

Characteristics of effective paths in Brazilian legal processes

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Relations in the
Legal Domain





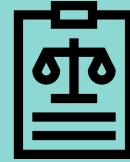
How Brazilian legal process works?



Judicial process
problem



Judicial Class
classification



→ Class A



→ Class B

Steps (movements) of a judicial process



→ A

→ B

→ C

→ ...

→ Z



→ A

→ D

→ Z

→ ...

→ F



About the steps (movements)

- Movements are action steps on the lawsuit:
 - Petição Inicial (Initial Petition)
 - Apelação (Appeals)
 - Súplicas (Pleadings)
- The number of movements does not depend on the judicial class.
- The time T in a movement depends on the type of action.
- All the movements depend on the **history** of the judicial process and the **judge's choice**.

**Is there a special
sequence (path) for each
judicial class ?**





Model



We chose a judicial class

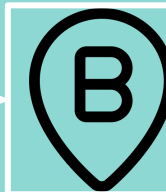
F_{AB} is the number of consecutive sequences that start in A and finished in B.

$$D_{AB} = \exp(-\beta F_{AB})$$

$$\beta = 1/\langle F \rangle$$



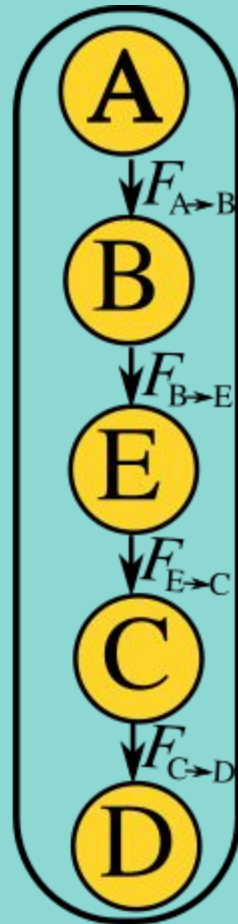
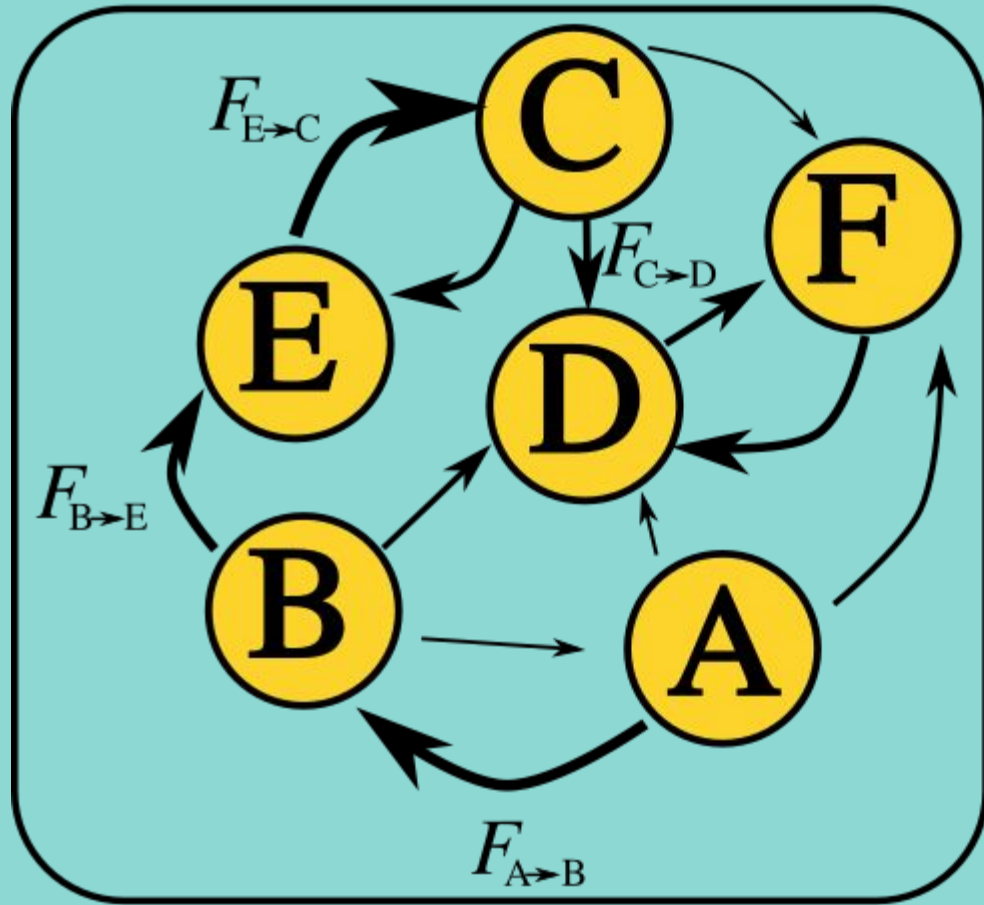
F_{AB}



