



**Departamento
de Controle do Espaço Aéreo**
Department of Airspace Control



ATM047 – ATM Performance Indicators



CURSO ATM047 – INDICADORES DE DESEMPEÑO ATM

Unit 1.2 – ATM PERFORMANCE INDICATORS

Subunit 1.2.1 – GANP Indicators GANP

October - 2024

GANP INDICATORS



OBJECTIVE

Have knowledge of the ATM Performance Indicators recommended by ICAO in the Global Air Navigation Plan (GANP).

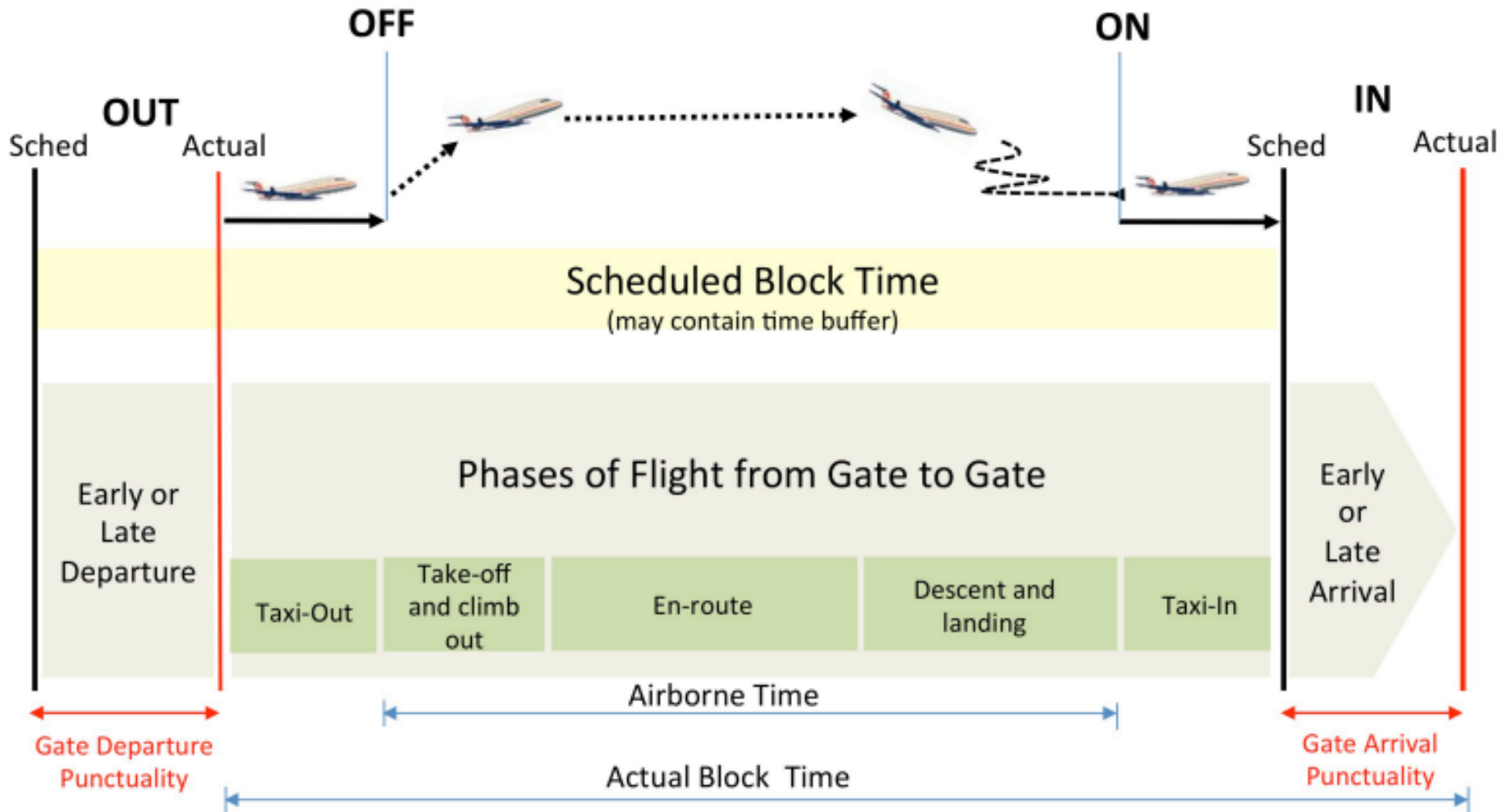


KPI – GANP INDICATORS

MCA 100-22 SISCEAB ATM Indicators Methodology (2020)



