Chapter 7

Cyber Crimes against Women and Children

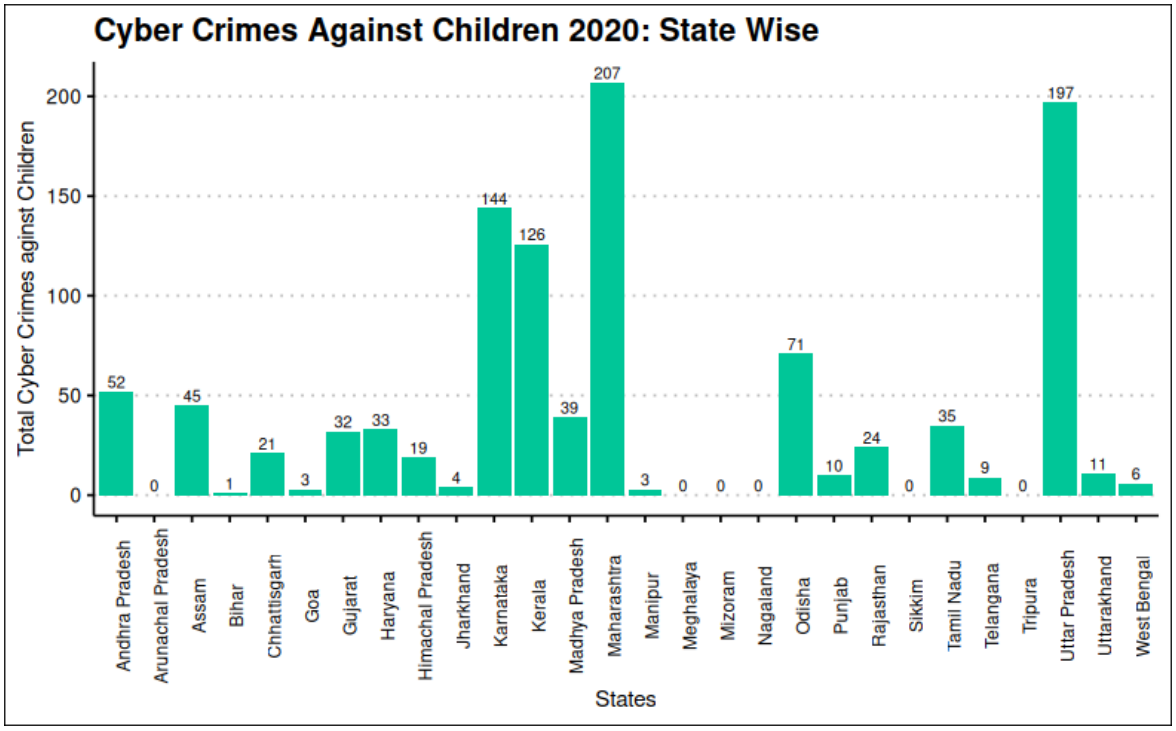
7.1 Introduction

In this section, the main interest is to carry out statistical analysis of the Cyber Crimes happening particularly against women and children.
The major cyber-crimes against women and children for which the data is collected by NCRB include: Cyber Blackmailing/Threatening, Cyber Bullying/Stalking, Cyber Pornography, Fake Profiles, Defamation/Morphing etc.

7.2 Cyber Crimes against Children

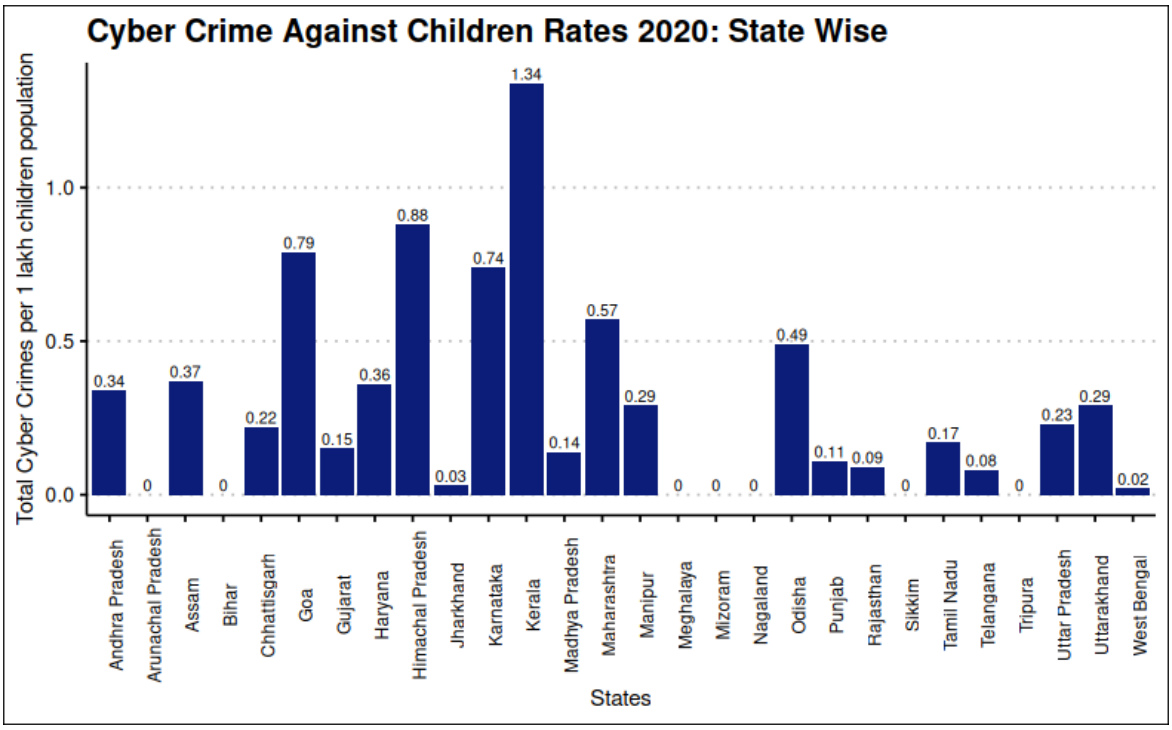
Year 2020

State - Wise



The states of Maharashtra, Uttar Pradesh, Karnataka, Kerala registered higher cyber-crimes against children in the year 2020.

