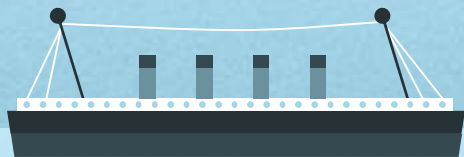


— Survival Day —

TITANIC

A short analysis of survival chance



Studenti: Ionut Toma

Mariana Ochiș

Coordonator: Conf. Univ. Dr. Adrian Beteringhe

01

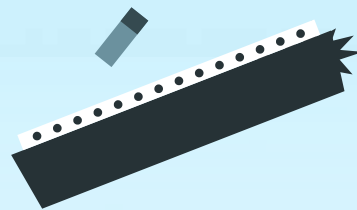
Guided data analysis

- Importarea librariilor
- Importarea datelor
- Explorarea datelor
- Statistici sumare
- Gestionarea valorii lipsa.

02

Further research

Corelarea între
sansele de
supraviețuire și
diverse caracteristici
ale pasagerilor.



— Cuprins —

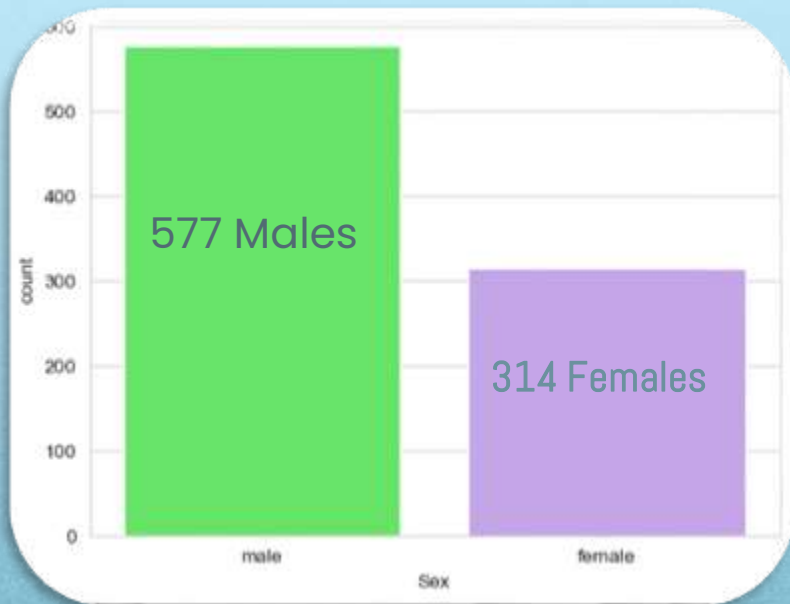
1. Informatii generale despre Titanic.
2. Distributia numarului de pasageri
3. Numarul si procentul de supravietuitori
4. Sansa de supravietuire dupa gen.
5. Sansa de supravietuire dupa gen si varsta.
6. Sansa de supravietuire dupa gen si clasa.
7. Sansa de supravietuire dupa punctul de imbarcare.
8. Sansa de supravietuire dupa varsta si alte corelari.
9. Sansa de supravietuire dupa clasa si alte corelari.
10. Sansa de supravietuire dupa marimea familie si alte corelari.

01

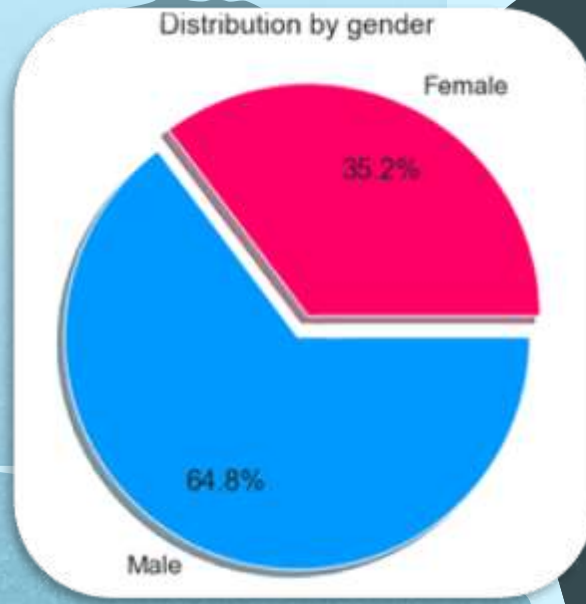
Cati pasageri ?

Distributia dupa gen

Total count: **891**



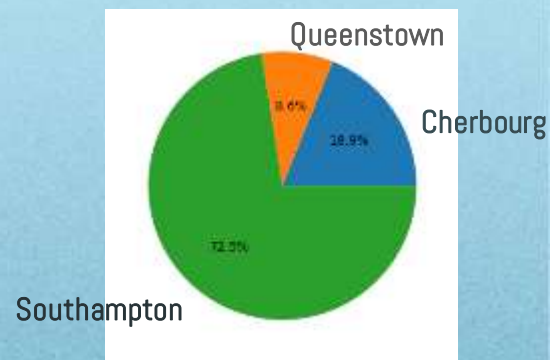
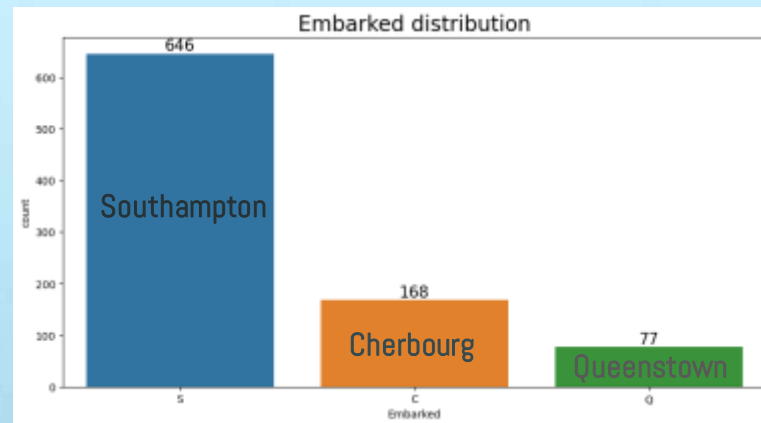
Procentul per gen



— Itinerariul Titanicului —



41c 43.5'N
49° 56.8'W



Distributia per gender a pasagerilor in fiecare port

1. Cherbourg (C)

♂ 95

♀ 73

2. Queenstown(Q)

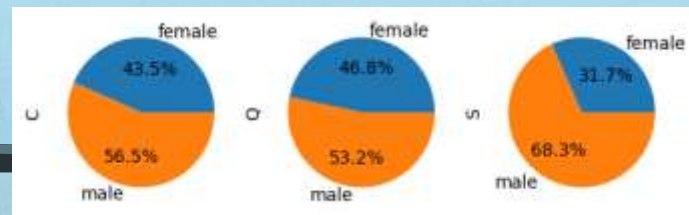
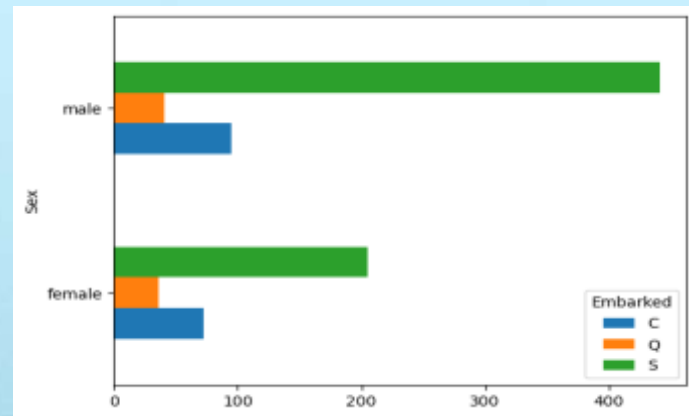
♂ 41

♀ 36

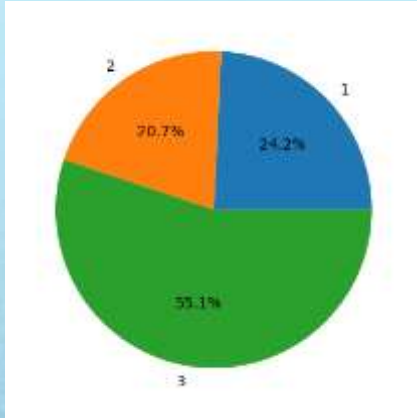
3. Southampton(S)

♂ 441

♀ 205



— Passenger Class Info—



216 pasageri • 24.2% •

1

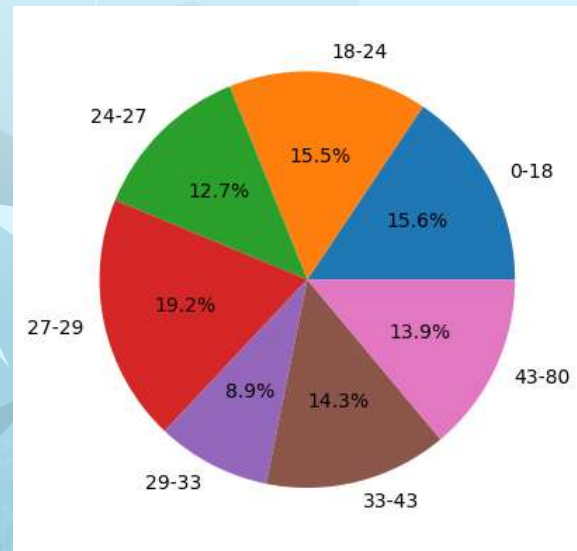
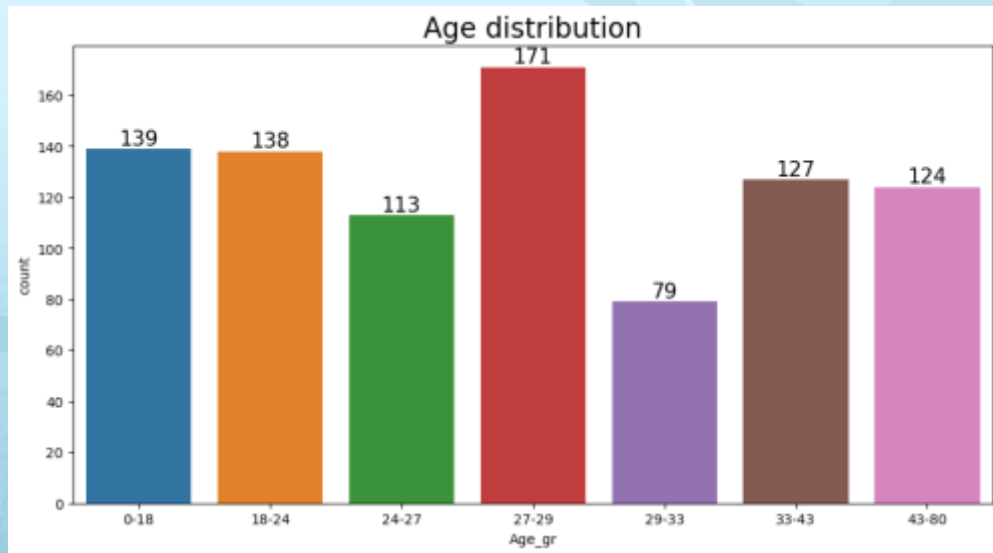
184 pasageri • 20.7% •

