

Data Analytics: Solving Business problems

An Example using Real Business Data
By: Eman Aldabaa



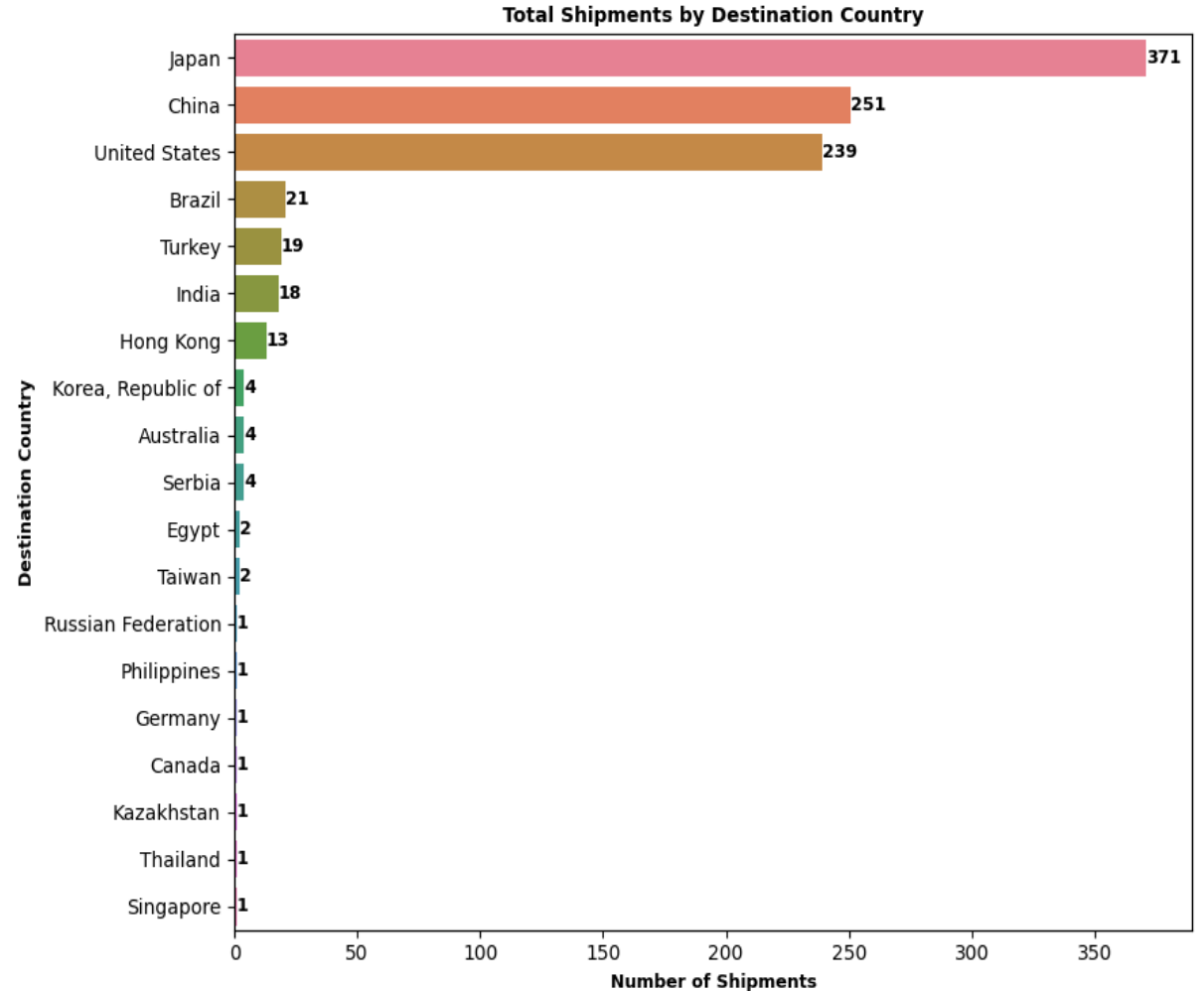
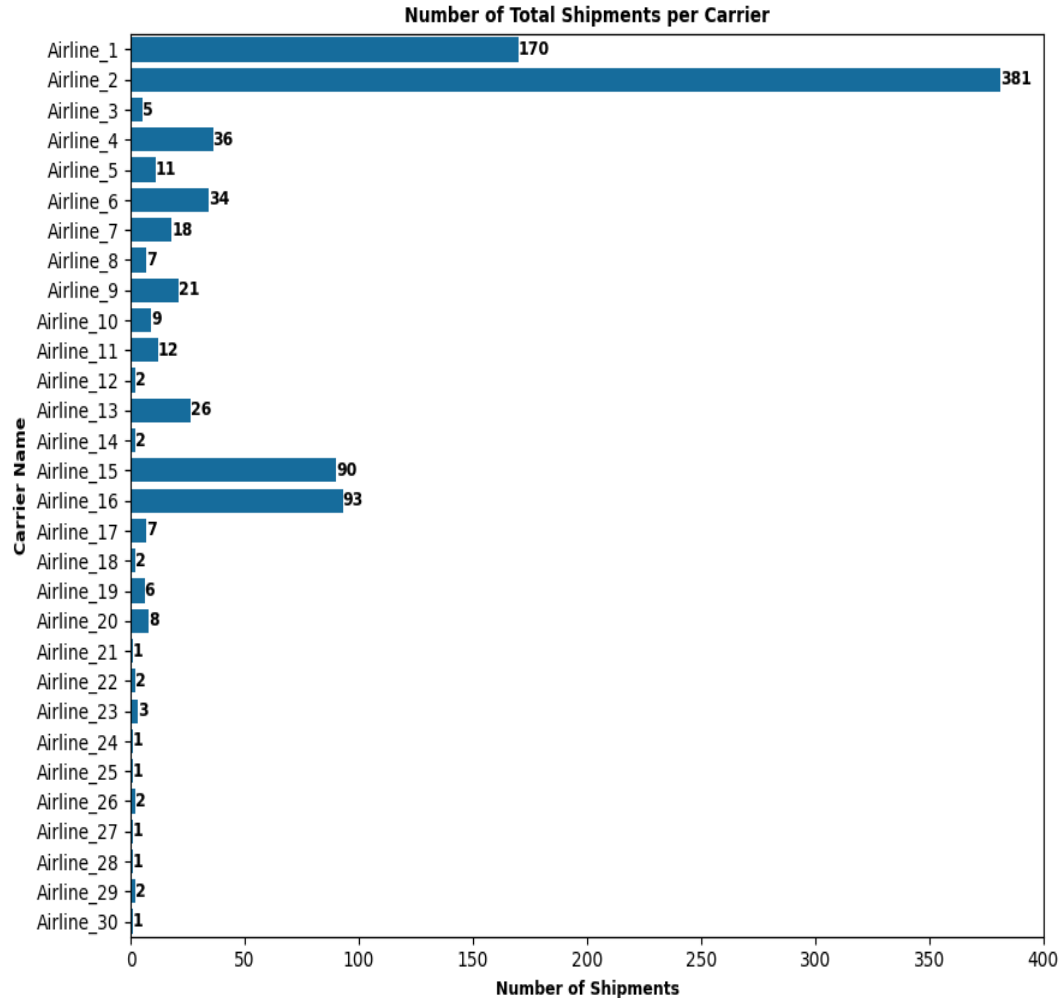
About The Data:

Project Workflow:

1. **Data Collection:** Extracted from a shipping company operational systems.
2. **Data Exploration & Cleaning:**
 - Global shipments for one of their top customers (Rows: 5869 – Columns:49).
 - Limited to Air-shipments from DK (Rows: 955 – Columns: 20).
3. **Data Analysis:** Discovering trends & insights.

