Gender-disaggregated data (GDD) analysis of cash-in cash-out (CICO) agent networks

Technical guide

MSC
MicroSave Consulting

www.microsave.net

Note for the reader

This technical guide provides practical guidance for analyzing gender-disaggregated data (GDD) in cash-in cash-out (CICO) agent network. The guide aims to help financial service providers use existing operational data to better understand gender dynamic within their agent network and advise management and strategic decisions-making.

In Indonesian context, financial service providers include bank, fintech companies, and other institutions that operate agent networks. The guide is intended for institutions of different sizes and will be particularly relevant for data analytics teams, research units, and agent network management teams responsible for monitoring and improving agent performance.

The guidance presented in this note draws on MSC's experience supporting gender-disaggregated data analysis for both financial and non-financial institutions in Indonesia with large agent networks. These engagements helped providers uncover patterns in agent participation and performance that are often overlooked in traditional reporting systems.

The guide is structured in three stages: defining objectives and identifying data sources, conducting gender-disaggregated analysis, and translating findings into operational and strategic actions.

Authors

Rhifa Ayudhia

Manager at MSC's Southeast Asia Office

Jilan Zahra Jauhara

Assistant Manager at MSC's Southeast Asia Office

M. Singgih Pangestu

Manager at MSC's Southeast Asia Office

Mitali

Manager at MSC's India Office

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Finally, we hope this technical note provides useful insights to inform the collection and use of gender-disaggregated data across financial service providers.

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Introduction

What is gender-disaggregated data (GDD) analysis?

Gender-disaggregated data (GDD) analysis is an essential approach for financial service providers (FSPs) to uncover structural, behavioral, and contextual factors shaping women participation and performance. Many FSPs already collect sex-disaggregated information in their operational systems, such as data on account ownership and transaction volumes, typically based on national identification records. In most countries, this involves a binary classification of male or female based on sex at birth. Despite its availability, this data is often underused and rarely analyzed beyond basic reporting.

This existing sex-disaggregated data provides a critical foundation for more advanced GDD analysis. GDD involves the systematic collection, analysis, and use of data disaggregated by sex and gender across segments of the financial ecosystem—including customers, business owners, and staff—and combined with other relevant factors such as location, age, education, marital status, and business profile. Moreover, to fully interpret observed patterns, FSPs must complement numerical data analysis with qualitative insights that capture lived experiences, social norms, and structural barriers shaping women experience in the financial ecosystem. By incorporating this intersectional perspective, GDD enables FSPs to develop a more nuanced understanding of women's contexts, behaviors, and constraints, and to translate routine operational data into more effective and inclusive decision-making.

Why GDD analysis is essential for CICO agent networks?

Cash-in cash-out (CICO) agents are the backbone of financial inclusion, enabling financial services to reach underserved and last-mile communities. In Indonesia, there were more than 2 million registered agents nationwide in 2025 and women make up around 55% of the overall agent network. However, many female agents struggle to sustain strong business performance. Without gender-disaggregated data (GDD), such patterns often remain invisible, limiting financial service providers' (FSPs') ability to understand the drivers behind these gaps. MSC studies suggest that female agents play a critical role in expanding access to formal financial services for female customers, particularly in contexts shaped by restrictive gender and social norms. This makes it critical for FSPs to better understand the realities and constraints surrounding female agents.

Despite this importance, many institutions are not yet equipped to systematically analyze gender dynamics within their agent networks. In most cases, current data systems present several common gaps:

Gender disaggregated data availability

Gender information is captured inconsistently or limited to basic records, and in some cases not recorded at all.

1

Overlooking important insights

Reporting rarely goes beyond aggregate figures, leaving gender-specific performance trends invisible.

2

Limited data triangulation

Limited effort is made to link quantitative data with field realities, missing the social or structural factors behind the numbers

3

As a result, gender gaps within agent networks remain underdiagnosed. Without granular insights into female agents' business realities and support needs, FSPs struggle to build a strong case for targeted investment. This limits opportunities to design tailored incentives, products, and capacity-building programs that could strengthen female agents' productivity and overall network performance.

Benefits for providers

When applied systematically, GDD moves institutions beyond anecdotal understanding toward structured, evidence-based action. It enables providers to look beyond women's inclusion as a compliance requirement and recognize it as a strategic lever for network growth, efficiency, and market expansion.

Through GDD, FSPs can identify underperforming agent or customer segments, uncover hidden drivers of profitability, and design targeted support mechanisms. These insights inform key agent network decisions—such as recruitment, placement, liquidity allocation, and performance management—allowing providers to strengthen support for female agents, improve targeting in underserved areas, and deliver more responsive services.

As institutions integrate gender insights into operations, broader ecosystem effects can emerge. Stronger network performance and greater participation of women can influence peer institutions and inform more gender-responsive policies and market practices.

Ultimately, these changes expand service reach, increase women's use of financial services, and strengthen trust in formal finance. By linking data to operational decisions, GDD becomes a practical tool for improving both network performance and women's financial inclusion.

Theory of change

This Theory of Change outlines how integrating gender-responsive practices into agent network management can strengthen financial service delivery and expand women's participation in agent networks. The approach begins with generating gender-disaggregated insights on agent performance, followed by embedding gender-responsive practices across recruitment, support, liquidity management, and product promotion. These efforts are reinforced by institutionalizing gender-related indicators within monitoring and decision-making systems. Together, these strategic levers enable financial service providers to improve agent recruitment, retention, and productivity—particularly among female agents—while strengthening operational decision-making and expanding financial service delivery in underserved areas. Over time, demonstrating the business value of supporting female agents can encourage broader adoption of gender-responsive practices across the ecosystem, contributing to a more inclusive financial system where women and men can equally access, deliver, and benefit from financial services.

