

Overcoming Finance Barriers among Libyan SMEs: Developing an Investment-Readiness and Alternative Credit-Assessment Framework

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التغلب على معوقات التمويل لدى الشركات الصغيرة والمتوسطة الليبية: تطوير إطار عمل لتقييم جاهزية الاستثمار والائتمان البديل

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Abstract

Libyan small and medium enterprises face a persistent finance gap. Banks hold large liquidity, yet business lending remains limited. This paper develops an Investment-Readiness and Alternative Credit-Assessment Framework for Libya. The framework addresses weak business records, collateral shortages, uncertain cash flows, and cautious bank practices. The study uses public secondary evidence and transparent pattern matching. Sources include Libyan banking reports, firm studies, and international field evidence. Central Bank data show LYD 193.2 billion in customer deposits during 2025. Total loans and facilities reached only LYD 33.8 billion. Banks also held LYD 89.8 billion in surplus liquidity. Non-performing loans reached 19.3 percent. These figures suggest an allocation problem, not only a funding shortage. The proposed framework separates readiness support from final credit scoring. Readiness covers legality, records, cash flow, market evidence, governance, financing plans, resilience, and data consent. Credit assessment combines traditional information with bank flows, invoices, supplier history, and payment records. A Western Balkans experiment improved investment-readiness scores by 0.3 standard deviations. Average financing effects remained small, but weaker firms gained more. Peruvian evidence shows psychometric tests can support thin-file applicants. Cash-flow studies also show useful predictive value. The paper recommends an explainable scorecard, human review, appeal rights, and fairness testing. A randomized Libyan pilot can test approval, pricing, repayment, investment, jobs, and firm survival.

Keywords: Libya; SMEs; investment readiness; alternative credit assessment; cash-flow lending; psychometric scoring; financial inclusion; Islamic finance.

المخلص

تواجه الشركات الصغيرة والمتوسطة في ليبيا فجوة تمويلية مستمرة. فرغم امتلاك البنوك سيولة كبيرة، إلا أن إقراض الشركات لا يزال محدوداً. تُطوّر هذه الورقة البحثية إطاراً لتقييم جاهزية الاستثمار والائتمان البديل في ليبيا. ويتناول هذا الإطار ضعف سجلات الأعمال، ونقص الضمانات، وعدم استقرار التدفقات النقدية، والممارسات المصرفية الحذرة. وتعتمد الدراسة على أدلة ثانوية متاحة للعموم ومطابقة أنماط شفافة. وتشمل المصادر تقارير مصرفية ليبية، ودراسات للشركات، وأدلة ميدانية دولية. تُظهر بيانات البنك المركزي أن ودائع العملاء بلغت 193.2 مليار دينار ليبي خلال عام 2025، بينما لم تتجاوز قيمة القروض والتسهيلات 33.8 مليار دينار ليبي. كما احتفظت البنوك بفائض سيولة قدره 89.8 مليار دينار ليبي. وبلغت نسبة القروض المتعثرة 19.3%. تشير هذه الأرقام إلى مشكلة في تخصيص الموارد، وليس مجرد نقص في التمويل. يفصل الإطار المقترح بين دعم الجاهزية والتقييم الائتماني النهائي. تشمل الجاهزية الجوانب القانونية، والسجلات، والتدفقات

النقدية، وأدلة السوق، والحوكمة، وخطط التمويل، والمرونة، وموافقة البيانات. يجمع التقييم الائتماني بين المعلومات التقليدية والتدفقات المصرفية، والفواتير، وسجل الموردين، وسجلات الدفع. حسنت تجربة في غرب البلقان مؤشرات جاهزية الاستثمار بمقدار 0.3 انحراف معياري. وظلت تأثيرات التمويل المتوسطة ضئيلة، لكن الشركات الأضعف استقادت أكثر. وتشير الأدلة البيروقية إلى أن الاختبارات النفسية يمكن أن تدعم المتقدمين ذوي الملفات المحدودة. كما تُظهر دراسات التدفق النقدي قيمة تنبؤية مفيدة. وتوصي الورقة البحثية ببطاقة تقييم قابلة للتفسير، ومراجعة بشرية، وحقوق استئناف، واختبارات نزاهة. ويمكن لتجربة ليبية عشوائية اختبار الموافقة، والتسعير، والسداد، والاستثمار، والوظائف، وبقاء الشركات.

الكلمات المفتاحية: ليبيا؛ الشركات الصغيرة والمتوسطة؛ جاهزية الاستثمار؛ التقييم الائتماني البديل؛ إقراض التدفقات النقدية؛ التقييم النفسي؛ الشمول المالي؛ التمويل الإسلامي.

