PAYGO PERFORM Portfolio Quality Working Group Survey

Wednesday, March 19, 2019

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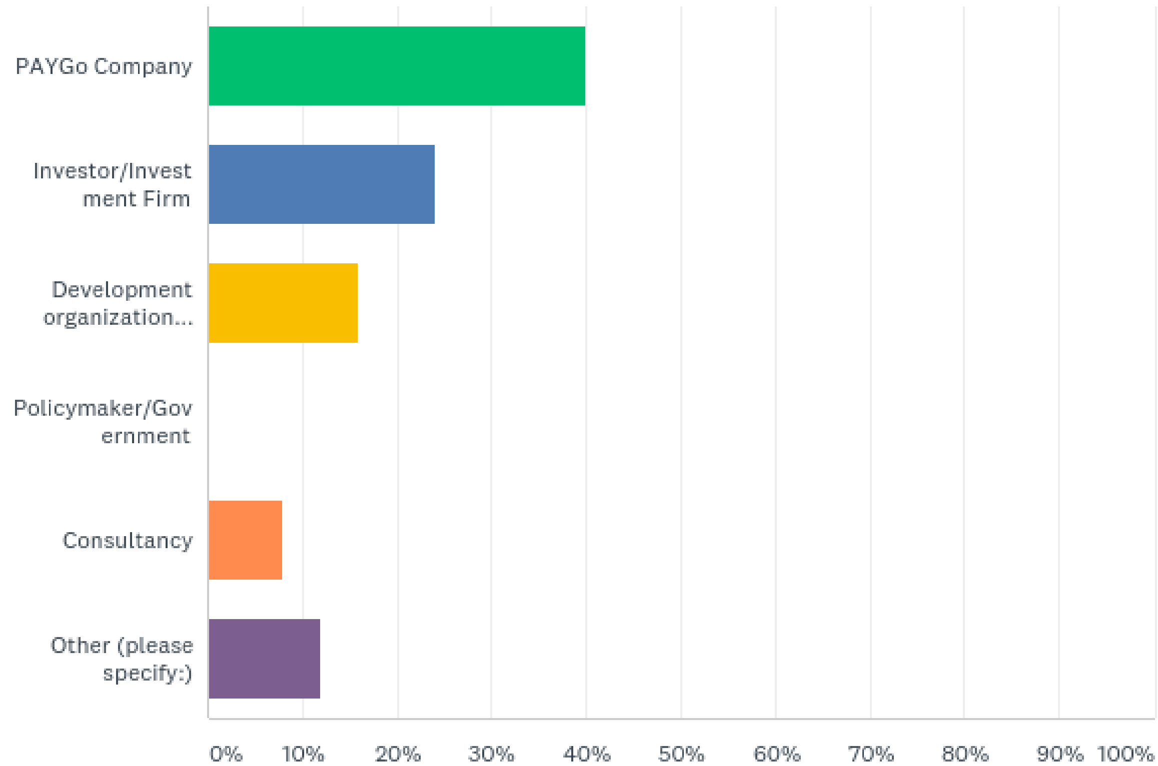
Q1: Please select the type of organization you are:

Answered: 25 Skipped: 0



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Q3: What information should the Portfolio Quality KPIs convey? Please try to list out the distinct aspects.

- Respondents reported that portfolio quality KPIs should broadly convey information about **accounts receivables**, **account performance** over time, and **risks** associated with nonpayment.
- **Examples of specific information include:**
  - **Account Information -** account balance, average age, average delay in repayment, provision for write off, NPV of risk adjusted accounts receivables
  - **Account Performance -** repayment trends, collection ratio, write off rates, utilization rate, churn rate, rates and costs of recollection and repossession, cohort vs. portfolio performance trends
  - **Risk Data -** value at risk, economic impacts of default, historical loss given default
  - Variance for the above (expected vs actual)

"These KPIs should ultimately answer two questions: 1) how much of my money will I ultimately get back, and 2) how long will it take." – PAYGo company

"A basis to understand pain-points of the sales and after-sales operations" – PAYGo company

"The portfolio quality KPIs should convey the risk posed to the PAYGo provider by non-payment of contractual asset finance obligations that could lead to deterioration of the provider's asset quality, profitability, and ultimately overall institutional viability" – Rating Agency

Q4: What should the Portfolio Quality KPIs be used for? By whom?

- Respondents reported that portfolio quality KPIs should be used by:
  - **PAYGo companies -** to monitor operations, including tracking pricing & profitability, setting employee incentives, distributor management, forecasting cash flow needs, and targeting various customer segments
  - **Investors & Lenders-** to understand the PAYGo landscape & industry trends, evaluate business model & business performance, and compare different PAYGo companies
  - **Governments & NGOs –** to understand the PAYGo industry and provide policy support

"On a firm level, to evaluate their ability to turn repayment commitments into actual revenue, while managing the credit risk of low-income borrowers." - Development Organization

"By investors, to assess the portfolio management strategy of the PAYGo company and assess the quality of the portfolio" – PAYGo company

"To measure the customers satisfaction effectiveness of working model" - Development Organization

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Q5: What limitations and/or considerations should we be mindful of?

- Respondents highlighted the need to use not one, but several metrics that were simple to calculate and useful across various business models, and the importance of cautious interpretation of KPIs. They also reported concerns around data quality.

- Considerations/ Limitations to be mindful of:
  - **The KPI metric -** should be simple to calculate, forward looking, capture changes over time, on cash basis & incorporate differences in PAYG business models.
  - **Underlying data –** poor data quality **(**low user literacy & outdated information), poor data collection mechanisms (connectivity issues in rural areas & inadequate tech platforms)
  - **How KPIs are used –** companies may not be willing to share, they may not be comparable, may be interpreted differently by different companies. One's not good, should use a set of KPIs for holistic picture.

"All the discussed KPIs are backward-looking, meaning that they show the status of the portfolio in the past or today, but there is no forward-looking components that makes them more suitable for forecast and planning" – PAYGo Company

"Any effort at generating industry-wide KPIs is going to disappoint a few people because we haven't really developed a standard way of thinking about an account" – PAYG platform provider

"This is THE most sensitive information that PAYGo firms possess, and they will be understandably reticent to share it. However, taxpayer-funded entities should not be shy in requiring disclosure, as long as they are willing to assist firms in reporting" – Development Organization