$$PP_{AB} = \text{Dijkstra}(D_{AB})$$

The most probable path





Most Probable Paths



Dataset



Dataset



- **Judicial Classes:**
 - Procedimento Comum Cível (Common Civil Procedure) - 67499 lawsuits
 - Execução Fiscal (Tax Enforcement) - 23039 lawsuits
 - Procedimento do Juizado Especial Cível (Procedure of the Special Civil Court) - 29643 lawsuits
 - Execução de Título Extrajudicial (Execution of Extrajudicial Title) - 4797 lawsuits
- 347 types of movements.



Results



Final movement



Expedição de Certidão de Arquivamento

Definitivo

Trânsito em julgado

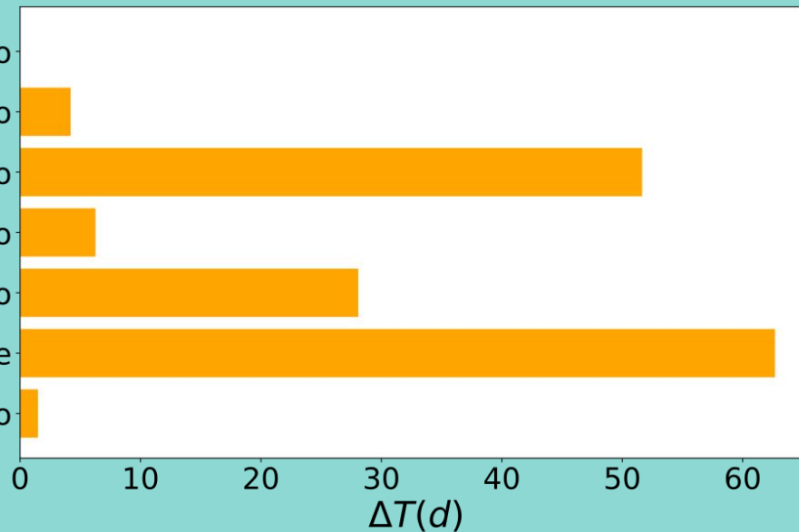
Despacho/Decisão disponibilizado no Diário de Justiça Eletrônico

Encaminhado edital/relação para publicação

Mero expediente

Conclusão

Start movement



Execução de Título Extrajudicial (Execution of Extrajudicial Title)

ΔT = The time during the movement

$N_m = 7$; Total time = 158 days

Final movement



Expedição de Certidão de Arquivamento

Definitivo

Trânsito em julgado

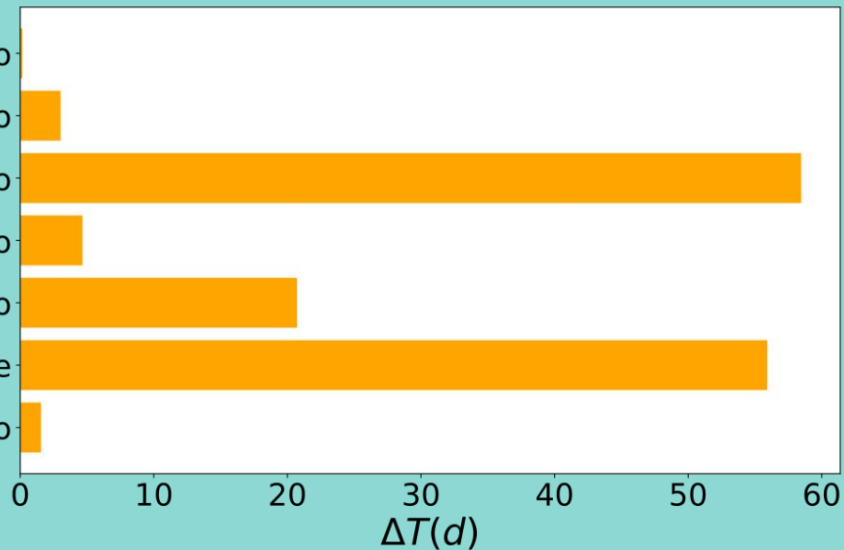
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Start movement