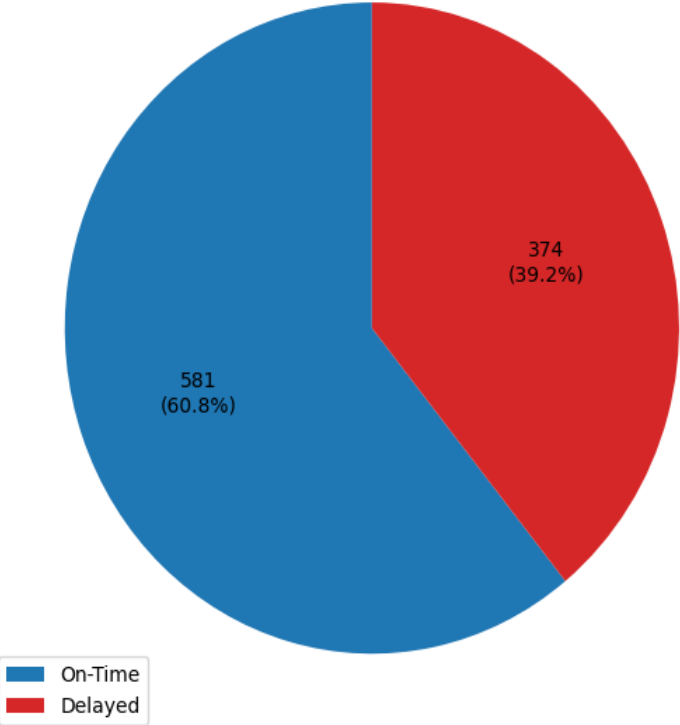
	JHANNESB	United Kingd Heathrow Aq South Africa	Johannesbu	###	#####	23/01/2022	22/01/2022	23/01/2022	24/01/2022	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	SMAUR	United Kingd Heathrow Aq India	Delhi	###	#####	15/01/2022	15/01/2022	16/01/2022	-	1	6	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	KUNSHAN	Denmark Copenhagen China	Shanghai Pux	###	#####	24/01/2022	22/01/2022	24/01/2022	26/01/2022	2	8	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	CHIPPING N	Netherlands Amsterdam Australia	Sydney	###	#####	13/01/2022	10/01/2022	12/01/2022	-	2	6	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	-	Hong Kong Hong Kong United State Philadelphia	Philadelphia	###	#####	13/01/2022	07/01/2022	13/01/2022	17/01/2022	2	10	8 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	SHANGHAI	Netherlands Amsterdam China	Guangzhou	###	#####	15/01/2022	15/01/2022	17/01/2022	26/01/2022	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
IT #####	SUZHO	Germany Frankfurt am China	Shanghai Pux	###	#####	15/01/2022	13/01/2022	15/01/2022	24/01/2022	2	12	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
L #####	BURNBY	United State Boston Canada	Vancouver	###	#####	16/01/2022	15/01/2022	16/01/2022	17/01/2022	1	2	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
L #####	SUZHOU	Germany Hamburg China	Shanghai Pux	###	#####	11/01/2022	08/01/2022	11/01/2022	12/01/2022	3	4	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	BREIDENG	Netherlands Amsterdam United Kingd Heathrow Aq	Aq	###	#####	08/01/2022	08/01/2022	08/01/2022	11/01/2022	0	5	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	SWEDSORB	China Ningbo United State John F. Kenn	Ken	###	#####	28/01/2022	28/01/2022	28/01/2022	01/02/2022	0	3	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	ALMELO	United State John