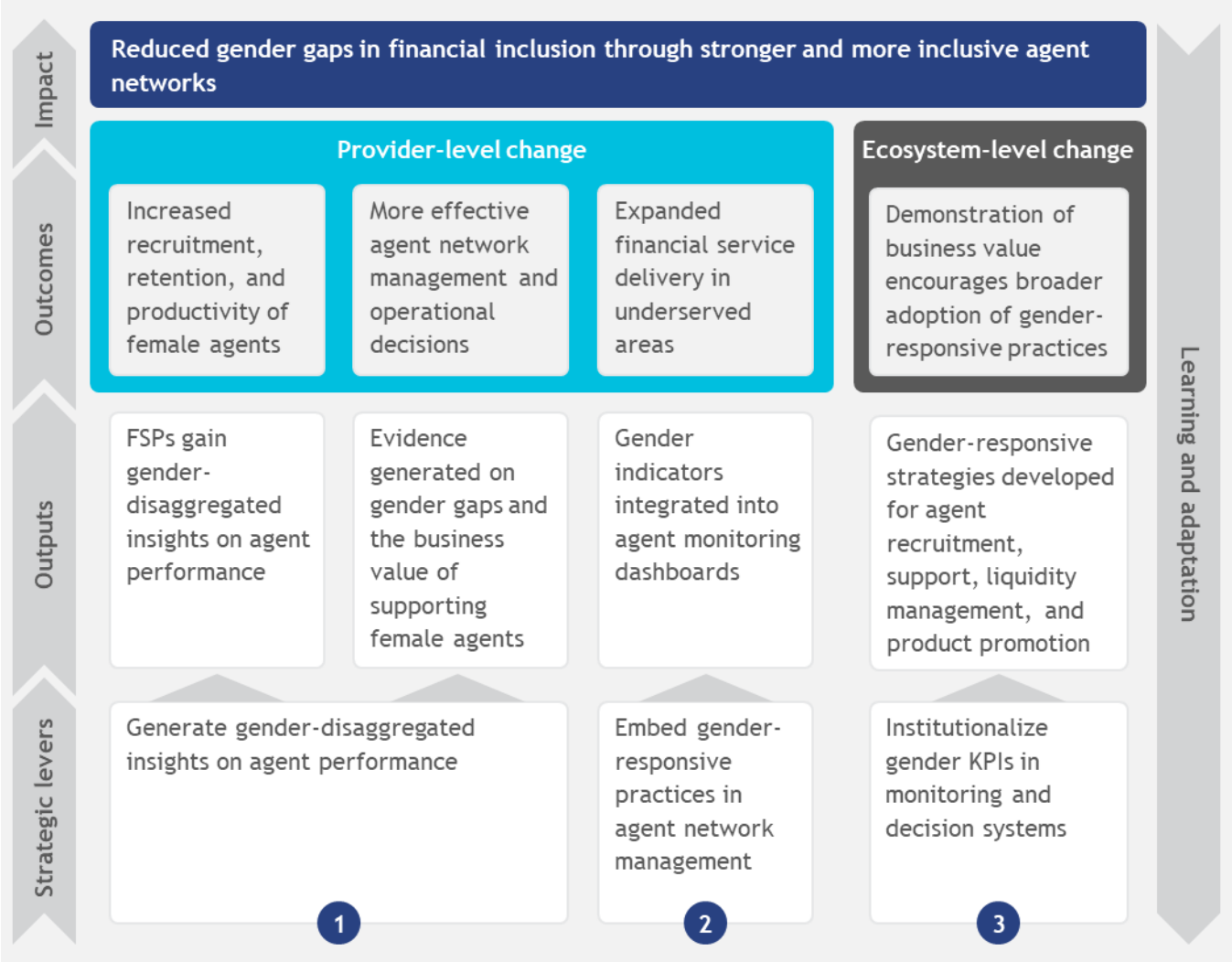


Figure 1: Theory of change

Structured approach to GDD analysis

This guideline outlines a structured approach to conducting gender-disaggregated data (GDD) analysis in agent networks. The process is organized into three broad stages: defining the analytical approach, conducting the GDD analysis, and translating insights into implementation. Within each stage, a series of key steps guide financial service providers in identifying relevant data sources, analyzing gender-disaggregated trends, validating insights, and integrating findings into operational and strategic decision-making. Together, these stages support institutions in systematically using gender-disaggregated data to strengthen agent network performance and advance more inclusive financial service delivery.

Stage 1: Define objectives and approach for data analysis

- **Step 1**: Determine the objectives
- **Step 2**: Map and assess data sources
- **Step 3**: Define the hypothesis
- **Step 4**: Design research methodology

Stage 2: Conduct GDD analysis

- **Step 5**: Preparation and data cleaning
- **Step 6**: Analyze gender-disaggregated trends
- **Step 7**: Interpret preliminary findings
- **Step 8**: Validate with field insights
- **Step 9**: Share findings internally

Stage 3: Implement findings

- **Step 10**: Integrate GDD in business strategy
- **Step 11**: Assign roles to sustain GDD practices

Figure 2: A step-by-step guide for FSPs to conduct GDD analysis

Stage 1: Define the objectives, overall approach, and identify data

Step 1: Determine the objectives

As with any research, the first step to conduct gender-disaggregated data (GDD) analysis is to clarify why the financial service provider (FSP) is undertaking this exercise and what questions it seeks to answer. This step is critical as it defines the core research question and sets the direction for the analysis. The objective should specify what decision or problem the analysis will address. Examples of good objectives include:

- Assess whether gender influences agent activity levels, transaction volumes, and overall profitability
- Understand if gender influences agent retention and attrition patterns
- Examine whether female agents serve different customer segments, particularly female customers, compared to male agents
- Analyze whether operational and liquidity constraints differ between male and female agents
- Test if female-led agency businesses contribute differently to loan referrals compared to male-led businesses

Effective GDD requires a balanced analytical scope. Analysis based on a single gender-disaggregated indicator provides only a partial view, while an overly expansive analysis can dilute strategic insights. GDD should combine multiple data points to uncover meaningful patterns (see Annex 1 for indicators commonly used in GDD analysis for agent networks). For example, FSPs may compare the performance of female and male agents and assess whether emerging trends signal opportunities to strengthen business strategy. This may involve examining transaction volumes or values alongside variables such as geography, age, or business ownership. A clearly defined scope keeps the analysis focused and structured. It helps generate insights that are measurable and relevant, while preventing the exercise from becoming overly broad.

Step 2: Map and assess data sources

Once objectives are defined, the FSP must map existing data systems and identify what sex-disaggregated information is already available and whether it is fit for the purpose. This begins with a quick scan of current databases to check whether the system records a gender marker, how consistently it captures this marker, and if it includes additional variables, such as performance, tenure, or outlet type.

For most providers, this process starts with their internal systems, such as Management Information System (MIS), Customer Relationship Management (CRM), Human Resource (HR) records, and transaction logs. The goal is to check whether gender information is captured consistently, for instance, whether gender is a mandatory field during agent or customer onboarding. Providers should also verify if the systems can link gender to performance indicators, such as transaction volumes and commissions, and whether it is complete enough to support analysis.

At this stage, providers may discover gaps, such as gender being recorded only at onboarding, transactions not directly tagged by gender, or information scattered across multiple systems. The provider can systematically map and review these internal system sources to avoid false starts and set realistic expectations about what can be analyzed. The output of this step is a shortlist of usable data sources and a plan for filling gaps, which may include targeted surveys, qualitative interviews, or field observation.

Key considerations at this stage may include

- **Data sources:** Do existing systems already collect the required data, or do teams need to establish new systems and processes?
- **Data availability:** Do teams store data consistently in a single consolidated system, or do multiple systems hold the data and require alignment?
- **Data period:** How far back do records extend? Do teams have sufficient historical data to analyze trends over time or conduct cohort analysis?
- **Data variety:** What product-level data are available? Can teams link these data to customer information or other aspects of the agent ecosystem?
- **Intersectional coverage**[1]: Can teams analyze the data across key dimensions such as gender by geography, tenure, education, marital status, and product access to identify overlapping constraints, address systemic biases, and generate more targeted insights?

[1] Intersectional analysis recognizes that gender gaps often interact with other characteristics. Incorporating these multiple dimensions helps reveal the lived experiences of different subgroups and improves the relevance and use of data for decision-making, ultimately supporting more responsive policies and interventions in areas such as financial inclusion.

Step 3: Define the hypothesis

With objectives and data sources in place, FSPs should translate their questions into clear, testable hypotheses that guide the analysis. A hypothesis is a structured assumption about a possible relationship or pattern in the data that can be confirmed or disproved. For example, an FSP may hypothesize that "female agents are more likely to serve female clients" or that "male agents are concentrated in higher-volume locations."

Hypotheses should guide the analysis toward key issues and operationally relevant insights, not a tool to prove a predetermined point. Well-defined hypotheses help ensure that analysis remains targeted, relevant, and aligned with operational priorities.

FSPs have multiple ways to structure hypotheses, based on what they seek to learn:

By product or service line

For instance, "female agents perform competitively in cash-in cash-out services but may be less engaged in loan disbursement."

By customer segment

For example, "female agents tend to attract and retain more female customers than male agents."

By geography or market characteristics

For instance, "female agents are more prevalent in peri-urban areas, while male agents dominate rural high-volume outlets."

By lifecycle stage

For example, "female agents have higher dropout rates during the first year of operation than male agents."

