

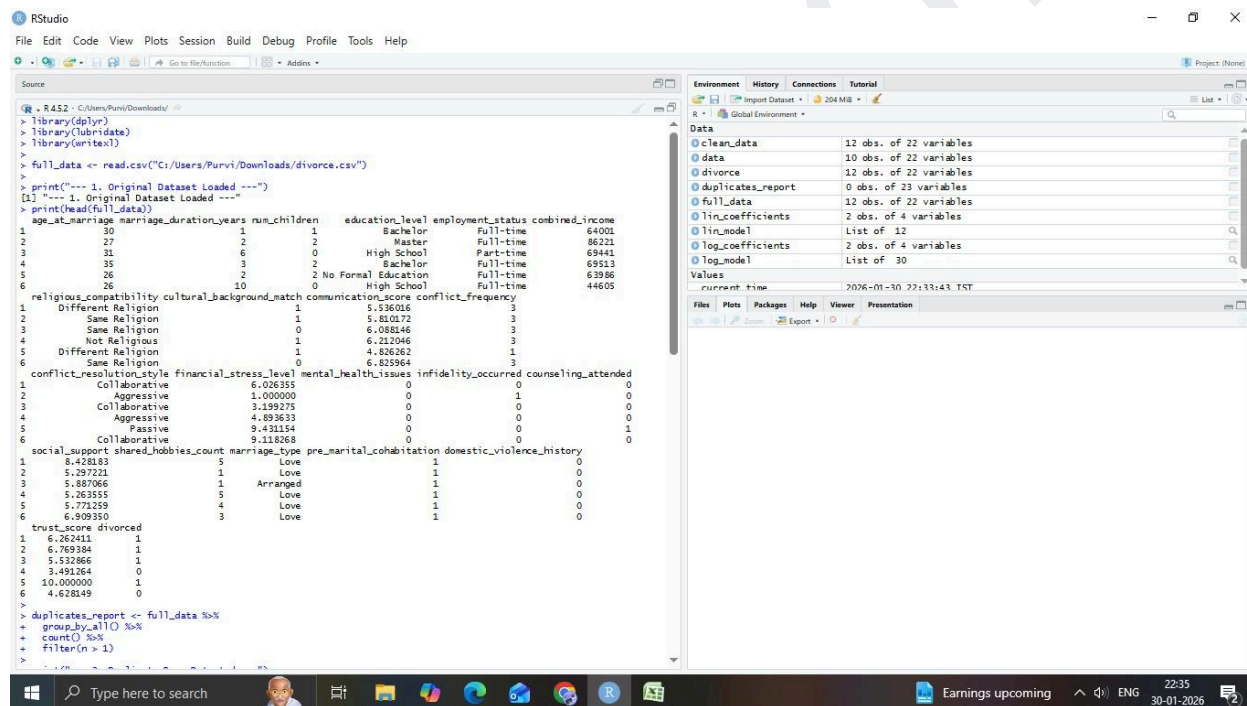
# SHETH L.U.J AND SIR M.V COLLEGE

Subject: Data Analysis with SAS / SPSS / R

## Practical no. 15

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

**Outputs**→



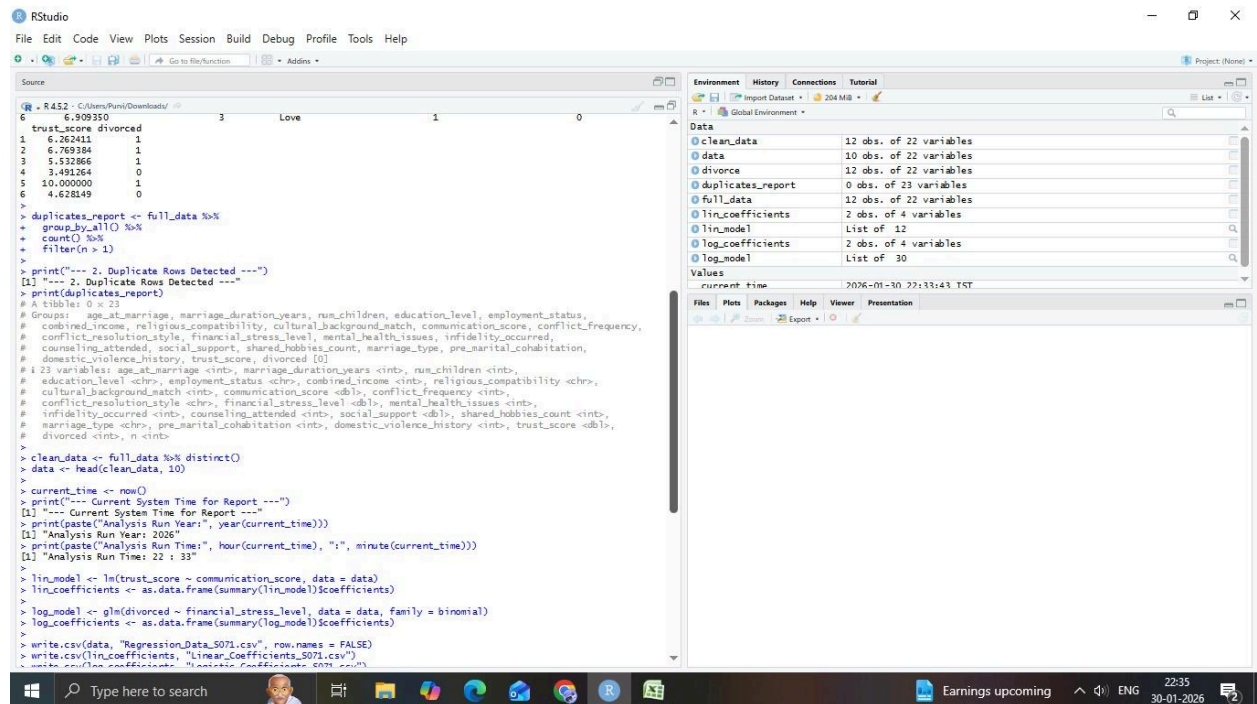
The screenshot displays the RStudio interface. The Source pane on the left contains R code for loading a dataset, printing its structure, and performing a group-wise summary. The Environment pane on the right lists the objects created in the workspace, including 'clean\_data', 'data', 'divorce', 'duplicates\_report', 'full\_data', 'lin\_coefficients', 'lin\_model', 'log\_coefficients', and 'log\_model'. The console at the bottom shows the execution of the code, including the output of `print(head(full_data))` and `group_by_all()`.

```
R - R452 - C:/Users/Purvi/Downloads/
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to File/Function | Add-ons
Source
R
> library(dplyr)
> library(tibble)
> library(writexl)
>
> full_data <- read.csv("C:/Users/Purvi/Downloads/divorce.csv")
>
> print("--- 1. Original Dataset Loaded ---")
[1] "--- 1. Original Dataset Loaded ---"
> print(head(full_data))
  age_at_marriage marriage_duration_years num_children education_level employment_status combined_income
1          30              1              1      Bachelor      Full-time          64001
2          27              2              2           Master      Full-time          86221
3          31              6              0      High School      Part-time          69441
4          35              3              2      Bachelor      Full-time          69523
5          26              2              0 No Formal Education Full-time          63986
6          26              10             0      High School      Full-time          44605
  religious_compatibility cultural_background_match communication_score conflict_frequency
1 Different Religion          1          5.536016              3
2 Same Religion          1          5.810172              3