F. Kenn Netherlands Amsterdam	Amsterdam	###	#####	29/01/2022	27/01/2022	29/01/2022	01/02/2022	2	15	8 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	KUNMING	United Kingd Heathrow Aq China	Guangzhou	###	#####	12/01/2022	10/01/2022	12/01/2022	20/01/2022	2	8	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HYDERABAD	United Kingd Heathrow Aq India	Chennai (Ma	##	#####	18/01/2022	18/01/2022	18/01/2022	-	0	8	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	YORK	Taiwan Taipei United State John F. Kenn	Ken	###	#####	02/01/2022	02/01/2022	02/01/2022	06/01/2022	0	0	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
X #####	STAFORD	United State Philadelphia United Kingd Heathrow Aq	Aq	###	#####	16/01/2022	15/01/2022	16/01/2022	19/01/2022	1	7	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	20/01/2022	15/01/2022	20/01/2022	03/02/2022	5	20	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	EINDHOVEN	India Delhi Netherlands Amsterdam	Amsterdam	###	#####	14/01/2022 -	-	14/01/2022	20/01/2022	-	-	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	DULUTH	Denmark Copenhagen United State O'Hare Apt/K	Kenn	###	#####	22/01/2022	22/01/2022	22/01/2022	27/01/2022	0	1	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HYDERABAD	Netherlands Amsterdam India Hyderabad	Hyderabad	###	#####	04/01/2022	01/01/2022	03/01/2022	-	2	2	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	DULUTH	Denmark Copenhagen United State O'Hare Apt/K	Kenn	###	#####	01/01/2022	02/01/2022	02/01/2022	06/01/2022	0	-1	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
Z #####	YORK	Taiwan Taipei United State John F. Kenn	Ken	###	#####	28/01/2022	28/01/2022	28/01/2022	02/02/2022	0	0	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	TANGIA	United Kingd Heathrow Aq China	Guangzhou	###	#####	24/01/2022	22/01/2022	24/01/2022	23/02/2022	2	32	5 