Maharashtra registered **207** cyber crimes against children, followed by Uttar Pradesh with a count of **197**.



However, taking the children population variation of the states under consideration, in terms of rates, Kerala has the maximum cyber-crime rate of **1.34** cyber-crimes against children per 1 lakh children population in the year 2020.

7.2.1 Runs Test for randomness

```
##
##  Runs Test
##
## data:  child20$rate[1:28]
## statistic = 1.1555, runs = 18, n1 = 14, n2 = 14, n = 28, p-value =
## 0.2479
## alternative hypothesis: nonrandomness
```

Since, p-value > 0.05, the results are coming out be non-significant. Thus, we conclude that the cyber-crime rates against children throughout the states is random.

7.2.2 Kolmogorov-Smirnov Test

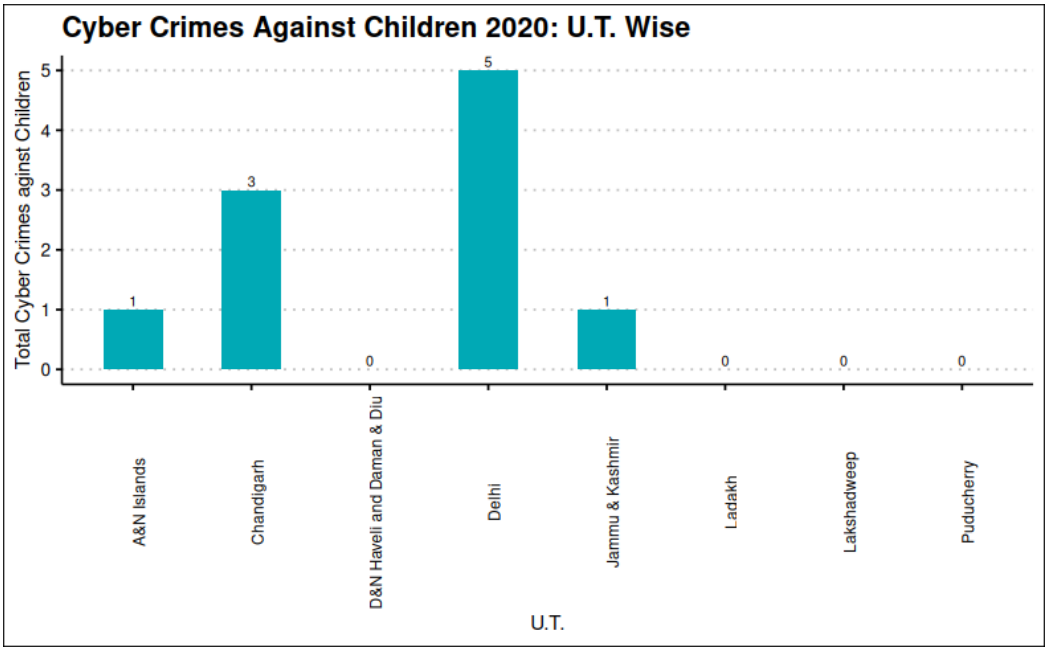
```
##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  child20$rate[1:28] and child21$rate[1:28]
## D = 0.10714, p-value = 0.9927
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  child17$rate[-c(10, 30:39)] and child21$rate[1:28]
```

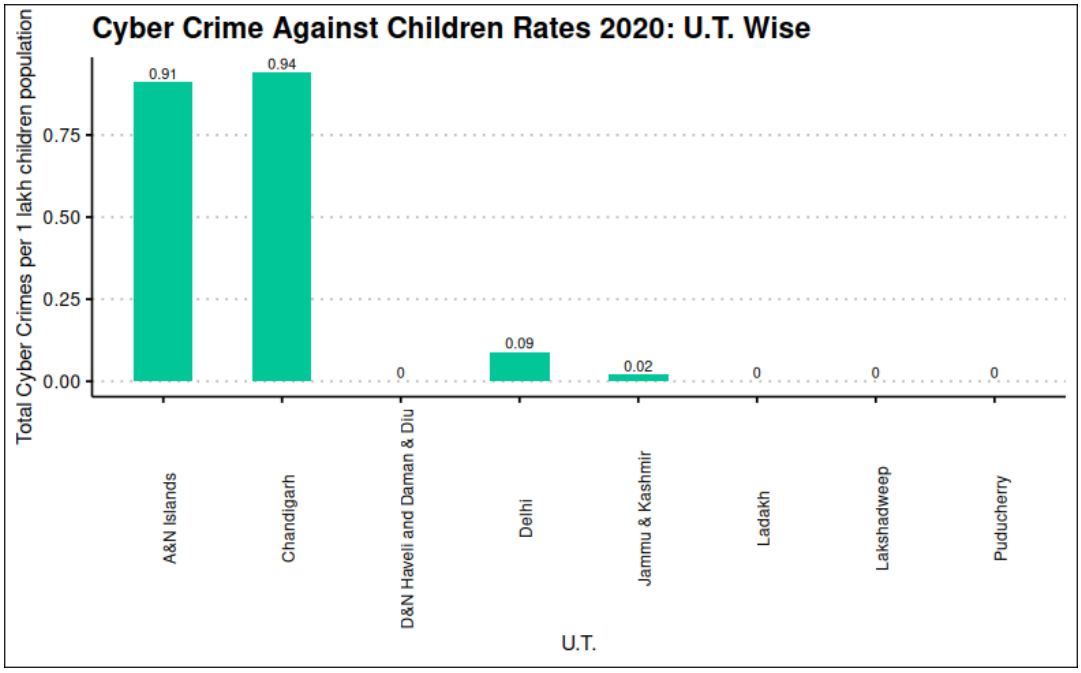
```
## D = 0.60714, p-value = 1.732e-05
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  child18$rate[-c(10, 30:39)] and child21$rate[1:28]
## D = 0.42857, p-value = 0.009589
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  child19$rate[-c(10, 30:39)] and child21$rate[1:28]
## D = 0.39286, p-value = 0.01865
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  child19$rate[-c(10, 30:39)] and child20$rate[1:28]
## D = 0.39286, p-value = 0.01988
## alternative hypothesis: two-sided
```

The distribution of cyber-crime rates against children is same for the years 2020 and 2021 throughout the states, however it differs significantly between the years 2021 and 2017, 2018, 2019.