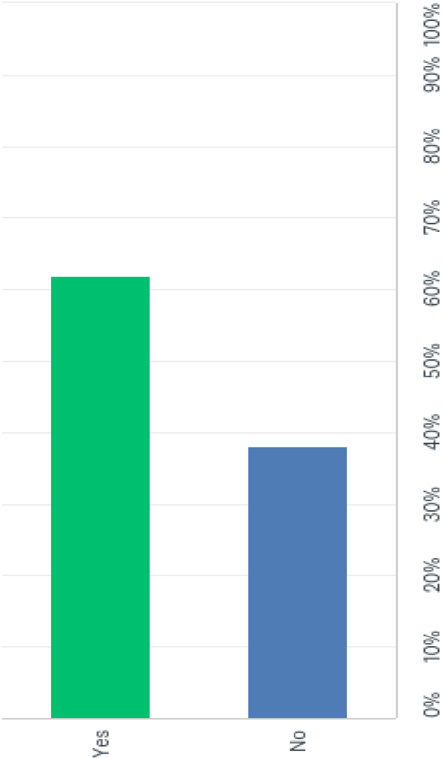
Q6: Summary Analysis of KPIs

Summary of Existing KPIs (% of positive responses)				
Criteria	Average Credit Period	Portfolio at Risk (PAR)	Churn	S.D. of $ Ahead/ Behind on Payments
Relevance (Crucial & Important)	43%	71%	81%	52%
Keep the KPI	62%	71%	90%	76%
Agree on Definition	62%	43%	48%	52%
Relevant to all PAYGo business models	62%	67%	81%	86%

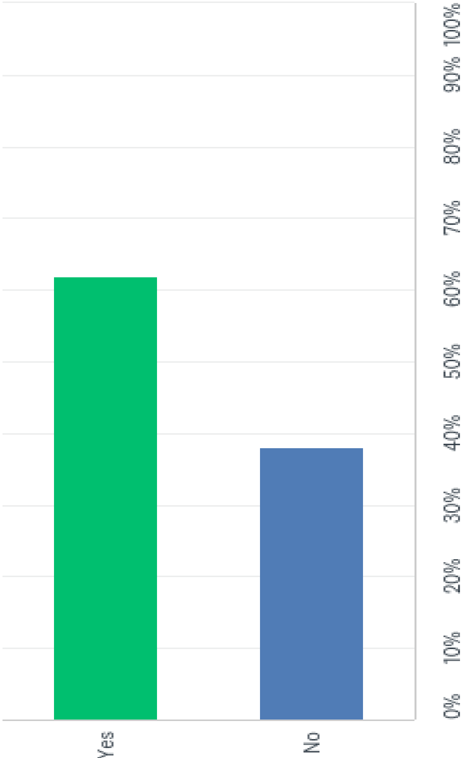
Summary of New KPIs	
New KPI	% positive responses
Utilization Rate	95%
Credit Provisoning	80%

Q6: Average Credit Period

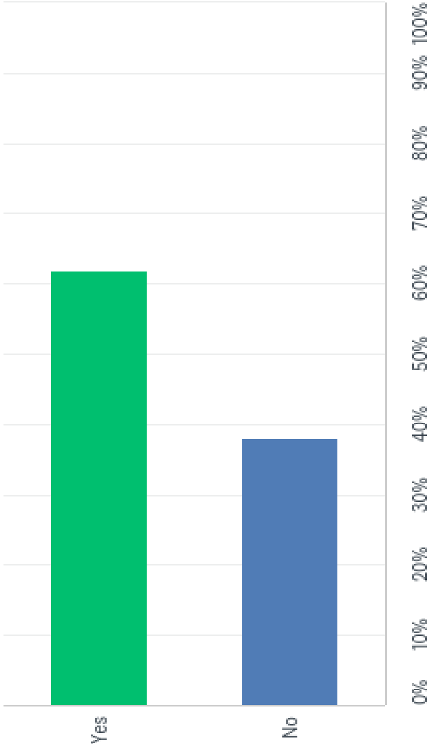
a) Do you think we should keep the KPI?



b) Do you agree with the current definition?



c) Do you think it can apply to all PAYGo business models??



Q6:Average Credit Period
a) If no, Please provide rationale for elimination:

The respondents found the 'average credit period' KPI **descriptive** but **not analytical** or actionable. They felt that it was **too general**, may not be relevant to many businesses, and **does not provide measure of portfolio quality, actual performance loan repayment or actual completion of PAYGo payments.**

"Average credit period as a KPI is relevant, though in my opinion not as much as a measure of portfolio quality, given that it measures expected payments (asset finance model) or contract end date (flexible PAYGo model), rather than actual loan repayment or actual completion of PAYGo payments" – Rating Agency

"This KPIs is too general and doesn't provide any useful information as it varies based on the business model, ageing of the receivables in the portfolio, the product and the average performance of the customers" – PAYGo Company

"It doesn't tell you much, and is not relevant for energy-as-service companies" – PAYGo Company

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Q6: Average Credit Period
b) If no, explain how its definition could be improved/modified:

Respondents felt that the 'average credit period' KPI could be improved by:

- **Clarifying/ Refining the definition** – (average credit period at point of subscription vs average credit period required to fully pay off the product)
- Using **comparisons of actual vs expected** average credit period
- **Assigning weights** to accounts receivable

"A weighted average life of receivables (WALR) would be more relevant - at least this is an indicator for where the portfolio stands in its lifecycle, e.g. a fast growing company would typically have a higher/increasing WALR" - Investor

"This information isn't really enough to provide insight. Using Actual vs. Expected Average Credit period would give much more information on how well the PAYGo company manages customers to their repayment period, and what the real exposure is on payment terms" – PAYGo Company

Q6: Average Credit Period
c) If no, explain which business models it may not apply to:

Respondents felt that 'average credit period' as a KPI may not apply to:

- Businesses that sell **larger systems** and thus, have longer credit periods
- **Energy-as-service companies**
- Companies that have already factored and **priced in customers delaying their repayment period**
- Companies with customers who **perpetually lease** the systems

"We've noticed some odd results monitoring this metric as certain of our customers have implemented what we call a "perpetual lease" model: payments entitle a client to a pre-defined amount of usage time on the device, but the unlock price of the device is set so high as to make the nominal term of the loan equal to some duration which is vastly greater than the likely lifespan of the unit" - PAYG platform provider

"I suspect some models which have assumed that customers will extend beyond their payment period and built that into their pricing and risk assumptions would not favor a view of actual vs. expected because it would seem to imply they are not properly managing to 'expected' " – PAYGo Company

"Not applicable to power as a service businesses or where the systems remain the property of the company"