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HONG KONG	United Kingd Heathrow Aq Hong Kong	Hong Kong	###	#####	17/01/2022	16/01/2022	18/01/2022	20/01/2022	2	4	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	BOULDER	Hong Kong Hong Kong United State Los Angeles	Los Angeles	###	#####	13/01/2022	12/01/2022	13/01/2022	19/01/2022	1	4	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	EINDHOVEN	China Shanghai Pux Netherlands Amsterdam	Amsterdam	###	#####	15/01/2022	13/01/2022	15/01/2022	18/01/2022	2	2	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	YORK	Hong Kong Hong Kong United State Philadelphia	Philadelphia	###	#####	10/02/2022	31/01/2022	10/02/2022	14/02/2022	10	10	6 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HANGZHOU	United Kingd Heathrow Aq China	Hangzhou Xi	###	#####	10/01/2022	07/01/2022	10/01/2022	-	3	11	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	BOULDER	Italy Fiumicino Ap United State Denver	Denver	###	#####	15/02/2022	05/02/2022	15/02/2022	16/02/2022	10	10	6 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	24/01/2022	22/01/2022	24/01/2022	-	2	2	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
S #####	SUZHOU	Germany Stuttgart China	Shanghai Pux	###	#####	13/01/2022	12/01/2022	13/01/2022	-	1	6	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	EINDHOVEN	China Shanghai Pux Netherlands Amsterdam	Amsterdam	###	#####	13/01/2022	12/01/2022	13/01/2022	17/01/2022	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
L #####	JAKARTA	Netherlands Amsterdam Indonesia	Soekarno-Ha	###	#####	15/01/2022	13/01/2022	15/01/2022	21/02/2022	2	55	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	JAKARTA	Netherlands Amsterdam Indonesia	Soekarno-Ha	###	#####	15/01/2022	13/01/2022	15/01/2022	21/02/2022	2	53	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HOSHIAKU	United Kingd