2

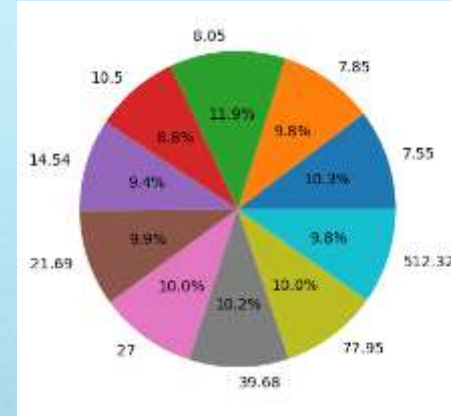
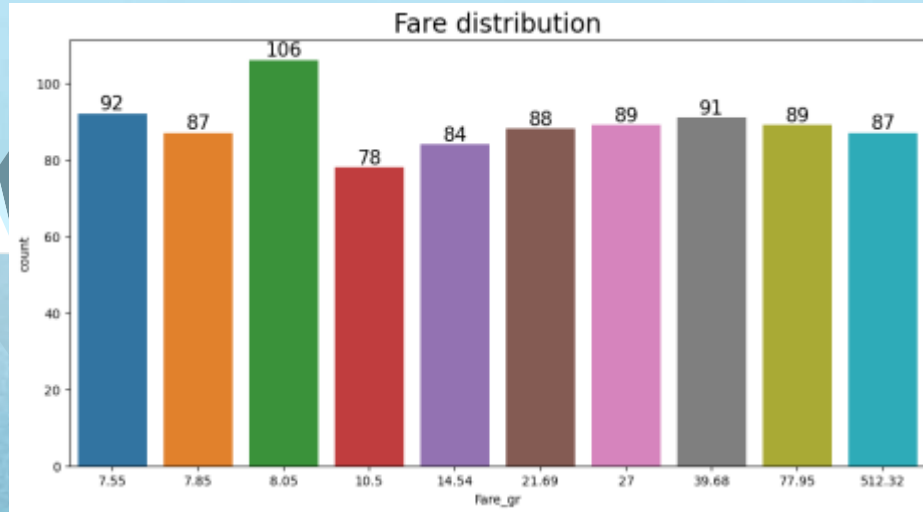
491 pasageri • 55.1% •

3

— Distribuția pe vârste a pasagerilor —

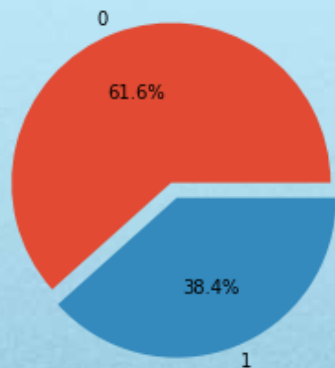


— Distributia pe valoarea biletului a pasagerilor —



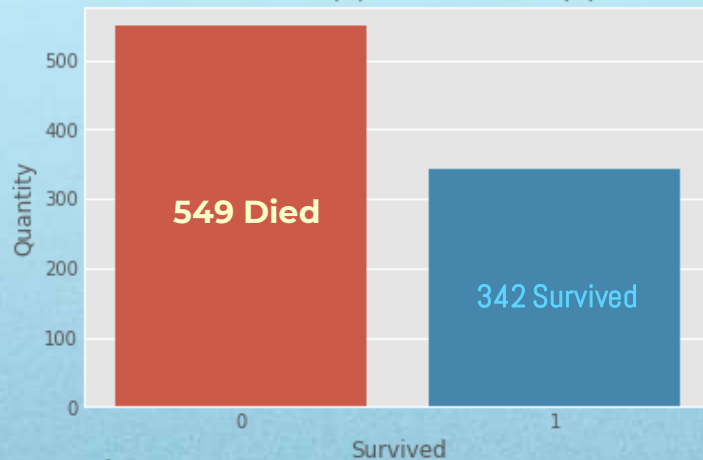
Procentul de supravietuitori

Survivors (1) and the dead (0)



Numarul de supravietuitori

Survivors (1) and the dead (0)



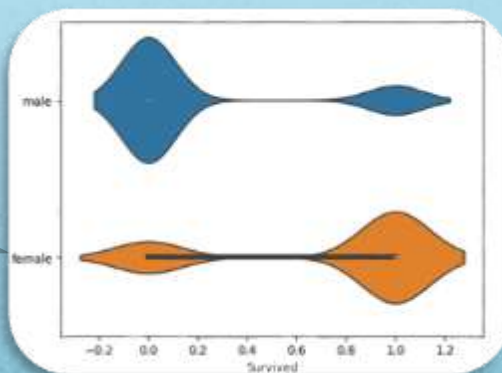
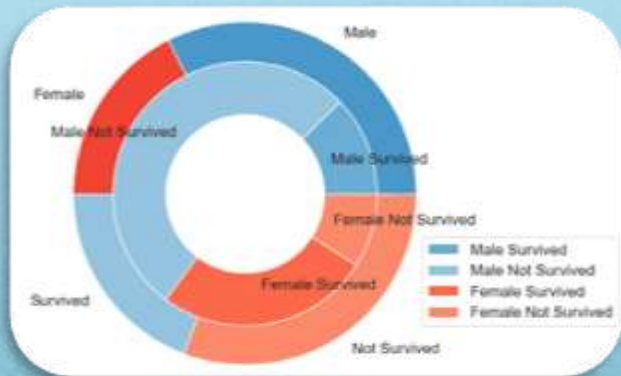
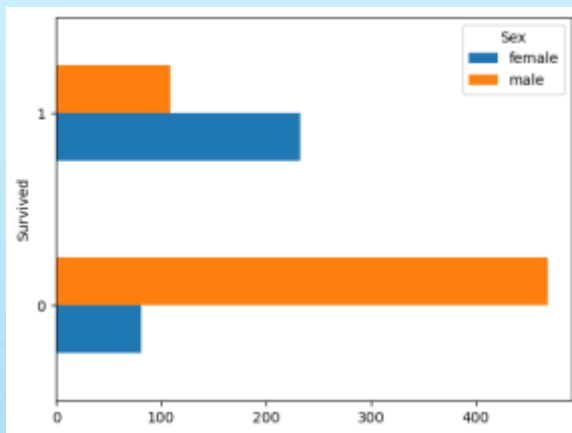
Nr total de supravietuitori: 342



109 barbati



233 femei



03

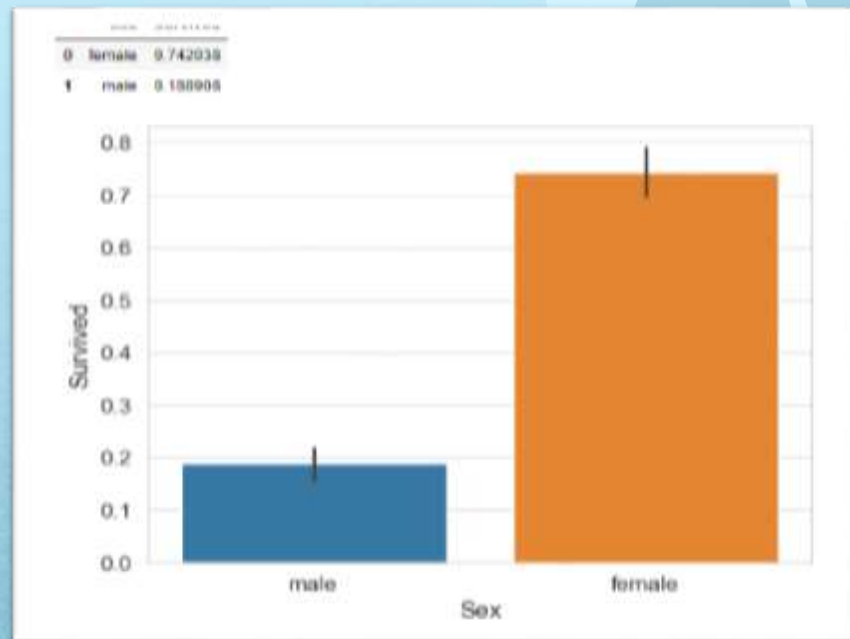
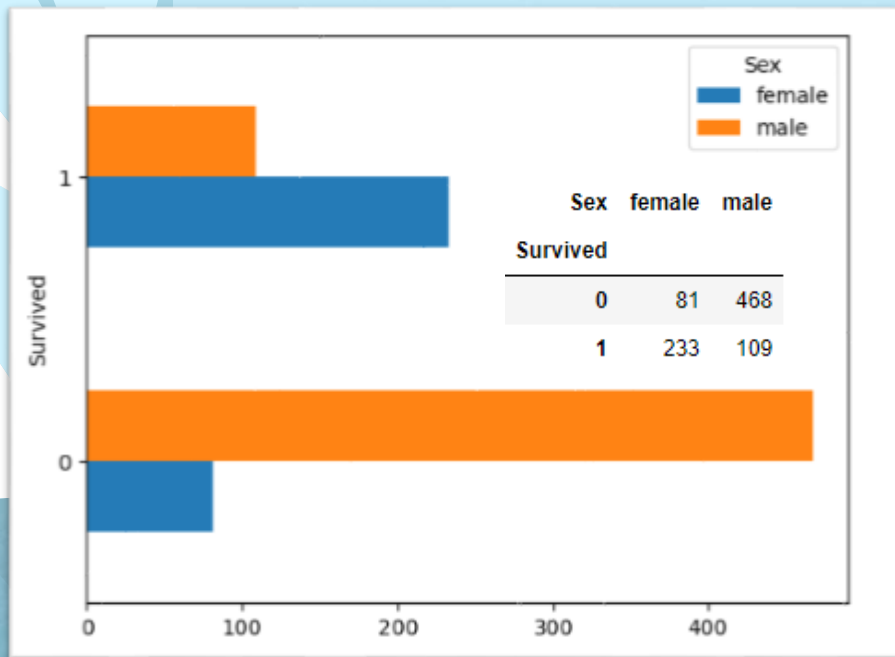
Survival dupa gen.



Total femei: **314**
233 supr.
81 decedate
74% survival rate.



Total barbati: **577**
109 Survived
468 Decedati
18,9% survival rate

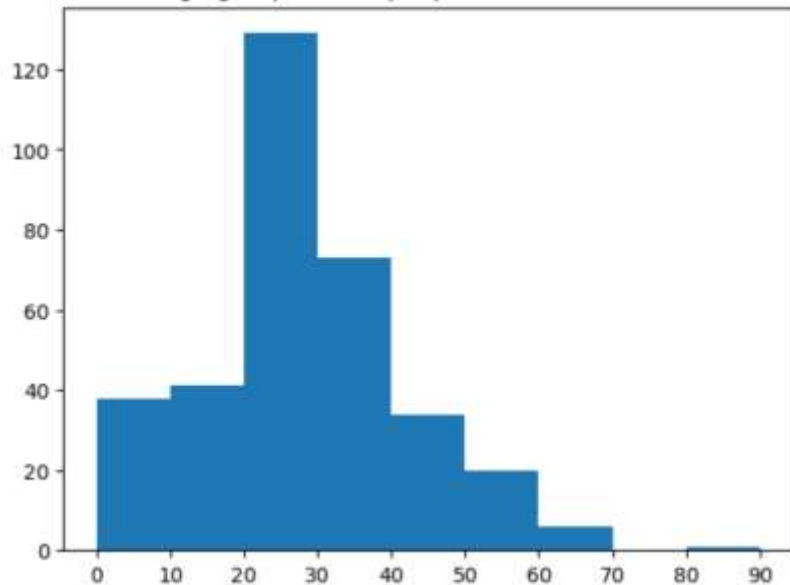


04

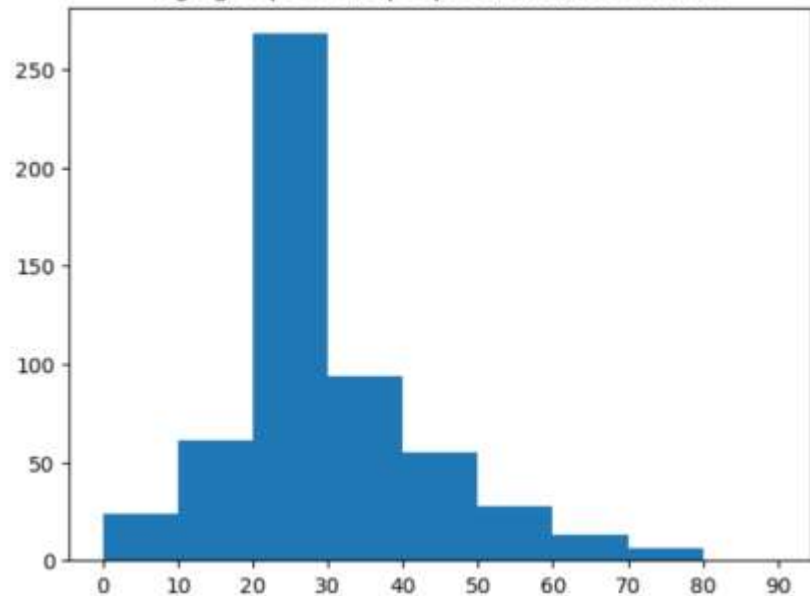
Survival by Age

O sansa mare de supravietuire o au cei cu varsta de 20-30 de ani.
Probabilitatea cea mai mare de nesupravietuire o au cei pana in 40 de ani.