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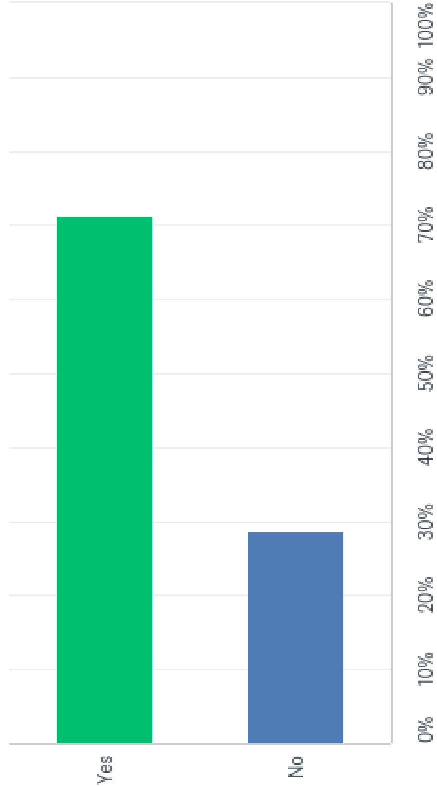
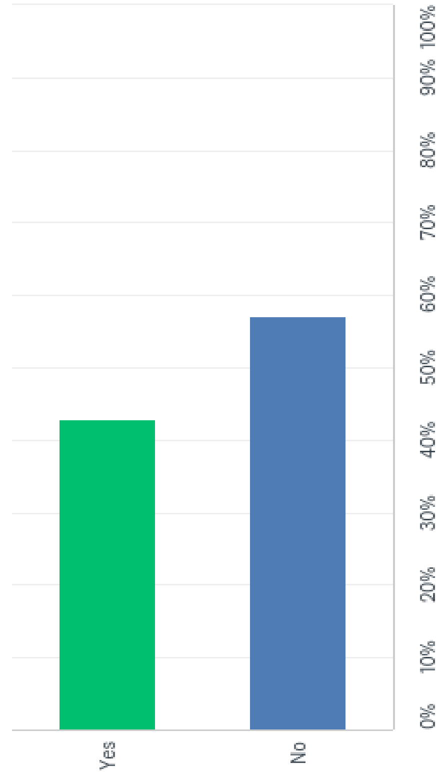
Q7: Portfolio at Risk (PAR)

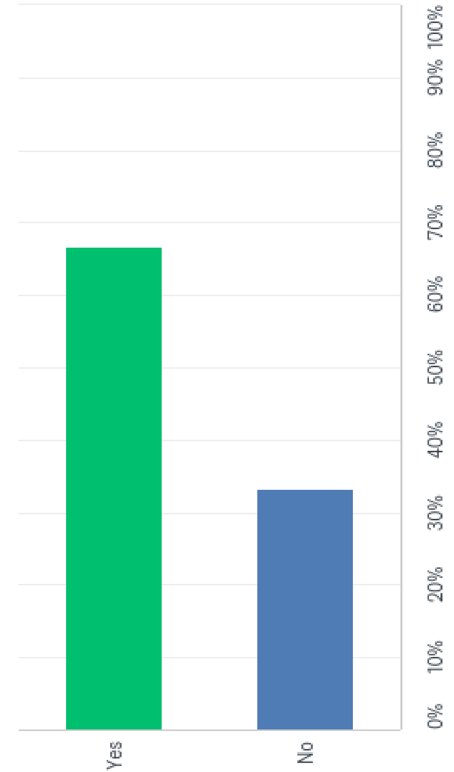
a) Do you think we should keep the KPI?



b) Do you agree with the current definition?



c) Do you think it can apply to all PAYGo business models??



Q7: Portfolio at Risk (PAR)
a) If no, Please provide rationale for elimination:

- Most respondents were of the opinion that 'Portfolio at Risk' (PAR) as a KPI was **anachronistic and irrelevant in the PAYG markets.**
- Because of its wide usage in the MFI sector, it has **potential for misinterpretation**.
- Since it **doesn't consider the past behavior of the customer, does not measure risk precisely**, it is far less useful than churn rate or cohort analysis.
- However, some of them agreed that **PAR as a KPI is intuitive to lenders/ investors**, and it might actually be **useful if it is accompanied by follow-up metrics** like default rates associated with each PAR.

"PAR is a widely used term in micro-finance, but the definition is different to the one here. As such, it should be renamed, maybe RAR, so Receivables at Risk, have a clearer definition" – PAYGo Company

"This is a microfinance institution metric with very little relevance in the markets we operate in. It does not specify whether this relates to cumulative or consecutive missed payment days - this needs to be specified" - – PAYGo Company

"I find this much less useful than churn or cohort analysis, but I recognize it is viewed as useful by the industry for standardization purposes" – Consulting Firm

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Q7: Portfolio at Risk (PAR)
b) If no, explain how its definition could be improved/modified:

Respondents reported that PAR as a KPI could be improved by:

- **Renaming the metric** to differentiate it from PAR used in MFIs - possibly as **RAR (Receivables at Risk)**
- Making a **distinction between** the **cumulative and consecutive missed days** of payments
- **Investigating the threshold for reporting** – Is 30 days relevant? What about 60/90/120 days?
- **Using alternative formulae/metrics** such as:
  - ($ owed on units at risk (30/60/90 days) / ($ owed on active units)
  - Total $ owed by customers who have missed a minimum of 30 days of payment in the last 90 days
  - Total # missed days compared to contract period per system (in aggregate)
  - value of missed installments in proportion to contract value

"The 30-day threshold should be investigated to see whether it is actually predictive of ultimate churn / credit loss" – Consulting Firm

"It's a bit convoluted how it's defined. Why not just measure a rolling average utilization rate?" – PAYGo Company

"Too complex as is and not straightforward to apply due to the different cut-off dates. Just because a client has not fully paid the due amounts, does not mean that the client will not fulfill the face value of the contract over time" – Investor

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Q7: Portfolio at Risk (PAR)
c) If no, explain which business models it may not apply to:

Respondents felt that PAR as a KPI may not be applicable to:

- Fast growing businesses – **PAR can underestimate churn credit losses** because new and presumably more engaged consumers will dominate the aggregate statistics and mask drop-offs in credit quality among more seasoned cohorts
- business **models that allow** for or expect **less frequent top-ups**
- **Energy-as-service companies**

"Fast growing businesses can have a low PAR despite actual portfolio quality issues (growth can mask this issue)" – Investor

"I don't think it really directly applies to any PAYG business models" – PAYG platform provider

"PAR in fast-growing businesses, if not accompanied by cohort analysis, can significantly lag or underestimate churn and ultimate credit losses" – Consulting Firm