Heathrow Aq India	Delhi	###	#####	23/01/2022	22/01/2022	23/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	STANFORD	Netherlands Amsterdam United Kingd Heathrow Aq	Aq	###	#####	16/01/2022	15/01/2022	15/01/2022	18/01/2022	0	5	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	JAKARTA	Netherlands Amsterdam Indonesia	Soekarno-Ha	###	#####	15/01/2022	13/01/2022	15/01/2022	21/02/2022	2	55	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	YORK	Hong Kong Hong Kong United State Philadelphia	Philadelphia	###	#####	17/01/2022	11/01/2022	17/01/2022	19/01/2022	2	8	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	MALVERN	China Shenzhen United Kingd Heathrow Aq	Aq	###	#####	08/01/2022	07/01/2022	09/01/2022	11/01/2022	2	3	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	JAKARTA	Netherlands Amsterdam Indonesia	Soekarno-Ha	###	#####	15/01/2022	13/01/2022	15/01/2022	21/02/2022	2	55	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
U #####	NARUM	Japan Kansai Int Ap Denmark	Copenhagen	###	#####	28/01/2022	28/01/2022	28/01/2022	-	0	0	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	22/01/2022	20/01/2022	22/01/2022	-	2	2	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
IT #####	SUZHOU	Germany Frankfurt am China	Shanghai Pux	###	#####	20/01/2022	18/01/2022	21/01/2022	24/01/2022	3	7	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	DULUTH	Denmark Copenhagen United State O'Hare Apt/K	Kenn	###	#####	21/01/2022	21/01/2022	21/01/2022	25/01/2022	0	1	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	NANJING	United Kingd Heathrow Aq China	Shanghai Pux	###	#####	11/01/2022	09/01/2022	10/01/2022	12/01/2022	1	6	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	XINING	United Kingd Heathrow Aq China	Beijing Shou	###	#####	26/01/2022	24/01/2022	26/01/2022	09/02/2022	2	23	10 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	CHONGQING	Denmark Copenhagen China	Chongqing Ji	###	#####	25/01/2022	19/01/2022	25/01/2022	-	6	29	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