Age groups of the people that had survived



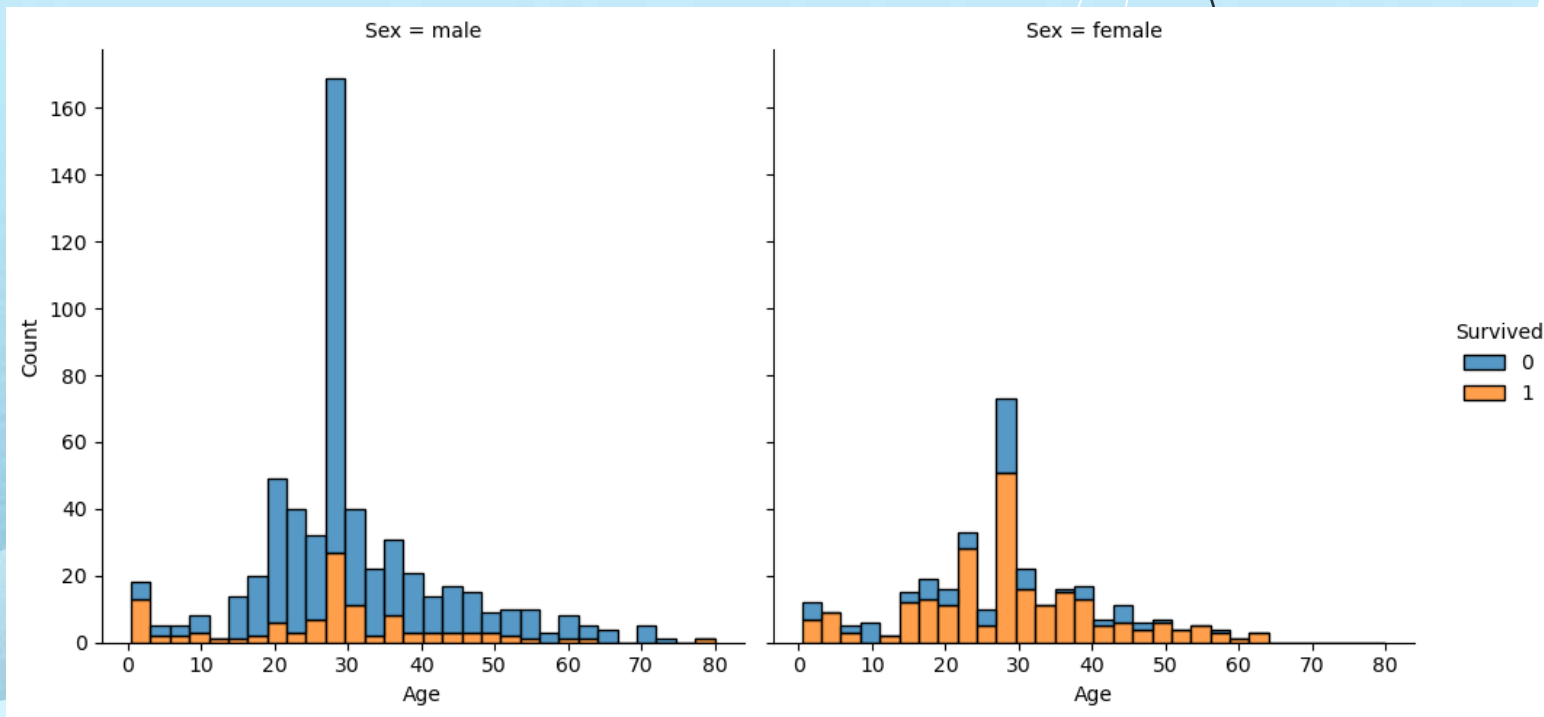
Age groups of the people that did not survive



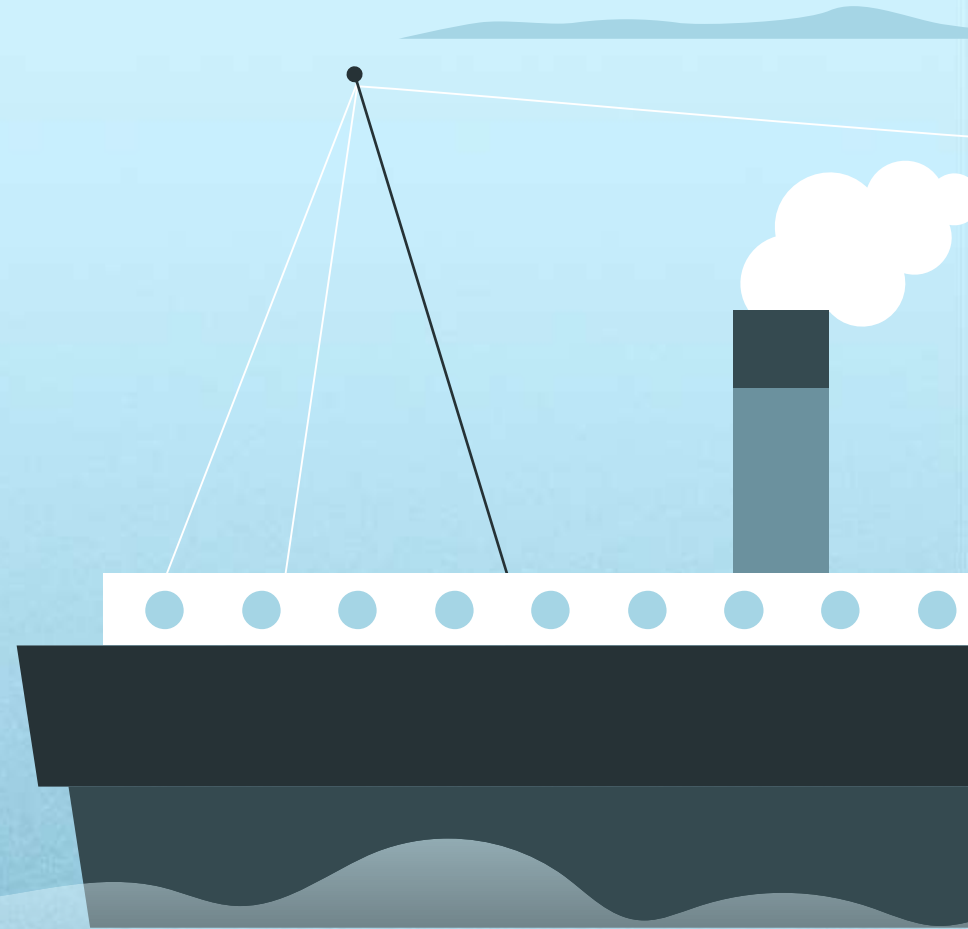
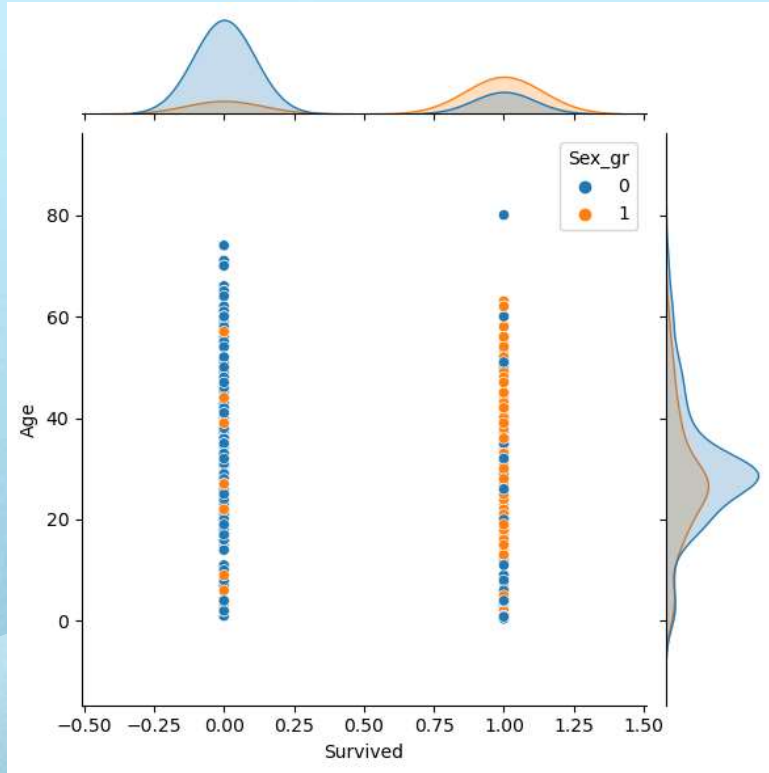
04 Survival dupa varsta si gen.

O rata mare de mortalitate la barbati in jurul varstei de 25-30 de ani.

O rata mare de supravietuire la femei in jurul aceluasi interval.



04 Survival dupa varsta si gen.

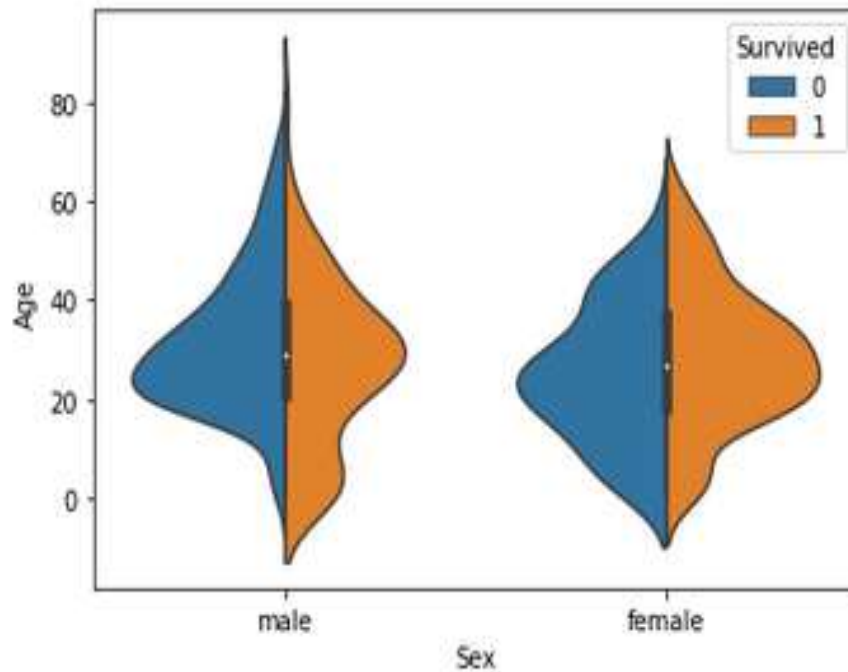


04

Survival by Age (& Gender)

Rata de supravietuire :

- Este buna la copii.
- Ridicata pt femei intre 20-50.
- Scade la barbatii pe masura ce varsta creste.