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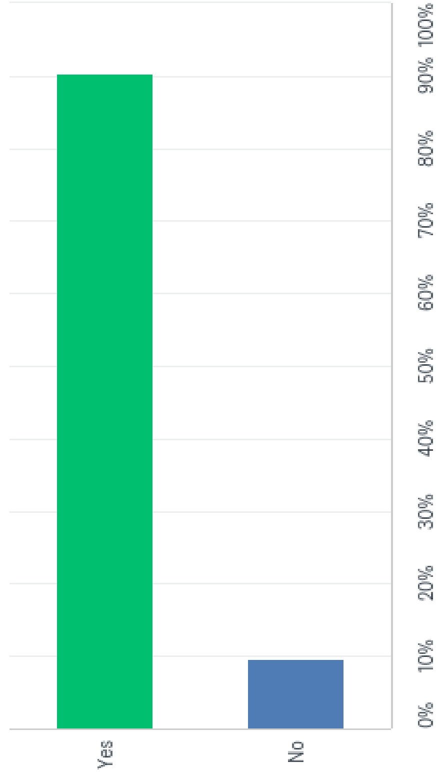
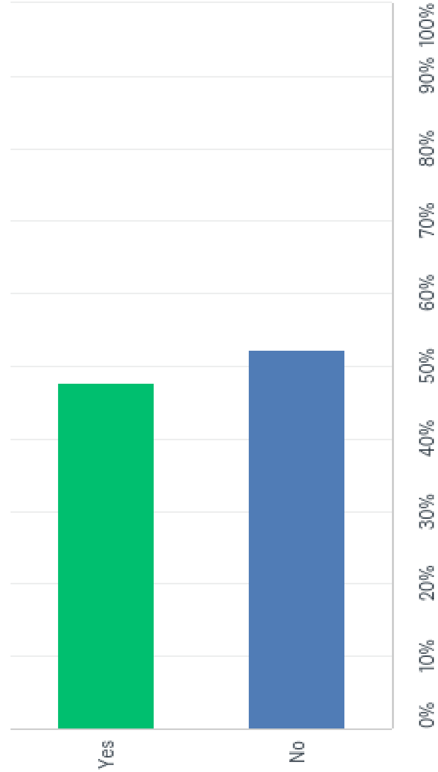
Q8: Churn

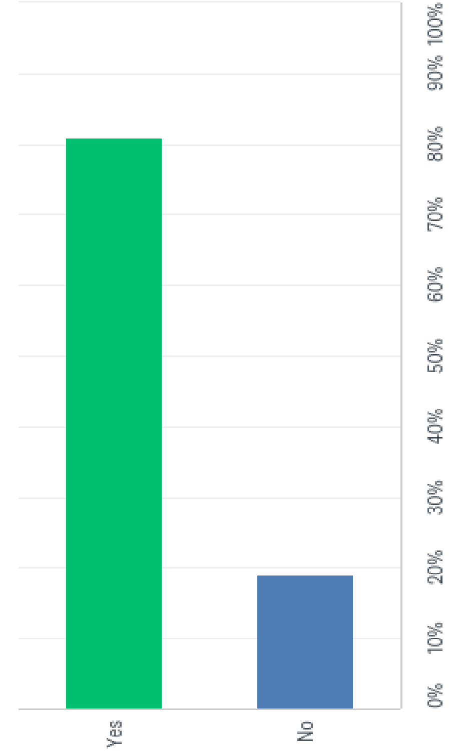
a) Do you think we should keep the KPI?



b) Do you agree with the current definition?



c) Do you think it can apply to all PAYGo business models??



Q8: Churn
b) If no, explain how its definition could be improved/modified:

Respondents reported that ‘churn’ as a KPI could be improved by:

- **Clarifying the definition** of active, unlocked and written-off accounts
- **Renaming it as ‘default’** (which is intuitive to lenders) because ‘churn’ is a telco word
- **Arriving at a consensus** whether 30/60/90/120 is the **right threshold for analysis**
- **Considering value of churned units** instead of the number of churned units
- **Split churn into a few categories** – like repossession rate, write-off rate and net default rate
- **Using alternative formula**, such as:
    - repossessed (t+1) + written off (t+1) / installed systems (t)
    - Sum of (# of units which have 90 consecutive missed payments) / (# of active [Units] as calculated 90 days ago

“What does '(# of active [Units] as calculated 90 days ago)' this mean? This may be too convoluted and could read # of paid for units as at 90 days ago?” – PAYGo Company

“Should also include clients who have been repossessed” – PAYGo Company

“Churn has a very specific and accepted meaning within subscription billing models, and this is not it. Nor is the "standard" method of calculating churn appropriate here: PAYG accounts are not subscriptions. You can't calculate ("monthly payments" * "gross margin") / "churn" = PAYG Lifetime Value. I would split this out into a few categories and call them what they really are” – PAYG platform provider

Q8: Churn
c) If no, explain which business models it may not apply to:

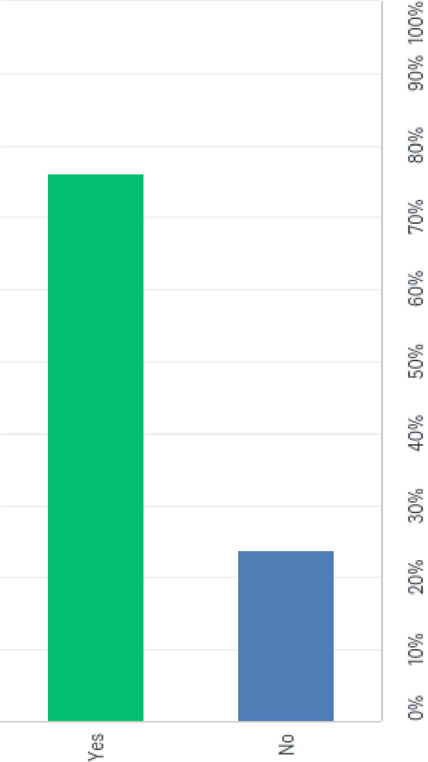
One respondent felt that **churn as a KPI may not be applicable to asset finance companies**

"While I think this is generally of some use, it's incomplete. Investors into asset finance companies will care much less about churn and more about how much you are actually writing off" – Development Organization

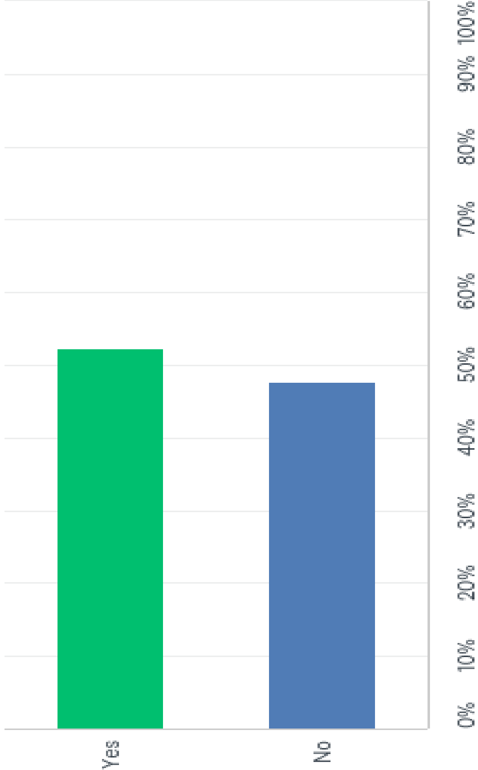
"Not sure of any where this does not apply, if we get the definition right" – PAYGo Company