3 Same Religion          0          6.080446              3
4 Not Religious          1          6.212046              3
5 Different Religion          1          4.826262              1
6 Same Religion          0          6.825964              3
  conflict_resolution_style financial_stress_level mental_health_issues infidelity_occurred counseling_attended
1 Collaborative          6.026355              0              0              0
2 Aggressive          1.000000              0              1              0
3 Collaborative          3.189275              0              0              0
4 Aggressive          4.893633              0              0              0
5 Passive          9.431154              0              0              1
6 Collaborative          9.118268              0              0              0
  social_support shared_hobbies_count marriage_type pre_marital_cohabitation domestic_violence_history
1          8.428183              5      Love          1              0
2          5.297221              1      Love          1              0
3          5.887066              1      Arranged          1              0
4          5.263555              5      Love          1              0
5          5.771259              4      Love          1              0
6          6.909350              3      Love          1              0
  trust_score divorced
1          6.262411          1
2          6.769384          1
3          5.532866          1
4          3.491264          0
5          10.000000          1
6          4.628149          0
>
> duplicates_report <- full_data %>%
+ group_by_all() %>%
+ count() %>%
+ filter(n > 1)
>
```

Environment History Connections Tutorial  
R - Global Environment • 204 MB  
Data  
clean\_data 12 obs. of 22 variables  
data 10 obs. of 22 variables  
divorce 12 obs. of 22 variables  
duplicates\_report 0 obs. of 23 variables  
full\_data 12 obs. of 22 variables  
lin\_coefficients 2 obs. of 4 variables  
lin\_model List of 12  