The distribution of cases also differs significantly for the consecutive years 2019 and 2020 at 5% level of significance.

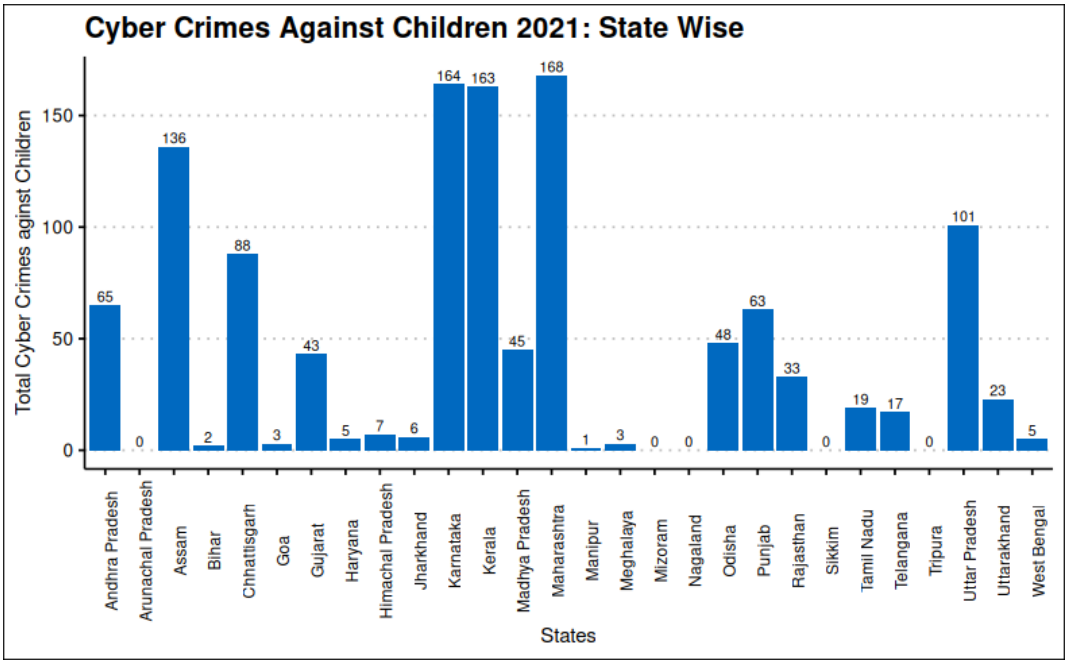
U.T. Wise



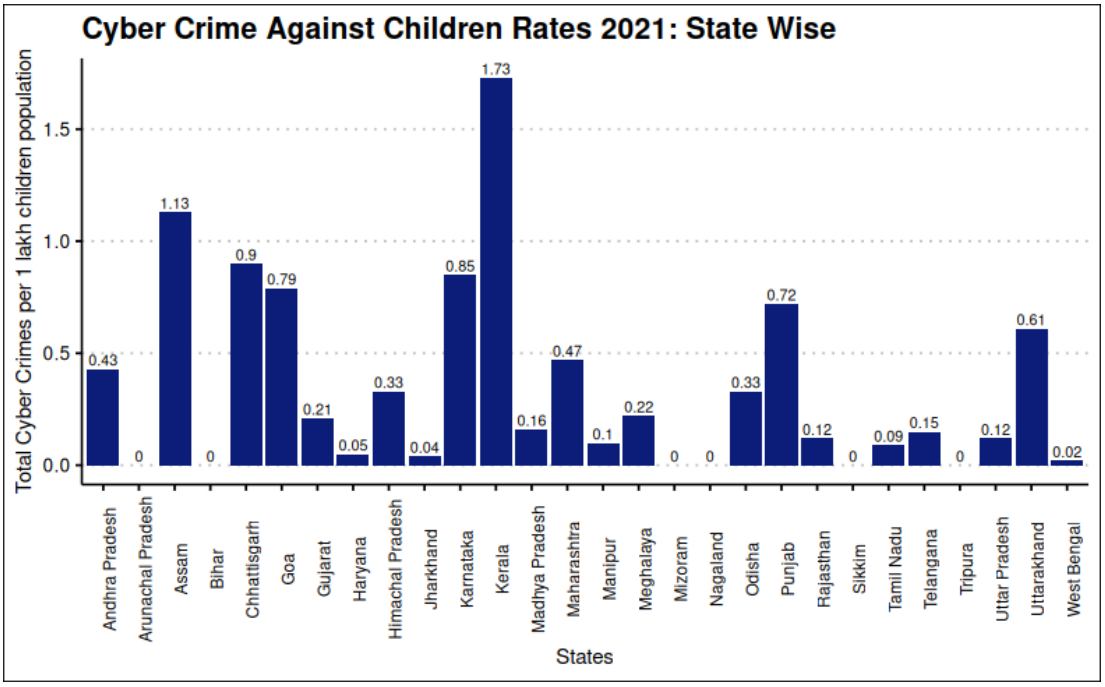


Year 2021

State-Wise



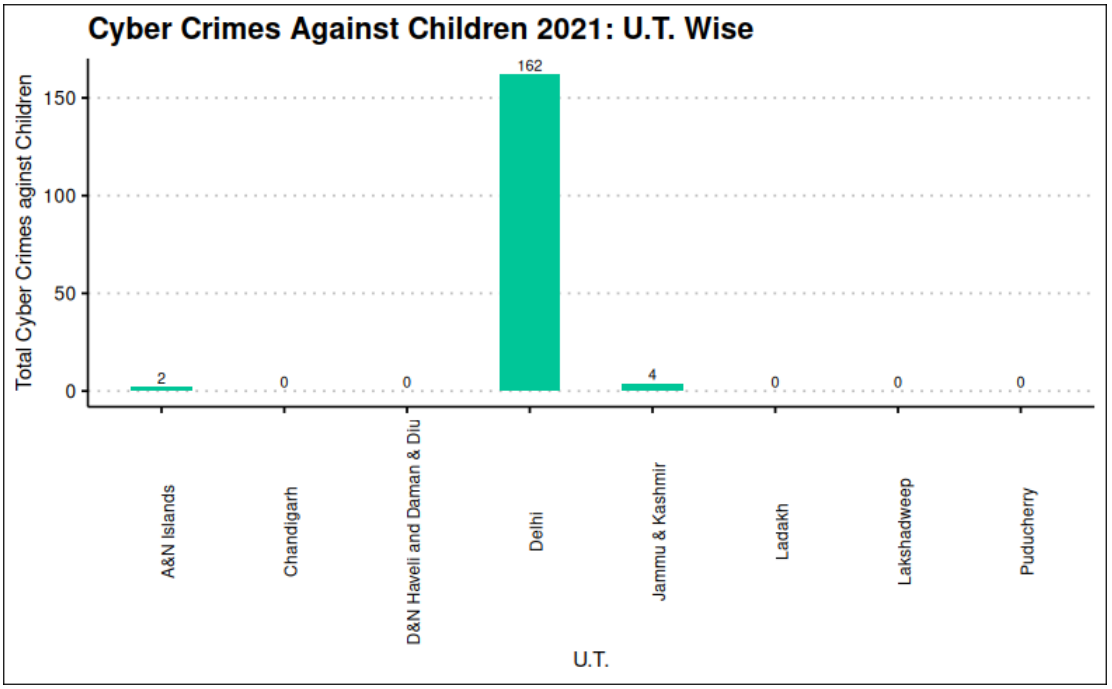
Maharashtra (**168**), Karnataka (**164**), Kerala (**163**)**,** Assam (**136**), and Uttar Pradesh (**101**) have comparatively higher cyber-crimes against children in 2021.



