

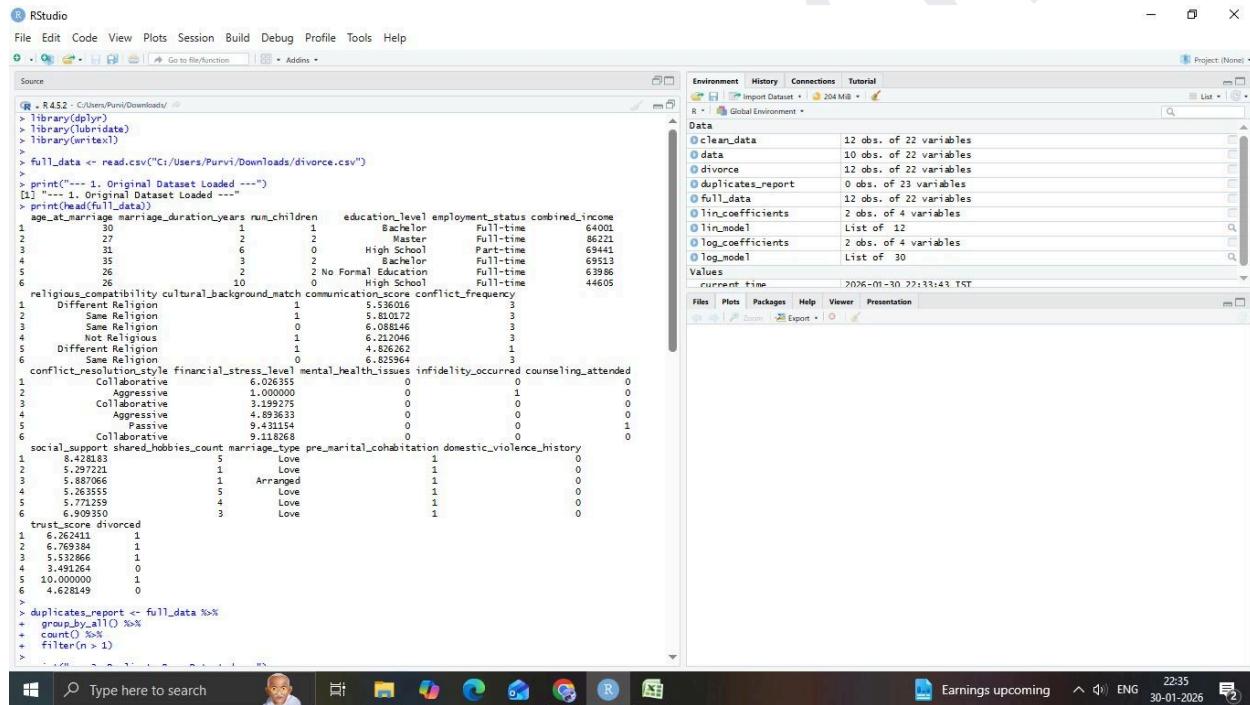
SHETH L.U.J AND SIR M.V COLLEGE

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→

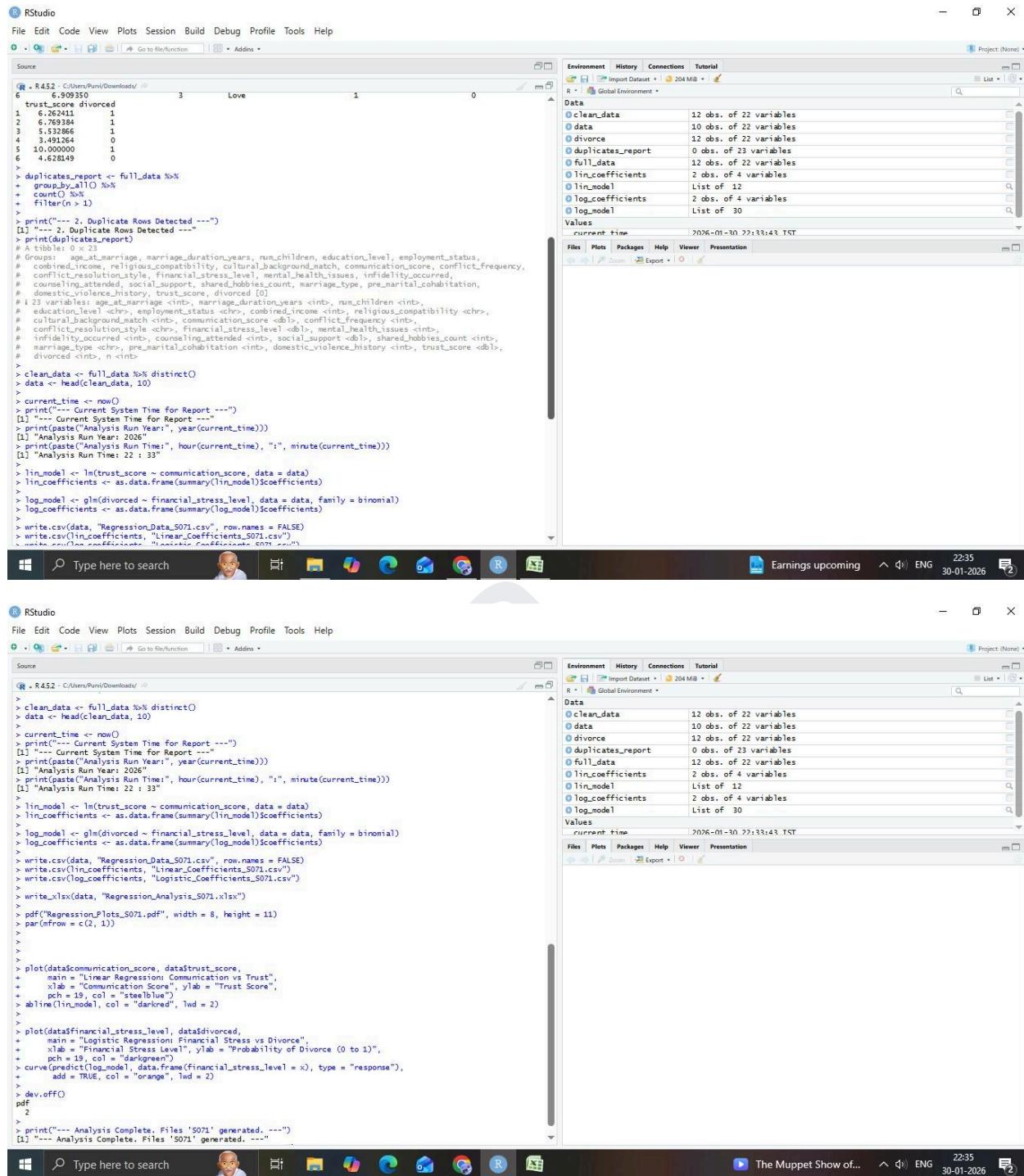


The screenshot shows the RStudio interface with the following details:

- Source Pane:** Displays R code for reading a CSV file, creating a clean dataset, and performing various analyses like linear regression (lm, log_lm) and logistic regression (logit). It also includes code for handling missing values and filtering data.
- Environment Pane:** Shows the global environment with objects like clean_data, data, divorce, duplicates_report, full_data, lm_coefficients, lm_model, log_coefficients, log_lm, and current_time.
- Plots:** No plots are visible in this screenshot.
- Packages:** No packages are listed.
- Help:** No help pages are visible.
- Viewer:** No output from the viewer is shown.
- Presentation:** No presentation slides are visible.
- Bottom Status Bar:** Shows the system tray, taskbar icons, and the date/time (30-01-2026, 22:35).