log\_coefficients 2 obs. of 4 variables  
log\_model List of 30  
Values  
current\_time 2026-01-30 22:33:43 IST  
Files Plots Packages Help Viewer Presentation

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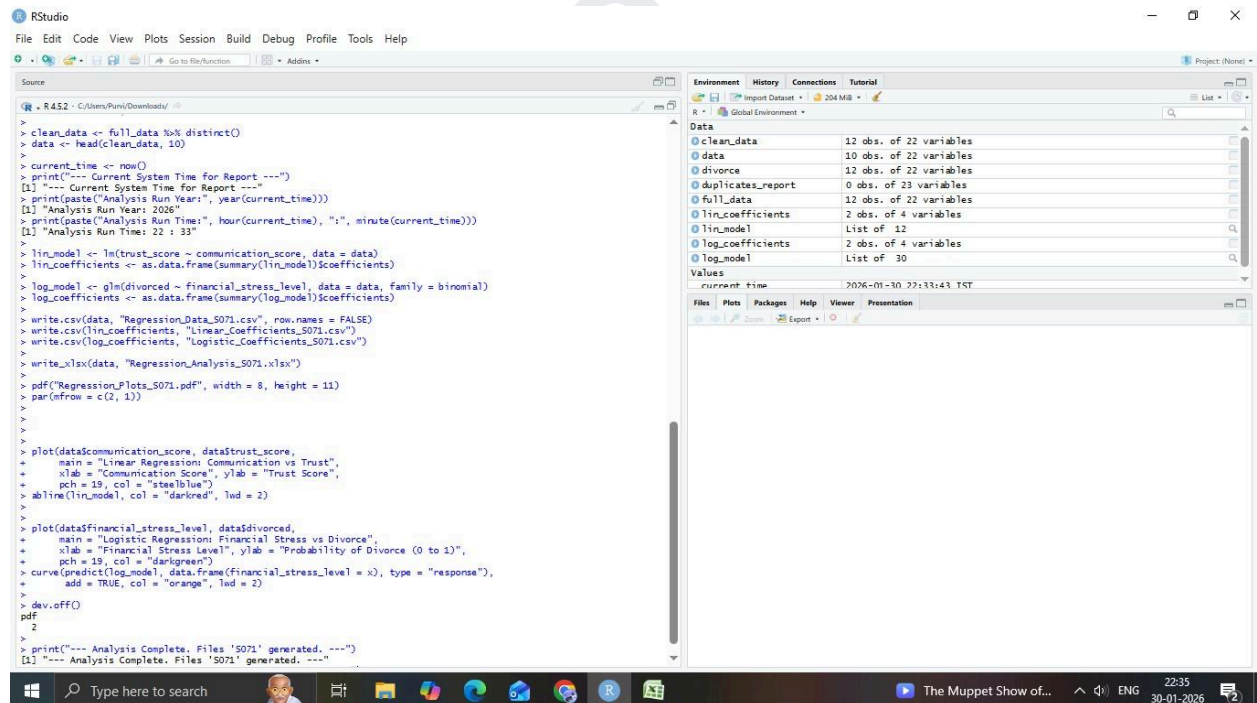
The screenshot shows the RStudio environment with the following code in the Source pane:

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help

Source
# R452 - C:\Users\Parvi\Downloads\
6 6.909350      3      Love      1      0
trust_score divorced
1 6.262411      1
2 6.769384      1
3 5.532866      1
4 3.491264      0
5 10.000000     1
6 4.628149      0
>
> duplicates_report <- full_data %>%
+ group_by_all() %>%
+ count() %>%
+ filter(n > 1)
>
> print("---- 2. Duplicate Rows Detected ----")
[1] "---- 2. Duplicate Rows Detected ----"
> print(duplicates_report)
# A tibble: 0 x 23
# Groups:   age_at_marriage, marriage_duration_years, num_children, education_level, employment_status,
# combined_income, religious_compatibility, cultural_background_match, communication_score, conflict_frequency,
# conflict_resolution_style, financial_stress_level, mental_health_issues, infidelity_occurred,
# counseling_attended, social_support, shared_hobbies_count, marriage_type, pre_marital_cohabitation,
# domestic_violence_history, trust_score, divorced [0]
# i 23 variables: age_at_marriage <int>, marriage_duration_years <int>, num_children <int>,
# education_level <chr>, employment_status <chr>, combined_income <int>, religious_compatibility <chr>,
# cultural_background_match <int>, communication_score <dbl>, conflict_frequency <int>,
# conflict_resolution_style <chr>, financial_stress_level <dbl>, mental_health_issues <int>,
# infidelity_occurred <int>, counseling_attended <int>, social_support <dbl>, shared_hobbies_count <int>,
# marriage_type <chr>, pre_marital_cohabitation <int>, domestic_violence_history <int>, trust_score <dbl>,
# divorced <int>, n <int>
>
> clean_data <- full_data %>% distinct()
> data <- head(clean_data, 10)
>