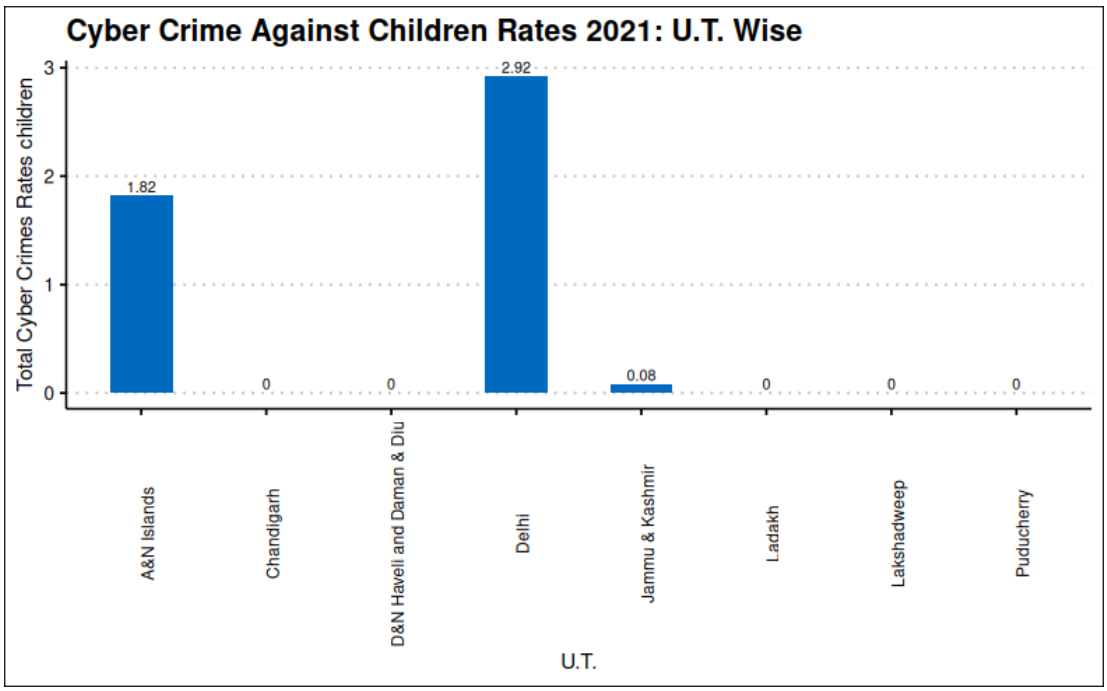
However, in terms of rates, the state of Kerala (**1.73**) again has the maximum cyber-crime rate against children.

U.T. Wise

Data for the Union Territories can also be viewed as follows:



A huge increase in the cyber-crimes against children can be noticed in Delhi as compared to previous year.