IT #####	BANGALORE	Germany Frankfurt am India	Bangalore	###	#####	14/01/2022	13/01/2022	14/01/2022	-	1	3	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	15/01/2022	14/01/2022	15/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	NANJING	United Kingd Heathrow Aq China	Shanghai Pux	###	#####	18/01/2022	17/01/2022	18/01/2022	-	1	11	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HYDERABAD	United Kingd Heathrow Aq India	Hyderabad	###	#####	24/01/2022	23/01/2022	24/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
IT #####	HOU	Germany Frankfurt am India	Chennai (Ma	##	#####	02/02/2022	31/01/2022	02/02/2022	-	2	5	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	TOKYO	Denmark Copenhagen Japan	Narita Apt/T	###	#####	21/01/2022	20/01/2022	21/01/2022	25/01/2022	1	6	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	29/01/2022	26/01/2022	29/01/2022	-	3	3	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	CHELTENAI	China Shenzhen United Kingd Heathrow Aq	Aq	###	#####	17/01/2022	15/01/2022	17/01/2022	24/01/2022	2	3	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	CHENNAI	United Kingd Heathrow Aq India	Mumbai (Bo	###	#####	10/01/2022	09/01/2022	10/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HANGZHOU	Netherlands Amsterdam China	Shanghai Pux	###	#####	07/01/2022	02/01/2022	07/01/2022	11/01/2022	5	14	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	MALVERN	China Shanghai Pux United Kingd Heathrow Aq	Aq	###	#####	11/01/2022	11/01/2022	11/01/2022	24/01/2022	0	0	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	15/01/2022	14/01/2022	15/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
