formal credit. BRI's LinkUMKM, Mandiri's Livin' Merchant, and BNI's Xpora already serve this segment. The gap is integration: banks systematically offering digital tools to their existing KUR borrowers rather than treating digital onboarding and credit as separate products. This requires no new programs, only coordination between the banking sector and digital onboarding providers.

Group A (857,859 households): Reference cases for program design.

These operators can serve as reference cases for understanding what conditions enable both digital adoption and credit access to coexist, informing future program design.

3.4 Sequencing

These recommendations are not equally urgent. Group B first: the PKA-KUR infrastructure already exists at pilot scale and the 2,621,446 target population is identified and mapped. Group D second: the largest population requiring coordination across multiple existing programs over a longer timeline. Group C and A are ongoing integration and learning efforts requiring minimal additional resources.

4. What This Becomes

This paper presents a one-time diagnostic using SUSENAS March 2025 data. But the underlying architecture is designed to be repeatable. BPS releases SUSENAS and SAKERNAS annually. Each new release allows the four-box classification, the OJK-BCG tier overlay, and the geographic mapping to be refreshed, producing an updated picture of where the UMKM digital-credit gap is shifting.

An accompanying interactive platform allows users to explore the data by province and kabupaten: total micro-enterprise households, Group B concentration, e-wallet adoption rates, KUR access rates, and government program coverage, with SAKERNAS province-level indicators on business registration, marketplace selling, and bookkeeping practices displayed alongside.

Four developments would increase the value of this framework over time:

First, linking SUSENAS household data with SIDT-UMKM registry data would allow the diagnostic to distinguish between enumerated and unenumerated businesses, addressing the gap between the 30.2 million registered units and the 20 million self-identified UMKM households captured in this analysis.

Second, as PKA-KUR pilots deploy, tracking Group B households' transition into Group A across survey waves would provide an empirical measure of whether alternative credit scoring is actually converting the digitally active into the financially included.

Third, expanding the digital activity indicators beyond internet-for-selling and e-banking to include QRIS merchant registration and e-commerce seller IDs, should BPS incorporate these into future survey instruments, would sharpen the definition of PKA-scorability.

Fourth, exploring the potential integration of this diagnostic framework with DTSEN (Data Tunggal Sosial dan Ekonomi Nasional), Indonesia's by-name-by-address population registry, could be a valuable direction for future work. If overlapping indicators between the two data systems prove sufficient, it could enable a transition from sample-based estimation to population-level targeting.

An interactive version of this diagnostic is available at https://the-missing-signal.njalbar.com, allowing users to explore the four-group classification, geographic concentration, and province-level indicators directly.

This framework does not replace any existing system. It provides the diagnostic layer that connects them: showing where the programs should go, which populations they should reach, and whether they are working.

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