7.3 Cyber Crimes against Women

7.3.1 Kolmogorov-Smirnov Test

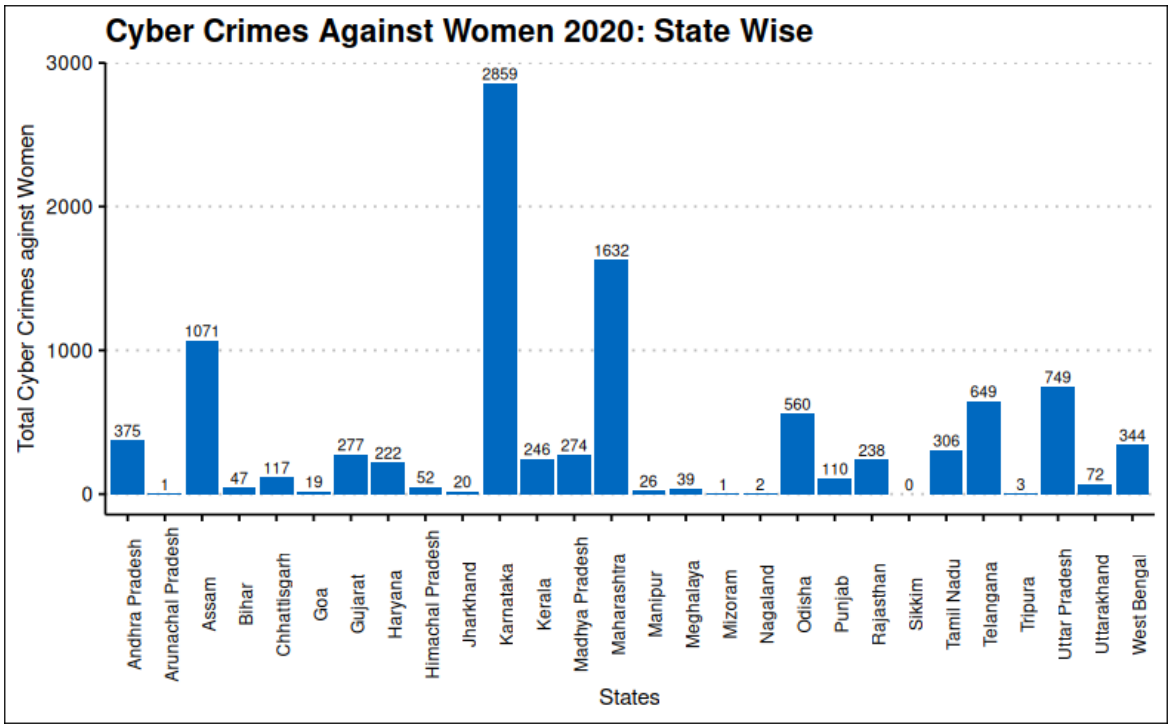
```
##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  women20$rate[1:28] and women21$rate[1:28]
## D = 0.21429, p-value = 0.5204
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  women17$rate[-c(10, 30:39)] and women21$rate[1:28]
## D = 0.46429, p-value = 0.003746
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  women18$rate[-c(10, 30:39)] and women21$rate[1:28]
## D = 0.35714, p-value = 0.05419
## alternative hypothesis: two-sided

##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  women19$rate[-c(10, 30:39)] and women21$rate[1:28]
## D = 0.39286, p-value = 0.02504
## alternative hypothesis: two-sided
```

```
##
##  Exact two-sample Kolmogorov-Smirnov test
##
## data:  women19$rate[-c(10, 30:39)] and women20$rate[1:28]
## D = 0.28571, p-value = 0.1902
## alternative hypothesis: two-sided
```

The distribution of cyber-crime rates against women throughout the states is same for the years 2020 and 2021. However, the distribution differs significantly for the years 2017 and 2021.

Year 2020

State-Wise

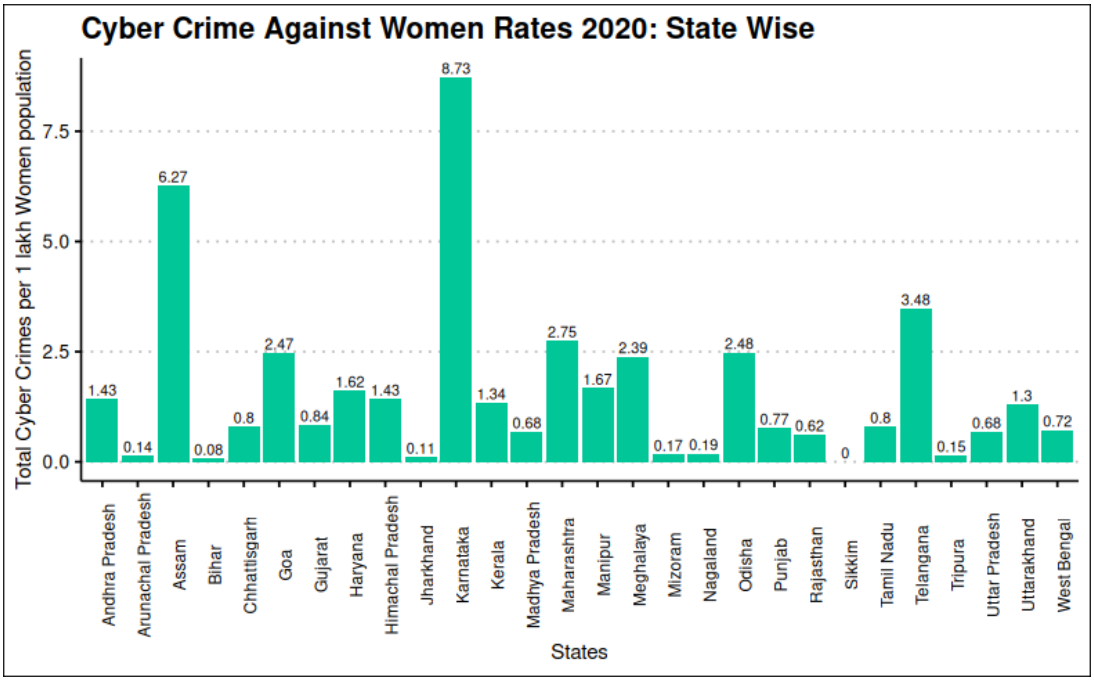


The states of Karnataka, Maharashtra, Assam have comparatively higher cyber-crimes against women.

