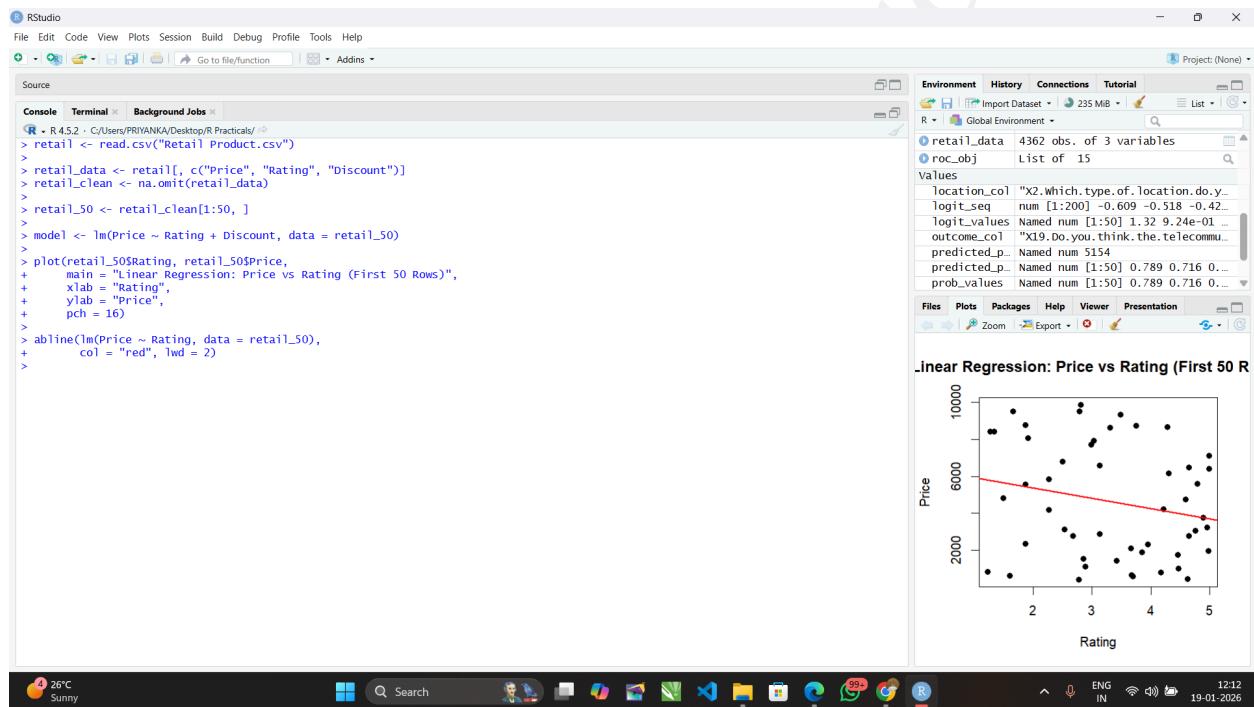


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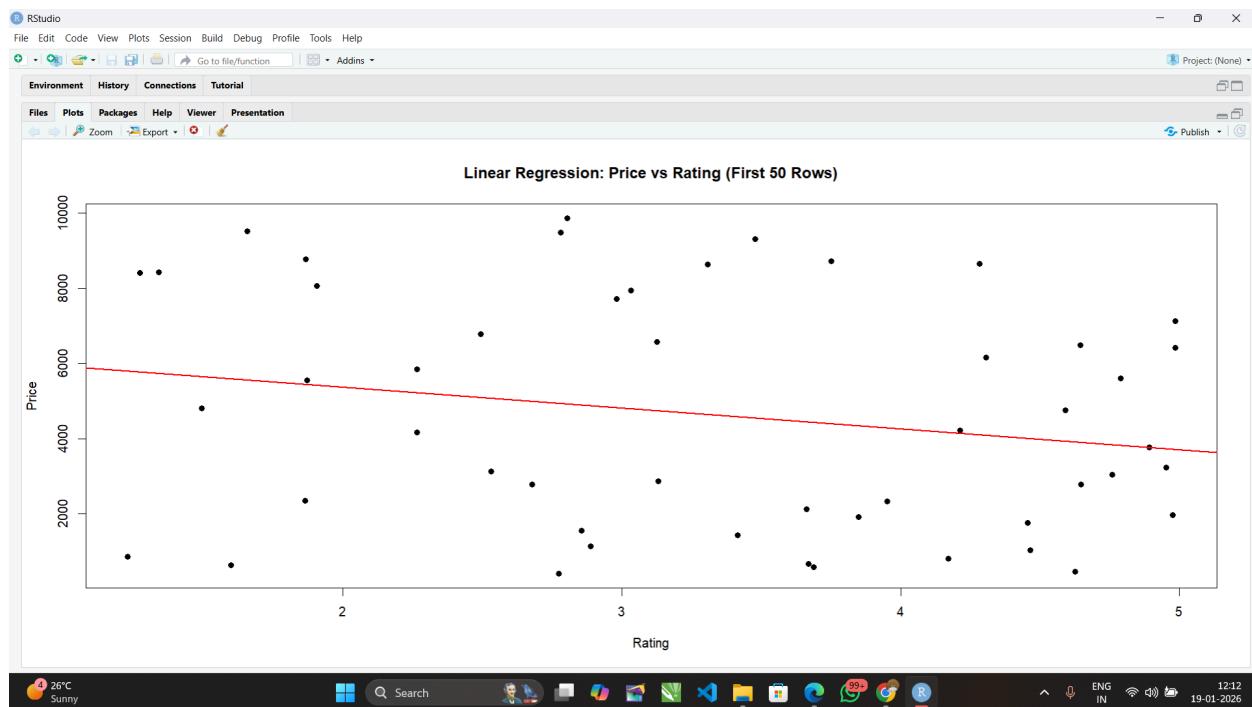
Module 2 Practical 13-15

Aim: Performing linear regression