> current_time <- now()
> print("---- Current System Time for Report ----")
[1] "---- Current System Time for Report ----"
> print(paste("Analysis Run Year:", year(current_time)))
[1] "Analysis Run Year: 2026"
> print(paste("Analysis Run Time:", hour(current_time), ":", minute(current_time)))
[1] "Analysis Run Time: 22 : 33"
>
> lin_model <- lm(trust_score ~ communication_score, data = data)
> lin_coefficients <- as.data.frame(summary(lin_model)$coefficients)
>
> log_model <- glm(divorced ~ financial_stress_level, data = data, family = binomial)
> log_coefficients <- as.data.frame(summary(log_model)$coefficients)
>
> write.csv(data, "Regression_Data_S071.csv", row.names = FALSE)
> write.csv(lin_coefficients, "Linear_Coefficients_S071.csv")
> write.csv(log_coefficients, "Logistic_Coefficients_S071.csv")
>
> write_xlsx(data, "Regression_Analysis_S071.xlsx")
>
> pdf("Regression_Plots_S071.pdf", width = 8, height = 11)
par(mfrow = c(2, 1))
>
> plot(data$communication_score, data$trust_score,
+ main = "Linear Regression: Communication vs Trust",
+ xlab = "Communication Score", ylab = "Trust Score",
+ pch = 19, col = "steelblue",
+ abline(lin_model, col = "darkred", lwd = 2))
>
> plot(data$financial_stress_level, data$divorced,
+ main = "Logistic Regression: Financial Stress vs Divorce",
+ xlab = "Financial Stress Level", ylab = "Probability of Divorce (0 to 1)",
+ pch = 19, col = "darkgreen",
+ curve(predict(log_model, data.frame(financial_stress_level = x)), type = "response"),
+ add = TRUE, col = "orange", lwd = 2))
>
> dev.off()
pdf
2
> print("---- Analysis Complete. Files 'S071' generated. ----")
[1] "---- Analysis Complete. Files 'S071' generated. ----"
```

The Environment pane on the right shows the following objects:

Object	Size
clean_data	12 obs. of 22 variables
data	10 obs. of 22 variables
divorced	12 obs. of 22 variables
duplicates_report	0 obs. of 23 variables
full_data	12 obs. of 22 variables
lin_coefficients	2 obs. of 4 variables
lin_model	List of 12