7.3.2 Runs Test for randomness

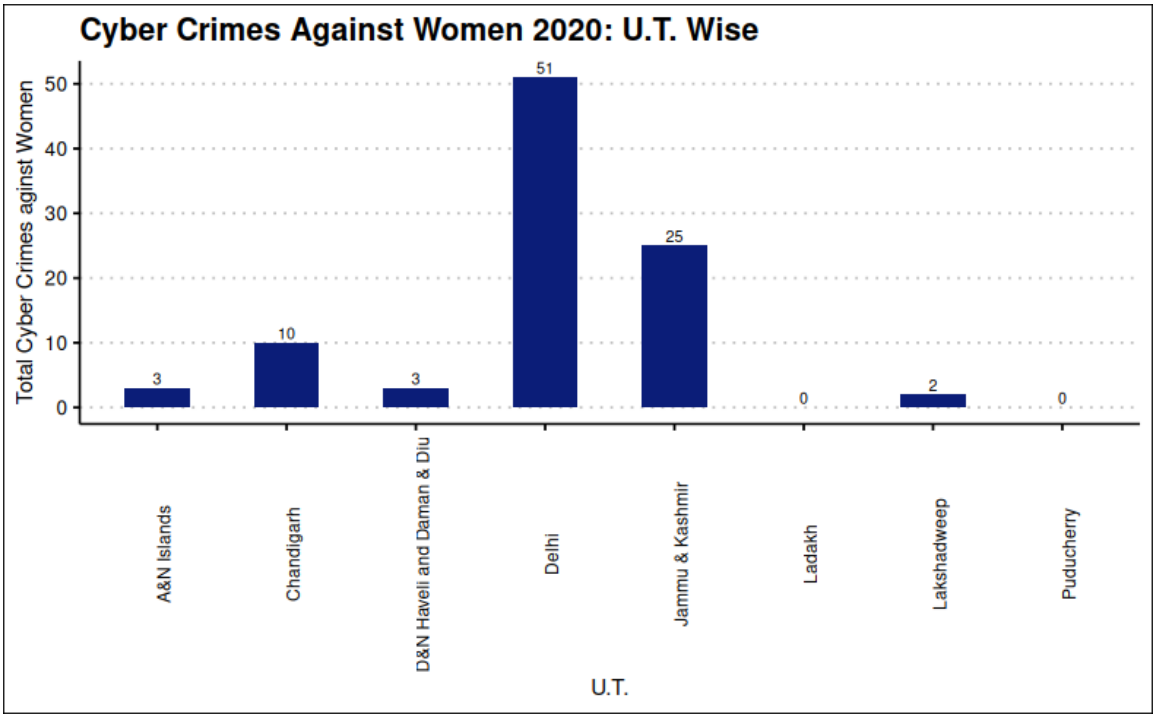
```
##
##  Runs Test
##
## data:  women20$rate[1:28]
## statistic = 0.38516, runs = 16, n1 = 14, n2 = 14, n = 28, p-value =
## 0.7001
## alternative hypothesis: nonrandomness
```

Since, p-value > 0.05, the results are coming out be non-significant. Thus, we conclude that the cyber-crime rates against women throughout the states is random.

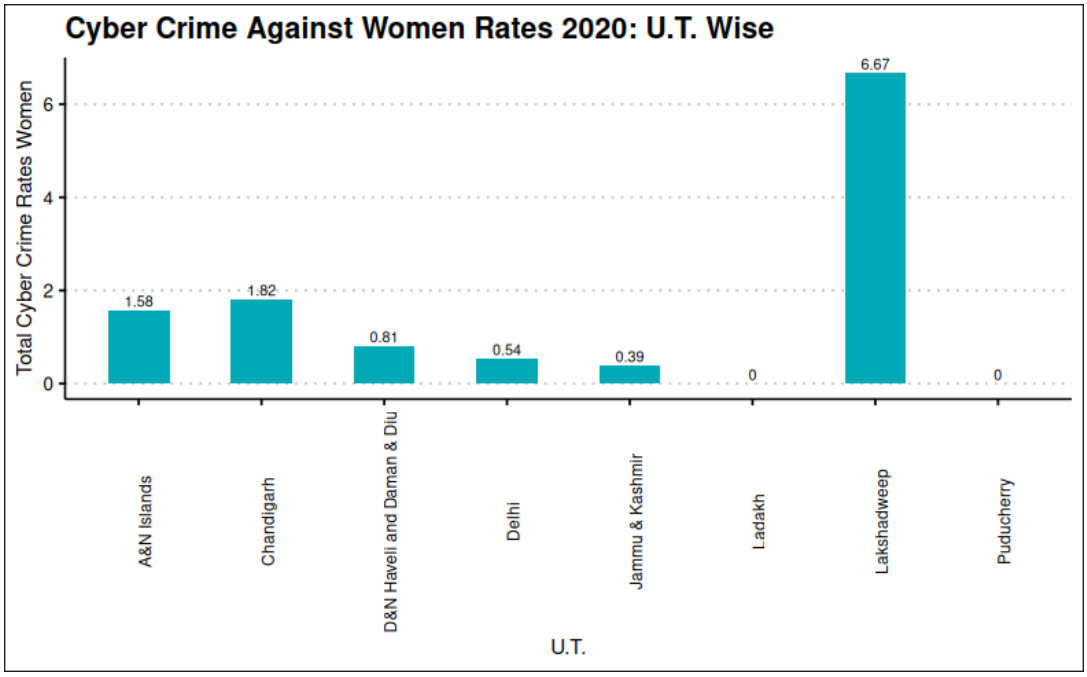


In terms of rates, Karnataka has the maximum 8.73 cyber-crimes against women followed by Assam and Telangana.