analysis using `lm()` (R).

OUTPUT:



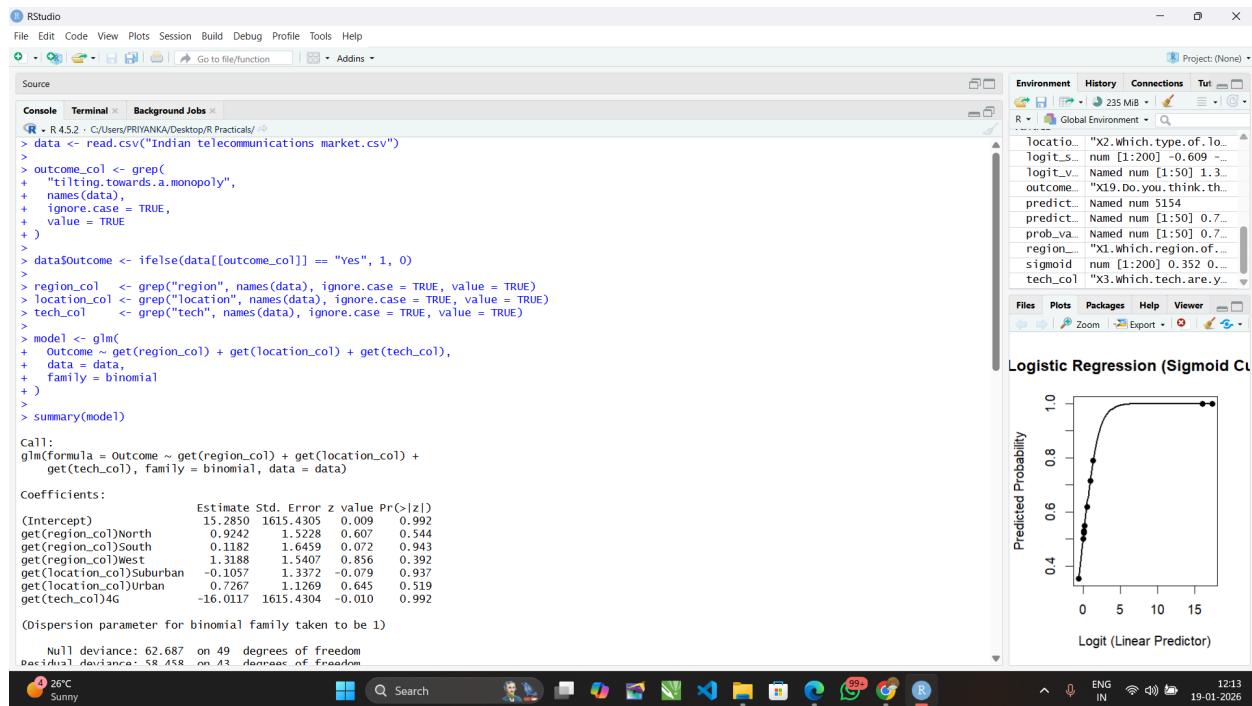
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Aim: Performing logistic regression using `glm()` (R).