1. Introduction

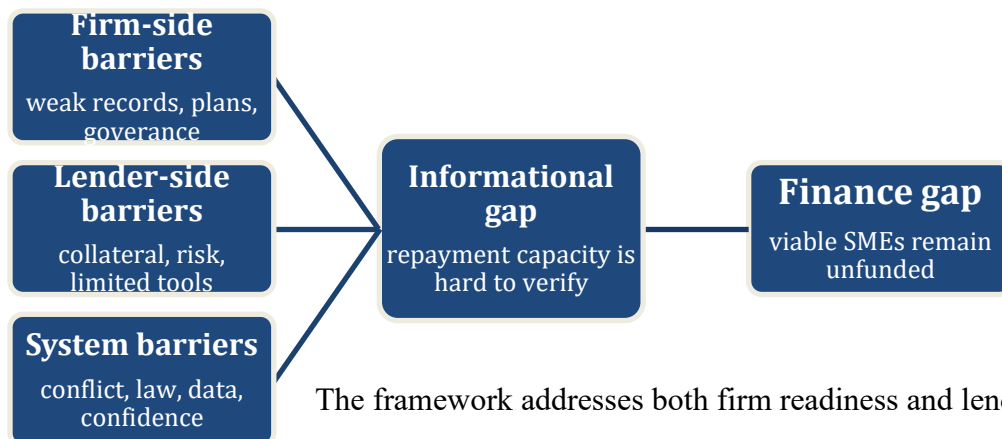
Small firms need finance for stock, equipment, hiring, and recovery. Many Libyan firms cannot obtain suitable external finance. The problem continues despite substantial banking liquidity. This contrast shows that money supply alone cannot explain the gap. Banks must judge uncertain firms with weak records and limited collateral. Firms must present evidence that lenders can verify. Both sides face high costs, weak information, and institutional uncertainty. Libya's conflict history has damaged revenues, assets, and business confidence. It has also weakened lending relationships. The World Bank (2020) identifies demand-side and supply-side barriers. Rahman and Di Maio (2020) describe lower profits and collateral problems. The unfinished transition toward Islamic banking created another constraint. These conditions make standard collateral lending difficult for many SMEs.

1.1 Research problem and contribution

The research problem is an information and preparation failure. Viable firms may appear risky because their business evidence is incomplete. Some applicants also request unsuitable amounts or instruments. Lenders then rely heavily on collateral, relationships, or broad exclusions. This process can reject promising firms and accept poorly matched risks. It can also exclude young, women-led, and regional enterprises.

This paper develops one connected solution with two stages. The first stage measures investment readiness and identifies repairable gaps. The second stage assesses credit with traditional and alternative information. The model keeps final lending judgment separate from business support. This separation protects credit discipline while expanding fair opportunities. The paper also proposes a practical Libyan pilot.

Three questions guide the study. Which barriers prevent Libyan SMEs from presenting credible financing cases? Which alternative data can improve credit assessment without causing unfair harm? How should Libya test the combined framework?



The framework addresses both firm readiness and lender information.

Figure 1 Finance barriers affecting Libyan SMEs.

Table 1 Main finance barriers and their observable signs

Barrier	How it appears	Framework response
Weak records	Incomplete sales, cost, and debt evidence	Readiness review and simple templates
Collateral shortage	Few acceptable fixed assets or titles	Cash flow, invoices, and guarantees
Uncertain cash flow	Volatile sales and supply disruption	Coverage, stability, and stress measures
Limited credit history	Thin or missing bureau files	Consented alternative data
High lender caution	Slow decisions and broad rejection rules	Explainable risk tiers and pilot limits
Institutional weakness	Enforcement, data, and confidence problems	Governance, appeals, and monitoring
Instrument mismatch	Short finance for long investments	Purpose-based Islamic product matching

2. Libya's SME Finance Context

2.1 A long-standing access gap

Access to finance has remained a leading business constraint in Libya. Sixty percent of surveyed firms reported a serious constraint during 2011. The situation became harder after renewed conflict (World Bank, 2015). Earlier survey evidence showed sharp differences by firm size. No surveyed micro firms reported a loan or credit line. The comparable SME share was about one percent. Large firms reached thirteen percent (World Bank, 2019).

The figures are old, so they do not describe today's exact access rate. They remain useful for the structural pattern. Smaller firms lacked both formal finance and strong bargaining power. OECD (2016) linked this gap with institutions, finance skills, and legal weaknesses. The 2025 OECD dialogue report still identifies MSME credit as a major barrier.

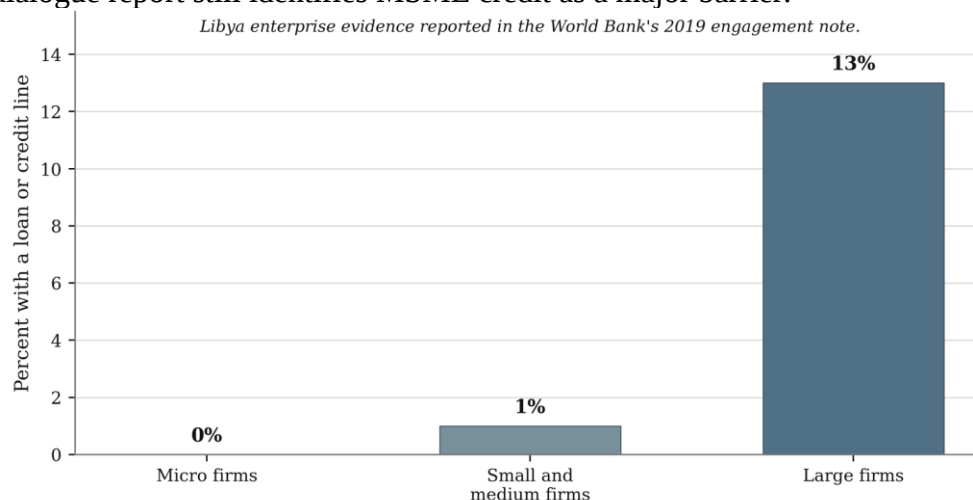


Figure 2 Earlier formal credit access by Libyan firm size.