Q9: S.D $ Ahead/ Behind on Payments

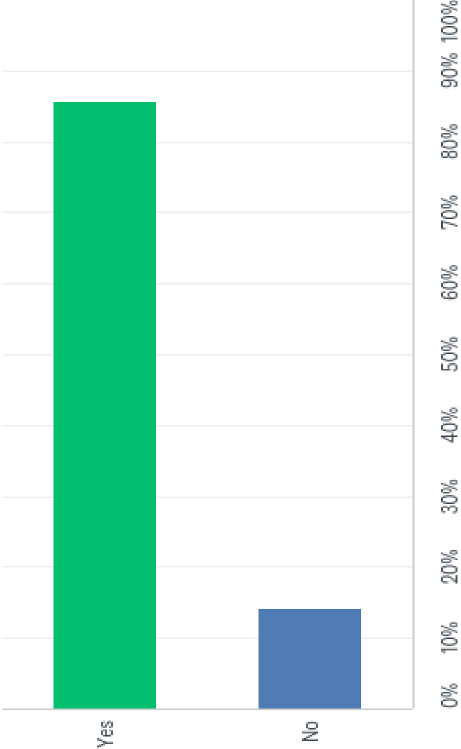
a) Do you think we should keep the KPI?



b) Do you agree with the current definition?



c) Do you think it can apply to all PAYGo business models??



Q9: S.D $ Ahead/ Behind on Payments
a) If no, Please provide rationale for elimination:

Respondents not in favor of keeping 'S.D $ Ahead/ Behind on Payments' felt that it was very **difficult to calculate and interpret**. It **favored companies who track KPI longer, but not necessarily doing better**. Finally, while it may be important for assessing individual borrowers, they found it **relativity less useful to assess company-wide performance.**

"The definition is very convoluted again and may cause confusion amongst companies. Wouldn't a simple indicator showing the difference between 'average credit period at registration' and 'average credit period once paid off' suffice?" – PAYGo Company

"To analyze trends/patterns in the portfolio it is relevant. However, not intuitive enough so will unlikely be applied in practice in a wide-spread manner" – Investor

Q9: S.D $ Ahead/ Behind on Payments
b) If no, explain how its definition could be improved/modified:

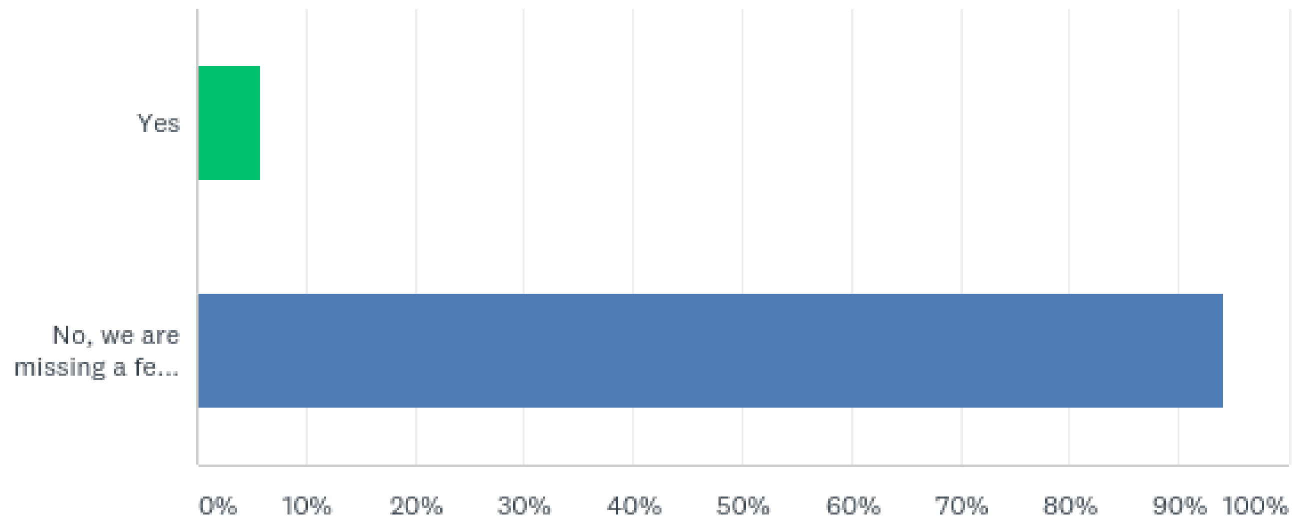
Respondents felt that 'S.D $ Ahead/ Behind on Payments' as a KPI could be improved by:

- **Expressing the metric as a function of a period** rather than as a snapshot in time
- **Modifying it as a yield gap** - looking at expected yield/revenue as a ratio and comparing it with actual yield/revenue.
- Using alternative metrics like **"Average Nominal Terms"** using common survival analysis methods

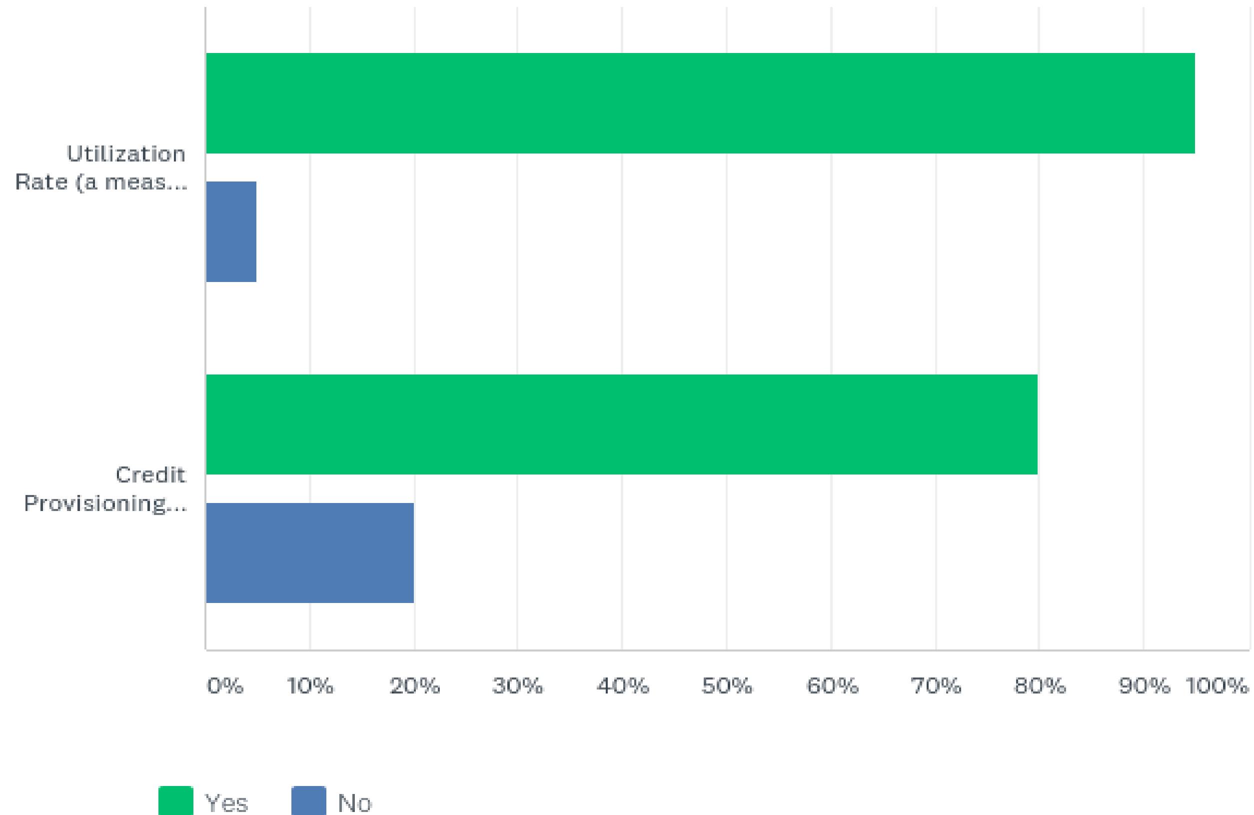
"If the goal of this metric is to determine how slow / fast a customer is relative to the ideal customer, then I think its easier just to calculate what % of expected total revenues have you received by a particular date and how does that compare with what your nominal / budgeted contract period is, again in cohorts ideally" – PAYGo Company