OUTPUT:



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RStudio

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Source

```

Console Terminal Background Jobs
R - R 4.5.2 · C:/Users/PRIYANKA/Desktop/R Practicals

Null deviance: 62.687 on 49 degrees of freedom
Residual deviance: 58.458 on 43 degrees of freedom
AIC: 72.458

Number of Fisher Scoring iterations: 15

> logit_values <- predict(model, type = "link")
> prob_values <- predict(model, type = "response")
>
> plot(
+   logit_values,
+   prob_values,
+   pch = 19,
+   main = "Logistic Regression (Sigmoid Curve)",
+   xlab = "Logit (Linear Predictor)",
+   ylab = "Predicted Probability"
+ )
>
> logit_seq <- seq(min(logit_values), max(logit_values), length.out = 200)
> sigmoid <- 1 / (1 + exp(-logit_seq))
>
> lines(logit_seq, sigmoid, lwd = 2)
>
> library(writexl)
>
> model_summary <- summary(model)
>
> results <- as.data.frame(model_summary$coefficients)
>
> write.csv(
+   results,
+   "logistic_regression_results.csv",
+   row.names = TRUE
+ )
>
> write.xlsx(
+   results,
+   "logistic_regression_results.xlsx"
)

```

Environment History Connections Tutorial Project: (None)

Files Plots Packages Help Viewer

Logistic Regression (Sigmoid Curve)

Predicted Probability

Logit (Linear Predictor)

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RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

```

Console Terminal Background Jobs
R - R 4.5.2 · C:/Users/PRIYANKA/Desktop/R Practicals

+ pch = 19,
+ main = "Logistic Regression (Sigmoid Curve)",
+ xlab = "Logit (Linear Predictor)",
+ ylab = "Predicted Probability"
+ )
>
> logit_seq <- seq(min(logit_values), max(logit_values), length.out = 200)
> sigmoid <- 1 / (1 + exp(-logit_seq))
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> lines(logit_seq, sigmoid, lwd = 2)
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>
> model_summary <- summary(model)
>
> results <- as.data.frame(model_summary$coefficients)
>
> write.csv(
+   results,
+   "logistic_regression_results.csv",
+   row.names = TRUE
+ )
>
> write.xlsx(
+   results,
+   "logistic_regression_results.xlsx"
+ )
>
> pdf("logistic_regression_results.pdf")
> plot.new()
> text(
+   0, 1,
+   paste(capture.output(print(results)), collapse = "\n"),
+   adj = c(0, 1),
+   cex = 0.7
+ )
> dev.off()
RStudioGD
2
> |

```

Environment History Connections Tutorial Project: (None)