05

Survival by Class (& Gender)

Females:

96% Class 1

92% Class 2

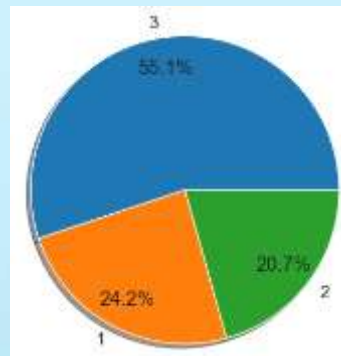
50% Class 3

Males:

36% Class 1

15% Class 2

13% Class 3

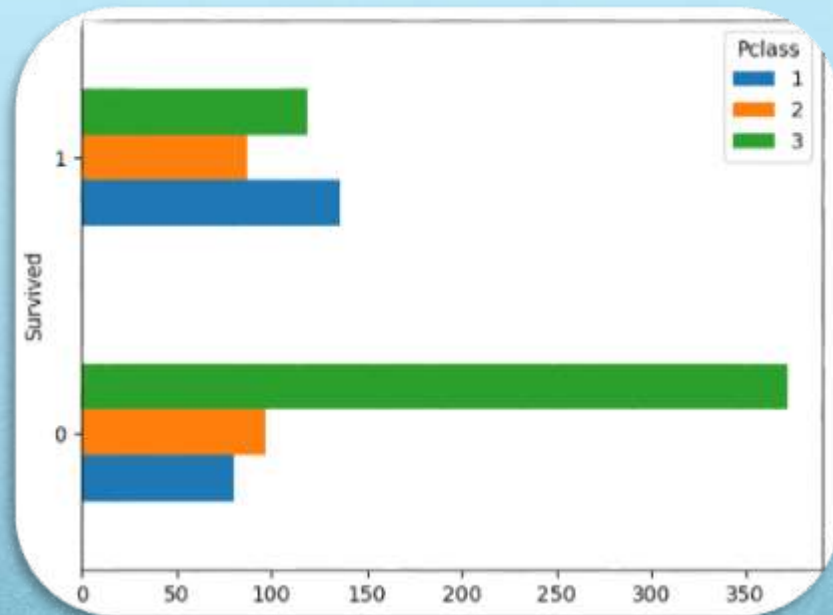
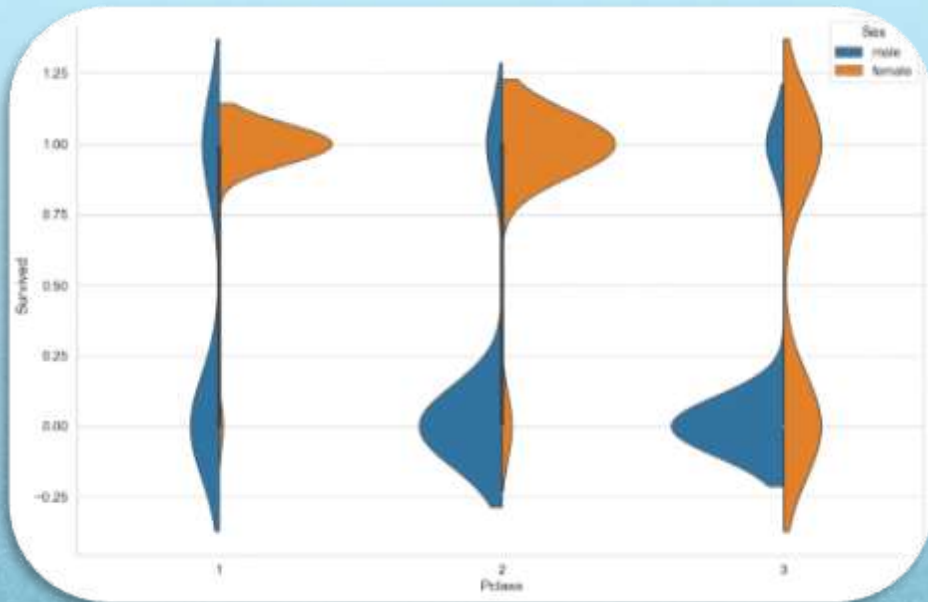


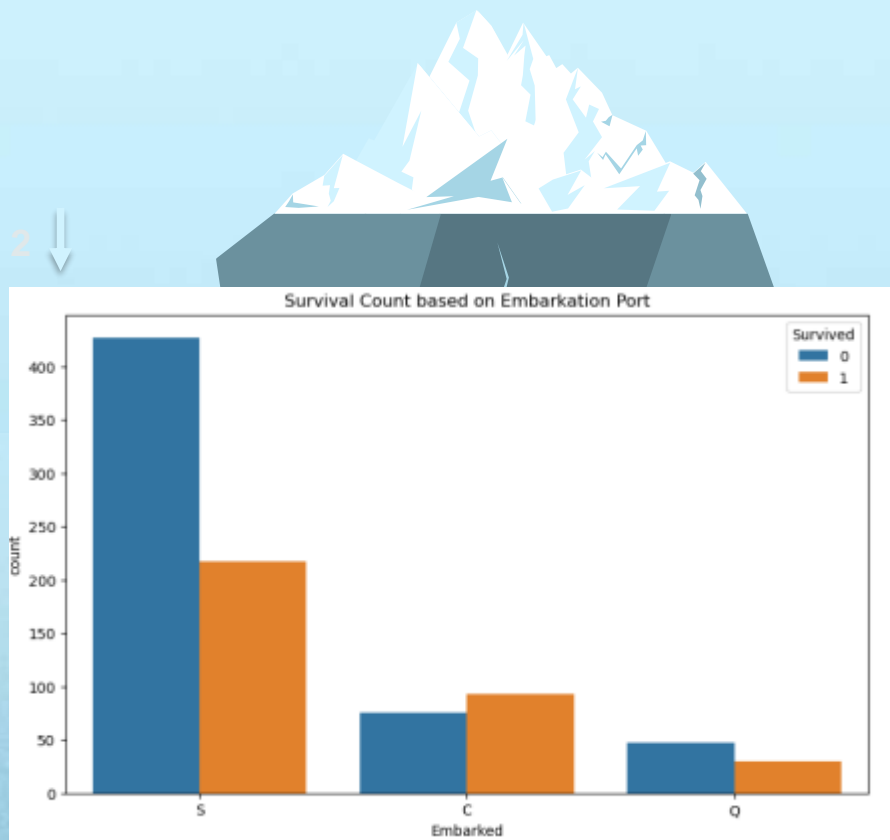
| Sex | female | | male | |
|----------|--------|---|------|---|
| Survived | 0 | 1 | 0 | 1 |
| Pclass | | | | |

1 3 91 77 45

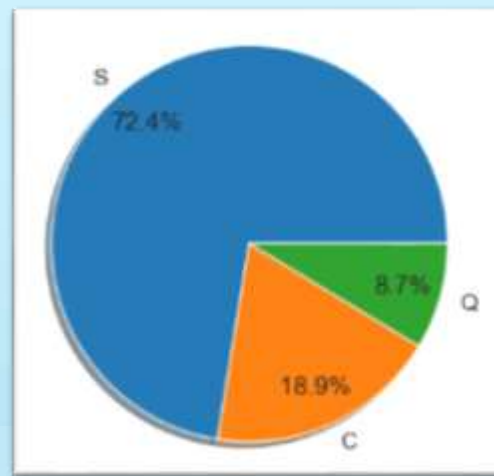
2 6 70 91 17

3 72 72 300 47





1 →



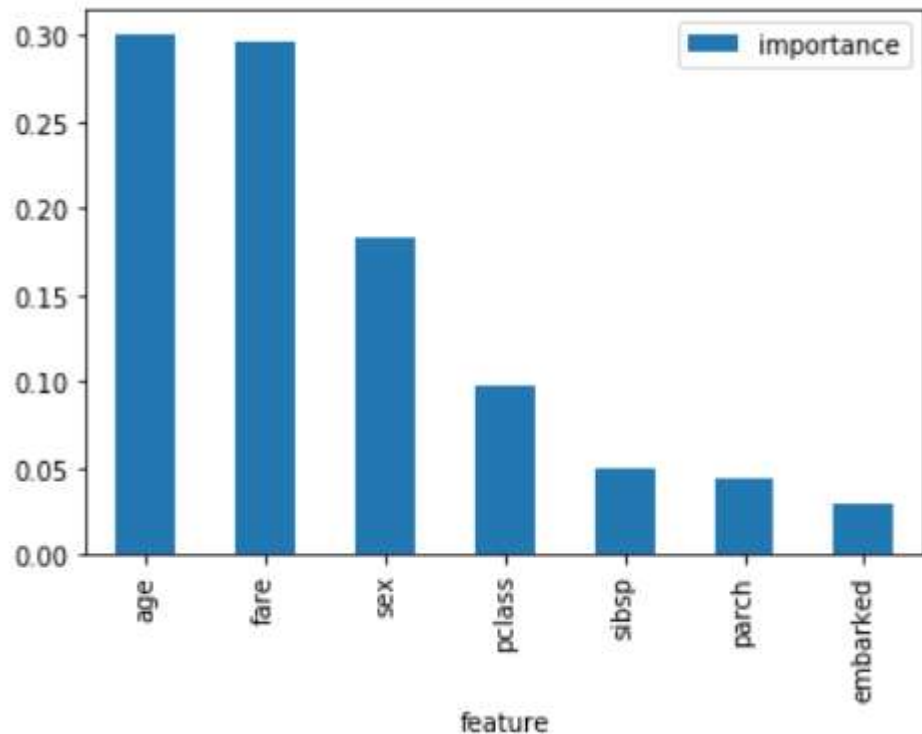
| Sex | female | | male | |
|-----|----------|-----|----------|--|
| | Embarked | | Embarked | |
| C | 73 | 95 | | |
| | 36 | 41 | | |
| | 205 | 441 | | |

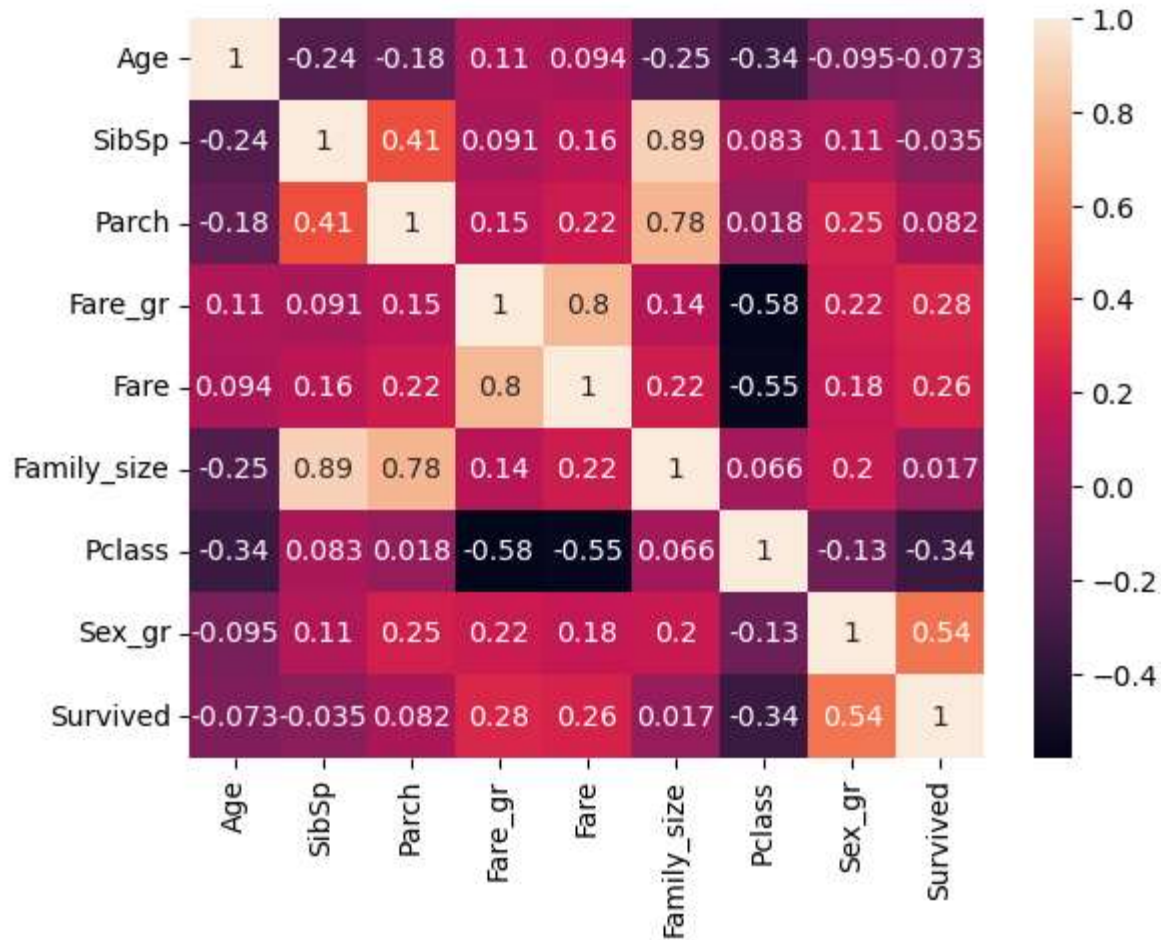
| Sex | female | | male | |
|-----|------------|------------|------------|------------|
| | Survived 0 | Survived 1 | Survived 0 | Survived 1 |
| C | 9 | 64 | 66 | 29 |
| | 9 | 27 | 38 | 3 |
| | 63 | 142 | 364 | 77 |

Corelarea punctului de imbarcare cu genul si rata de supravietuire.