log_coefficients	2 obs. of 4 variables
log_model	List of 30



The screenshot shows the RStudio environment with the following code in the Source pane:

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help

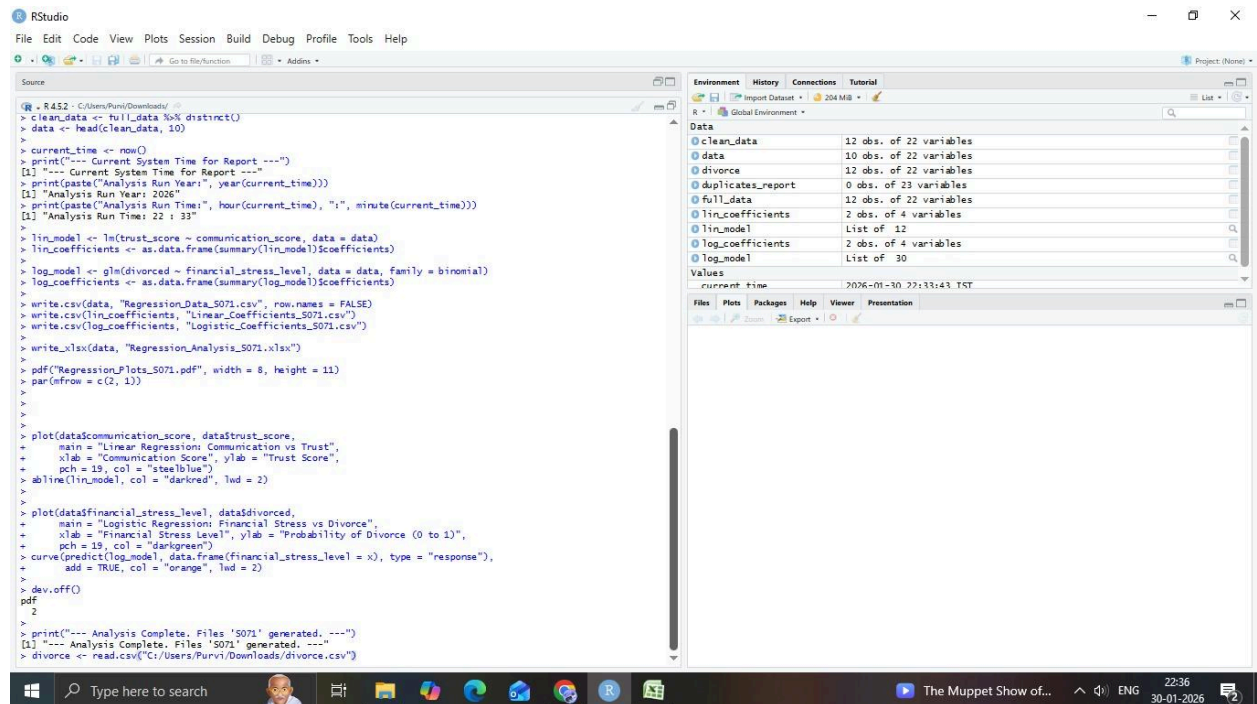
Source
# R452 - C:\Users\Parvi\Downloads\
>
> clean_data <- full_data %>% distinct()
> data <- head(clean_data, 10)
>
> current_time <- now()
> print("---- Current System Time for Report ----")
[1] "---- Current System Time for Report ----"
> print(paste("Analysis Run Year:", year(current_time)))
[1] "Analysis Run Year: 2026"
> print(paste("Analysis Run Time:", hour(current_time), ":", minute(current_time)))
[1] "Analysis Run Time: 22 : 33"
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> lin_model <- lm(trust_score ~ communication_score, data = data)
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> log_coefficients <- as.data.frame(summary(log_model)$coefficients)
>
> write.csv(data, "Regression_Data_S071.csv", row.names = FALSE)
> write.csv(lin_coefficients, "Linear_Coefficients_S071.csv")
> write.csv(log_coefficients, "Logistic_Coefficients_S071.csv")
>
> write_xlsx(data, "Regression_Analysis_S071.xlsx")
>
> pdf("Regression_Plots_S071.pdf", width = 8, height = 11)
par(mfrow = c(2, 1))
>
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+ xlab = "Communication Score", ylab = "Trust Score",
+ pch = 19, col = "steelblue",
+ abline(lin_model, col = "darkred", lwd = 2))
>
> plot(data$financial_stress_level, data$divorced,
+ main = "Logistic Regression: Financial Stress vs Divorce",
+ xlab = "Financial Stress Level", ylab = "Probability of Divorce (0 to 1)",
+ pch = 19, col = "darkgreen",
+ curve(predict(log_model, data.frame(financial_stress_level = x)), type = "response"),
+ add = TRUE, col = "orange", lwd = 2))
>
> dev.off()
pdf
2
> print("---- Analysis Complete. Files 'S071' generated. ----")
[1] "---- Analysis Complete. Files 'S071' generated. ----"
```

The Environment pane on the right shows the following objects:

Object	Size
clean_data	12 obs. of 22 variables
data	10 obs. of 22 variables
divorced	12 obs. of 22 variables
duplicates_report	0 obs. of 23 variables
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```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help

Source
R452 - C:/Users/Purvi/Downloads/
> clean_data <- full_data %>% distinct()
> data <- head(clean_data, 10)
>
> current_time <- now()
> print("--- Current System Time for Report ---")
[1] "--- Current System Time for Report ---"
> print(paste("Analysis Run Year:", year(current_time)))
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> log_coefficients <- as.data.frame(summary(log_model)$coefficients)
>
> write.csv(data, "RegressionData_S071.csv", row.names = FALSE)
> write.csv(lin_coefficients, "Linear_Coefficients_S071.csv")
> write.csv(log_coefficients, "Logistic_Coefficients_S071.csv")
>
> write.xlsx(data, "RegressionAnalysis_S071.xlsx")
>
> pdf("RegressionPlots_S071.pdf", width = 8, height = 11)
> par(mfrow = c(2, 1))
>
> plot(data$communication_score, data$trust_score,
+      main = "Linear Regression: Communication vs Trust",
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+      pch = 19, col = "steelblue")
> abline(lin_model, col = "darkred", lwd = 2)
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> plot(data$financial_stress_level, data$divorced,
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+      xlab = "Financial Stress Level", ylab = "Probability of Divorce (0 to 1)",
+      pch = 19, col = "darkgreen")
> curve(predict(log_model, data.frame(financial_stress_level = x), type = "response"),
+       add = TRUE, col = "orange", lwd = 2)
>
> dev.off()
pdf
2
>
> print("--- Analysis Complete. Files 'S071' generated. ---")
[1] "--- Analysis Complete. Files 'S071' generated. ---"
> divorce <- read.csv("C:/Users/Purvi/Downloads/divorce.csv")

Environment History Connections Tutorial
R - Global Environment
Data
clean_data 12 obs. of 22 variables
data 10 obs. of 22 variables