2.2 Liquidity without strong intermediation

Current banking data show a different but related problem. Customer deposits reached LYD 193.2 billion during 2025. Total loans and facilities reached LYD 33.8 billion. Banks held LYD 89.8 billion in surplus liquidity. The Central Bank of Libya linked these surpluses with limited investment opportunities and insufficient guarantees (Central Bank of Libya, 2026).

Loans represented 13.7 percent of total bank assets. They represented 17.5 percent of deposit liabilities. The bank system therefore holds funds that do not become proportional productive finance. This pattern reflects risk, information, and institutional problems. It does not prove that every rejected SME deserves credit. It shows why better screening has economic value.

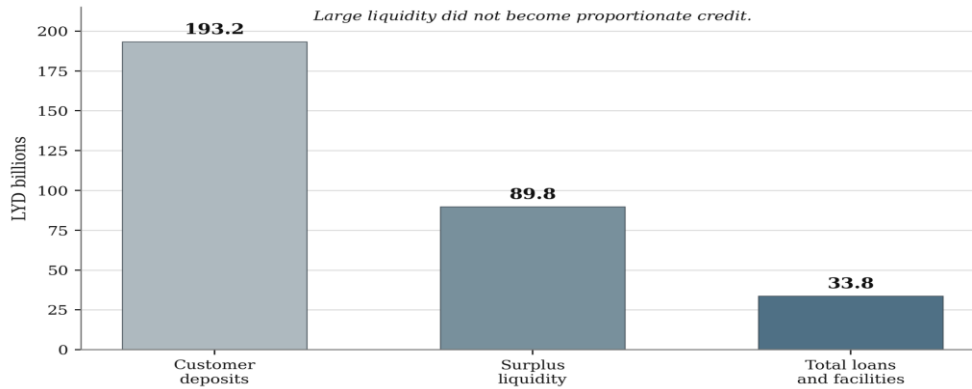


Figure 3 Selected Libyan banking indicators for 2025. Source: Central Bank of Libya's annual banking report

2.3 Credit growth and portfolio structure

Private-sector loans increased from LYD 13.2 billion during 2021. They reached LYD 26.8 billion during 2025. The increase is meaningful, but the final annual growth was only 5.6 percent. Total credit grew by 2.9 percent. These rates remained far below deposit growth during 2025 (Central Bank of Libya, 2026).

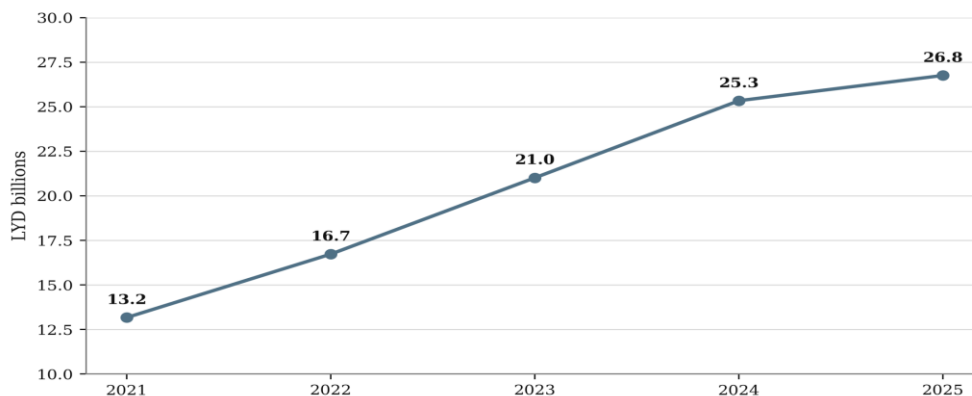


Figure 4 Loans advanced to Libya's private sector, 2021–2025.

The credit mix also matters. Individual Murabaha and social advances reached LYD 17.1 billion. Other loans reached LYD 12.8 billion. Advances and overdrafts reached LYD 3.9 billion. The CBL states that many other loans use corporate Murabaha forms. However, published totals do not isolate SMEs. A national SME credit dashboard is therefore necessary.