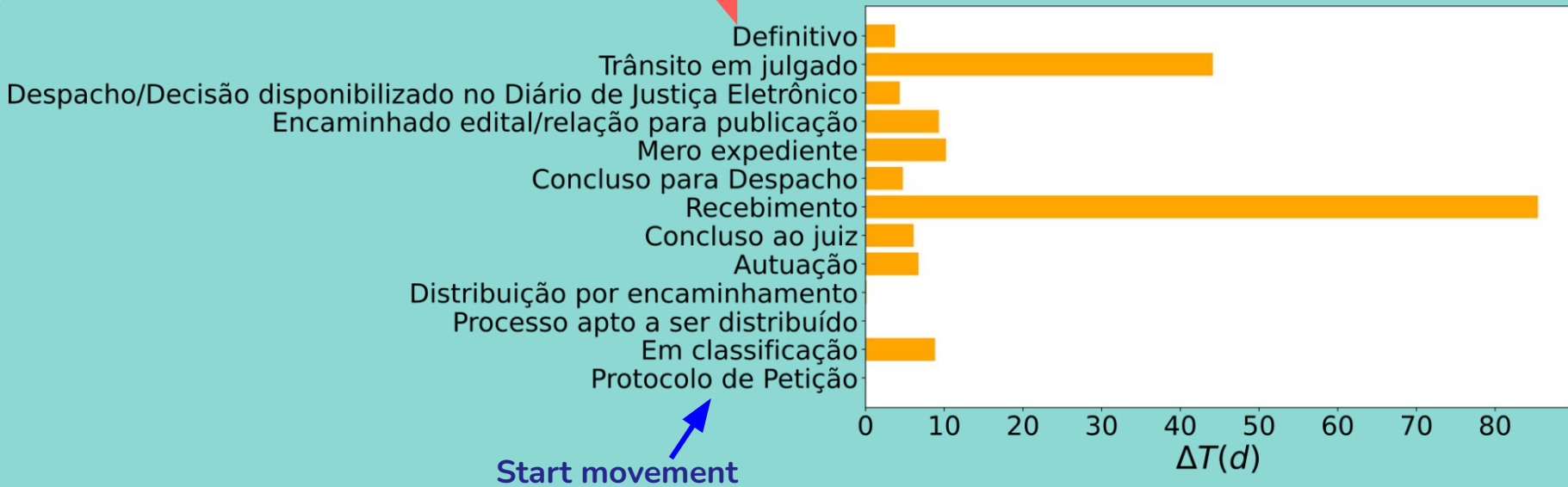


Procedimento Comum Cível (Common Civil Procedure)