divorced 12 obs. of 22 variables
duplicates_report 0 obs. of 23 variables
full_data 12 obs. of 22 variables
lin_coefficients 2 obs. of 4 variables
lin_model List of 12
log_coefficients 2 obs. of 4 variables
log_model List of 30
Values
current_time 2026-01-30 22:33:43 TST
Files Plots Packages Help Viewer Presentation
```

Regression\_Data\_S071.csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
1	age_at_marriage	num_child	education	employment	combined	religious	cultural	b_communic	conflict	fi	conflict	ri	financial	mental	h_infidelity	counselin	social_sug	shared_h	marriage	pre_marit	domestic	trust_s
2	30	1	1	Bachelor	Full-time	64001	Different	1	5.536016	3	Collaborat	6.026355	0	0	0	8.428183	5	Love	1	0	6.2624	
3	27	2	2	Master	Full-time	86221	Same Reli	1	5.810172	3	Aggressiv	1	0	1	0	5.297221	1	Love	1	0	6.7693	
4	31	6	0	High Scho	Part-time	69441	Same Reli	0	6.088146	3	Collaborat	3.199275	0	0	0	5.887066	1	Arranged	1	0	5.5328	
5	35	3	2	Bachelor	Full-time	69513	Not Religi	1	6.212046	3	Aggressiv	4.893633	0	0	0	5.263555	5	Love	1	0	3.4912	
6	26	2	2	No Forma	Full-time	63986	Different	1	4.826262	1	Passive	9.431154	0	0	1	5.771259	4	Love	1	0		
7	26	10	0	High Scho	Full-time	44605	Same Reli	0	6.825964	3	Collaborat	9.118268	0	0	0	6.90935	3	Love	1	0	4.6281	
8	35	10	2	High Scho	Full-time	73454	Different	1	3.775491	1	Passive	1	0	0	0	7.351375	1	Love	1	0	5.7538	
9	31	17	1	High Scho	Unemploy	59491	Not Religi	1	6.613021	4	Aggressiv	1.822366	0	0	0	8.709813	2	Love	0	0	7.0105	
10	25	5	1	Bachelor	Full-time	40944	Not Religi	0	2.963345	0	Collaborat	5.361882	0	0	0	8.727489	3	Arranged	1	0	2.4283	
11	30	1	0	PhD	Full-time	46819	Same Reli	1	3.612109	1	Collaborat	6.575486	1	0	0	5.939285	1	Arranged	1	0	8.7506	
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Regression\_Data\_S071

Ready

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Regression\_Analysis\_S071.xlsx - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1																					