"Why not just % paid vs. expected? The standard deviation view doesn't mean as much to me" – PAYGo Company

Q10: Do you believe the list of current KPIs as defined in the overview below are enough to analyze the portfolio quality of PAYGo solar companies?



Q11: Do you think the following KPIs should be added or considerations made? Please elaborate further on your inputs and indicate for which KPI(s):



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Q11: Please elaborate further on your inputs and indicate for which KPI(s):

Utilization Rate

Respondents reported that this was the **most highly regarded and widest used metric for portfolio "quality"**, which gives actual customer repayment information. It could be improved by:

- **Standardizing** – breaking it down by product offering and comparable across companies
- **Defining it as YTD figure** and not year-end figure:
  - Collected Cash / Expected Cash (monthly basis or since inception)
  - Shown as receivables (collected / expected), or a time-based measure
- **Renaming it as 'repayment progression rate'**

Credit Provisioning

Many respondents **raised concerns** about making credit provisioning an industry wide KPI because of **a lack of uniformity in calculations and definitions**

Further, while it provides some information on expected losses, they **highlighted that it should be read in conjunction with other metrics like NPAs, write offs** etc. to assess portfolio quality

Some reported **preference for a document describing how KPIs could be used to construct a loan loss provision**

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Q11: Please elaborate further on your inputs and indicate for which KPI(s):

Utilization Rate

“Utilization rate is in our opinion the best measure of a company's performance” – Investor

“Utilization rate could be great if broken down by product offering and comparable across companies”

“I would call repayment progression rate instead of utilization rate, as in the solar industry it might be confused with the actual utilization of a solar system”
– PAYGo Company

“Utilization is sometimes helpful but the same analysis can be done using churn and payment speed KPIs”
– Consulting Firm

Credit Provisioning

“credit provisioning, similar to revenue recognition, is an accounting choice, and is business model dependent. While it would be helpful for companies to clarify what their policy is, it doesn't help much from an analysis perspective” – PAYGo Company

“Don’t know how feasible, but standardized reporting around when to take provisions (and for how much) and when to write off bad debt would certainly be nice!”

“Credit provisioning is not being done uniformly. This should not be an industry KPI for reporting until there is a standard approach to calculation and definitions. Would appreciate industry guidance on this, ahead of making it an industry wide report” –PAYGo Company

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Q12: Please list any additional KPIs that you believe are missing and should be included to evaluate the portfolio quality of PAYGo solar companies. Provide a brief rationale for each suggested KPI.

Respondents proposed several additional KPIs that they would like to be included to evaluate portfolio. Some of them are:

- Average credit period and average credit % paid by churned clients
- Average time to completion (expressed as time taken to pay off loan/ nominal days of contract)
- Red line metrics like the number of consecutive missed days at which a borrower becomes historically unlikely (i.e. < 50%) to ever pay again
- Number of products written off as a percentage of total PAYGO registrations made per month
- Number of products repossessed as a percentage of total PAYGO registrations made per month
- Roll rate Analysis: the rate of migration of customers from one receivables bucket to another (e.g. from 30-60 to 60-90)
- Security coverage ratio: (total value of security / portfolio and receivables), to measure what portion of portfolio quality risk is covered by actionable security/collateral
- Average rate per user (ARPU)
- Customer satisfaction KPI, such as % of retained customers
- Risk Adjusted Present Value of Receivables

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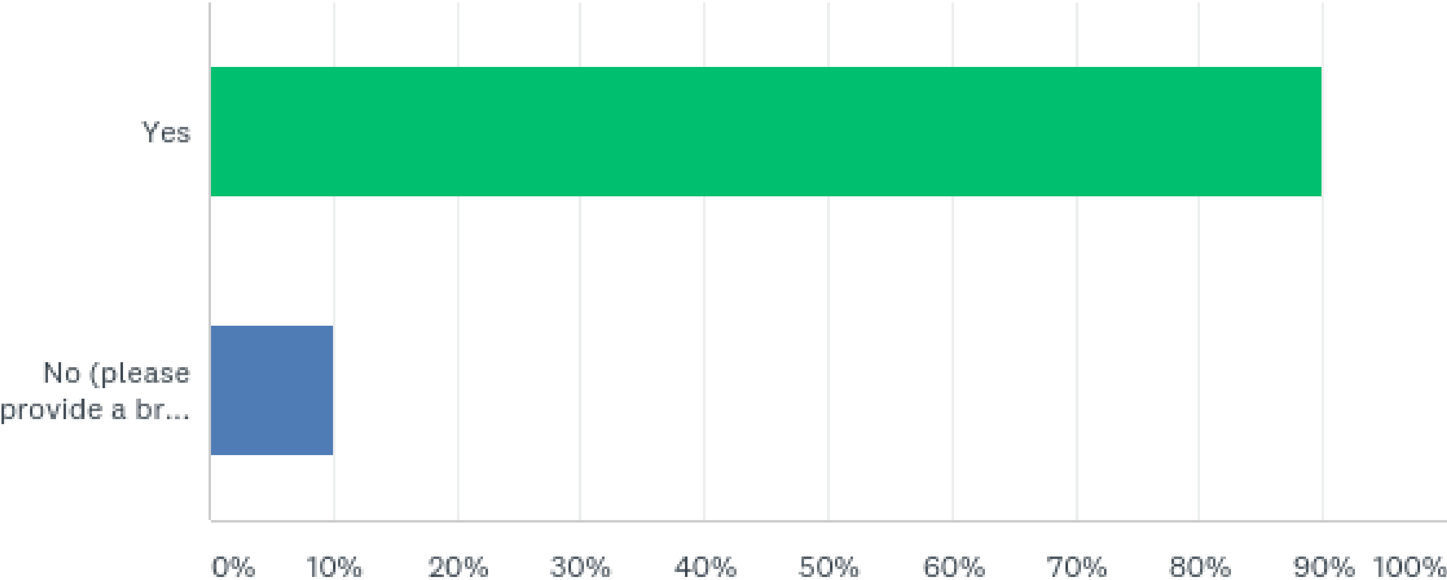
Q13: Would you recommend using cohort analysis when evaluating the portfolio quality of PAYGo solar companies?