ΔT = The time during the movement

$N_m = 7$; Total time = 146 days

Final movement

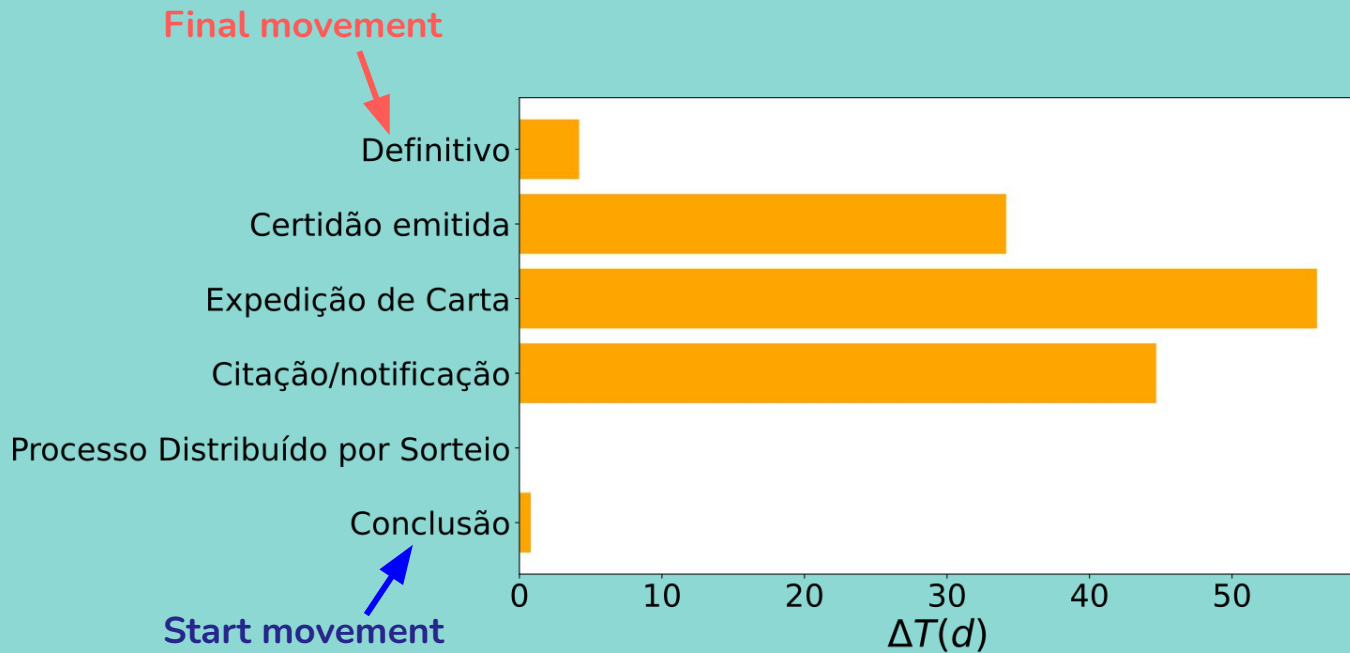


Start movement

Procedimento do Juizado Especial Cível (Procedure of the Special Civil Court)

ΔT = The time during the movement

$N_m = 13$; Total time = 184 days



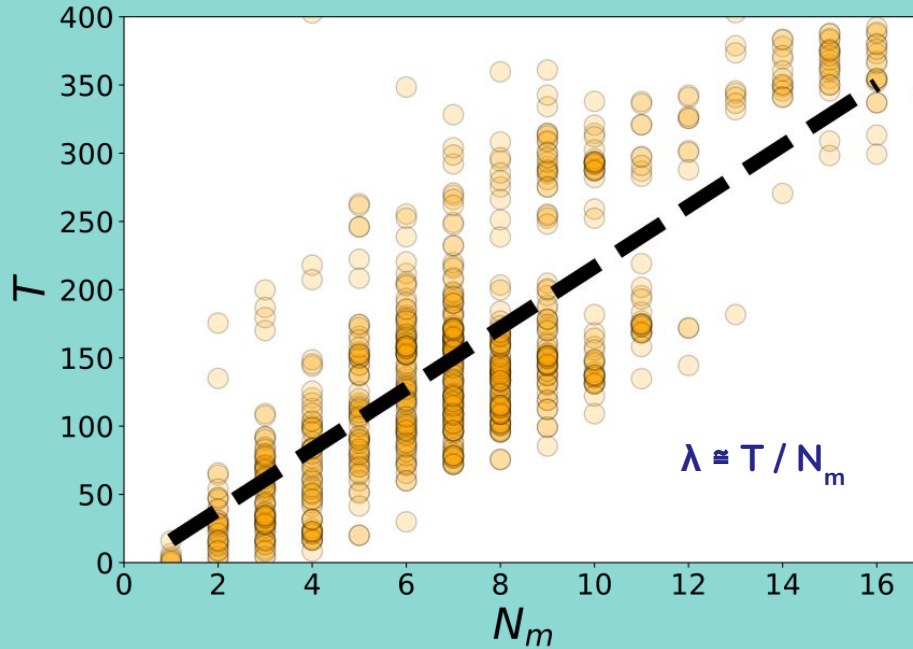
Execução Fiscal (Tax Enforcement)