A good practice is to adopt a well-rounded scope when defining hypotheses, so that the analysis captures conditions across products, customer segments, geography, and agent lifecycle. This avoids a narrow focus on a single dimension and provides a more comprehensive understanding of gender dynamics.

Case study

MSC conducted a gender-disaggregated data (GDD) analysis of the agent network of a reputable public bank in Indonesia. The exercise applied an **agent lifecycle approach** to frame hypotheses and better understand the experiences of female agents. We categorized the journey of female agents into five distinct stages, where each stage presented specific challenges that women agent encounter:

- **Registration**: At the entry stage, many female agents have limited experience with financial services and low levels of digital literacy.
- **Onboarding**: Female agents often have lower educational backgrounds, which requires more personalized and hands-on training approaches.
- **Initial operation**: Female agents face the double burden of balancing business responsibilities with traditional gender roles and family expectations. Limited starting capital and lower digital literacy further constrain the range of products or services they can offer.
- **Matured operation**: As businesses stabilize, many female agents face constraints in accessing additional funding to expand operations. Limited access to credit—often due to lack of collateral or formal financial history—restricts their ability to scale transaction volumes, invest in liquidity, or grow their businesses. In some cases, lower confidence in taking financial risks may also discourage expansion.
- **Expansion and dormancy**: Fewer women progress to top-performing agent positions, often due to greater risk aversion. They may struggle to sustain operations, which leads to higher dormancy rates among female agents.

Step 4: Design research methodology

The next step is to design the research methodology. This step is essential because it determines how hypotheses will be tested and how reliable the results will be. The methodology should clearly set out the research approach, the subjects and sampling, and the analysis methods.

1. Research approach

For GDD analysis, a mixed methods approach combining quantitative and qualitative approach are usually the most effective. Quantitative research identifies trends and patterns based on gender indicators in the data, while qualitative research explains the social and structural factors behind these numbers to complement these findings. The mixed-methods approach ensures a fuller and more nuanced understanding of gender dynamics in agent networks. For example, quantitative analysis may reveal that female agents show slightly lower performance than male agents, particularly in the early stages of participation in the network. However, these patterns cannot always be fully explained by quantitative data alone. Qualitative research can help uncover underlying factors—for instance, limited household support and domestic responsibilities that constrain many female agents' ability to expand their businesses.

2. Research subjects and sampling

FSPs must identify the population and sampling strategy for the GDD study, based on the hypotheses. Each hypothesis may involve a different group of research subjects, though sometimes they overlap. For example:

	Description	Subject
Hypothesis A	Rural female agents conduct more cash withdrawal transactions than their male counterparts.	Male and female agents in rural areas
Hypothesis B	Urban male agents maintain higher balances than urban female agents.	Male and female agents in urban areas

Since most studies involve multiple hypotheses, FSPs must ensure that the study includes the full set of research subjects across hypotheses.

For quantitative research, FSPs may use population-level data covering all agents in their network or select a representative sample. The choice between full population and sampling depends on the size of the agent network and the analytical capacity of the FSP's systems. For example, if an FSP manages more than 1 million agents but lacks data processing tools to analyze all records at once, a representative sample should be used. In such cases, probability-based sampling methods, such as random sampling, help ensure that the sample reflects the broader population.

For qualitative research, FSPs can select subjects based on the specific questions the study seeks to answer. For example, if quantitative analysis shows that female agents in a particular region consistently outperform male agents, FSPs may choose to conduct interviews or focus groups with those female agents to explore the factors that drive their success.

For example, the quantitative component may use stratified random sampling, with agent tier and gender as stratification variables. This ensures adequate representation of smaller subgroups, such as high-performing female agents. For the qualitative component, the analysis may focus on agents who actively offer loan referral services. This enables deeper examination of agents' motivations, incentives, and operational conditions influencing engagement in loan referrals, including any gender-specific factors shaping participation and performance.

3. Analysis methods

Before selecting appropriate analysis methods, FSPs should consider not only the availability of data and internal technical capacity, but also the readiness of their teams to apply a gender-sensitive and reflective analytical approach. A critical enabling condition for effective GDD analysis is ensuring that staff involved are trained in gender awareness and bias mitigation, and approach the data with curiosity and openness. This helps reduce the risk of reinforcing existing stereotypes and supports more objective interpretation of findings.

Within this enabling environment, analytical approaches can be grouped into three broad levels:

- **Basic**: For FSPs with limited data capacity, a simple start is often the most effective way to gain actionable insights and build experience. Methods include descriptive statistics and trend analysis. Descriptive statistics help summarize the distribution of data, such as measures of central tendency (mean, median, mode), variability (range, variance, standard deviation), and frequency distributions. Trend analysis helps identify changes in key indicators over time, such as transaction volumes by gender across different months.
- **Intermediate**: FSPs with slightly greater internal capacity can apply hypothesis testing and more structured comparisons.
  - Hypothesis testing: Statistical tests, such as t-tests or chi-square tests, are used to confirm or reject assumptions. For instance, whether differences in transaction volumes between male and female agents are statistically significant.
  - Trend analysis with segmentation: This allows comparisons across categories, such as urban versus rural agents or different tenure groups, to highlight more nuanced gender differences.
- **Advanced**: FSPs with more mature data systems and skilled analysts can use inferential statistical methods, such as regression analysis. Regression helps identify the relationship between multiple variables, for example, how gender, location, and tenure together affect agent performance. It can also explain why differences exist and even predict future outcomes, such as which agents are most likely to become top performers or drop out. An example of advanced analysis can be found in a World Bank study that used data from the Foundation for International Community Assistance (FINCA) in the Democratic Republic of the Congo. It applied regression analysis to examine whether an agent's gender influenced customers' decisions to transact.

4. Data governance and ethical use of gender data

Gender-disaggregated data can provide valuable insights, but it often intersects with sensitive personal information. It should therefore be governed and used responsibly, regardless of whether the analysis is conducted internally by the FSP or by an external partner. Gender-disaggregated data may originate from routine operational systems as well as from dedicated research or assessment activities. The governance principles below apply to both contexts.

- **Roles, responsibilities, and data access**

  GDD analysis may involve multiple actors and may draw on gender-disaggregated data generated through routine operational systems as well as specific analytical or research activities. Access to gender-disaggregated datasets should be limited to authorized users and used only for their intended purposes. Where external parties are involved, data-sharing arrangements should clearly define the scope and limits of data use. Non-disclosure agreements (NDAs) should be in place to protect sensitive information from unauthorized disclosure or misuse.

- **Data privacy and confidentiality**

  Gender-disaggregated data becomes particularly sensitive when combined with identifiable variables, such as full name or

precise address. Staff and partners handling gender data should take a careful approach to protect individual agents' privacy, especially in small samples or highly granular analyses that increase the risk of re-identification. Wherever possible, data users should anonymize data and report it in an aggregated form.

- **Ethical data management**

  Gender data should be used only when it serves a clear and legitimate analytical or operational objective, whether through routine data capture processes or dedicated research activities. Staff and partners handling gender data should manage it transparently and respectfully. During interviews, providers should provide informed consent form for the agents concerned. They should ensure that gender data are not used in ways that could disadvantage, stigmatize, or penalize specific groups.

- **Responsible data interpretation and use for inclusive decision-making**

  Analysts should not interpret observed gender differences in indicators should not in isolation, as they often reflect broader structural and contextual constraints. Data collectors should complement GDD analysis with contextual information to avoid reinforcing stereotypes or drawing misleading conclusions. Interventions informed by GDD should be monitored over time to assess their effectiveness and to prevent any unintended consequences.