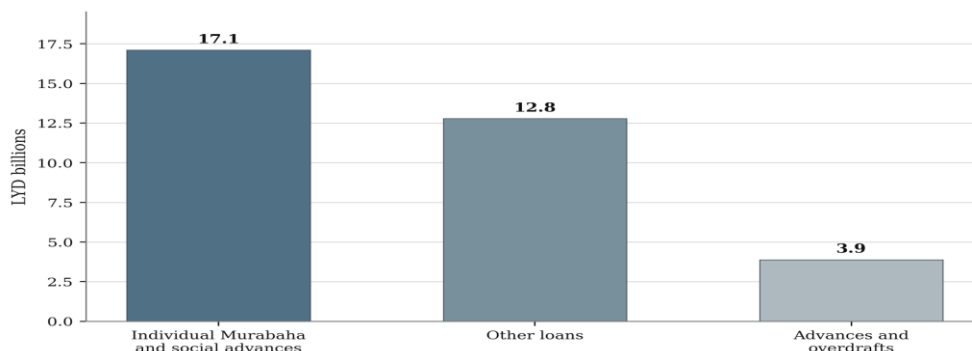


Figure 5 Composition of loans and credit facilities in Libya, 2025.

2.4 Risk and institutional conditions

Non-performing loans reached 19.3 percent of total loans during 2025. This ratio supports legitimate lender caution. However, caution based only on fixed collateral can create avoidable exclusion. Better information can separate viable thin-file firms from weak cases. The IMF (2025) also notes banking fragilities and limited private intermediation.

Libya's 2013 interest prohibition changed the legal setting for finance. Banks still need deeper Islamic products and better risk tools. Murabaha can finance identifiable purchases, but it may not suit every working-capital need. Leasing, guarantees, factoring, and partnership finance can widen options. Each product still needs sound underwriting and enforceable contracts.

3. Literature Review

3.1 SME finance and information gaps

Small firms often face greater financing obstacles than large firms. Information is less standardized, and financial statements are often weaker. Beck and Demirgüç-Kunt (2006) connect finance barriers with firm growth constraints. Berger and Udell (2006) stress different lending technologies. These technologies include relationship lending, asset-based lending, leasing, and credit scoring. No single technology serves every SME.

Standard corporate models may perform poorly for smaller enterprises. SME defaults follow different balance-sheet and management patterns. Altman and Sabato (2007) show that SME-specific models can improve risk classification. Yet numerical scores need reliable inputs. This requirement creates the link between investment readiness and credit assessment.

3.2 Investment readiness

Investment readiness describes a firm's ability to present a credible financing case. It includes financial evidence, strategy, governance, and investor communication. It also requires a suitable funding request and clear use of funds. A polished pitch alone is insufficient. The firm must show how finance can create returns and support repayment.

Cusolito et al. (2021) provide important causal evidence. Their program covered financial planning, markets, pitching, and equity acceptance. Readiness improved, but average funding effects were small and statistically uncertain. Smaller and less fundable firms gained more. The lesson is careful targeting, not universal intensive training.

3.3 Business practices and simple support

Readiness depends on daily management, not only application documents. McKenzie and Woodruff (2017) studied firms across seven developing economies. Marketing, stock control, recordkeeping, and financial planning predicted better performance. These practices also create information that lenders can use. A readiness program should therefore improve business routines before improving presentation.

Complex accounting classes may fail weaker owners. Drexler et al. (2014) tested simpler financial rules in the Dominican Republic. Rule-based training improved practices, reporting quality, and revenues. Effects were stronger among less skilled owners. This result supports simple Libyan tools, Arabic examples, and repeated coaching.

3.4 Alternative credit information

Alternative credit assessment uses information beyond standard collateral and bureau files. Useful sources can include bank flows, invoices, and payment receipts. Supplier histories can also reveal regular payment behavior. Each source measures a different part of repayment capacity. Combining sources can reduce dependence on one imperfect signal.

Arráiz et al. (2017) studied psychometric screening for Peruvian entrepreneurs. The tool supported some unbanked applicants without increasing portfolio risk. It worked best as a secondary screen, not a universal replacement. Berg et al. (2020) found useful information in digital footprints. Björkegren and Grissen (2020) also predicted repayment from mobile behavior.

These methods create serious rights concerns. Phone behavior can reflect income, gender, geography, language, or social conditions. Applicants may not understand how such data affect decisions. Libya should prioritize business cash flows and invoices. Psychometrics should remain optional and low-weight. Intrusive phone data should not become the default.

Table 2 Evidence base for the proposed framework

Source	Evidence design	Lesson for Libya
World Bank (2020)	Libya financial review	Finance barriers arise on both market sides.
Cusolito et al. (2021)	Five-country randomized trial	Readiness can improve before funding changes.
Drexler et al. (2014)	Dominican randomized trial	Simple rules can improve weaker firms.
Arráiz et al. (2017)	Peruvian bank pilot	Psychometrics can support thin files.
Berg et al. (2020)	German digital-footprint study	Alternative signals can complement bureau data.
FinRegLab et al. (2025)	Two-lender empirical study	Cash-flow variables add predictive information.
McKenzie & Woodruff (2017)	Seven-economy firm evidence	Business practices predict performance.

4. Framework Development

4.1 Investment-readiness scorecard

The readiness stage should diagnose preparation before a credit decision. It should not predict default or approve a loan. Eight dimensions cover the evidence needed by most lenders. Scores use observable documents and short verified interviews. Low scores produce a repair plan, not an automatic rejection.