Factori importanti pentru rata de supravietuire:

| | importance |
|----------|------------|
| feature | |
| age | 0.300 |
| fare | 0.296 |
| sex | 0.183 |
| pclass | 0.098 |
| sibsp | 0.050 |
| parch | 0.044 |
| embarked | 0.030 |



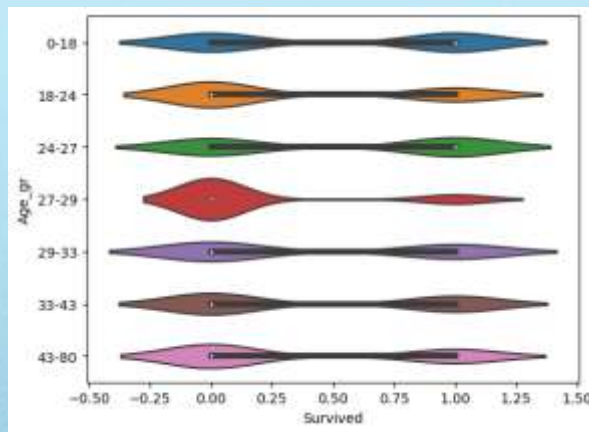
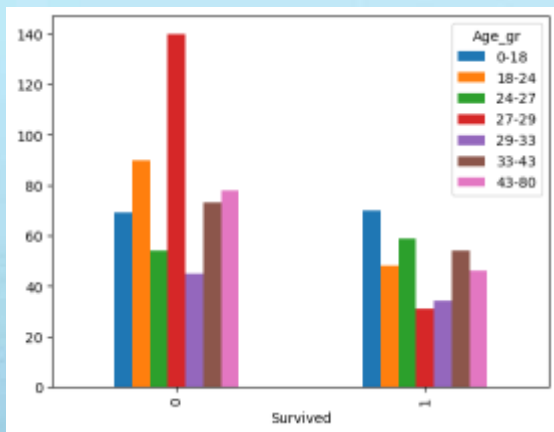


Corelarea între diversele caracteristici ale pasagerului. Putem observa că rata de supraviețuire este puternic influențată de factori precum vârsta, gen și clasă și mai puțin influențată de factori precum mărimea familiei.

08

Survival by Age group

Sanse de supravietuire aplicate strict la gen, mai mari le au cei cuprinsi intre intervalele de varsta 24-27, 0-18 si 29-33.
Rata scazuta observam la intervalul 27-29.

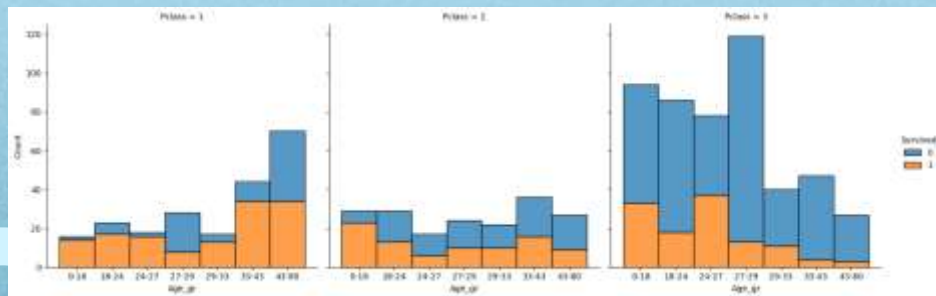
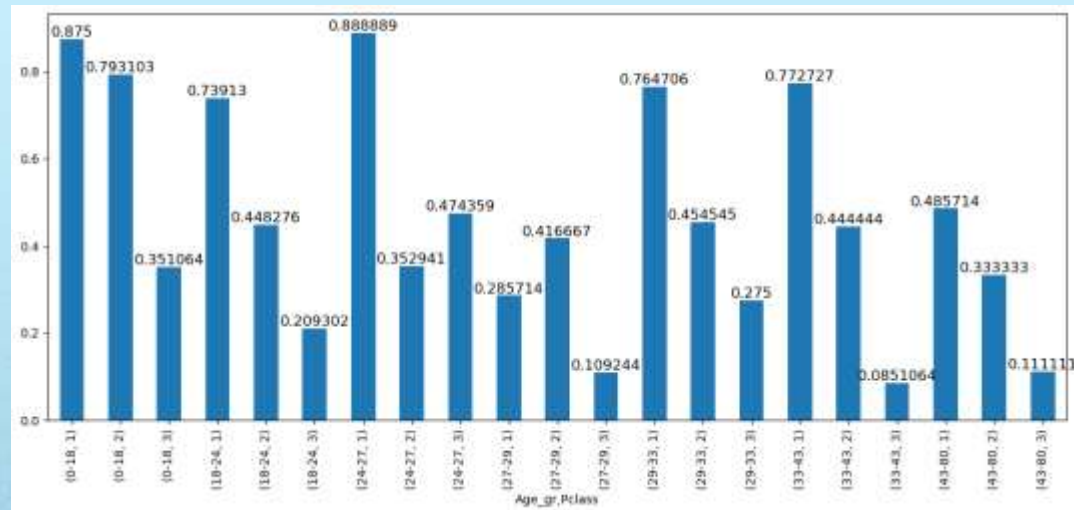
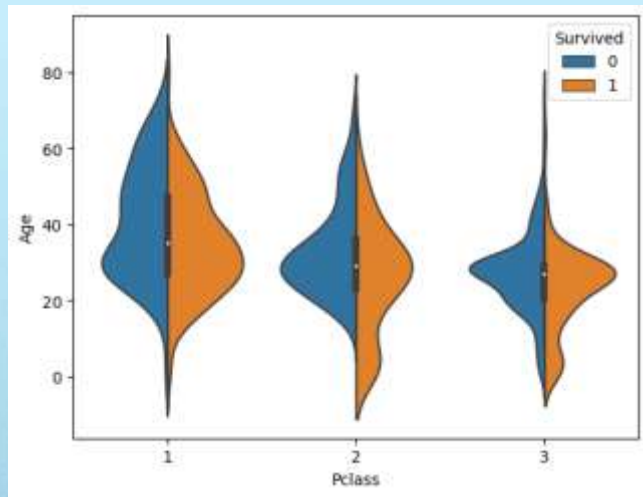


| | Age_gr | Survived |
|---|--------|----------|
| 0 | 0-18 | 0.503597 |
| 1 | 18-24 | 0.347826 |
| 2 | 24-27 | 0.522124 |
| 3 | 27-29 | 0.181287 |
| 4 | 29-33 | 0.430380 |
| 5 | 33-43 | 0.425197 |
| 6 | 43-80 | 0.370968 |

| Age_gr | 0-18 | 18-24 | 24-27 | 27-29 | 29-33 | 33-43 | 43-80 | |
|----------|------|-------|-------|-------|-------|-------|-------|----|
| Survived | | | | | | | | |
| 0 | 69 | 90 | | 54 | 140 | 45 | 73 | 78 |
| 1 | 70 | 48 | | 59 | 31 | 34 | 54 | 46 |

08

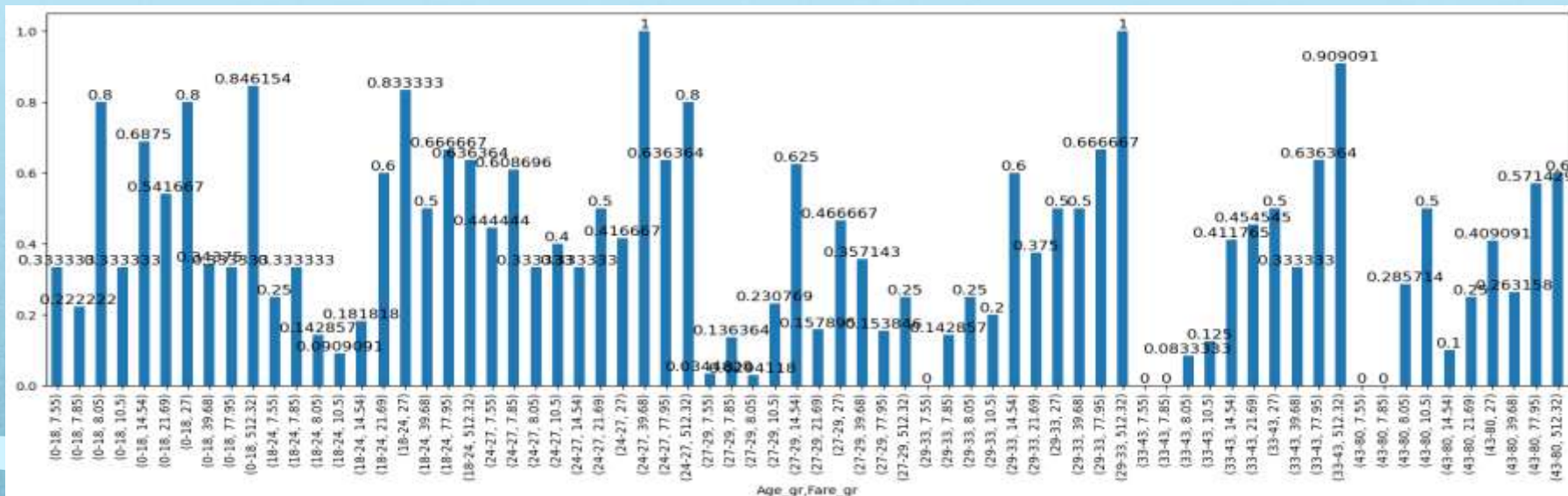
Survival by Age group and Passenger Class



Dupa analiza grafica observam ca sanse mari de supravietuire au pasageri de la clasa 1 / varsta 24-27 ani 0.88 % si clasa 1 / varsta 0-18 ani 0.87 %.

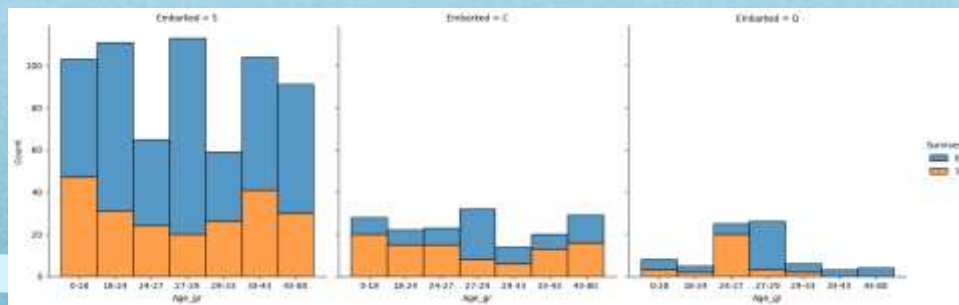
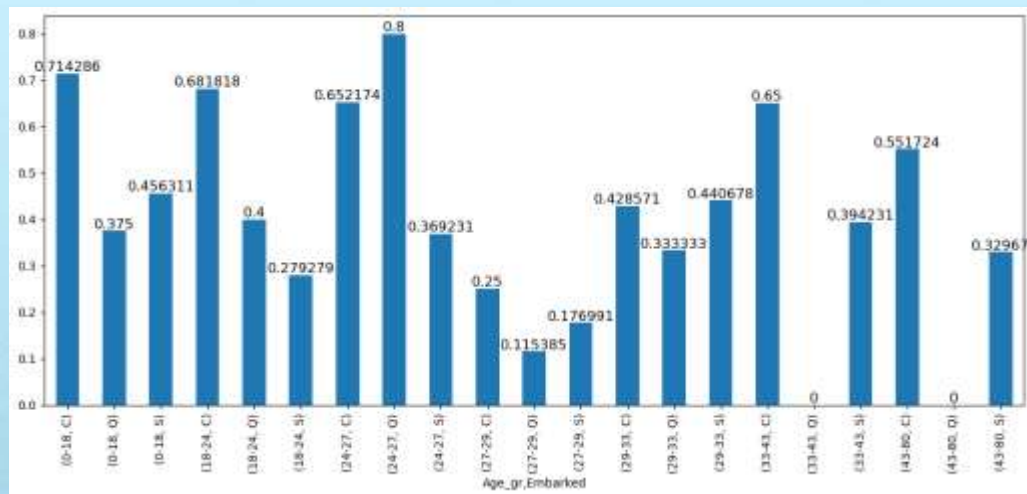
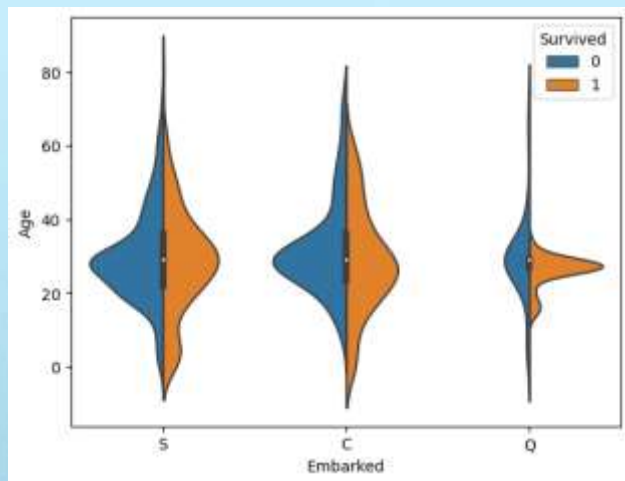
Survival by Age group and Fare Group

A violin plot showing the distribution of Age (Y-axis, ranging from -20 to 100) across different fare_gr categories (X-axis: 7.55, 7.85, 8.05, 10.5, 14.54, 21.69, 27, 39.68, 77.95, 512.32). The plot is split by Survived status (0, represented by blue; 1, represented by orange). The distributions show that for lower fare_gr values, the age distribution is generally skewed towards younger ages, while for higher fare_gr values, the distribution is more spread out and centered around older ages. The 'Survived' status is indicated by the color of the violin plots.