Q13: If no, please provide a brief explanation

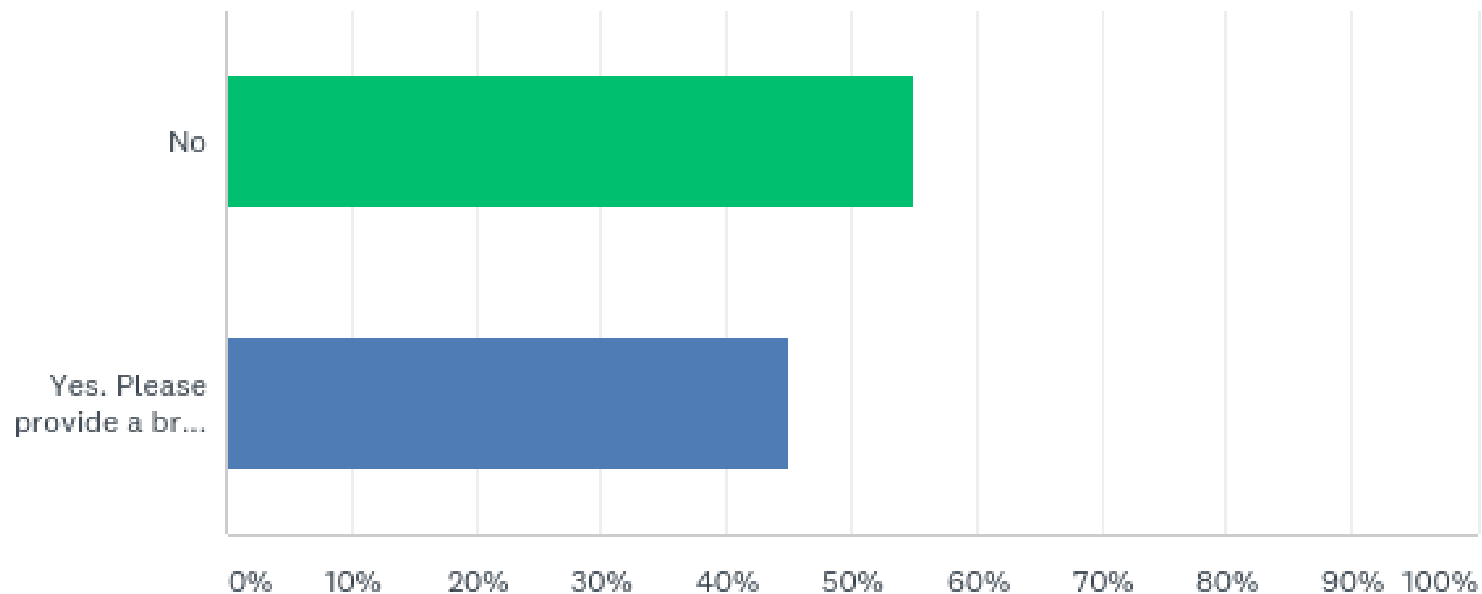
Most respondents were in favor of using cohort analysis when evaluating portfolio quality.

However, some **cautioned the need to consider differences in geographies and business models.**

“This is critical and is normally one of the most important analyses I do in a commercial due diligence. It is very important to examine churn rates over at a cohort level and build composite churn curves to adjust for the effects of fast growth (which dampens PAR) and identify businesses that are trading off growth for portfolio quality. It also allows a much more sensitive analysis of customer lifetime value” – Consulting Firm

“Need to account for regional specificity and types of companies Averaging over a cohort may be misleading”

Q14: Are there any other analytical tools that you suggest / recommend using when evaluating the portfolio quality of PAYGo solar companies?



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Q14: If Yes, please provide a brief description:

Respondents indicated a strong preference for analytical tools that considered a **present value perspective of the receivables** and **impacts of currency loss** based on repayment speeds.

At the customer end, they suggested:

- **State-Phase Analysis:** In a given time period, how many (a) 'Perfect' customers stayed 'Perfect', (b) slipped down to 'Good'? (c) 'Locked' customers moved up to 'Good'?
- **Survival analysis:** to help predict likely account durations, cashflows, etc.
- **First Payment Default:** as a useful predictor of payment behavior
- **Segmentation:** to break down customers by portfolio quality, customer segment, market, distribution channel etc. for tapping into new types of customers
- **Customer rating system** based on utilization rate

“We've had some success using state-phase analysis” –Development Organization

“Incorporating the effects of currency loss (both the expected loss assuming UIRP and the risk assuming downside-case short term currency crashes) by looking at payment speed / Average Credit Period is also important” –Consulting Firm

“A present value perspective is missing: e.g. cashflow discounting, or discounting of receivables for time-value and /or risk is often a concept missed. Despite this concept being fundamental in most other industries dealing with credit/loans” – Investor

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Q15: If you are a representative from a PAYGo solar company, would your company consider sharing data under the following scenarios?

ANSWER CHOICES	RESPONSES	
a) I am not a representative of a PAYGo solar company or am not authorized to respond to this question.	47.06%	8
b) Yes, if the data is shared with a third party and anonymized.	17.65%	3
c) We are willing to share relevant data or indications on working group discussions to test out various KPIs but are not comfortable sharing data otherwise.	11.76%	2
d) No, we are not comfortable sharing internal data at this stage	11.76%	2
e) Other	11.76%	2
TOTAL		17

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Q15: Please elaborate further on your inputs:

- Some respondents indicated an **interest to share anonymized data at the aggregate level**, after satisfying themselves with rigorous customer privacy due diligence.
- Few others **preferred to conduct a self-assessment** and work internally, **but share feedback** on the process.
- Some others were willing to share data, but did not have the requisite approvals to do so

"We are able at our discretion to share highly aggregated and fully anonymized data, especially summary statistics … but not share the underlying data, as it could risk exposing private business information of one or more of our clients. Additionally, we are happy to expose data at the explicit request of our customers" – PAYGo platform provider

"We are happy to perform a self-assessment on the revised KPIs and to share feedback" – PAYGo Company

"Personally I am willing to share data, but don't have the ability to approve that" - PAYGo Company

Q16: Any additional thoughts on data sharing that you were not able to provide above?