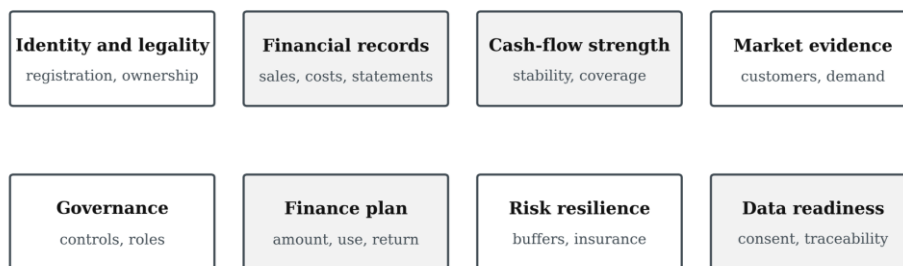


Figure 6 Proposed investment-readiness scorecard.

Table 3 Investment-readiness dimensions and weights

Dimension	Points	Required evidence
Identity and legality	10	Registration, ownership, licenses, tax identity
Financial records	20	Sales, costs, debts, and reconciled statements
Cash-flow strength	20	Coverage, stability, seasonality, and buffers
Market evidence	10	Customers, contracts, orders, and competition
Governance	10	Roles, approvals, controls, and related parties
Financing plan	10	Amount, purpose, timing, and expected return
Risk resilience	10	Supplier, currency, power, and conflict plans
Data readiness	10	Consent, traceability, correction, and retention

The proposed total ranges from zero to one hundred. A score below forty signals major preparation gaps. Scores from forty to sixty-nine require targeted repair. Scores above sixty-nine allow full credit assessment. These thresholds are starting rules only. Pilot evidence must test their usefulness and fairness.

4.2 Alternative credit assessment

The credit stage estimates repayment risk after basic readiness. Traditional information remains valuable when it is reliable. The model adds business account flows, invoice quality, customer concentration, and supplier behavior. It also examines sector and geographic shocks. Every variable must have a clear financial meaning.

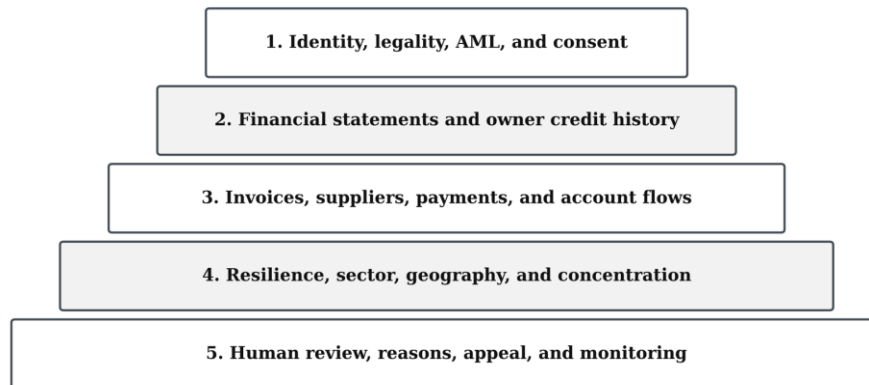


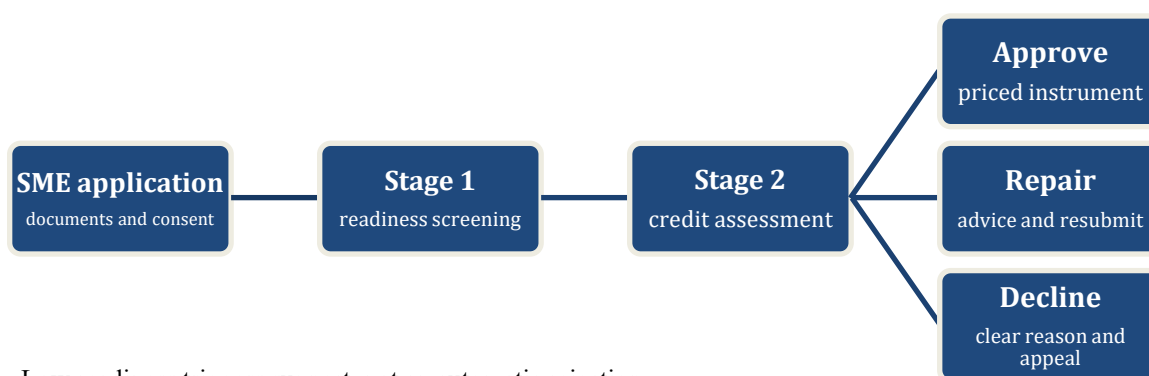
Figure 7 Data layers for alternative SME credit assessment.

Table 4 Alternative data benefits and safeguards

Data source	Possible value	Required safeguard
Bank transactions	Cash flow, volatility, and coverage	Consent, account scope, and correction
Invoices and receipts	Sales evidence and customer quality	Authenticity checks and tax clarity
Supplier payments	Trade behavior and business continuity	Dispute process and verified identity
Payment records	Frequency, seasonality, and digital share	No forced provider lock-in
Utility history	Operating continuity and payment regularity	Low weight and hardship review
Psychometrics	Secondary signal for thin files	Optional use and cultural validation
Phone behavior	Possible repayment signal	Avoid default use; strict necessity test

4.3 Decision workflow and product fit

The workflow separates support from risk judgment. Stage one reviews readiness and offers a repair route. Stage two estimates credit risk with approved information. The lender can approve, request repair, or decline. Every outcome must provide a simple reason. Applicants should have a correction and appeal path.