Important checklist

- Are the objectives for doing GDD analysis clearly defined?
- Is gender data consistently captured and validated?
- Is historical data available for trend analysis?

Stage 2: Conduct GDD analysis

This section outlines the core technical steps required to prepare data for GDD analysis. FSPs with established data management systems may already perform some of these activities as part of their regular processes. In such cases, teams can use this section to review and strengthen current practices and move directly to relevant steps.

Step 5: Preparation and data cleaning

FSPs must prepare and ensure that the data is ready for use before they start the analysis. A critical part of this stage is data cleaning, which determines the quality of the analysis that will follow. The quality of the output depends on the quality of the input. If the data used is inaccurate, incomplete, inconsistent, or biased, the results will be invalid and potentially misleading.

Some of the most fundamental data cleaning tasks include:

1. Merging and appending data

FSPs should carefully review how agent data is stored across systems. In many cases, agent information is scattered across multiple datasets or different databases. These datasets need to be merged or appended to make the data usable for analysis and to bring all relevant information together in one place.

Practical notes:

- **Merge:** Link datasets side-by-side with a common unique identifier, such as agent ID. Use this when datasets contain different information about the same agents, such as profiles and transactions.
- **Append:** Stack datasets on top of each other. Use this when datasets contain the same type of information but cover different groups or time periods, such as profiles from different years. In this case, column names and data types must match.

2. Removing duplicate entries

In a clean dataset, each row should represent one observation, such as one agent. Each column should represent one variable, such as gender, transaction value, and years of operation.

Agent ID	Gender	Total transaction value	Total transaction volume	Years of operation
A60790	Female	50,000	100	4
A45302	Male	12,300	55	1
A98617	Female	90,000	220	6

Examples of an ideal data table structure

The one-row-per-person, one-column-per-variable data structure ensures consistent, easy-to-analyze data. If the data is organized differently, for example, when several people's details are mixed in one row or when one person's details are split across multiple rows, it becomes harder to compare, group, or calculate results. A clear structure makes it possible to see patterns, such as differences in access or outcomes between women and men.

Duplicate entries break this rule by giving the same person two or more rows. This can distort the analysis, for example, by making it appear that more women or men received a loan than actually did, or by double-counting repayment amounts. The removal of duplicates keeps the data accurate and ensures fair gender comparisons.

3. Checking for outliers

Outliers are values that appear unrealistic compared to the rest of the dataset—for example, unusually high transaction volumes, an age recorded as 300, or years of operation exceeding the age of the agent network. These values may reflect rare cases or signal data entry errors.

Outliers can distort averages, obscure gender patterns, and lead to misleading conclusions. Depending on the situation, teams can:

- **Correct:** Update the value if the error is confirmed and the correct data are available.
- **Remove:** Exclude the variable from the analysis for that observation if the value is incorrect and cannot be verified.
- **Keep with explanation:** Retain the value if it cannot be confirmed as incorrect, but document the anomaly and its potential impact (for example, by reporting both mean and median).

4. Checking and treating missing data

Missing data occurs when certain values are not recorded in the dataset. This can happen for several reasons. Data entry errors or incomplete forms are common causes. Agents may also choose not to report certain information. In other cases, records are lost or collected inconsistently across areas or time periods. If ignored, it can bias results. For example, if gender data is missing more often for rural agents, comparisons between rural and urban agents will be misleading. There are several ways to handle missing data:

- **Correct it**: Where possible, retrieve the missing information from other sources or records.
- **Exclude it for specific analyses**: If a single variable is missing, such as transaction volume, use the observation for other valid variables, such as agent gender or years of operation.
- **Impute it**: Estimate the missing value through a reasonable method, such as

replacement with the average or median for similar agents, or through advanced statistical techniques, such as regression imputation.

- **Flag it**: In some cases, keep missing values coded as such and analyze if the pattern of missing data follows a gendered pattern.

  The choice depends on the extent and nature of the missing data. The key principle is to be transparent about how missing values are treated and to ensure the approach does not introduce further bias.

5. Transforming data

Variables in their original form are often inadequate for analysis. This happens when the available data cannot directly answer the research question or test the hypothesis. For example, if an FSP wants to analyze agents' monthly transaction values but only has yearly totals, the data must be transformed. The transformation of variables means changes, creation, or reshaping so that datasets better fit the purpose of analysis.

The most common transformations in GDD analysis of agent networks include:

- **Recode and group**: Convert continuous variables into categories. For example, turn age into age groups or collapse various business types into fewer categories.
- **Create new variables**: Derive new indicators from existing data. For example, calculate agent tenure by subtracting registration date from today's date, or create an average value per transaction by dividing total transaction value by transaction volume.
- **Create binary variables**: Generate variables with only two values (1 and 0), often used in regression analysis to compare groups. For example, code whether an agent has an EDC machine (yes = 1, no = 0).
- **Mathematical transformations**: Apply mathematical functions to adjust scale or distribution. For example, transform income into a logarithmic scale to handle skewed distributions.

Careful preparation and data cleaning lay the foundation for meaningful gender data analysis. Without these steps, even the most advanced methods may produce flawed or misleading results. Completion of the basic data-cleaning tasks above allows FSPs to strengthen the reliability of their insights and build confidence in the findings to inform decision-making.

Step 6: Analyze gender-disaggregated trends

FSPs can begin the analysis once the data is prepared and cleaned. As mentioned in Step 4, FSPs can choose from three levels of analysis based on data availability and their internal analytical capacity: Basic, intermediate, and advanced. The table below explains each level of analysis in detail.

	Basic	Intermediate	Advanced
What should FSPs do?	Start with descriptive statistics, such as mean, median, frequency counts, and percentages by gender. For example, compare the average monthly transaction values of male and female agents.	Apply statistical tests, such as the t-test and chi-square test, to examine differences between groups. Use a t-test to check whether the mean differs between two groups, such as whether female agents have lower transaction volumes than male agents. Use a chi-square test to assess if the proportions differ between groups, such as whether female agents are more likely than male agents to offer loan referrals.	Use regression analysis to examine relationships between multiple variables, such as how gender, location, and tenure together affect agent performance. Logistic regression can also be applied to estimate the probability of events, such as agent dropout from the system, based on multiple variables.
How should they do it?	Create simple tables, pivot tables, or charts that summarize key indicators by gender. For example, compare the number of male and female agents or their performance outcomes across multiple dimensions.	Use statistical software, such as Excel, Stata, SPSS, R, or Python, to test whether differences are statistically significant.	Use statistical software, such as Stata, SPSS, R, or Python, to test if variables are statistically significant and to measure the size of their effect on the outcome.

A critical enabling condition for effective GDD analysis is ensuring that staff involved approach the data with curiosity and openness. This helps reduce the risk of reinforcing existing stereotypes and supports more objective interpretation of findings.

What should they consider?	Outliers may distort averages. Always check the data distribution. For	Statistical significance does not always imply practical importance. A difference	Interpret regression results carefully. Focus on the size and

	Basic	Intermediate	Advanced
	example, use a histogram. If the data is skewed, use the median instead of the mean.	may be statistically significant yet too small to matter in practice. For example, female and male agents may have different average transaction values, but the gap might be minor. When results are reviewed, consider both the size of the difference and the broader context. Always interpret findings in context.	direction of effects, not statistical significance alone. Highlight which factors matter most for the explanation of performance differences.

Step 7: Interpret preliminary findings

Once the gender-disaggregated analysis is complete, the next step is to make sense of the numbers. This step focuses on the translation of quantitative patterns into initial insights that can guide further validation and decision-making.