U.T. Wise

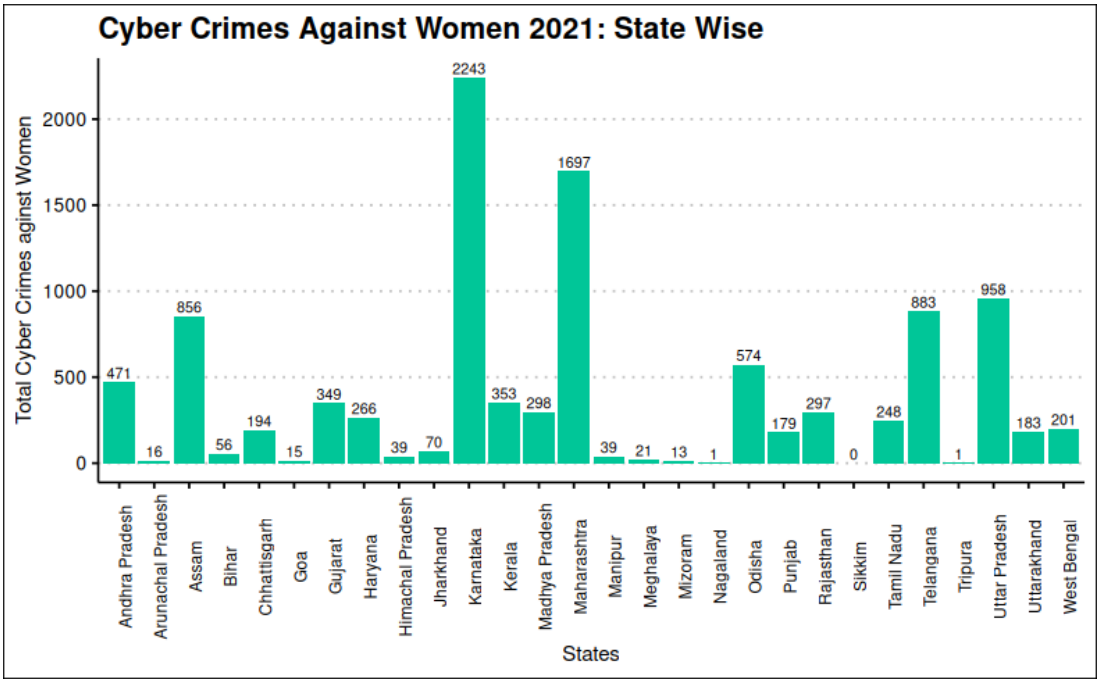


Delhi reported **51** cyber crimes against women in the year 2020, which is maximum among the Union Territories, followed by **25** cases in Jammu and Kashmir.