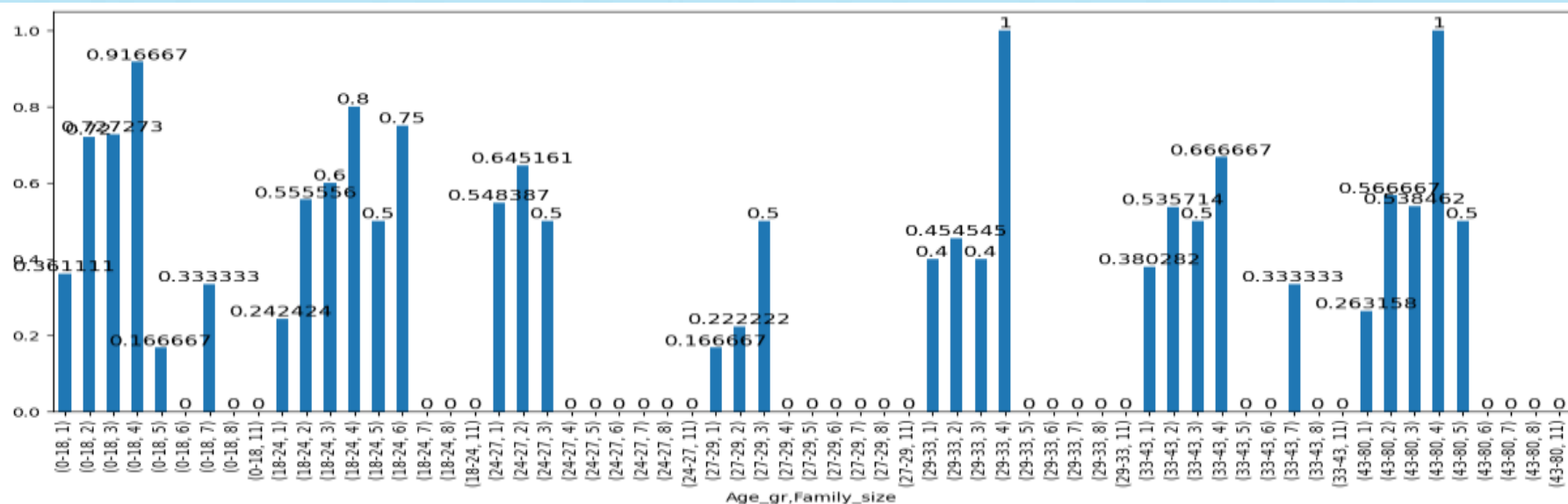
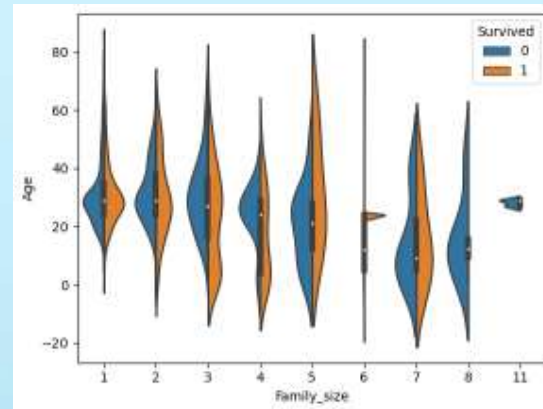
08

Survival by Age group and Embarcation Point



Coreland locul de imbarcare si varsta observam ca ai sanse mari de supravietuire in intervalul 24-27 ani din portul Queenstown.

08 Survival by Age group and Family Size



— Concluzii dupa analiza pe varsta si caracteristici—

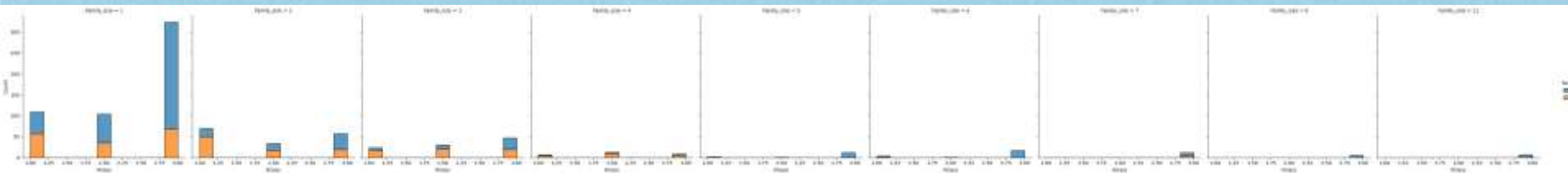
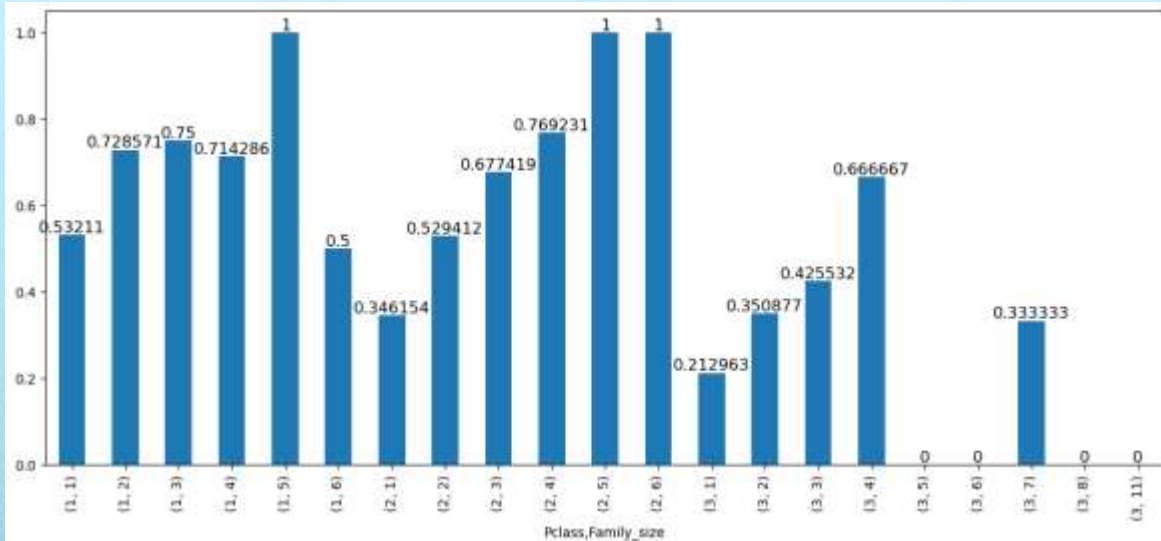
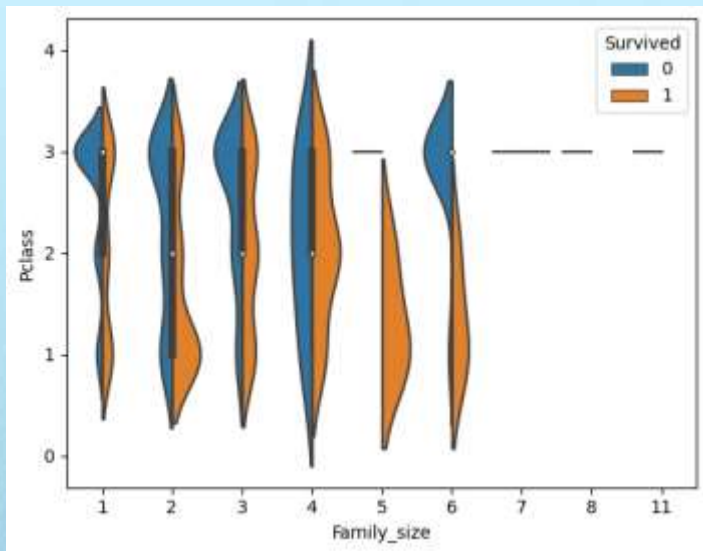
Concluzii dupa analiza bazata pe varsta si diverse caracteristici:

- daca ai 24 si 27 de ani si calatoresti la clasa 1 cu tichet mediu in valoare de 39.68 plecand din portul Queenstown in familie de 2-3 persoane, ai printre cele mai mari sanse de supravietuire.



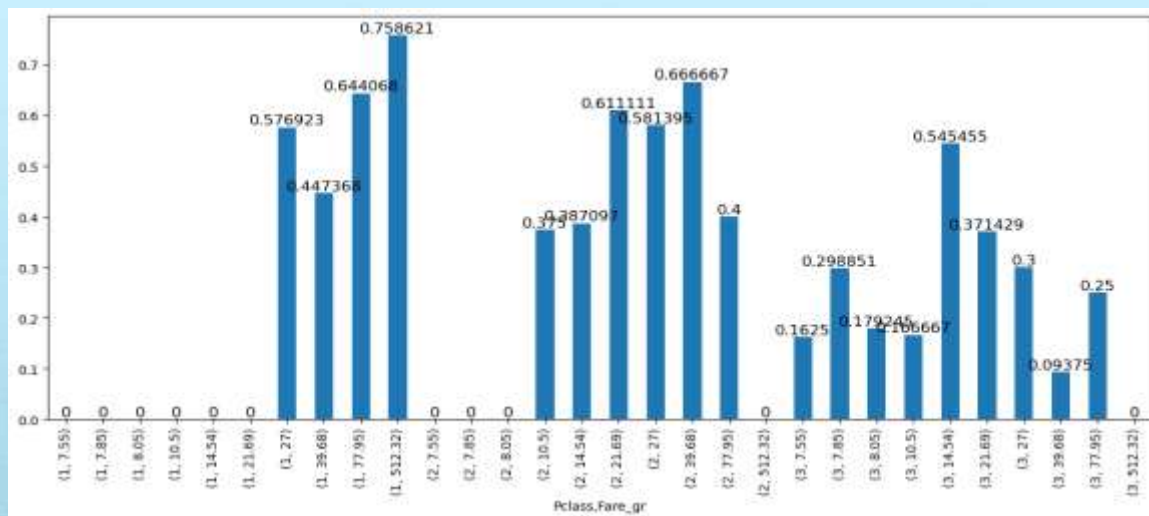
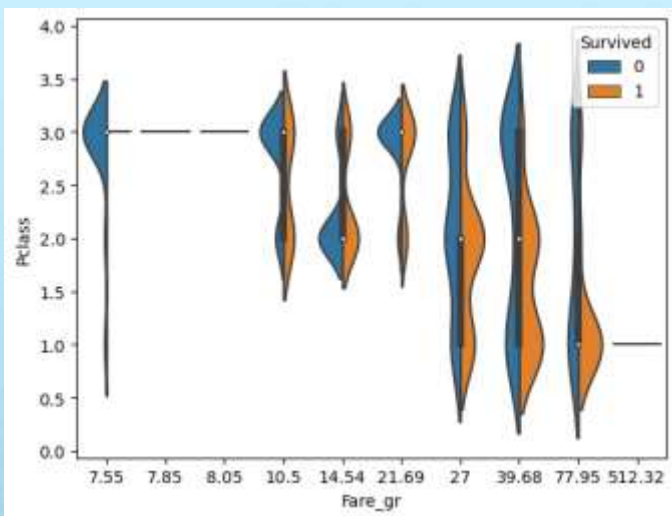
09