This involves the identification of meaningful patterns, such as consistent differences between male and female agents across key indicators, such as transaction volumes, product mix, or retention rates. Providers should also pay attention to anomalies or unexpected trends, which may point to structural barriers or untapped opportunities. For example, female agents might underperform in cash-in cash-out transactions while they excel in loan referrals.

These preliminary observations serve a dual purpose. They help the team understand the landscape of gender dynamics within the agent network and generate hypotheses for further exploration. Follow-up questions, framed based on these trends, can help providers design qualitative validation that confirms or refines the initial findings. This step ensures that the analysis moves beyond raw numbers to surface actionable insights that can guide decision-making.

Key tips for interpreting gender-disaggregated analysis

Start simple, then layer complexity

Begin with cross-tabulations or pivot tables that compare key indicators, such as transaction volume, revenue contribution, and agent dropout by gender. Then add more advanced methods, such as regression analysis, to identify predictors of performance.

Look for distribution, beyond averages

Avoid relying solely on average values, as these may mask meaningful gender gaps. For instance, female agents may show similar average transaction values as male agents, but if most are clustered at the lower end of activity, it signals a structural issue.

Apply intersectional segmentation

Compare the gender data across other tabs, such as geography (urban vs rural agents), tenure (new vs experienced), products (money transfer, e-wallet top-up, and bill payment, among others).

Track agent lifecycle with a gender lens

Examine gender patterns across key stages of the agent journey, including onboarding, early operations, maturity, and dormancy. This helps pinpoint where female agents are most likely to disengage and where targeted interventions may be most effective.

Watch for indirect indicators

Recognize that gender-related constraints may not be immediately visible in transaction data. They may appear in related indicators such as frequent liquidity shortages, higher reliance on field support, delayed commission payments, or increased service complaints—often reflecting time, mobility, or capital constraints faced by female agents.

The goal is beyond simply to spot differences. It is to interpret whether these differences point to structural barriers, such as liquidity constraints faced by female agents, or untapped opportunities, such as higher loan referral activity among female agents.

Case box: How to interpret findings?

One way to interpret gender-disaggregated findings is to examine differences across transaction types or service activities rather than relying only on overall performance indicators. This helps identify whether observed gender gaps reflect structural constraints or untapped opportunities within the agent network.

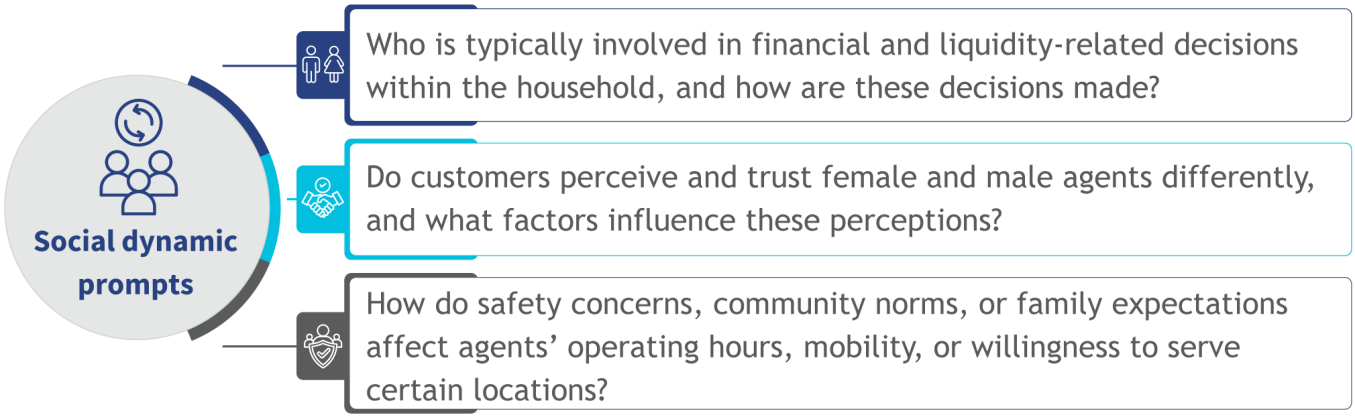
In one GDD exercise, quantitative analysis showed that female agents had lower overall transaction volumes compared to male agents. However, an examination of transaction types revealed that female agents consistently performed more loan referrals than their male counterparts. This pattern highlighted two things: a potential structural barrier in cash handling for female agents and an untapped opportunity to use female agents for loan product outreach.

Based on this insight, the team developed follow-up questions for field interviews. Are female agents subject to liquidity constraints? Do customers prefer to interact with female agents for loan inquiries? This approach ensured that the preliminary findings moved beyond description to be actionable and guided the next step of validation and deeper investigation.

Step 8: Validate with field insights

Quantitative analysis can highlight patterns, but it rarely explains why certain trends exist. Field validation allows providers to explore operational, social, and structural factors that drive these differences and ensures that interventions are informed by real-world conditions. During the field validation, providers engage directly with agents, customers, and field officers through interviews, focus group discussions, and on-site observations. For example, if female agents show lower transaction volumes, field engagement can reveal whether this is due to limited access to liquidity, household decision-making, mobility constraint, safety concern, digital confidence, customer preferences, or other constraints. Similarly, if male agents show higher attrition, interviews might uncover issues, such as competing employment opportunities or insufficient support mechanisms.

Teams should use carefully designed interview guides, observation checklists, and short surveys to ensure consistency across locations and agent profiles. In addition to operational questions, field tools should include sensitively framed prompts to explore power dynamics and social norms, such as:



Insights from field validation can also be synthesized into personas, which translate gendered data patterns into human-centered profiles. These profiles help teams better understand the real needs, constraints, and motivations of different agents and customers, and support the design of more relevant products, services, and support mechanisms. Below is the example of agents personas:

		Liquidity	Decisionmaking	Typical constraint
Reluctant starter 	Typically has low confidence and limited interest. Joining the agent business mainly because "there is no harm in trying" and hopes to earn a small additional income.	Very limited and unstable	Often influenced by family	Fear of making mistakes, limited and unstable liquidity
Purposeful balancer 	These agents deliberately choose to become agents to support family finances while maintaining their caregiving roles.	Limited, but partly dedicated	Often influenced by family	Limited ability to scale operations
Informal partner 	These agents seemingly form a partnership in establishing the agent business with a family member, usually a spouse. However, in practice, male family members often retain greater influence over key decision-making.	Joint household-business funds	Shared decision-making	Dependence on spousal support
Masterpreneur 	These agents are already established entrepreneurs before becoming agents. They integrate agent services into their broader business strategies and operate with a clear commercial mindset.	Dedicated and well-managed	Independent	Self-limiting norms, hesitation to take risks such as seeking large credit.

The above personas illustrate the diversity of motivations, constraints, and operating contexts among female agents. Rather than adopting a uniform approach, FSPs can use these profiles to design differentiated and more effective support strategies.

For **reluctant starters**, this may involve prioritizing confidence-building, basic financial and digital literacy, simple operating guides, and small, flexible liquidity support, complemented by close field supervision and peer mentoring.

For **purposeful balancers**, targeted interventions may focus on flexible training schedules, tools to strengthen liquidity management, and products that help stabilize household and business finances.

For **partnership builders**, support strategies can emphasize joint engagement with spouses, promotion of business-household financial separation, and pathways toward greater formalization and scaling. For **masterpreneurs**, FSPs can shift from basic support to growth-

oriented partnerships by offering tailored business advisory services, step-up credit limits linked to performance, alternative credit scoring approaches, and leadership or peer mentor roles within the network.

The combination of quantitative analysis, field validation, and persona development helps move beyond surface-level patterns and generates actionable insights that can inform practical and sustainable operational decisions.