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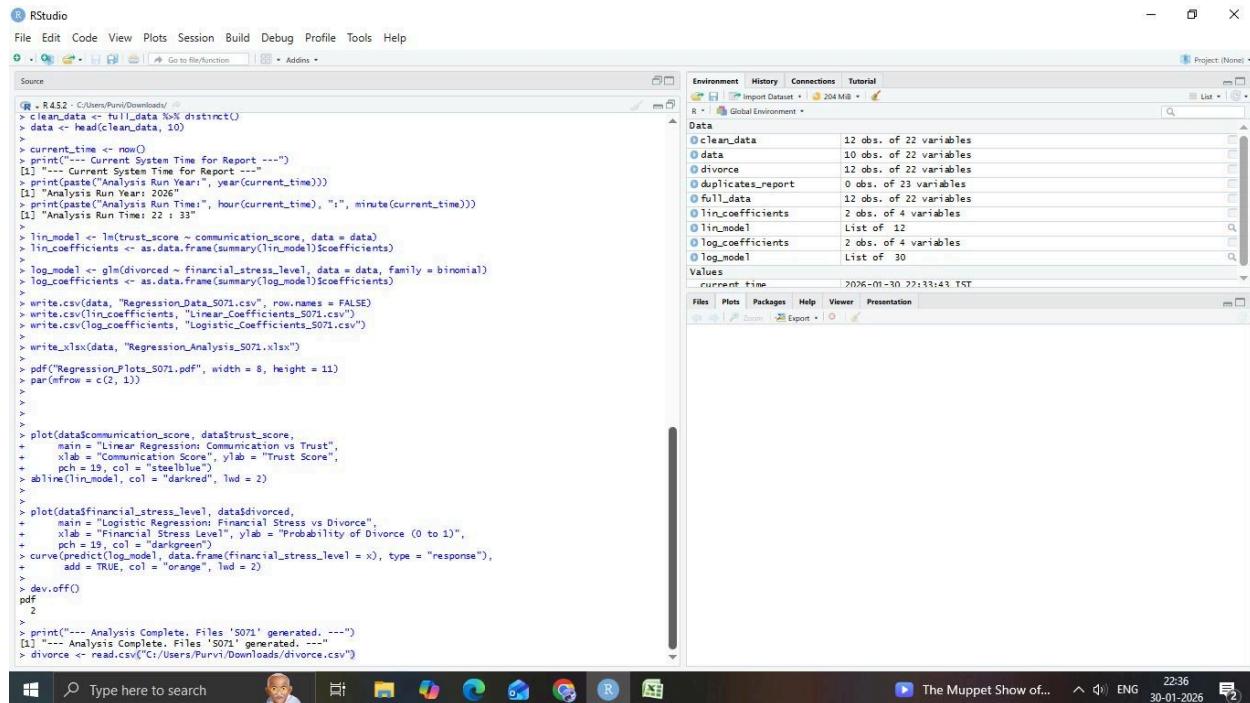


The screenshot shows two side-by-side instances of the RStudio IDE. Both instances have the same workspace setup, including a Source tab with R code, an Environment tab showing objects like clean_data, divorce, duplicates_report, etc., and a Plots tab displaying various plots such as scatter plots and histograms. The top instance's status bar shows "Earnings upcoming" and the bottom one shows "The Muppet Show of...". Both status bars also show the date as 30-01-2026 and time as 22:35.

```
R > R452 - C:/Users/Puni/Downloads/ 3 Love 1 0
> #clean_data %>% distinct()
#> #clean_data %>% filter(divorced == 1)
#> #clean_data %>% count() %>%
#> #filter(n > 1)
#> #print("-- 2. Duplicate Rows Detected ---")
#> #print(duplicates_report)
#> # A tibble: 0 × 23
#> # Groups: age_at_marriage, marriage_duration<years>, num_children, education_level, employment_status,
#> # financial_stress_level, 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> <dbl>, num_children <int>,
#> # education_level <chr>, employment_status <chr>, financial_stress_level <dbl>, 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()
#> #
#> # print("-- Analysis Complete. Files 'S071' generated. ---")
#> # [1] "---- Analysis Complete. Files 'S071' generated. ---"
```