2	at_marrie	duration	child	education	employment	sbined	incous	compa	background	uncommunication	lict	freque	resolutio	cial	stress	il	health	lelity	occueing	attetial	suppd
3	30	1	1	Bachelor	Full-time	64001	Different	1	5.536016	3	Collaborat	6.026355	0	0	0	8.428183	5	Love	1	0	6.2624
4	27	2	2	Master	Full-time	86221	Same Reli	1	5.810172	3	Aggressivi	1	0	1	0	5.297221	1	Love	1	0	6.7693
5	31	6	0	High Scho	Part-time	69441	Same Reli	0	6.088146	3	Collaborat	3.199275	0	0	0	5.887066	1	Arranged	1	0	5.5328
6	35	3	2	Bachelor	Full-time	69513	Not Religi	1	6.212046	3	Aggressivi	4.893633	0	0	0	5.263555	5	Love	1	0	3.4912
7	26	2	2	No Forma	Full-time	63986	Different	1	4.826262	1	Passive	9.431154	0	0	1	5.771259	4	Love	1	0	0
8	26	10	0	High Scho	Full-time	44605	Same Reli	0	6.825964	3	Collaborat	9.118268	0	0	0	6.90935	3	Love	1	0	4.6281
9	35	10	2	High Scho	Full-time	73454	Different	1	3.775491	1	Passive	1	0	0	0	7.351375	1	Love	1	0	5.7539
10	31	17	1	High Scho	Unemploy	59491	Not Religi	1	6.613021	4	Aggressiv	1.822366	0	0	0	8.709813	2	Love	0	0	7.0105
11	25	5	1	Bachelor	Full-time	40944	Not Religi	0	2.963345	0	Collaborat	5.361882	0	0	0	8.727489	3	Arranged	1	0	2.4283
12	30	1	0	PhD	Full-time	46819	Same Reli	1	3.612109	1	Collaborat	6.575486	1	0	0	5.939285	1	Arranged	1	0	8.7506
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Logistic\_Coefficients\_S071.csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Estimate	Std. Error	z value	Pr(> z )																
2	(Intercept	0.644674	1.268274	0.508308	0.611237																
3	financial_	-0.04898	0.221506	-0.22112	0.825002																
4																					
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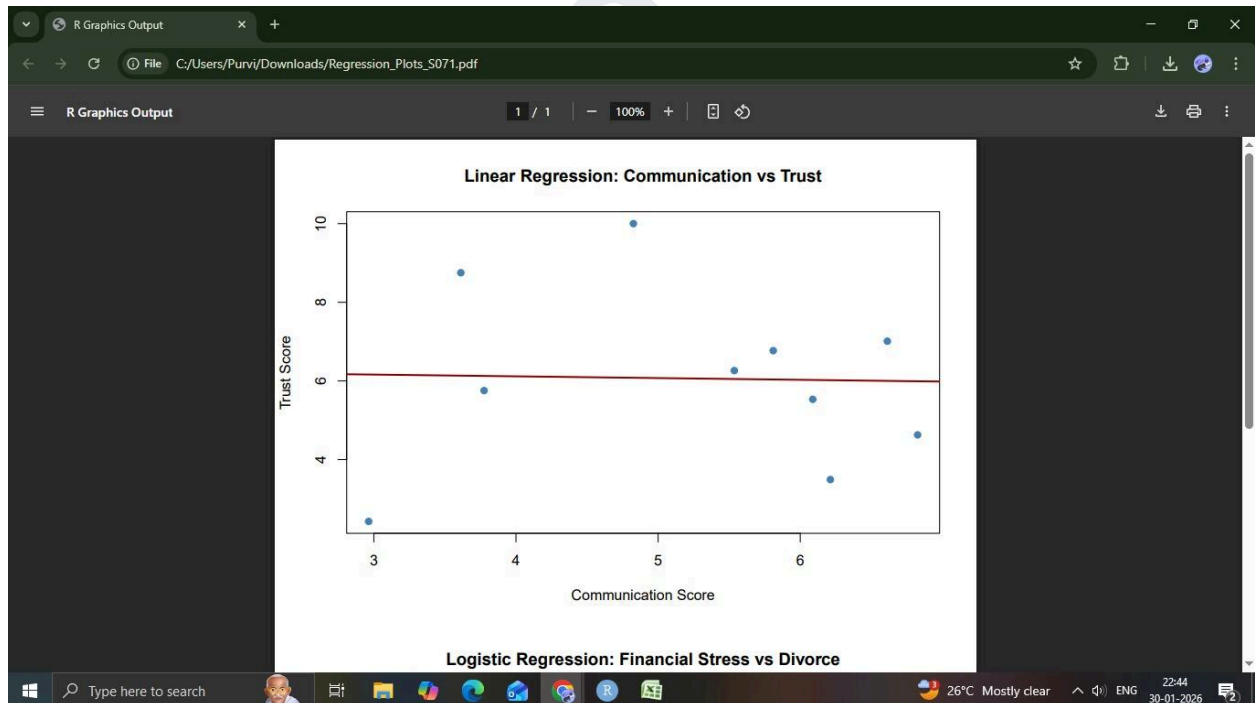


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Linear\_Coefficients\_S071.csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Estimate	Std. Error	t value	Pr(> t )																
2		(Intercept	6.295099	3.179049	1.980183	0.083025															
3		communic	-0.04446	0.590577	-0.07527	0.941844															
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