KPI – GANP INDICATORS



KPI – GANP INDICATORS

Título do Indicador	PONTUALIDADE DE PARTIDA (KPI01)
Área do Negócio	Previsibilidade
Descrição do Indicador	Porcentagem de voos saindo do <i>gate</i> pontuais em relação ao horário programado (EOBT, Registro ANAC).
Objetivo	Este indicador aponta para a previsibilidade desempenhada pelo aeroporto em suas operações de decolagem, sendo calculado de duas formas: com base no horário programado de partida do voo (Registro ANAC) e com base no EOBT do Plano de Voo.
Identificação das Variáveis	<ol style="list-style-type: none"> 1. Filtrar somente os voos regulares (tipo de plano de voo). 2. Determinar variação de tempo (Delta partida). <ul style="list-style-type: none"> $\Delta T 1 = AOBT - EOBT$ $\Delta T 2 = AOBT - \text{Hora de partida registro}$ 3. Classificar se o voo está pontual ou não (com as 2 variantes de $\Delta T 1$ e 2). <ul style="list-style-type: none"> - Se $\Delta T \geq \Delta L \rightarrow$ Voo não pontual - Se $\Delta T < \Delta L \rightarrow$ Voo pontual <p>Delta limite = 5 min, 15 min ou 30 min</p> 4. Calcular percentual de voos pontuais.
Fórmula (Métrica)	$KPI_{01} = \frac{\Sigma(\text{voos de saída pontuais})}{\Sigma(\text{voos de saída})} \times 100 \text{ [% de voos]}$

KPI – GANP INDICATORS

DEPARTURE PUNCTUALITY

Definition – Percentage of flights departing from the gate on-time (compared to schedule).

Measurements unit – % of scheduled flights.

Operations Measured – IFR departures of scheduled airlines.

Variants

Variant 1A – % of departures within ± 5 minutes of scheduled time of departure.

Variant 1B – % of departures delayed ≤ 5 minutes versus schedule.

Variant 1B – % of departures delayed ≤ 5 minutes versus schedule.

Variant 2B – % of departures delayed ≤ 15 minutes versus schedule.

Objects Characterized – The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).

KPI – INDICADORES GANP

DEPARTURE PUNCTUALITY

Utility of the KPI – This is an airspace user and passenger focused KPI: departure punctuality gives an overall indication of the service quality experienced by passengers, and the ability of the airlines to execute their schedule at a given departure location.

Parameters – On-time threshold (maximum positive or negative deviation from scheduled departure time) which defines whether a flight is counted as on-time or not.

Recommended values: 5 minutes and 15 minutes.

Data Requirement

For each departing scheduled flight:

- Scheduled time of departure (STD) or Scheduled off-block time (SOBT).
- Actual off-block time (AOBT).

KPI – GANP INDICATORS

DEPARTURE PUNCTUALITY

Data Feed Providers – Schedule database(s), airports, airlines and/or ANSPs

Formula / Algorithm

At the level of individual flights:

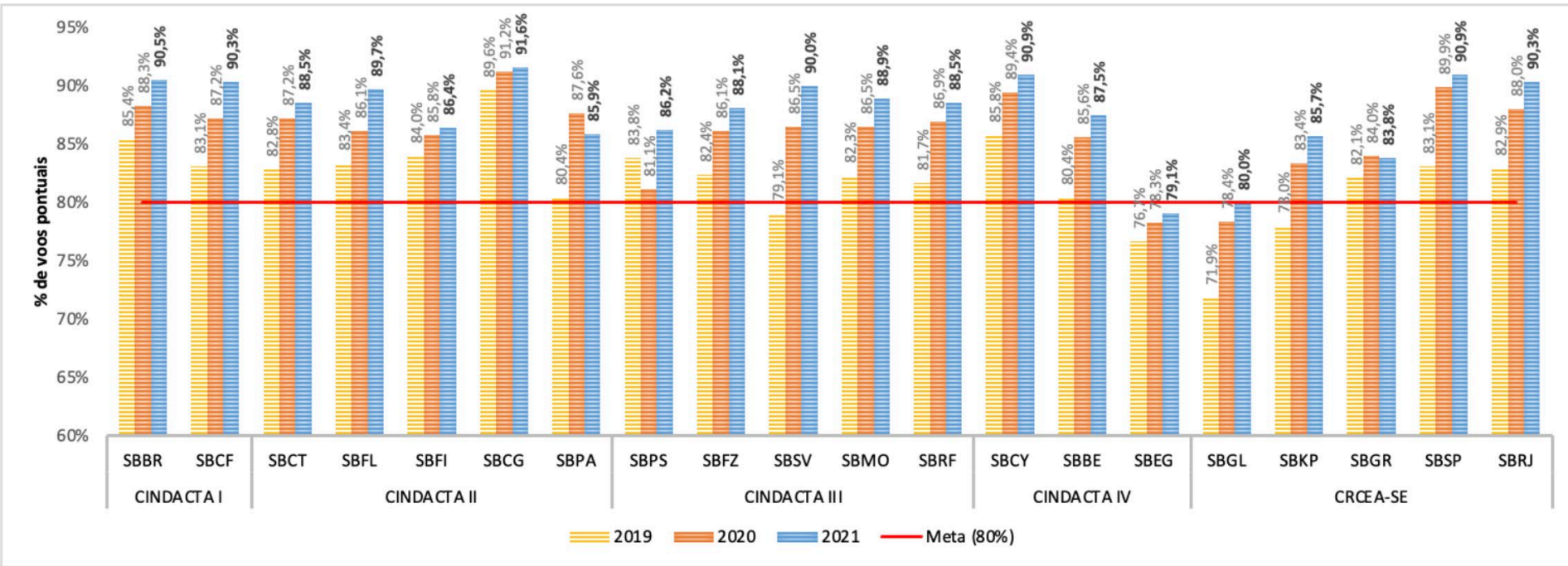
1. Exclude non-scheduled departures.
2. Categorize each scheduled departure as on-time or not.

At aggregated level:

3. Compute the KPI: number of on-time departures divided by total number of scheduled departures.

KPI – GANP INDICATORS

Figura 33 - Pontualidade de partida por aeroportos



Fonte: SIROS e TATIC FLOW

Source: Relatório de Performance do SISCEAB 2021

KPI – GANP INDICATORS

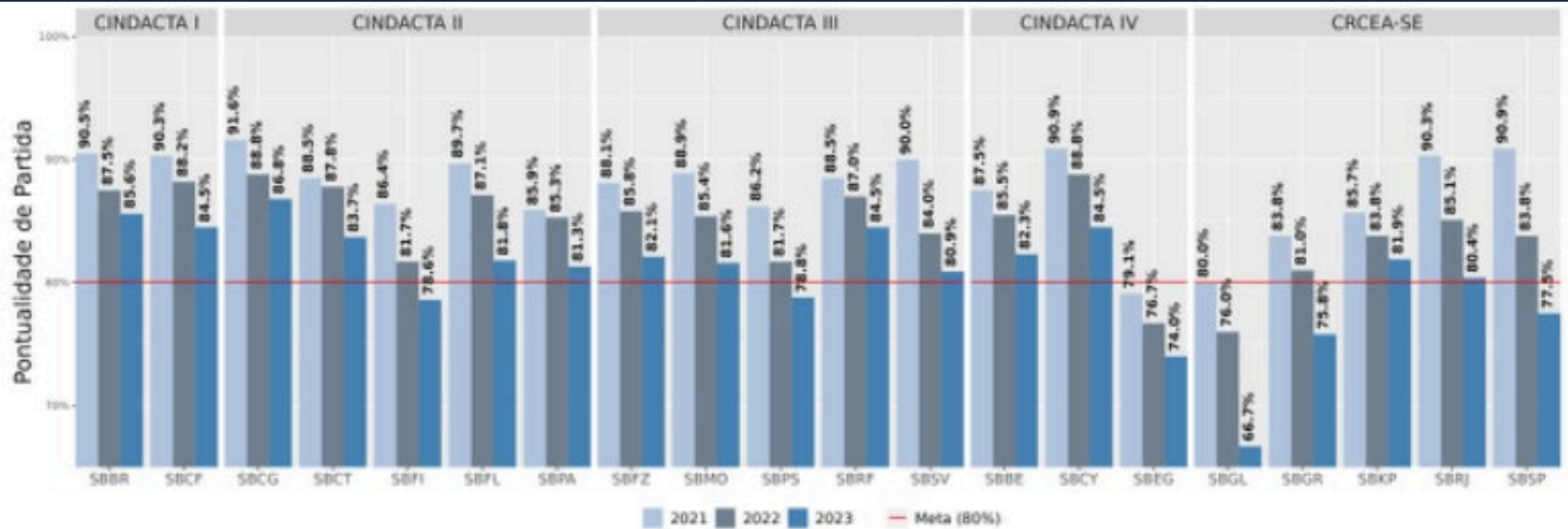


Figura 3.2: Pontualidade de Partida (KPI01)

Source: Relatório de Performance do SISCEAB 2023

KPI – GANP INDICATORS

Título do Indicador	PONTUALIDADE DE CHEGADA (KPI14)
Área do Negócio	Previsibilidade
Descrição do Indicador	Porcentagem dos voos chegando no <i>gate</i> no horário programado (comparação com a programação)
Objetivo	Este é um KPI com foco no usuário do espaço aéreo e no passageiro. Fornece uma indicação geral da qualidade do serviço prestado pelos ANSP e companhias aéreas no que tange à pontualidade de chegada ao <i>gate</i> nas localidades selecionadas.
Identificação das Variáveis	AIBT EIBT ETA
Fórmula (Métrica)	$KPI_{14} = \frac{\sum(\text{voos de chegada pontuais})}{\sum(\text{voos de chegada})} \times 100 \text{ [\% de voos]}$

KPI – GANP INDICATORS

ARRIVAL PUNCTUALITY

Definition – Percentage of flights arriving at the gate on-time (compared to schedule).

Measurement Units – % of scheduled flights.

Operations Measured – IFR arrivals of scheduled airlines.

Variants

Variant 1A – % of arrivals within ± 5 minutes of scheduled time of arrival.

Variant 1B – % of arrivals delayed ≤ 5 minutes versus schedule.

Variant 2A – % of arrivals within ± 15 minutes of scheduled time of arrival.

Variant 2B – % of arrivals delayed ≤ 15 minutes versus schedule.

Objects Characterized – The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).

KPI – INDICADORES GANP

ARRIVAL PUNCTUALITY

Utility of the KPI – This is an airspace user and passenger focused KPI: arrival punctuality gives an overall indication of the service quality experienced by passengers, and the ability of the airlines to execute their schedule at a given destination.

Parameters – On-time threshold (maximum positive or negative deviation from scheduled arrival time) which defines whether a flight is counted as on-time or not.

Recommended values: 5 minutes and 15 minutes.

Data Requirement

For each arriving scheduled flight:

- Scheduled time of arrival (STA) or Scheduled in-block time (SIBT).
- Actual in-block time (AIBT).

KPI – INDICADORES GANP

ARRIVAL PUNCTUALITY

Data Feed Providers – Schedule database(s), airports, airlines and/or ANSPs

Formula / Algorithm

At the level of individual flights:

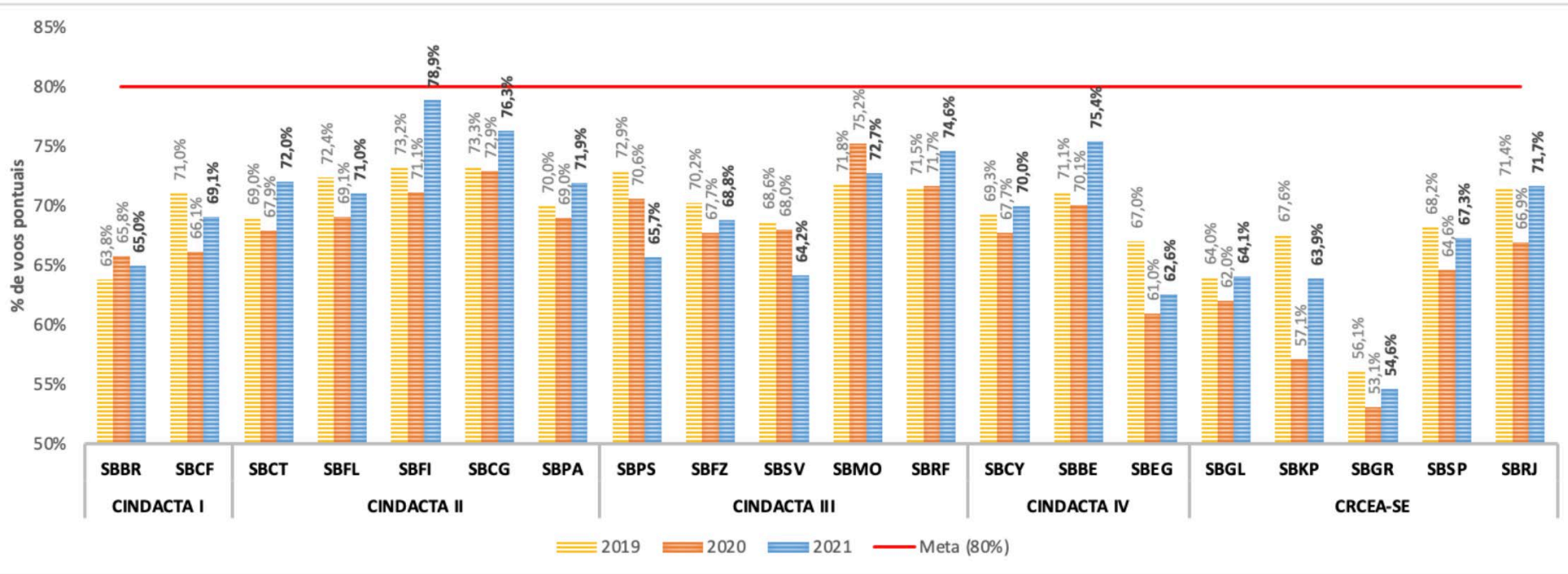
1. Exclude non-scheduled arrivals.
2. Categorize each scheduled arrival as on-time or not.

At aggregated level:

3. Compute the KPI: number of on-time arrivals divided by total number of scheduled arrivals.

KPI – GANP INDICATORS

Figura 40 - Pontualidade de chegada por aeroportos



Fonte: SIROS e TATIC FLOW

Source: Relatório de Performance do SISCEAB 2021

KPI – GANP INDICATORS

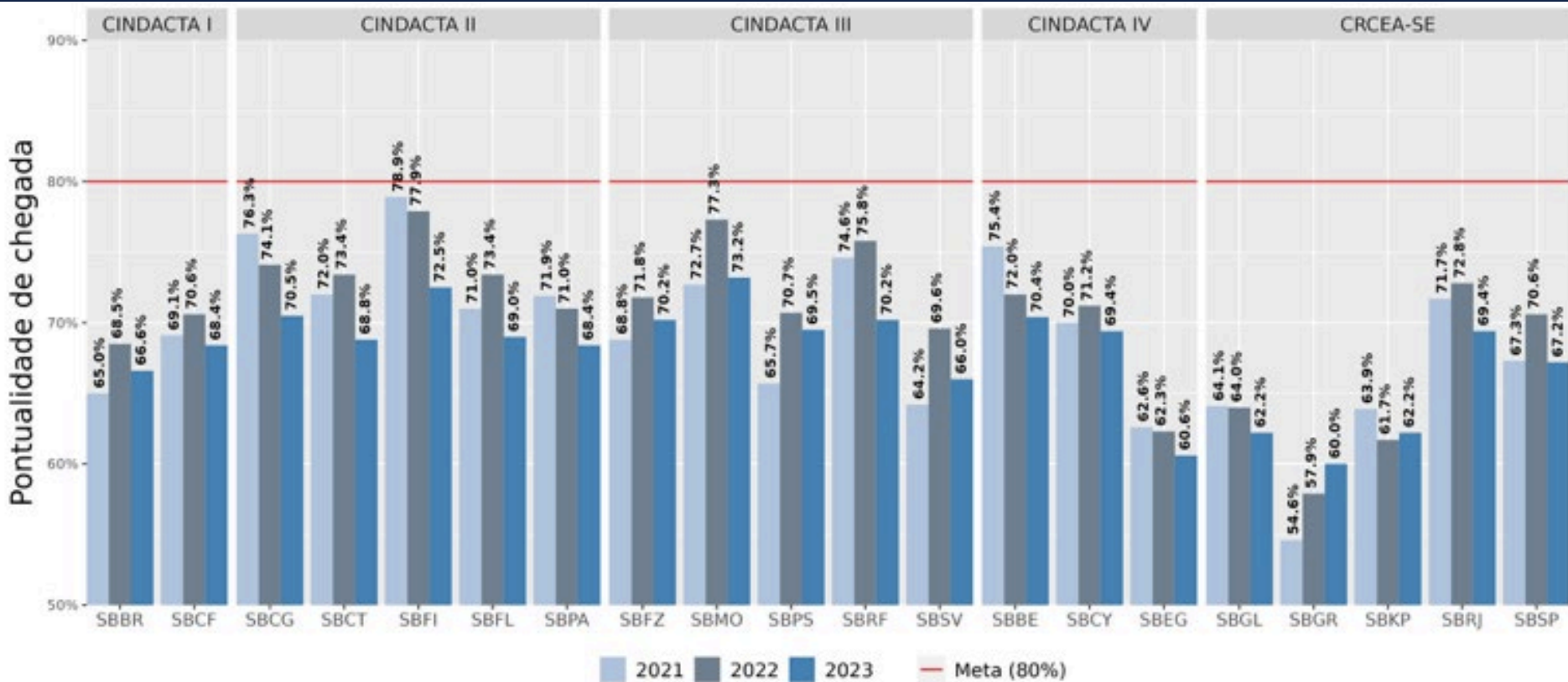
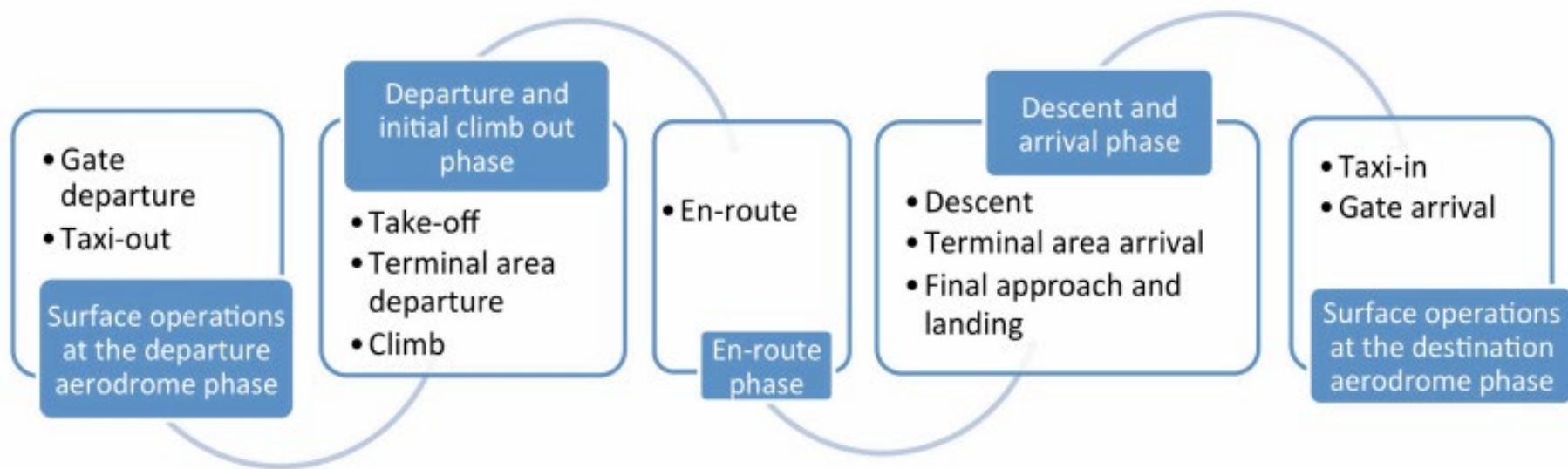


Figura 3.5: Pontualidade de chegada (KPI14)

Source: *Relatório de Performance do SISCEAB 2023*

KPI – GANP INDICATORS



Muito obrigado!



ATM047 COURSE – ATM PERFORMANCE INDICATORS

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