Survival by Class Group



09

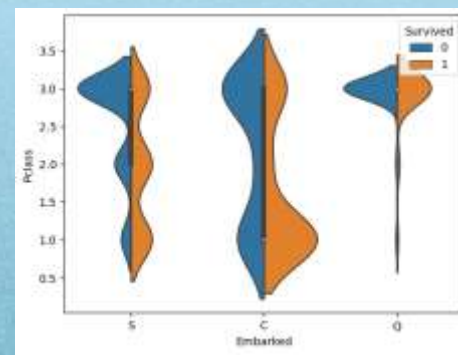
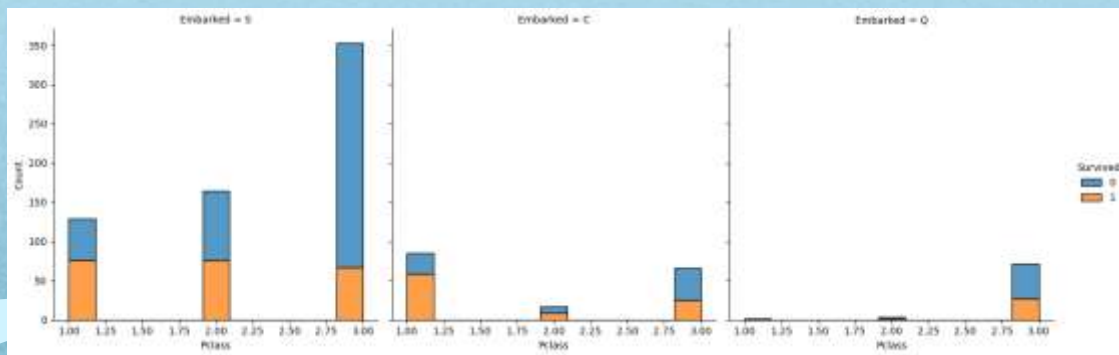
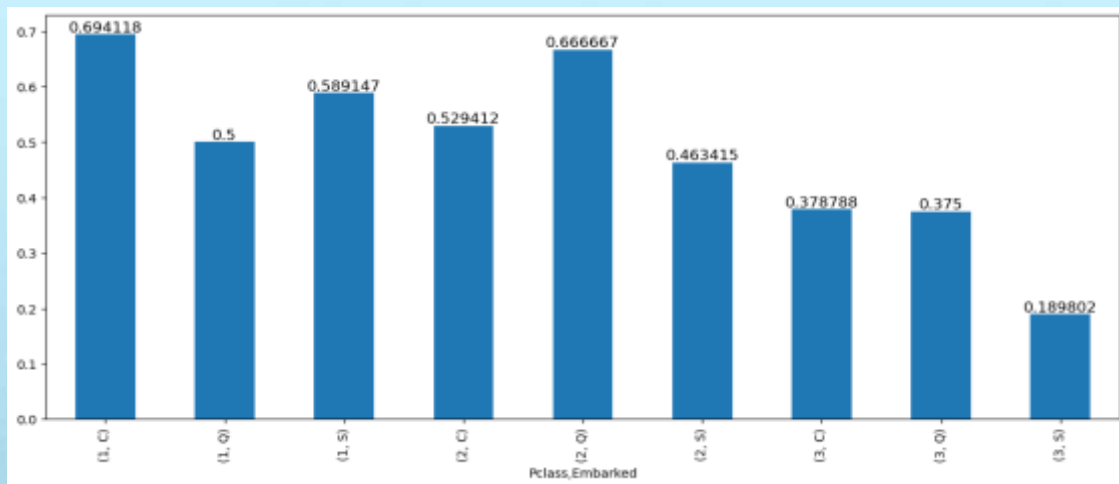
Survival by Class group and Fare Group



| Pclass | 1 | ... | | | | | | | | | | 3 | ... | | | | | | | | | |
|----------|------|------|------|------|-------|-------|----|-------|-------|--------|-----|------|------|------|------|-------|-------|----|-------|-------|--------|-----|
| Fare_gr | 7.55 | 7.85 | 8.05 | 10.5 | 14.54 | 21.69 | 27 | 39.68 | 77.95 | 512.32 | ... | 7.55 | 7.85 | 8.05 | 10.5 | 14.54 | 21.69 | 27 | 39.68 | 77.95 | 512.32 | ... |
| Survived | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 11 | 21 | 21 | 21 | ... | 67 | 61 | 87 | 45 | 10 | 44 | 14 | 29 | 15 | 0 |
| | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 17 | 38 | 66 | ... | 13 | 26 | 19 | 9 | 12 | 26 | 6 | 3 | 5 | 0 |

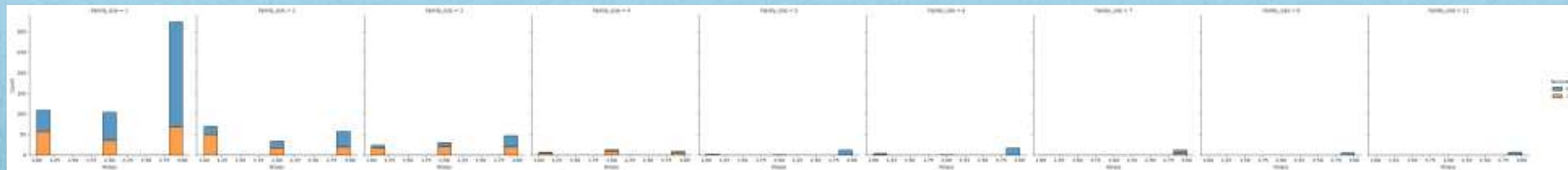
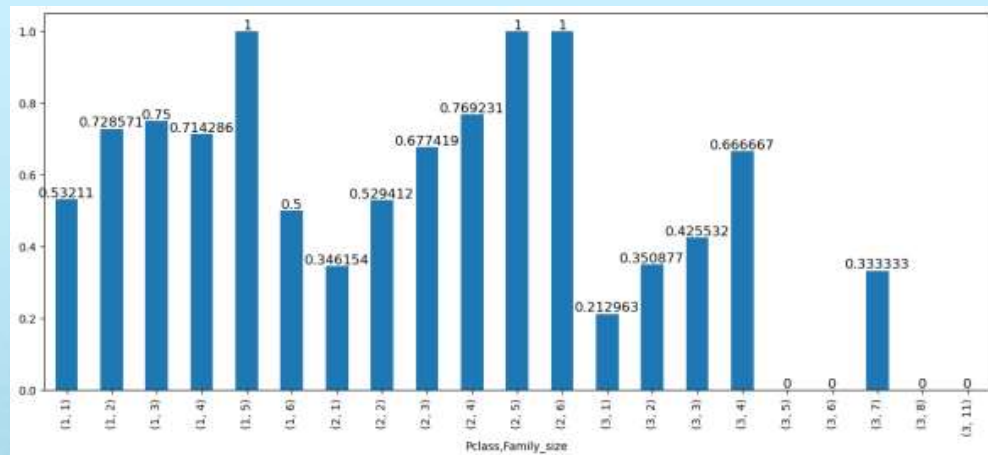
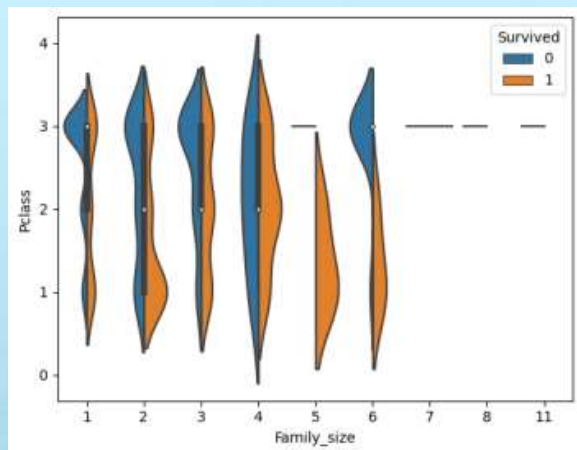
09

Survival by Class group and Embarcation point



09

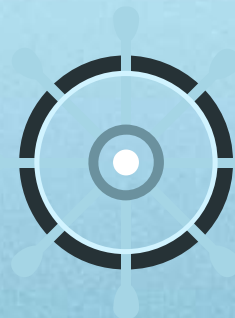
Survival by Class group and Family Size



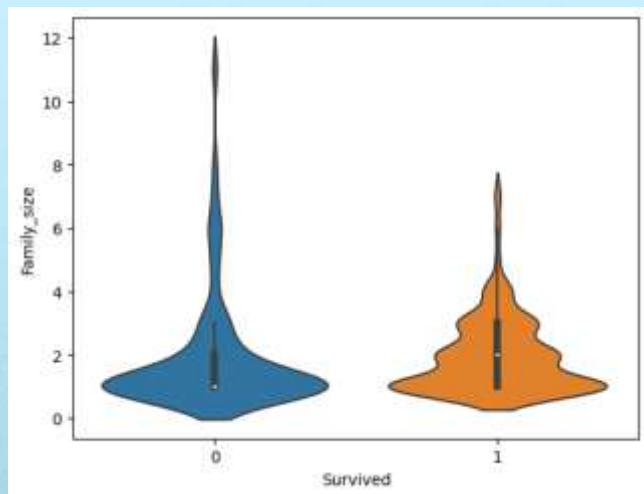
— Concluzii dupa analiza pe clasa si caracteristici —

Concluzii finale raportat la corelarea între class group si caracteristici

- sanse mari de supravietuire le ai la clasa 1 cu o familie de 5-6 persoane cu tichet peste 77.95 plecand de la Cherbourg cu varsta între 24-27