Low readiness triggers support, not an automatic rejection

Figure 8 Two-stage finance decision workflow.

Approval should lead to an instrument that matches the financing purpose. Murabaha can support inventory or equipment purchases. Ijarah can support productive assets without immediate ownership. Guarantees can reduce collateral pressure. Factoring can finance verified receivables. Partnership finance suits selected growth firms, but requires stronger governance.

4.4 Hypotheses

Table 5 Hypotheses for the public-evidence test

ID	Hypothesis	Expected evidence
H1	Weak readiness contributes to SME finance rejection.	Records, plans, and governance matter
H2	Targeted support improves investment readiness.	Readiness scores or practices improve
H3	Alternative data improves thin-file assessment.	Better prediction or wider safe approval
H4	Cash-flow data should receive the strongest alternative weight.	Direct link with repayment capacity
H5	Human review and explanations reduce model harm.	Errors, disputes, and unfair gaps fall
H6	Matched instruments improve finance usefulness.	Better investment, repayment, and survival

5. Methodology

5.1 Research design

The study uses a structured secondary-evidence design. It combines descriptive Libyan data with mechanism testing from public research. This design fits Libya's limited linked SME finance data. It avoids invented observations or false regression results. The framework is assessed through theory-pattern matching.

Four evidence streams were used. Official reports describe Libya's banking scale, liquidity, credit, and risk. Libya studies identify business and institutional barriers. Randomized studies test readiness and training mechanisms. Alternative-data studies examine screening value and limits.

5.2 Source selection and coding

Sources required clear methods, public access, and direct relevance. Official and peer-reviewed evidence received priority. The review covered evidence available through August 2026. It was structured, but it was not a full systematic review. Foreign effect sizes were not transferred into Libya forecasts.

Each hypothesis received an evidence-congruence score. Zero means no direct support. One means partial or mixed support. Two means strong and repeated support. Libya evidence received greater weight for local barriers. Randomized evidence received greater weight for support interventions.

Table 6 Public evidence used in the practical test

Evidence	Design	Main outcome	Transfer limit
CBL (2026)	Administrative banking data	Credit, liquidity, NPLs	No SME loan breakdown
World Bank (2015)	Libya firm survey	Finance access and constraints	Older conflict period
Cusolito et al. (2021)	Randomized readiness program	Readiness and funding	Innovative Balkan firms
Drexler et al. (2014)	Randomized training	Practices and revenues	Dominican micro firms
Arráiz et al. (2017)	Bank screening pilot	Risk and access	Peruvian applicants
Berg et al. (2020)	Digital-footprint analysis	Default prediction	German consumers
FinRegLab et al. (2025)	Two-lender analysis	Prediction and inclusion	United States lenders

5.3 Validity, ethics, and limitations

Triangulation improves construct validity because different sources test different framework parts. External validity remains limited. A result from Peru or Europe cannot prove the same effect in Libya. Published banking totals also do not isolate SMEs. The final scores reflect informed judgment, not statistical estimation.

The study used no private records. A future pilot must use informed consent and minimum necessary data. It must test unequal errors across gender, age, location, and firm size. Independent review should examine complaints and model changes. No fully automated rejection should be allowed during the pilot.

6. Public Experiments and Practical Evidence

6.1 Western Balkans investment-readiness experiment

Cusolito et al. (2021) randomized 346 innovative firms across five Western Balkan economies. Half received an intensive readiness program. The control group received a cheaper online course. The intensive program covered planning, markets, pitching, mentoring, and equity readiness. Independent judges later scored each firm.

The program increased readiness scores by 0.3 standard deviations. Two-year average financing effects were positive but statistically insignificant. Smaller firms and firms with weaker funding prospects gained more. This result supports targeted support before universal subsidies. It also warns against treating a better score as guaranteed finance.

6.2 Dominican financial-practice experiment

Drexler et al. (2014) compared standard accounting training with simple financial rules. The study worked through a Dominican bank. The rule-based program improved financial practices, reporting quality, and revenues. Less skilled owners gained more from the simpler approach. The Libya framework therefore uses short templates and practical routines.

6.3 Peruvian psychometric screening

Arráiz et al. (2017) examined a psychometric tool used by a Peruvian bank. The tool assessed applicants with limited traditional information. It helped screen risk among banked entrepreneurs. It also supported some unbanked applicants rejected by traditional scoring. Portfolio risk did not increase for that thin-file group.

The tool did not outperform strong negative bureau information. This boundary is important. Psychometrics should complement verified credit history. It should not override clear repayment problems. Cultural validation is also necessary before any Libyan use.

6.4 Digital footprints and mobile behavior

Berg et al. (2020) studied about 250,000 online purchases from a German company. Simple digital footprints matched much bureau-score information. They also complemented bureau data and improved credit allocation. Björkegren and Grissen (2020) found predictive patterns in mobile behavior. Their data came from a South American telecom setting.