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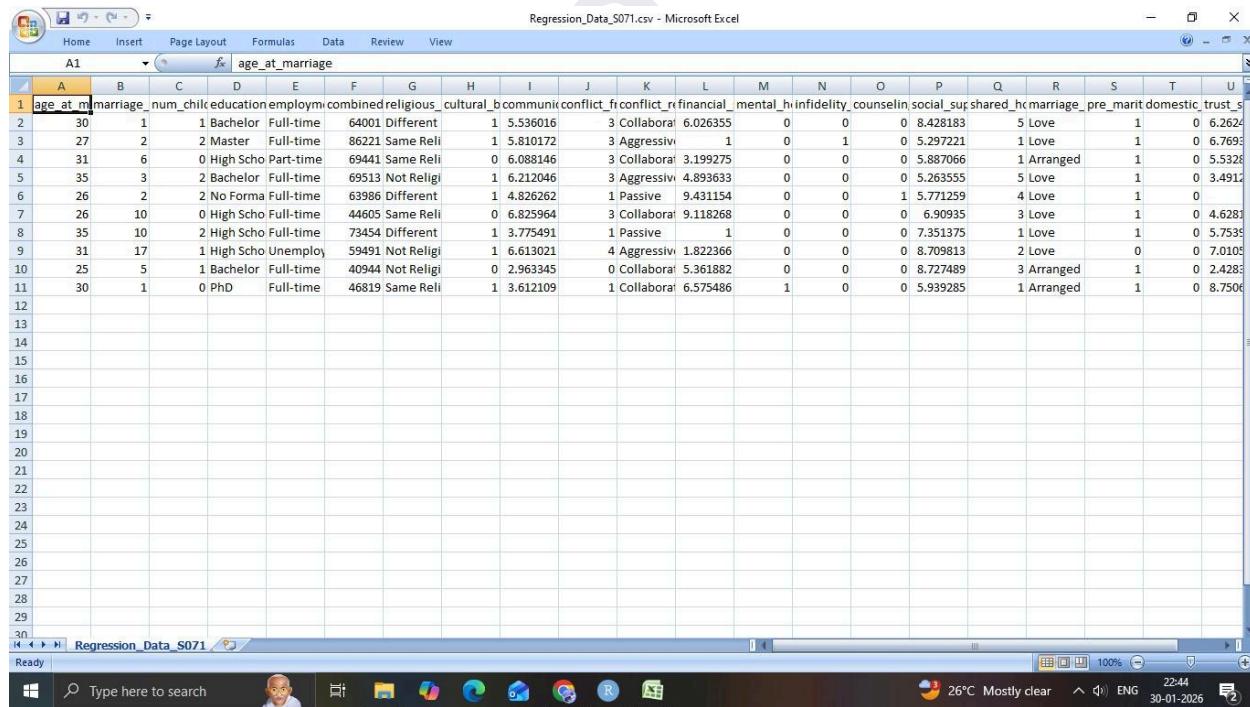


The screenshot shows an RStudio interface with the following details:

- Environment View:** Shows objects like `clean_data`, `data`, `divorce`, etc.
- Data View:** Shows the structure of various datasets.
- Plots View:** Shows a histogram of `age_at_marriage`.
- Code Editor:** Displays R code for data cleaning, model fitting, and plot generation.
- Output View:** Shows the results of the R code execution.

The R code in the editor includes:

```
R > 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("System 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. --- "
> divorce <- read.csv("C:/Users/Purvi/Downloads/divorce.csv")
```



The screenshot shows a Microsoft Excel spreadsheet titled "Regression_Data_S071.csv". The data consists of 20 rows and 20 columns, with the first row serving as the header. The columns include variables such as age at marriage, education level, employment status, religious affiliation, communication score, conflict resolution style, financial management, infidelity, counseling, social support, shared home, marriage pre-marital trust, and divorce status. The data shows various combinations of these factors across different individuals.