Respondents highlighted that **greater transparency** from PAYGo companies, even when justified**, is a multi-year process and cannot be hastened**.

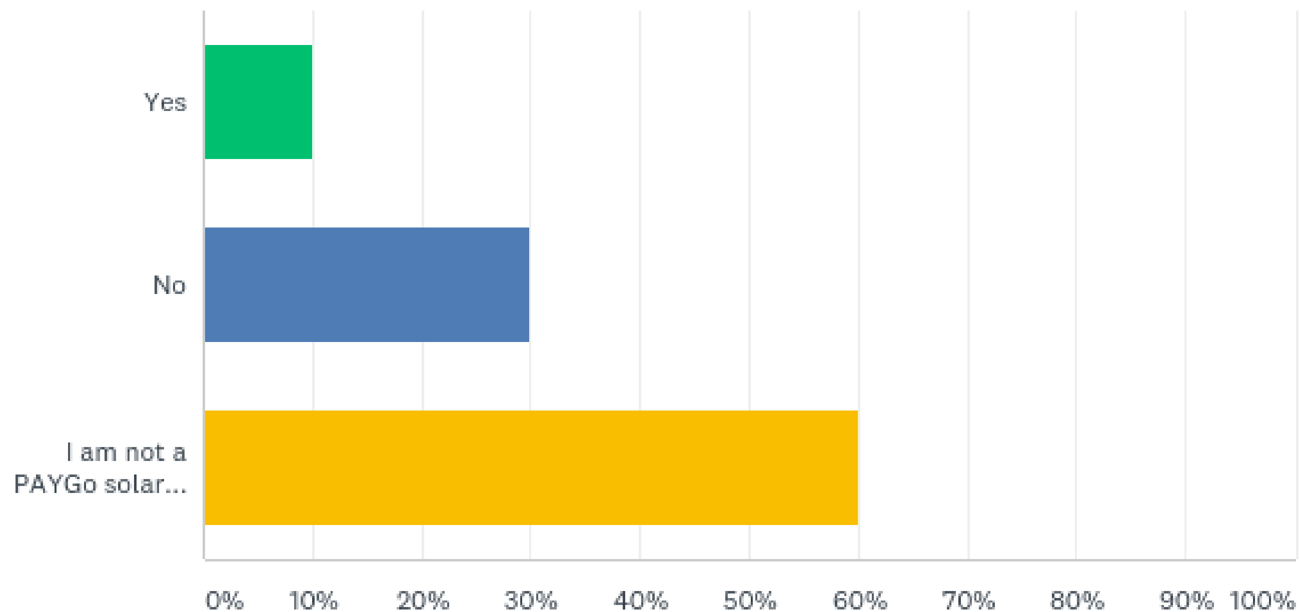
They emphasized the need for a **trustworthy data operator** who can **handle confidential data**.

One of the respondents offered to **share lessons and feedback** from a similar process elsewhere.

“No, this is a delicate question. I do think public investors have a right to expect more transparency, but that can happen over a multi-year timeframe, not all at once” – Development Organization

“I have been working on a process to aggregate, anonymize, and publicly release data on portfolio quality and economic profitability trends in … based on portfolio data from their members. I am leading this process …. and would be happy to share lessons learned on how to set up a data-sharing scheme that allows competitors to work together in a productive, positive-sum way”- Consulting Firm

Q17: For PAYGo solar company representatives: Are there any other portfolio-quality indicators that investors (from across the debt to equity spectrum) request for internal analysis or include in legal documents that is distinct from the ones mentioned so far?



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Q17: If you answered yes to the previous question, please include as detailed a description of the metric(s), the type of investor(s) that request it (them), and please give an indication of the frequency/burden of the request(s)

One respondent reported that **Default rate** is a KPI investors commonly ask

"Investors always ask for default rate. However, this is not a relevant metric for PAYG companies. It is, in fact, dangerous to prioritize default rates because it is an arbitrary metric that can easily be gamed (for example, a company can lower its default rate by making the terms more flexible)" – PAYGo Company

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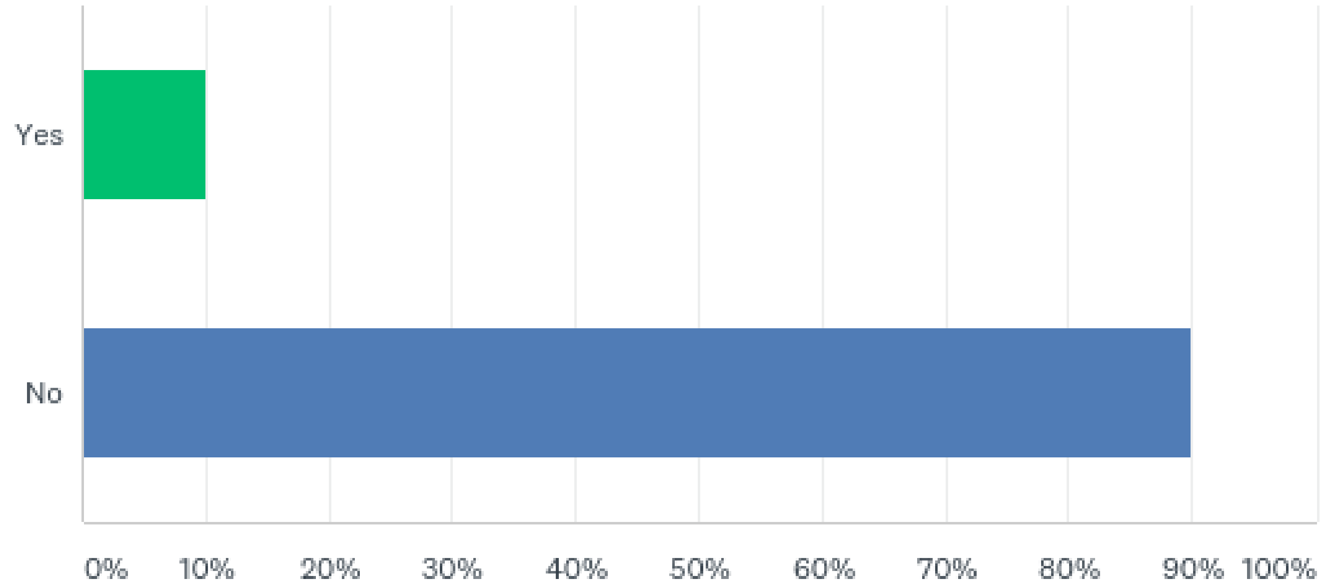
Q18: Are there any potential issues that need to be addresses which have not been covered in the questions above?



Q18: Are there any potential issues that need to be addresses which have not been covered in the questions above?

Respondents felt that an **analysis of power-as-a-service businesses** had not been covered by the survey. They also emphasized need for a discussion on **data collection, data quality and a common taxonomy.**