ΔT = The time during the movement

$N_m = 6$; Total time = 141 days



Total time and number of movements correlation

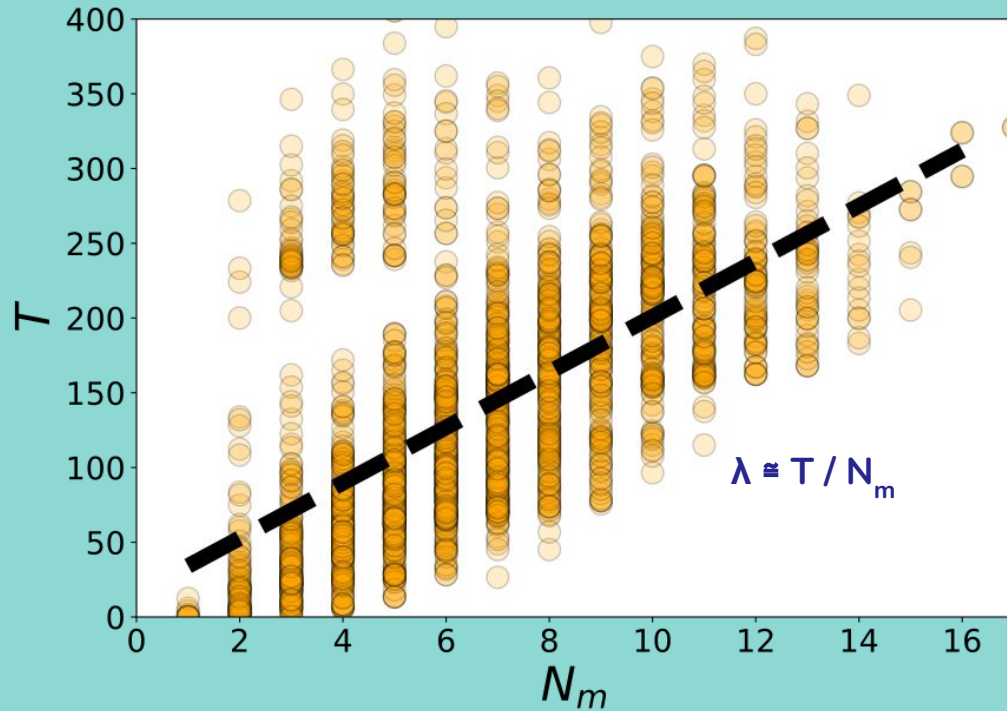


Execução de Título Extrajudicial (Execution of Extrajudicial Title)

$\lambda = 21.3$ days / movement

N_m = Number of movements in the most probable path ;

T = Total time (in days)