	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_chil	education	employm	combined	religious_cultural	b_communic	conflict_fi	conflict_r	financial_m	mental_h	infidelity_counselin	social_su	shared_h	marriag	pre_marit	domestic_trust_s				
2	30	1	1 Bachelor	Full-time	64001	Different	1	5.536016	3 Collabora	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 Collabora	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 Collabora	9.118268	0	0	0	6.90935	3 Love	1	0	4.6283			
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	5.7535			
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 Collabora	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 Collabora	6.575486	1	0	0	5.939285	1 Arranged	1	0	8.7506			
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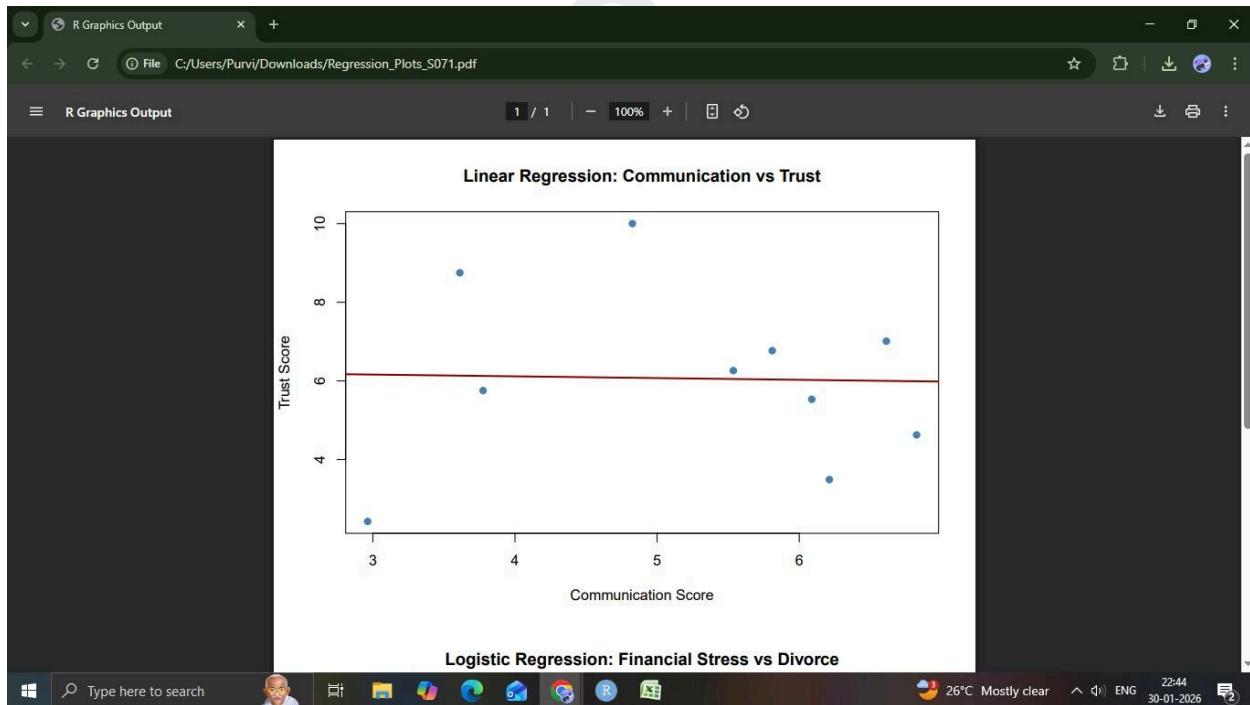
Regression_Analysis_S071.xlsx - Microsoft Excel																				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	at_marriagel_duration	childeducation	leloymen_sbined	incus_compa	background	lict_frequ	resolutio	al_stress	sl_health	lelity_occuelng	attacial_suppd_hobbies	arrage_tyrital_cohalc	violenc	erust_sc						
2	30	1	1 Bachelor	Full-time	64001	Different	1	5.536016	3 Collabora	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 Collabora	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 Collabora	9.118268	0	0	0	6.90935	3 Love	1	0	4.6283		
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	5.7535		
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 Collabora	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 Collabora	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															
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8																				
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Linear_Coefficients_S071.csv - Microsoft Excel					
A	B	C	D	E	F
1	Estimate	Std. Error	t value	Pr(> t)	
2	(Intercept	6.295099	3.179049	1.980183	0.083025
3	communik	-0.04446	0.590577	-0.07527	0.941844
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