Challenge: Respondent bias or reluctance to share issues

Tip: Build trust by explaining the purpose of the research and assuring confidentiality. Ask open-ended questions and probe gently for explanations.

Challenge: Overgeneralization from limited field visits

Tip: Ensure diversity in locations, tenure, and agent types for interviews, and clearly note the scope and limitations of the findings.

Challenge: Inconsistent or incomplete feedback

Tip: Triangulate insights with multiple sources, such as agents, supervisors, and transaction records, to validate observations.

Challenge: Difficult to link qualitative insights back to quantitative trends

Tip: Map observations to specific indicators or patterns identified. Highlight where field feedback confirms, contradicts, or adds nuance to the data.

Practical notes:

- Focus on the underlying causes behind observed patterns
- Use structured tools, such as interview guides or observation checklists, to maintain consistency
- Triangulate qualitative insights with quantitative trends to confirm or refine hypotheses
- Document actionable implications to inform operational decisions and interventions

Step 9: Share findings internally

Once preliminary findings have been validated in the field, effective communication of these insights within the organization is critical. Internal sharing of the findings ensures that teams across functions, such as operations, agent management, and strategy, understand the gender-related patterns and the underlying causes. This step transforms analysis into actionable knowledge that can inform operational adjustments, resource allocation, and targeted support programs.

Effective internal sharing involves a summary of quantitative trends and qualitative insights in a clear, concise format. Visualizations, such as charts, dashboards, or heat maps, can help highlight patterns and gaps, while narrative explanations provide context and interpretation. The goal is to ensure that stakeholders not only see the data but also understand the implications for decision-making.

Gender Disaggregated Data Monitoring

Example dashboard for illustrative purposes only. The data shown are dummy data.

Practical notes:

- Focus on key insights relevant to operational or strategic decisions
- Use clear visuals to highlight gender gaps, trends, and anomalies
- Include context and interpretation alongside numbers to avoid misinterpretation
- Encourage discussion and feedback from different teams to validate understanding and explore implications
- Highlight actionable recommendations to guide immediate or short-term interventions

Important checklist

- Are gender gaps and trends systematically analyzed?
- Are outliers and anomalies investigated?
- Is the team that conducted the GDD analysis adequately trained in gender sensitivity and equipped to validate quantitative findings with qualitative insights?
- Are data sharing protocols and safeguards against misuse in place?
- Are results interpreted with social and operational context?

Stage 3: Implementation of findings

Once the analysis is complete, the next step is to translate gender-disaggregated insights into practice. At this stage, FSPs need to ensure that findings do not remain static reports, but they must actively integrate these findings into how they manage, support, and monitor their agent network. Implementation involves, but is not limited to, three critical actions. It 1. integrates GDD indicators into business dashboards and strategy; 2. embeds gender insights into ongoing performance reviews; and 3. assigns clear ownership for sustaining the process. Together, these actions enable FSPs to institutionalize gender awareness in agent network operations and decision-making and ensure that inclusion goals are continuously tracked and acted upon.

Step 10: Integrate GDD in business reporting and strategy

FSPs should integrate gender breakdowns into the same tools used to monitor agent performance, which covers metrics, such as activity rates, transaction volumes, product mix, and dormancy. Ideally, the quantitative component of gender-disaggregated analysis should become part of routine monitoring, embedded in operational dashboards and management reporting. This integration will allow managers to see, in real time, how male and female agents contribute to business outcomes and where disparities may exist. For example, if female agents record lower activity levels in certain areas, management can investigate whether structural barriers, such as mobility constraints or social norms in the area, affect performance.

While quantitative monitoring can be embedded in day-to-day systems, qualitative research can be conducted periodically or integrated into other research activities, such as agent satisfaction surveys, market studies, or operational reviews. These qualitative exercises help explain the drivers behind observed patterns and provide deeper insights into the social, behavioral, or operational factors shaping agent performance. Many institutions may find it useful to conduct a more structured GDD review annually or every two years, using the latest data to test new hypotheses and identify emerging trends.

Aligning gender data with operational dashboards enables decision-makers to make timely, evidence-based adjustments to recruitment, support, or incentive structures. When gender indicators are reviewed regularly in branch meetings, performance reports, or strategic planning sessions, they become part of how success is measured and discussed. Over time, this integration strengthens institutional accountability and ensures that gender considerations are embedded in core business management rather than treated as a peripheral inclusion effort.

These insights can then inform practical initiatives, such as targeted recruitment drives to attract more female agents, customized digital literacy programs, or bundled products aligned with women's customer segments. Such actions strengthen the effectiveness of the agent network while expanding the reach of financial inclusion. Over time, integrating GDD into operational and strategic processes

enables institutions to monitor progress toward inclusive growth while maintaining focus on overall business performance.

Step 11: Assign roles to sustain GDD practice

Clear internal ownership is necessary to sustain GDD practices over time. However, GDD should not be treated as the responsibility of a single individual. To be effective, gender analysis needs to be embedded within the institution's existing systems, processes, and decision-making routines. Financial service providers should integrate GDD into their standard data management and reporting structures. Teams responsible for data analytics, agent network management, product development, and strategy should engage with gender-disaggregated insights as part of their routine work. This helps ensure that gender considerations are reflected in operational monitoring, performance reviews, and business planning.

At the same time, FSP may assign a coordinating function to maintain momentum and accountability. Depending on institutional capacity, this role can be held by a gender focal point, a data analytics team, or the agent network management unit. In some organizations, a "gender champion" or similar role can help promote awareness, coordinate analysis efforts, and ensure that insights are translated into operational actions.

While technical expertise is central, equipping the team with basic gender awareness can further strengthen the quality of analysis. A study by CGAP (2025) on Advancing Women's Financial Inclusion highlights that without an understanding of gender norms, biases, and social dynamics, FSP faces risks in misinterpreting gender-disaggregated data or overlooking structural barriers that affect women's participation in financial systems. Building this awareness helps ensure that gender data is interpreted thoughtfully and without reinforcing stereotypes.

Ultimately, the key is to ensure that someone within the institution is accountable for translating GDD insights into actionable steps and embedding them into operational decision-making.