Files Plots Packages Help Viewer

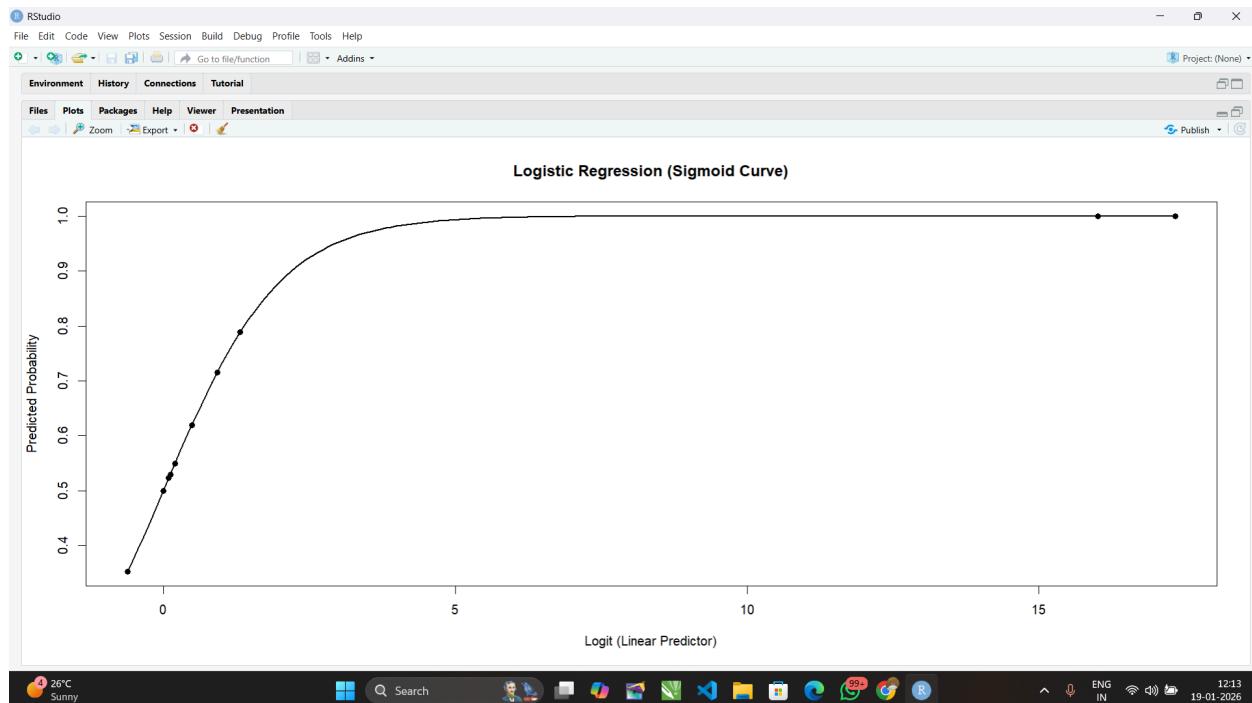
Logistic Regression (Sigmoid Curve)

Predicted Probability

Logit (Linear Predictor)

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Aim: Exporting results into external files (Excel, CSV, PDF) using write.csv() and writexl (R).

OUTPUT:

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Addins:** Go to file/function, Addins.
- Code Editor:** A large window displaying R code for logistic regression analysis. The code includes reading data from CSV files, creating a logistic regression model, and generating a PDF report. It uses the `dplyr` and `gridExtra` packages.
- Environment:** Shows the global environment with variables like `location_col`, `Logit_seq`, `Logit_values`, and `outcome_col`.
- Files:** A sidebar showing the file structure. Files include `exsample.R`, `fast_food_ordering_dataset.csv`, `GamingStudy_data.csv`, `Indian telecommunications market.csv`, `IndianFlightdata - Sheet1.csv`, `logistic_regression_results.csv`, `logistic_regression_results.pdf` (highlighted in red), `logistic_regression_results.xlsx`, `random_smartphone_usage_dataset.csv`, `Retail_Product.csv`, `Rplot.png`, `Rplot1.png`, `S.R`, `S074 pract 1 M2.R`, `S074 pract 2 M2.R`, `S074 pract 3 M2.R`, `S074 pract 4 M2.R`, `S074 pract 4.R`, `S074 pract 5 M2.R`, and `S074 pract 5.R`.
- Console:** Shows the command history for the R session.
- Plots:** A small preview of the generated PDF report.
- System Tray:** Shows the date (26°C, Sunny), system icons (Search, Mail, File Explorer, Task View, Edge, Google Chrome, R), and system status (ENG IN, WiFi, Battery, 19:01 2020).