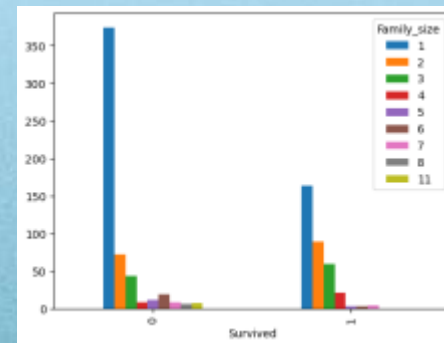


10 Survival by Family size



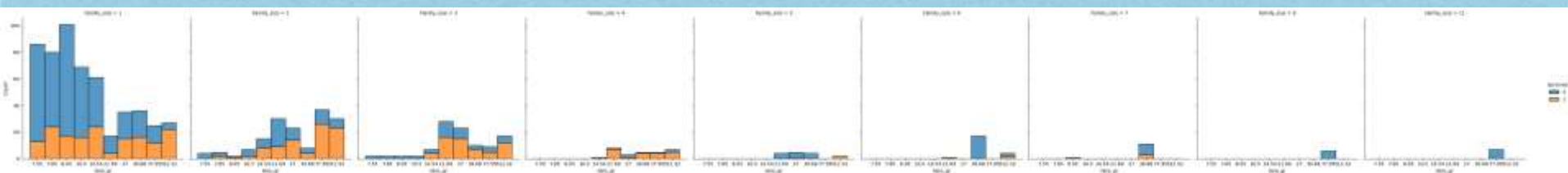
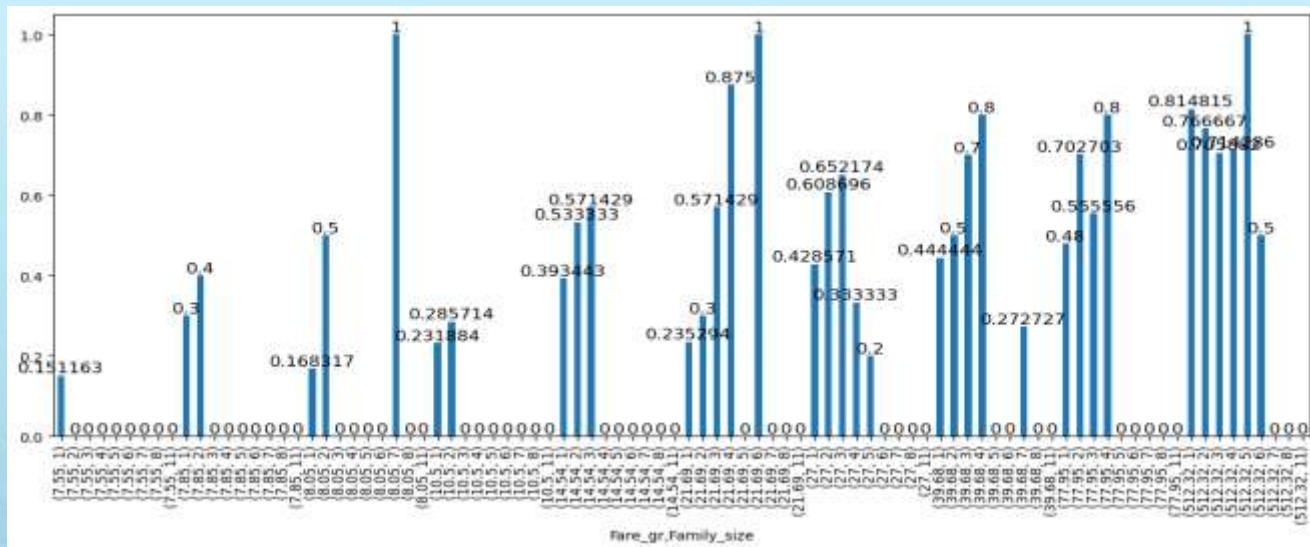
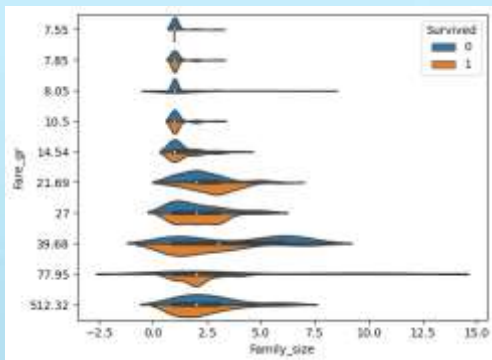
| Family_size | Survived | |
|-------------|----------|----------|
| 0 | 1 | 0.303538 |
| 1 | 2 | 0.552795 |
| 2 | 3 | 0.578431 |
| 3 | 4 | 0.724138 |
| 4 | 5 | 0.200000 |
| 5 | 6 | 0.136364 |
| 6 | 7 | 0.333333 |
| 7 | 8 | 0.000000 |
| 8 | 11 | 0.000000 |

| Family_size | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 11 |
|-------------|-----------|------|------|------|------|------|-----|-----|-----|
| Survived | | | | | | | | | |
| 0 | 37 4.0 | 72.0 | 43.0 | 8.0 | 12.0 | 19.0 | 8.0 | 6.0 | 7.0 |
| 1 | 16 3.0 | 89.0 | 59.0 | 21.0 | 3.0 | 3.0 | 4.0 | NaN | NaN |



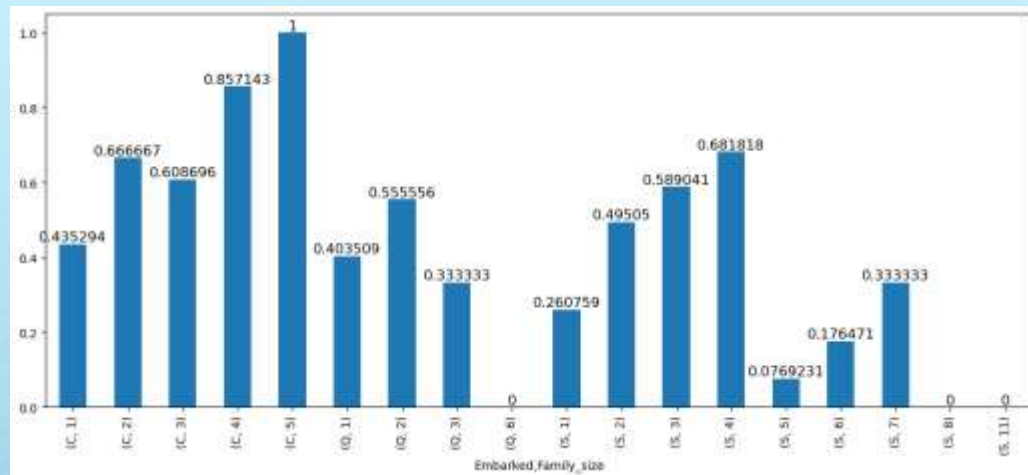
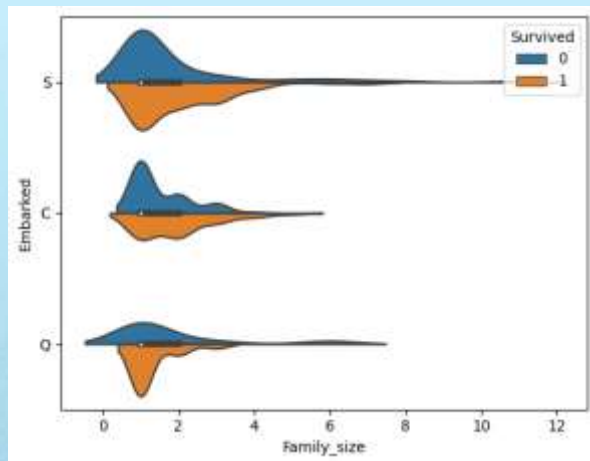
10

Survival by Family size and Fare group



10

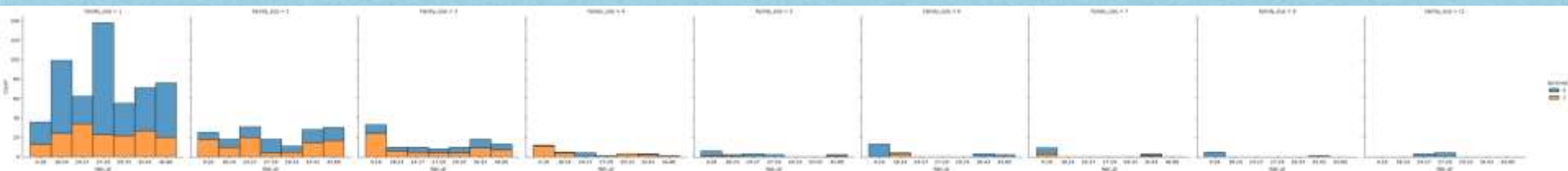
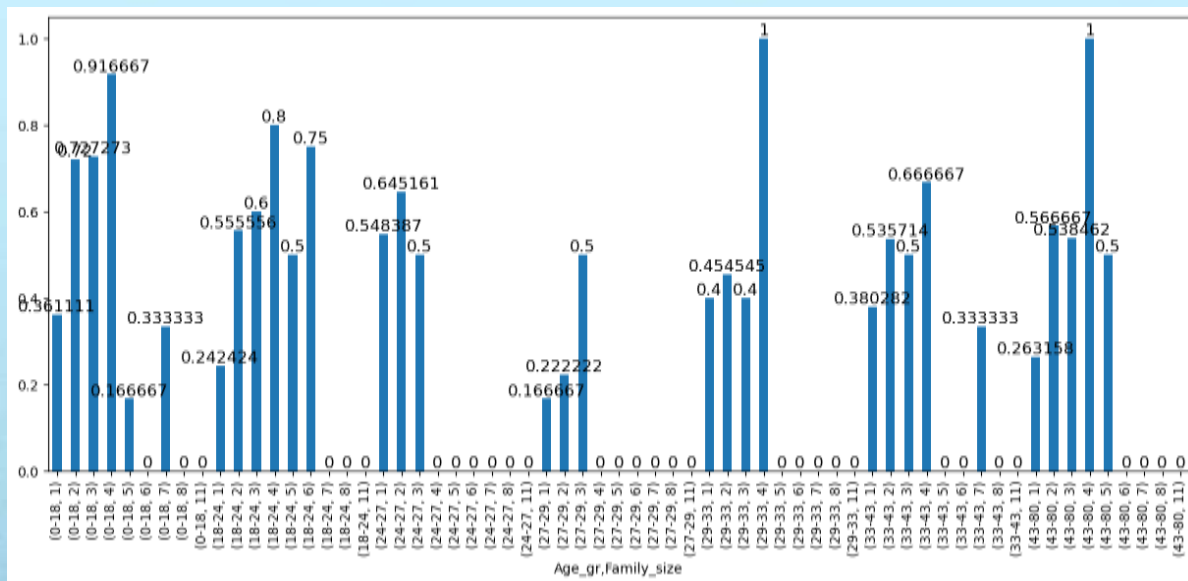
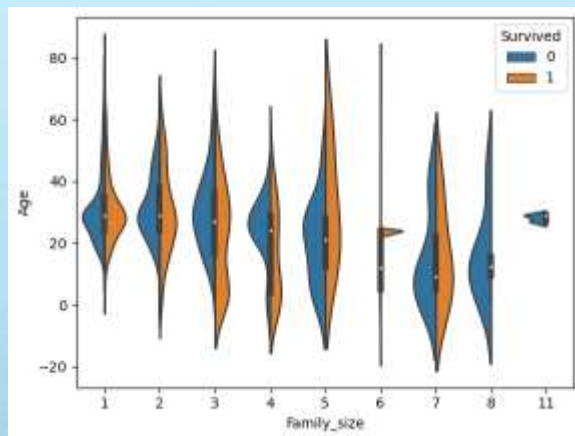
Survival by Family size and Embarcation point



| Embar ed | C | | | | | Q | | | | | S | | | | | | | | |
|-----------------|---|------|------|------|-----|-----|------|-----|-----|-----|-------|------|------|------|------|------|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 11 | |
| Famil y_size | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 11 | |
| Surviv ed | 0 | 48.0 | 17.0 | 9.0 | 1.0 | NaN | 34.0 | 4.0 | 4.0 | 5.0 | 292.0 | 51.0 | 30.0 | 7.0 | 12.0 | 14.0 | 8.0 | 6.0 | 7.0 |
| | 1 | 37.0 | 34.0 | 14.0 | 6.0 | 2.0 | 23.0 | 5.0 | 2.0 | NaN | 103.0 | 50.0 | 43.0 | 15.0 | 1.0 | 3.0 | 4.0 | NaN | NaN |

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Survival by Family size and Age group



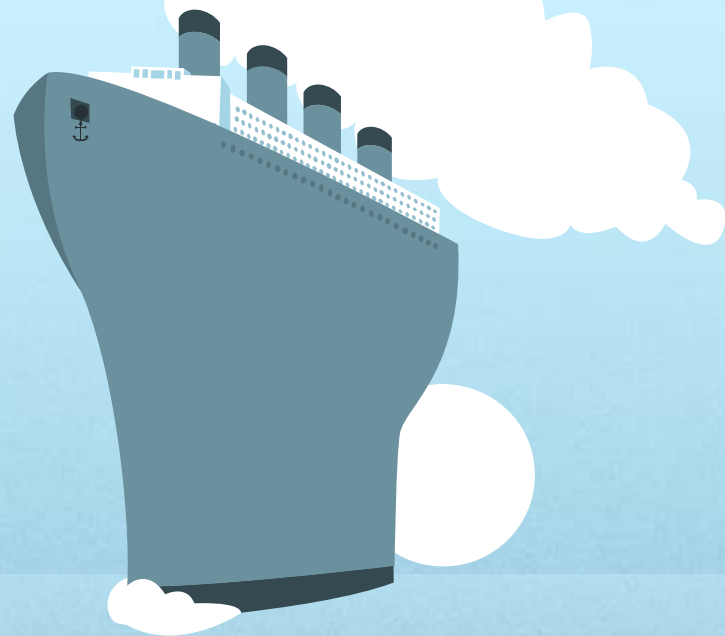
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— Concluzii dupa analiza pe clasa si caracteristici—

Concluzii finale dupa corelarea dupa marimea familiei:

criterii de sanse mari de supravietuire:

- 3-4 membri in familie
- tichet mediu in valoare de peste 21.69
- portul de imbarcare Cherbourg
- varsta 24-27 ani



TITANIC

Va multumim!