Important checklist

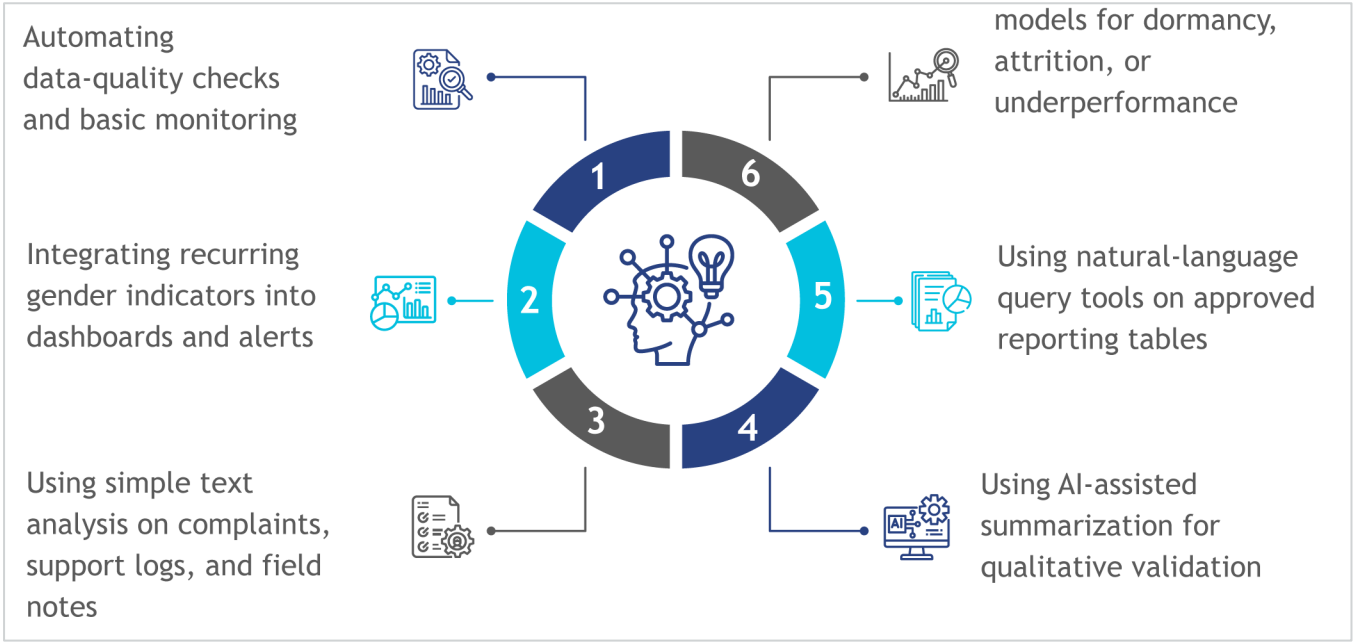
- Do findings inform key business processes, such as recruitment, training, and incentives?
- Are results discussed in management and branch meetings?
- Do gender insights reflect in business planning?
- Does the organization have a clear team or focal point responsible for GDD? Are roles and follow-up actions defined?
- Does the organization review and adjust interventions regularly? Are gender-informed interventions documented, and are lessons learned shared?

Strengthening data systems and using practical digital and AI tools for gender insights

As financial service providers strengthen their gender-disaggregated data practices, they may also consider using practical digital tools and selected AI applications to make analysis more routine, timely, and actionable. These tools are most useful when introduced gradually and only after the core building blocks of GDD are in place. In most cases, the immediate opportunity is not to replace basic analysis, but to improve the quality, speed, and regular use of gender insights.

This is closely linked to the earlier steps in this guide. **Step 5** emphasizes the importance of cleaning and structuring data before analysis. **Steps 7 and 8** highlight the need to interpret patterns carefully and validate them through field insights. **Step 10** focuses on embedding GDD into dashboards, reporting, and strategy, while **Step 11** emphasizes clear ownership and ongoing use. Practical digital and AI tools can support each of these steps, but they are most valuable when they strengthen existing systems and decision processes rather than operate as stand-alone innovations.

High-return options that are easier to implement



1. Automating data-quality checks and basic monitoring

For many providers, the highest-return first step is to automate routine checks on the quality and completeness of gender-related data and detect irregularities in large datasets. For example, systems can flag missing gender fields, duplicate records, inconsistent coding, or unusual changes in gender composition across locations or branches. Providers can also automate basic monitoring rules for key indicators such as activity, dormancy, transaction levels, or complaint volumes among female and male

agents. This strengthens the data cleaning and structuring process by making data preparation more consistent and reducing the risk that findings are distorted by avoidable data issues. It also creates a stronger foundation for all later analysis.

To enable this, providers need a unique identifier for each agent, a consistently used gender field, regular extracts from operational systems, and a small set of agreed validation rules. This is suitable for institutions at a basic to intermediate level of maturity and can usually be managed by an MIS or analytics team.

The main limitation is that automated checks improve data readiness, but they do not explain why a pattern exists. Interpreting these patterns and identifying their underlying causes still requires human review and contextual understanding.

2. Integrating recurring gender indicators into dashboards and alerts

Once data is structured and regularly updated, providers can automate recurring reporting of gender-disaggregated indicators such as activity rates, transaction volumes, product mix, dormancy, support requests, and referral activity. Simple threshold-based alerts can also be introduced to notify teams when gender gaps widen or when one group shows a sudden decline in performance.

This is a practical way to strengthen the integration of GDD findings into business process as explained in Step 10. The note already emphasizes that GDD should be integrated into the same dashboards and reporting systems used for routine business monitoring, so that insights can inform recruitment, support, incentives, and business planning. To enable this, providers need a standard set of indicators, a reporting cadence, linked datasets across profile and performance systems, and clear ownership for follow-up. A good starting point is a small set of indicators already reflected elsewhere in this guide, such as transaction volume and value, activity or dormancy, e-float or cash balance, support visits, complaints, and referral activity.

This is suitable for institutions at a basic to intermediate stage of data maturity. The main consideration is that indicators and alerts should be selective and tied to specific management actions.

3. Using simple text analysis on complaints, support logs, and field notes

Structured data often shows where gender gaps exist, but it does not always explain what is driving them. Many of the indirect indicators highlighted earlier in the guide, such as service complaints, support dependence, or operational friction, may also appear in unstructured records such as complaint logs, helpdesk tickets, or supervisor notes.

A practical next step is to use simple text analysis to group these records into common themes, such as liquidity issues, app or device problems, training gaps, commission concerns, fraud or safety issues, or onboarding difficulties. This can help providers see whether certain issues appear more often among female or male agents, or in particular regions or stages of the agent lifecycle.

This supports the interpretation and validation of preliminary findings process (explained in Steps 7 and 8) by helping connect quantitative patterns with operational and social realities. It is often a stronger use of AI than advanced prediction because it helps explain patterns that matter for decision-making.

To enable this, providers need digital complaint or support data, basic labeling standards, and a way to link records to agent

or location attributes where appropriate. This is most suitable at an intermediate stage of maturity. In many cases, simple theme tagging is enough; a complex NLP model is not necessary. The main limitation is that complaint and support data may reflect reporting patterns rather than the full range of problems experienced, so findings should complement, not replace, field validation.

Options that may be useful later

4. Using AI-assisted summarization for qualitative validation

Where providers conduct interviews, focus groups, field visits, or agent surveys, AI tools can help summarize and organize qualitative material. This can make it easier to compare themes across groups and turn field evidence into operational recommendations. This can support FSPs in interpreting, validating, and disseminating findings, especially where institutions already conduct periodic qualitative reviews. However, it is best treated as a supporting tool rather than a first investment, since its value depends on whether the provider is already collecting qualitative material in a usable form. It requires digital notes or transcripts, secure storage, and staff review of outputs. It is most relevant at an intermediate stage of maturity.

5. Using natural-language query tools on approved reporting tables

Some providers may later find it useful to introduce tools that allow non-technical users to ask questions in plain language and retrieve approved gender-disaggregated indicators without writing SQL queries. This can improve accessibility across teams and help managers engage more directly with GDD findings.

However, this should be treated as a later-stage option. It is useful only when the reporting tables, indicator definitions, and access controls are already stable and trusted. Otherwise, it risks making inconsistent or poorly framed queries easier rather than making insights better.

This is most relevant at an intermediate to advanced stage of maturity.

6. Exploring predictive models for dormancy, attrition, or underperformance

At a more advanced stage, providers may consider machine learning models to estimate which agents are at higher risk of dormancy, disengagement, or persistent underperformance. Gender can be included as one variable among others such as geography, tenure, liquidity patterns, support interactions, and transaction behavior.

This can add value by helping providers identify risks earlier and design targeted support measures. However, predictive modeling should not be the starting point for most institutions. Such models require good historical data, clearly defined outcome variables, technical capacity, and a clear operational response plan. Without these conditions, the value is likely to be limited.

This is suitable only at an advanced stage of maturity. Providers should also review such models carefully to avoid reinforcing existing structural disadvantages or biased assumptions.