Prediction does not establish fairness or social acceptability. Digital traces can embed hidden proxies for protected conditions. They can also change when users understand the scoring process. The proposed Libyan model therefore ranks business cash flows above behavioral traces. High-risk data require a strict necessity test.

6.5 Cash-flow underwriting

FinRegLab and its research partners studied cash-flow data from two small-business lenders. Recent bank statements provided business inflow and outflow variables. These variables added predictive value beyond owner credit scores. Gains were important for early-stage and

financially constrained businesses. The study supports careful cash-flow pilots for thin-file firms.

Cash-flow data are still incomplete. A cash business may show weak account activity despite real sales. A temporary shock may also distort recent statements. Lenders should examine seasonality, account coverage, and business explanations. Human review remains necessary for unusual patterns.

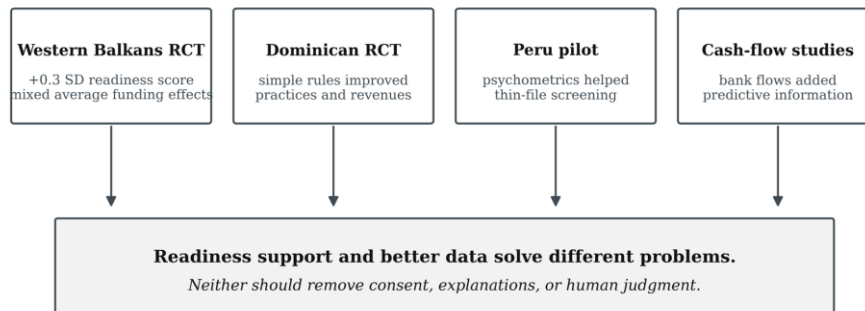


Figure 9 Main lessons from the public evidence.

6.6 Shared lesson

The studies test different problems. Readiness programs improve how firms prepare and present evidence. Alternative data improve how lenders interpret evidence. Simple training can improve the underlying records. These functions should work together, but they should remain institutionally separate. A training provider should not guarantee approval.

7. Results

7.1 Framework fit with Libya's barriers

The first result concerns local fit. Libya's finance gap includes liquidity, risk, information, and product problems. The readiness stage directly addresses weak records, plans, and governance. The credit stage addresses thin files and collateral dependence. The product stage addresses Islamic finance and purpose mismatch. H1 therefore receives strong support.

7.2 Readiness and training mechanisms

The Western Balkans experiment shows that intensive support can improve readiness. Its average funding effect remained uncertain. The Dominican trial shows that simple routines can improve weaker businesses. Together, these findings support targeted and practical support. H2 receives strong support with an important funding limit.

7.3 Alternative assessment mechanisms

Psychometric, digital-footprint, mobile, and cash-flow studies show predictive value. However, their transparency and relevance differ. Cash-flow information has the clearest business meaning for SME repayment. Invoices and supplier histories provide useful supporting evidence. H3 and H4 receive strong support.

Evidence for H5 is mainly normative and operational. Public studies do not fully test Libyan appeals or fairness controls. H5 receives partial support. Evidence for instrument matching is economically strong, but direct Libya testing remains absent. H6 also receives partial support.

Table 7 Public-evidence assessment of the six hypotheses

Hypothesis	Score	Result	Reason
H1: Readiness affects rejection	1.8	Strong	Libya barriers and business-practice evidence
H2: Support improves readiness	1.8	Strong	Randomized readiness and training results
H3: Alternative data helps	1.7	Strong	Repeated screening evidence
H4: Cash flow gets priority	1.8	Strong	Direct repayment-capacity meaning
H5: Safeguards reduce harm	1.2	Partial	Strong logic, limited field tests
H6: Product fit improves value	1.3	Partial	Clear theory, no Libya estimate

7.4 Overall framework judgment

The evidence supports the framework's two-stage structure. Readiness support can improve the quality of business information. Alternative assessment can then interpret that information more fairly. The model should prioritize verifiable business data. Sensitive behavioral data should remain secondary or excluded.

8. Discussion

8.1 Why the lending gap persists

Libya's finance problem is not a simple shortage of bank money. Banks already report large liquidity surpluses. They also report high non-performing loans and weak investment conditions. Lenders therefore see limited safe opportunities. SMEs experience the same system as collateral demands, delays, and rejection.

A better assessment system can narrow this gap, but it cannot remove every risk. Political instability, contract enforcement, and currency access still matter. The framework should therefore start with small limits and close monitoring. A credit guarantee can share risk during controlled pilots. It should not replace lender screening.

8.2 Why readiness and scoring must remain separate

Combining support and approval can create conflicts. Applicants may believe that paid training guarantees finance. Trainers may also coach firms toward superficial score changes. Separate teams reduce these risks. The readiness report should identify evidence gaps without predicting approval.

8.3 Product matching and Islamic finance

Alternative scoring is useful only when the final product matches business needs. Inventory needs differ from equipment purchases. A short Murabaha arrangement may suit stock, while Ijarah may suit machinery. Receivable finance can support completed sales. Partnership finance needs stronger governance and investor rights.