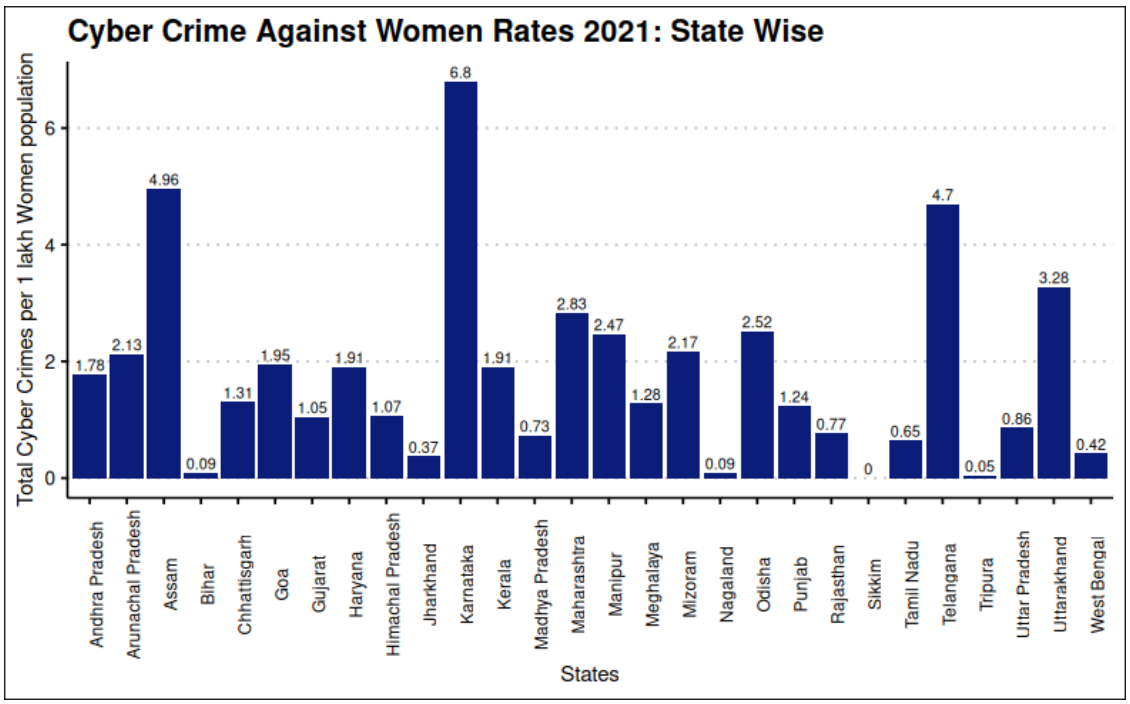


Year 2021

State-Wise

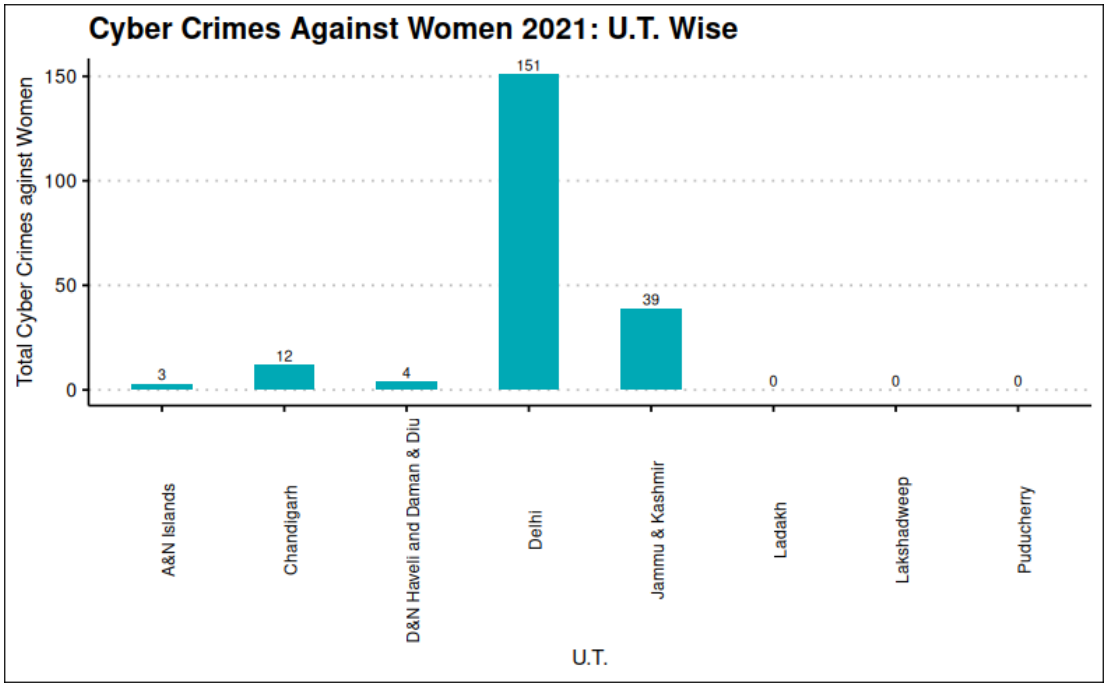


Karnataka (**2243**), Maharashtra (**1697**), and Assam (**856**) are again the states with higher cyber-crimes against women.

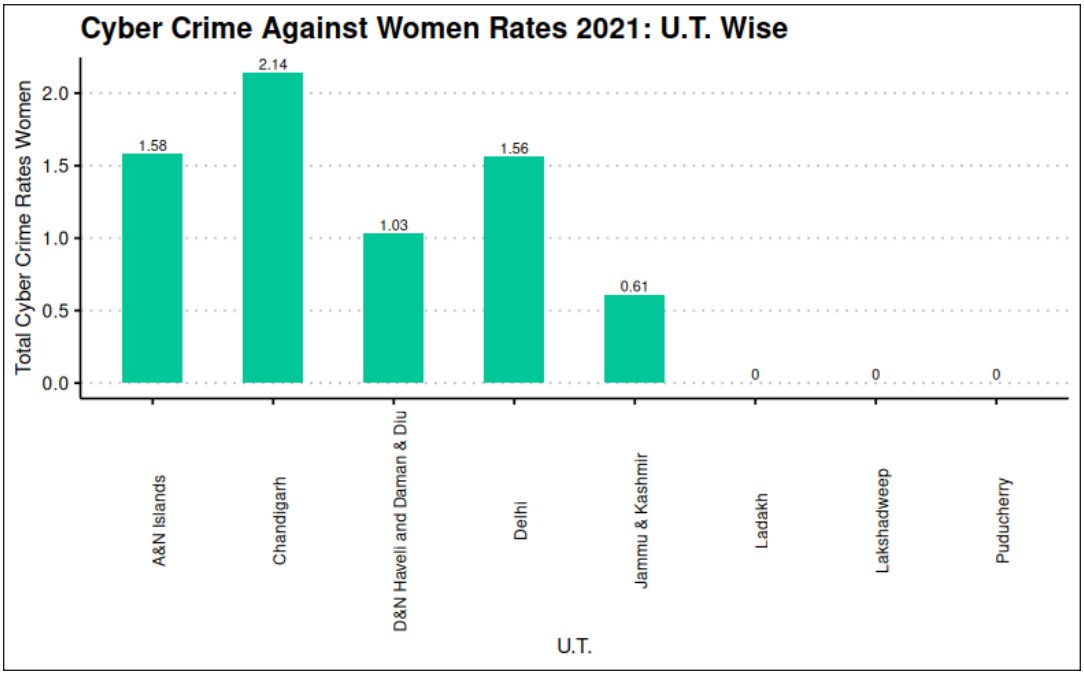


Again, the state of Karnataka (**6.8**) has the maximum cyber-crime rate against women followed by Assam (**4.96**), Telangana (**4.7**), and Uttarakhand (**3.28**).

U.T. Wise



The major Union Territories having cyber crimes against women are Delhi (**151**), Jammu & Kashmir (**39**) and Chandigarh (**12**) during the year 2021.



In the year 2021, the cyber-crime rate against women is highest in the Union Territory of Chandigarh (**2.14**), followed by A&N Islands (**1.58**) and Delhi (**1.56**).

Moreover, no cyber-crime case against women was reported in Ladakh, Lakshadweep and Puducherry during 2021.

Chapter 8

Conclusion

Cyber Crimes: A Huge Concern:

The IT Act and the Rules promulgated thereunder regulate the cyber law regime. When the IT Act is unable to provide for any specific sort of offence or if it does not include exhaustive provisions regarding an offence, one may also turn to the provisions of the Indian Penal Code, 1860. However, the current cyber law system is still insufficient to cope with the wide range of cybercrimes that exist. With the country advancing towards the 'Digital India' movement, cybercrime is continuously developing, and new types of cybercrime are being added to the cyber law regime daily. So, there is a need to bring some amendments to the laws to reduce such crimes.

Further Findings:

- India is expected to surpass about 8 lakh cyber-crime reporting count by the end of 2030 as predicted in this study.
- The expected rate is likely to be above 50 cyber-crimes per 1 lakh population by the end of 2030.
- Fraud is the major motive behind the cyber-crimes in India.
- Computer Related Offenses are the major investigated cyber crime incidents by the Police.
- The state of Karnataka has the highest cyber crimes of Fraud and Computer Related Offenses.
- Conviction rates vary significantly between states and UTs, showing differences in the efficiency of the criminal justice system in various jurisdictions.
- States like Uttar Pradesh, Uttarakhand, Rajasthan, Mizoram, and West Bengal have continuously had high conviction rates throughout the years.
- The number of unsolved cybercrime cases in the legal system is expanding.
- Compared to the IPC and SLL, the overall number of crimes under the IT Act is constantly larger.
- The states of Assam, Mizoram and Tripura had sudden spikes in the number of cyber - crime arrests.
- Over the years, there has been a fluctuating pattern in the number of people charged with cybercrimes.

- Kerala and Karnataka have the highest cyber-crime rate against children and women respectively.

Need for Cybersecurity measures:

Strong cybersecurity measures are required for people, corporations, and governmental organizations, as evidenced by the rising number of offences under the IT Act. It highlights the need of putting into place solid security procedures and spending money on cybersecurity infrastructure to defend against online attacks.

References:

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