A realistic sequence for most providers

For many providers, the best progression will be to first strengthen data quality and consistency (Step 5). Next, integrate recurring gender indicators into dashboards and

management reporting (Step 10) to enable regular monitoring. Once these foundations are in place, use simple text analysis and qualitative review to better explain observed patterns (Steps 7 and 8). More advanced tools, such as natural-language querying or predictive models, are likely to be useful only after these foundations are working well.

This sequencing helps ensure that AI is applied where it adds real value and does not distract from the more immediate task of institutionalizing sound GDD practice.

Governance and ownership

As with the rest of the GDD process, governance remains essential. Before introducing AI-supported tools, providers should define who can access the data, which use cases are approved, how outputs will be reviewed, and who is responsible for follow-up. This connects closely to Step 11, which emphasizes that GDD should be embedded in routine systems, roles, and decision-making processes.

Providers should also ensure that teams using these tools have a basic understanding of gender norms, data bias, and the limitations of automated outputs. This can help reduce the risk of misinterpretation and support more thoughtful use of gender-disaggregated insights in practice.

Used appropriately, digital and AI tools can help providers move from one-off gender analysis toward a more routine, responsive, and operationally relevant GDD practice. In most cases, the strongest early returns will come from automating data-quality checks, embedding recurring gender indicators into dashboards and reporting, and using simple text analysis to better understand the drivers behind observed gaps. More advanced AI tools may become useful later, but only when the underlying data systems, governance arrangements, and decision processes are already in place.

Annex 1. List of indicators for gender-disaggregated data in agent networks

Effective GDD is not limited to reporting gender-disaggregated values for a single metric. It requires the linkage of multiple indicators to reveal patterns, gaps, and constraints across different groups. Broadly, two categories of indicators are required to conduct GDD in agent networks.

Category 1. Agent characteristics (demographic and profile indicators)

These indicators describe the agent. They are primarily used for segmentation, cross-tabulation, and subgroup analysis, which enables comparisons across gender and other intersecting characteristics. Indicative indicators include, but are not limited to:

- Agent gender
- Agent level or tier
- Geographic location, such as province, city, district
- Area type, such as urban and rural
- Agent age
- Registration date or agent tenure
- First transaction date
- Agent type based on FSP-defined classifications, where applicable, such as top-performing agent, beginner agent
- Education level
- Marital status: Single, married, or divorced
- Care responsibilities for dependents, such as children, the elderly, or sick household members
- Presence of other income-generating activities or businesses

Category 2. Business and transaction indicators

These indicators describe how the agent performs. They assess productivity, financial viability, liquidity constraints, and engagement with the provider's ecosystem. They also identify gender-based differences in business outcomes and operational challenges.

Indicative indicators include, but are not limited to:

- Transaction volume (aggregate and by product)
- Transaction value (aggregate and by product)
- Income generated from agency business
- Number of savings accounts opened through the agent, where applicable
- Number of loan referrals made by the agent, where applicable
- E-balance or e-float levels
- Cash balance levels
- Activity or dormancy indicators, such as last active date, last transaction date
- Loan uptake by the agent
- Number of EDC machines used, if applicable
- Frequency of visits by field support staff, such as agent support officers or sales support staff responsible for agent enablement and monitoring
- Number of complaints filed, or assistance requests submitted by the agent

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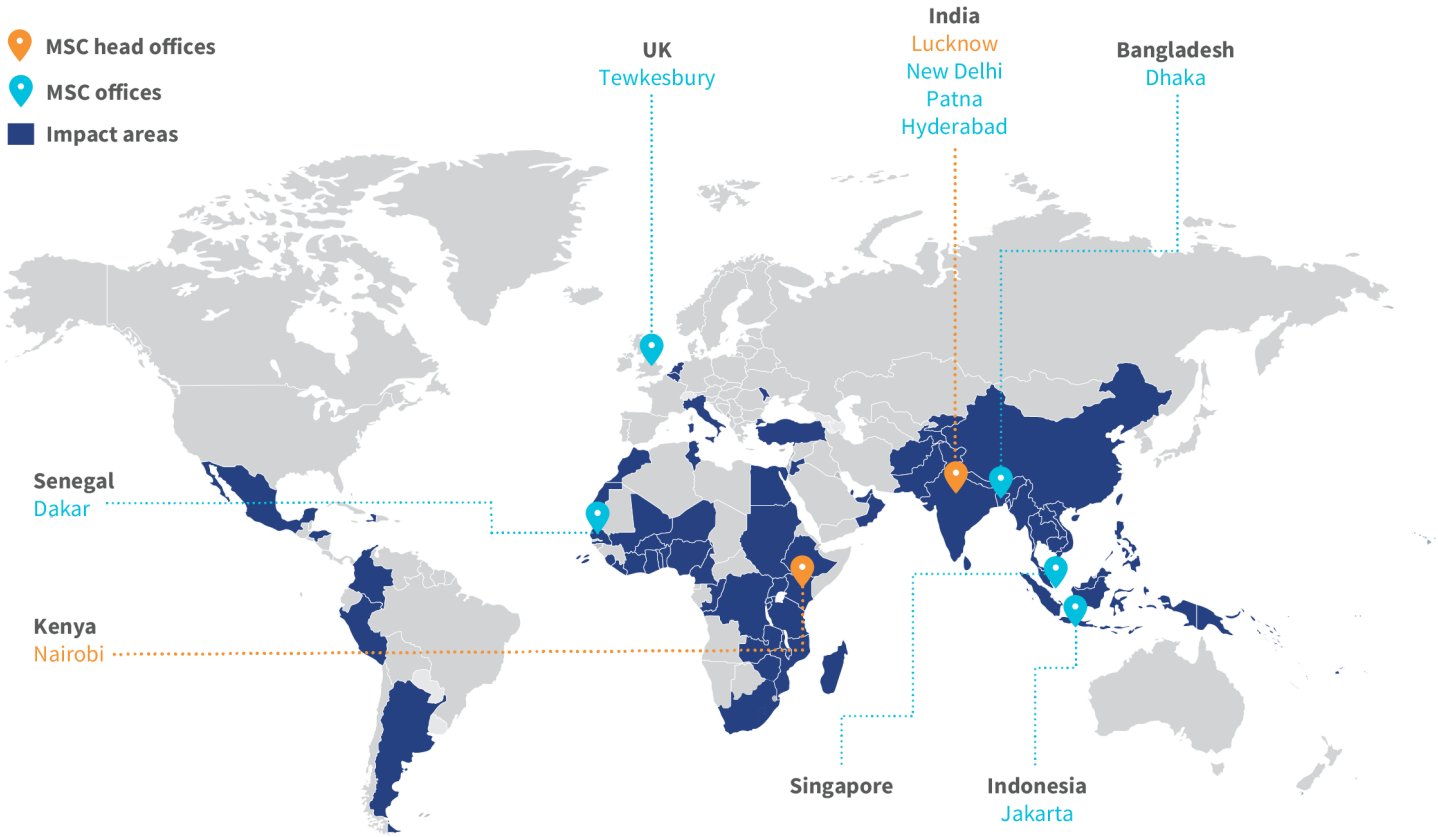

Asia head office

28/35, Ground Floor, Princeton Business Park, 16 Ashok Marg,
Lucknow, Uttar Pradesh, India 226001
Tel : +91-522-228-8783 | Fax : +91-522-406-3773

Africa head office

Landmark Plaza, 5th Floor, Argwings Kodhek Road
P.O. Box 76436, Yaya 00508, Nairobi, Kenya
Tel: +254-20-272-4801/272-4806

Email: info@microsave.net | Website: www.microsave.net