The readiness score should therefore include financing purpose and timing. It should also record expected cash generation. Banks can then compare product obligations with business cash cycles. This practice improves both client value and repayment quality.

8.4 Data governance and fairness

Alternative data can widen access, but it can also hide discrimination. A variable may appear neutral while reflecting location or social status. The pilot should compare approval and error rates across major groups. It should also test outcomes after approval. Equal approvals with unequal defaults are not sustainable inclusion.

Applicants need clear consent and understandable reasons. They must be able to correct wrong invoices or account links. Data retention should follow a defined period. Providers should record every model version and decision override. These controls support trust and regulatory learning.

9. Policy and Managerial Implications

9.1 A practical Libya pilot

Libya should test the framework before national adoption. An illustrative pilot could recruit 300 eligible SMEs. Firms should be blocked by city, sector, size, and owner gender. Final sample size needs formal power analysis. Recruitment should include Tripoli, Benghazi, Misrata, Sabha, and smaller commercial centers.

Group A would use the standard application process. Group B would receive readiness diagnosis and simple support. Group C would receive support plus consent-based alternative assessment. The same lender policy window should apply across groups. Independent staff should measure outcomes for twelve months.

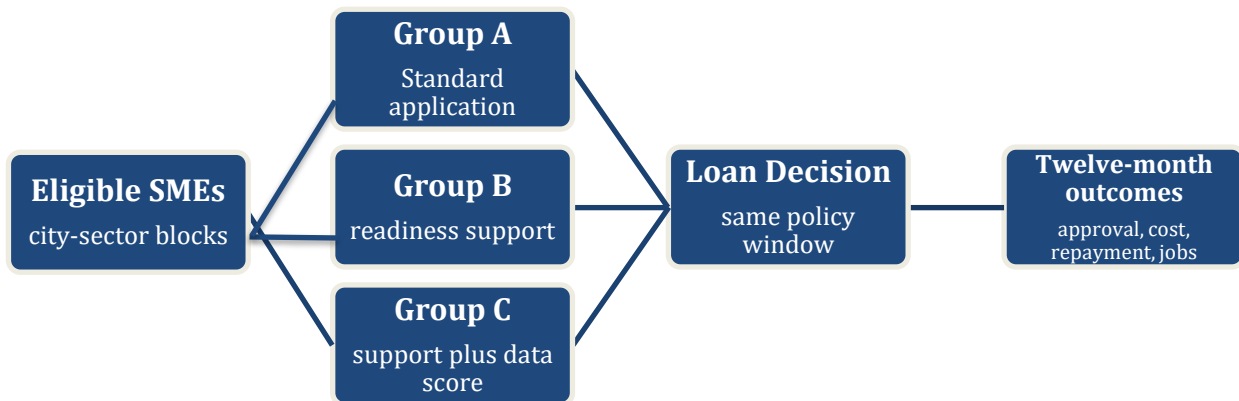


Figure 10 Proposed randomized Libya pilot.

Primary outcomes should include approval, loan size, pricing, processing time, and repayment. Business outcomes should include investment, sales, jobs, and survival. Fairness outcomes should include group approval gaps, false declines, complaints, and successful appeals. Cost data should measure staff time and technology. The pilot should publish a pre-analysis plan.

9.2 Actions for regulators and lenders

The Central Bank should define an SME reporting standard. Banks should report applications, approvals, limits, sectors, regions, and repayment. The data should separate micro, small, medium, and large firms. A credit-guarantee pilot should target documented market failures. Guarantee coverage should remain partial.

Lenders should publish minimum application documents and decision times. They should offer secure statement imports and Arabic readiness templates. Risk teams should validate cash-flow variables on local data. Compliance teams should review consent, AML, and privacy controls. Senior committees should monitor overrides and group outcomes.

9.3 Actions for SMEs and support providers

SMEs should separate business and household transactions. They should record daily sales, costs, debts, and owner withdrawals. Monthly reconciliation should compare records with bank and payment statements. Firms should document major customers, suppliers, and contracts. They should also explain seasonal and conflict-related disruptions.

Support providers should use short sector examples. A retailer needs stock and margin tools. A contractor needs invoice and receivable tools. A manufacturer needs equipment, capacity, and supplier evidence. Programs should measure improved records, not attendance alone. Providers must never promise loan approval.

10. Conclusion

Libyan SMEs face a serious finance barrier. The barrier remains despite high deposits and large banking liquidity. Weak records, collateral shortages, risk, and institutional uncertainty shape this outcome. Standard lending methods cannot solve every part. However, careless alternative scoring could create new problems.

The proposed framework joins two necessary responses. Investment readiness improves the firm's evidence and financing plan. Alternative credit assessment improves the lender's interpretation of repayment capacity. Cash-flow and invoice data should receive priority. Psychometrics should remain optional, while intrusive behavioral data require strict limits.

The public evidence supports a cautious pilot. Readiness programs can improve preparation, but finance does not follow automatically. Alternative information can support thin-file applicants, but fairness and explainability remain essential. Libya should test outcomes before national scaling. A transparent pilot can convert policy interest into reliable local evidence.

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