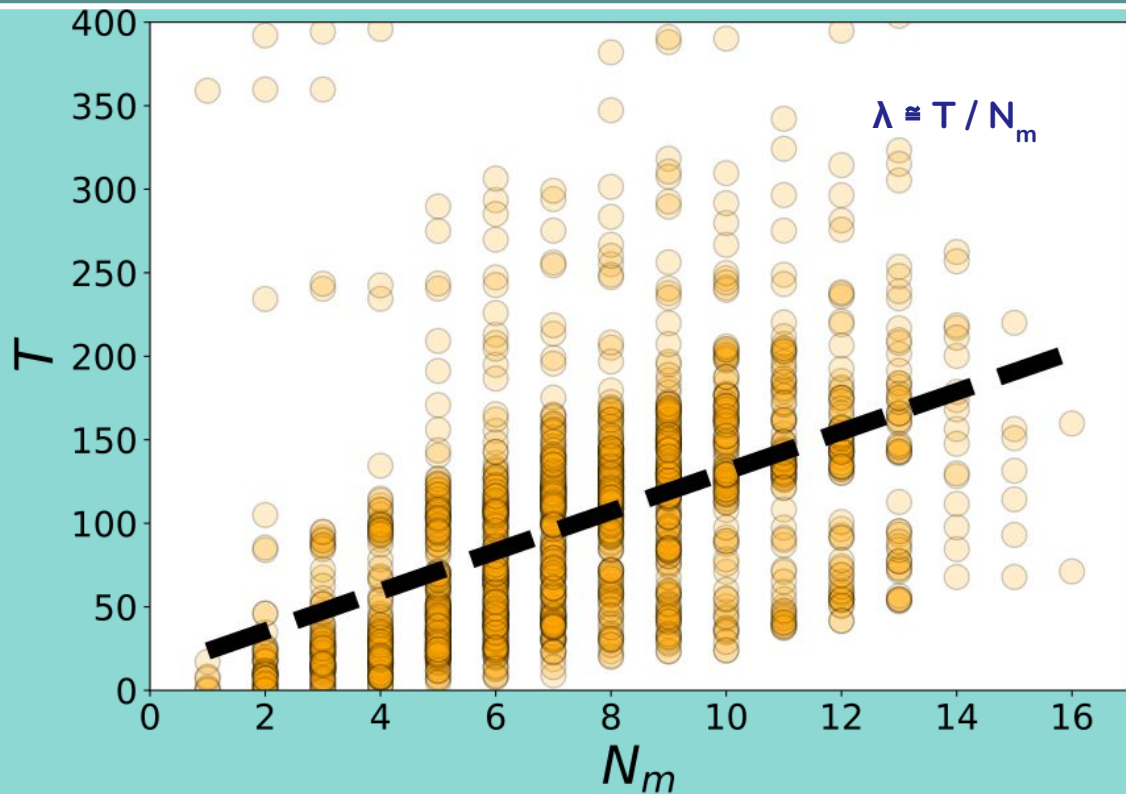


Procedimento Comum Cível (Common Civil Procedure)

$\lambda = 11.5$ days / movement

N_m = Number of movements in the most probable path ;

T = Total time (in days)

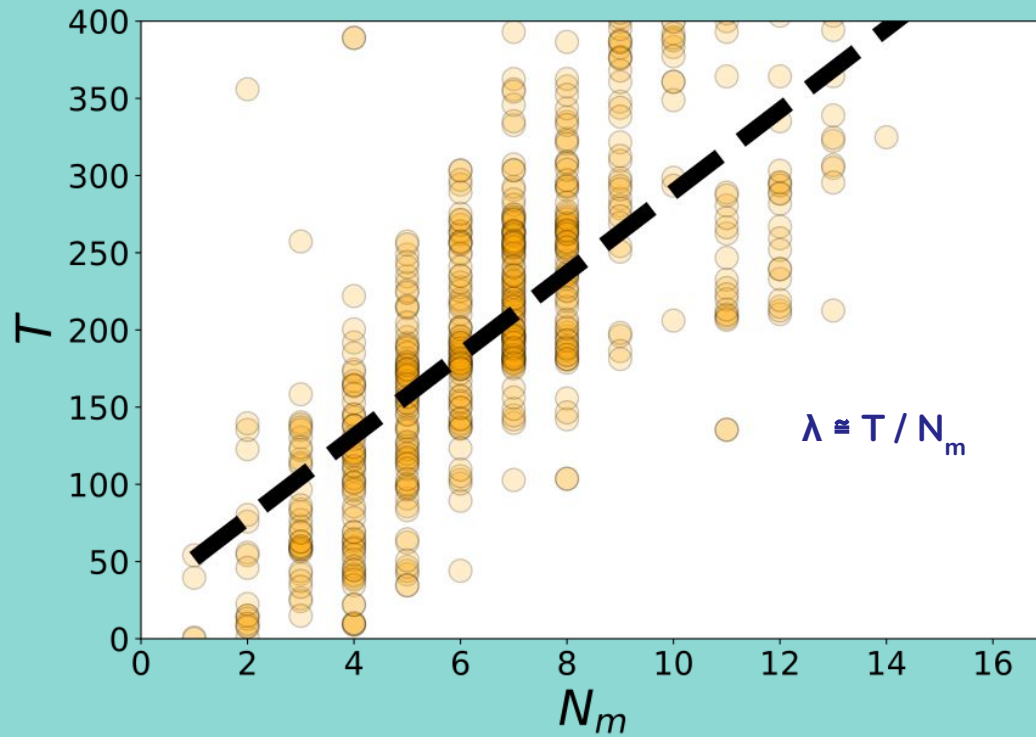


Procedimento do Juizado Especial Cível (Procedure of the Special Civil Court)

$\lambda = 11.9$ days / movement

N_m = Number of movements in the most probable path ;

T = Total time (in days)



Execução Fiscal (Tax Enforcement)

$\lambda = 26.4$ days/ movement

N_m = Number of movements in the most probable path ;

T = Total time (in days)

Conclusion



- We estimated the effective paths for different judicial class.
- We highlighted the main movements for each judicial class and check the time necessary to finished them.
- We have created a quality index for each judicial class.