IT #####	BANGALORE	Germany Frankfurt am India	Bangalore	###	#####	29/01/2022	27/01/2022	29/01/2022	-	2	5	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	HYDERABAD	United Kingd Heathrow Aq India	Hyderabad	###	#####	24/01/2022	23/01/2022	24/01/2022	-	1	1	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	JAPUR	Netherlands Amsterdam India	Delhi	###	#####	29/01/2022	26/01/2022	29/01/2022	-	3	4	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
A #####	DULUTH	United Kingd Heathrow Aq United State Phoenix	Phoenix	###	#####	30/01/2022	30/01/2022	30/01/2022	03/02/2022	0	7	10 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	SAN JOSE	United Kingd Heathrow Aq Costa Rica	San Jose	###	#####	11/01/2022	10/01/2022	11/01/2022	-	1	7	8 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
N #####	CHITTORGAR	Netherlands Amsterdam India	Mumbai (Bo	###	#####	31/01/2022	28/01/2022	31/01/2022	-	3	3	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
Z #####	-	Taiwan Taipei United State John F. Kenn	Ken	###	#####	13/01/2022	13/01/2022	13/01/2022	18/01/2022	0	0	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
G #####	YORK	Hong Kong Hong Kong United State Philadelphia	Philadelphia	###	#####	26/01/2022	22/01/2022	26/01/2022	28/01/2022	4	9	8 N	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	GURGAON	Netherlands Amsterdam India	Delhi	###	#####	04/01/2022	02/01/2022	04/01/2022	-	2	2	6 Y	-	-	#####	#####	GSP	#####	#####	#####	#####	#####
	TOKYO	Denmark Copenhagen Japan	Narita Apt/T	###	#####	28/01/2022	27/01/2022	28/01/2022	01/02/2022													

Visualizing & Exploring Data:

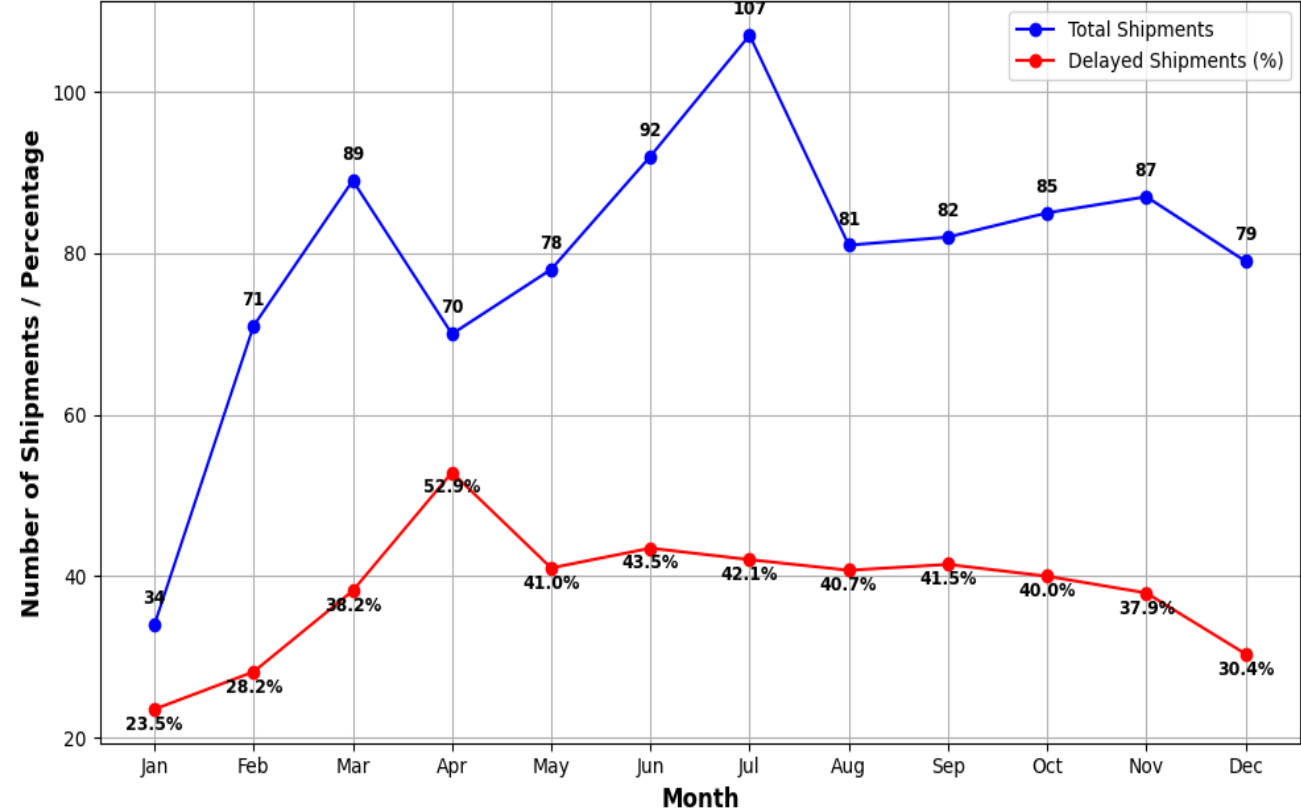


Analyzing Data:

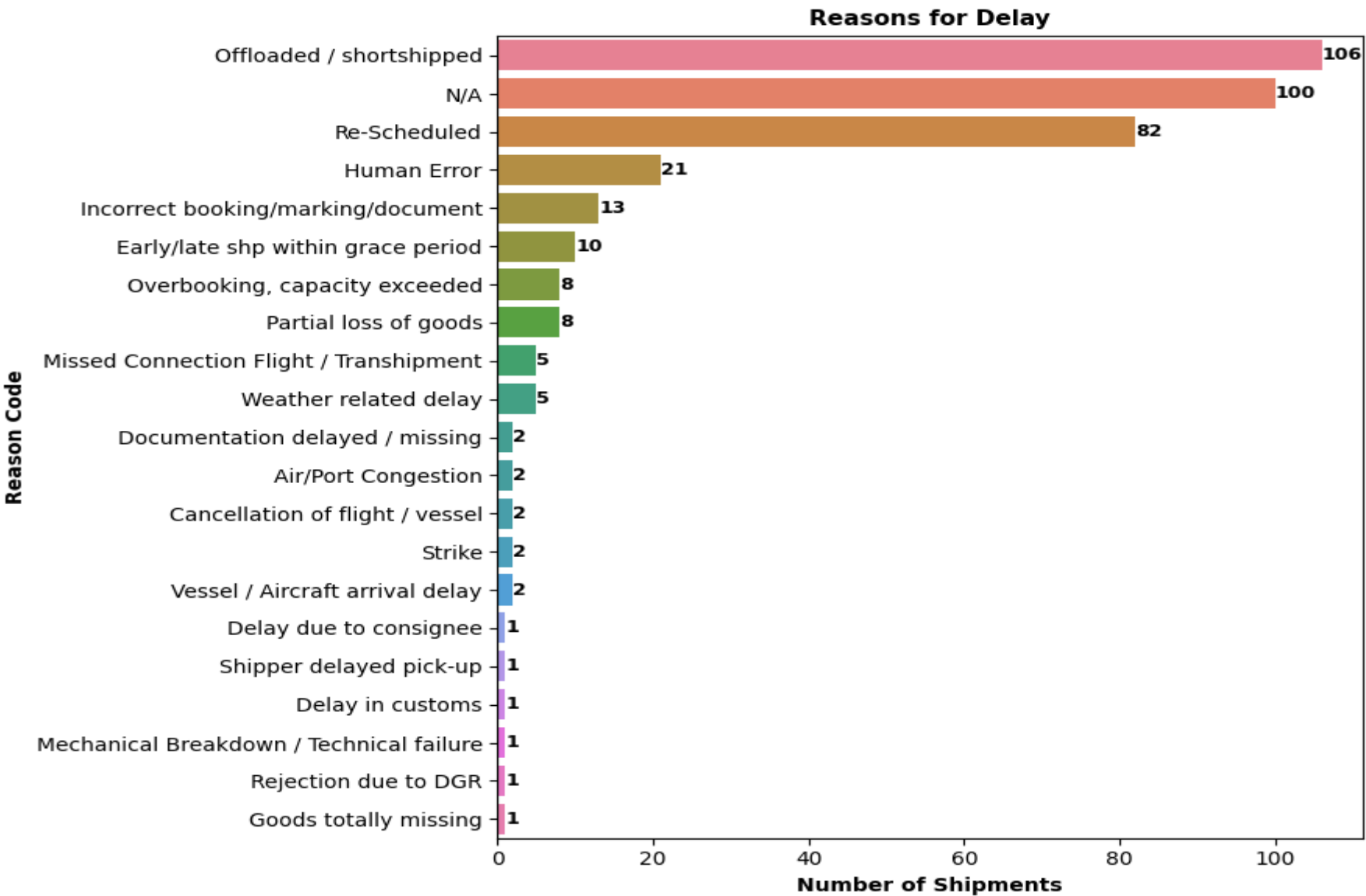
Percentage of Delayed and On-Time Deliveries



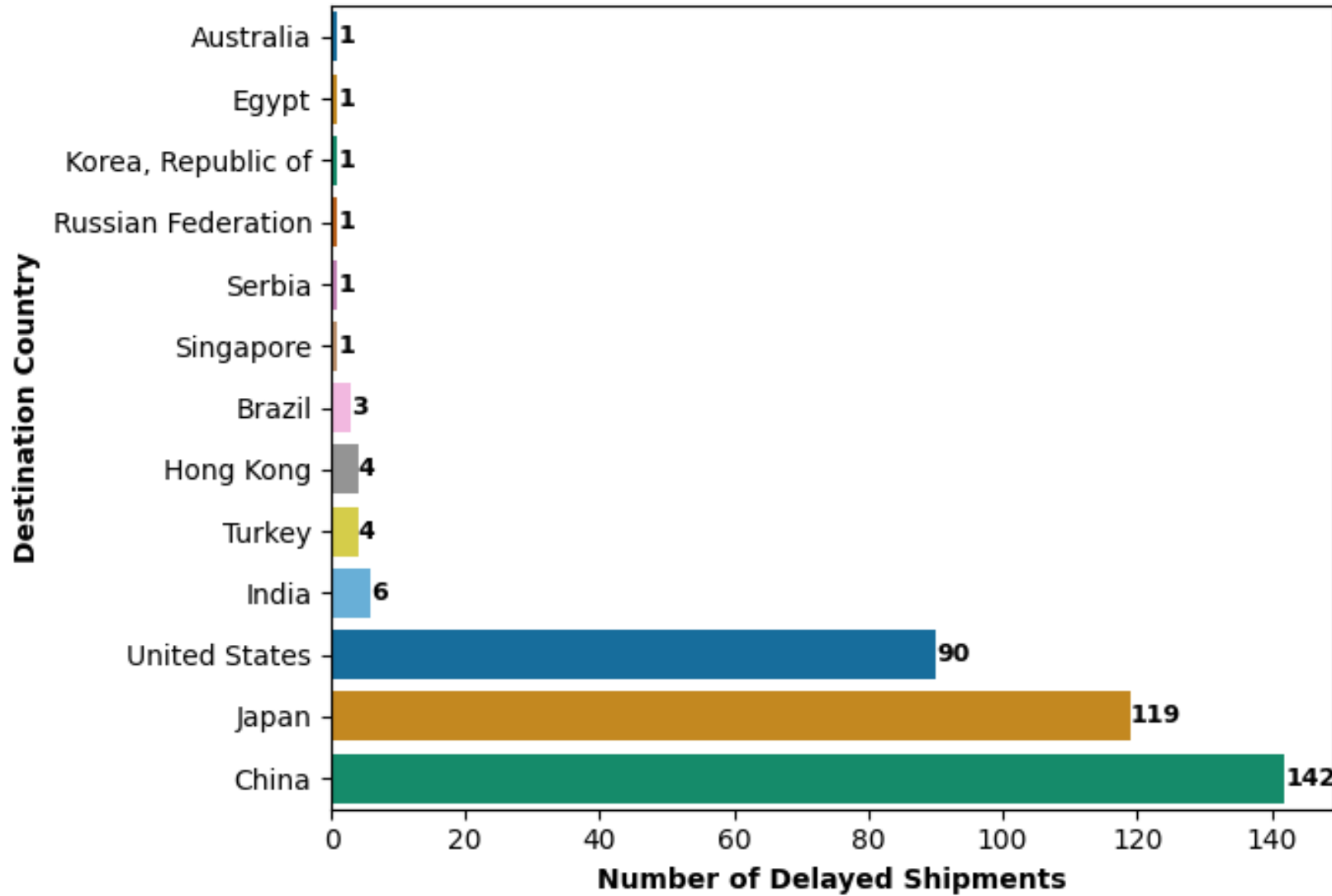
Annual Total Shipments vs Delays (in Percentage)

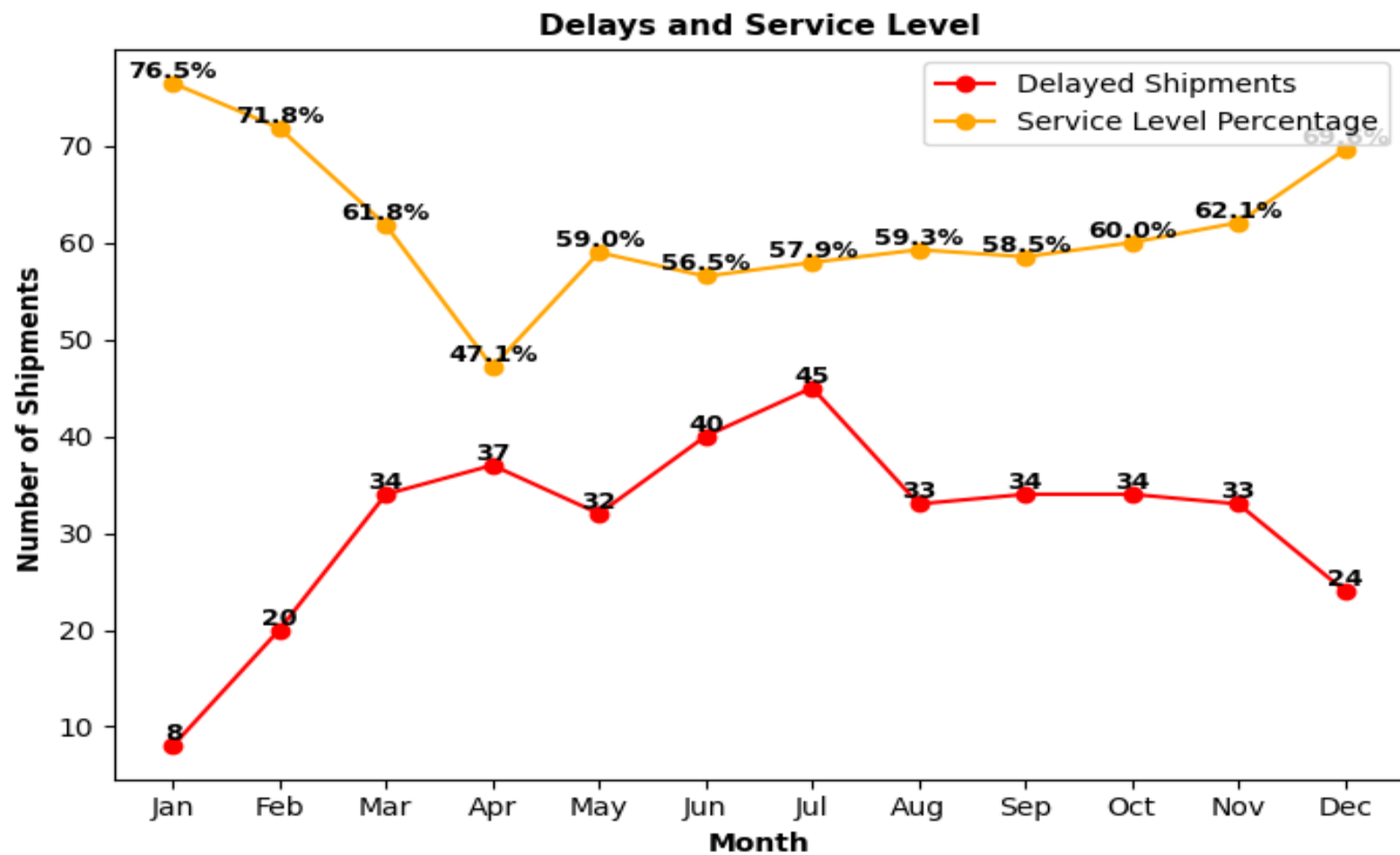


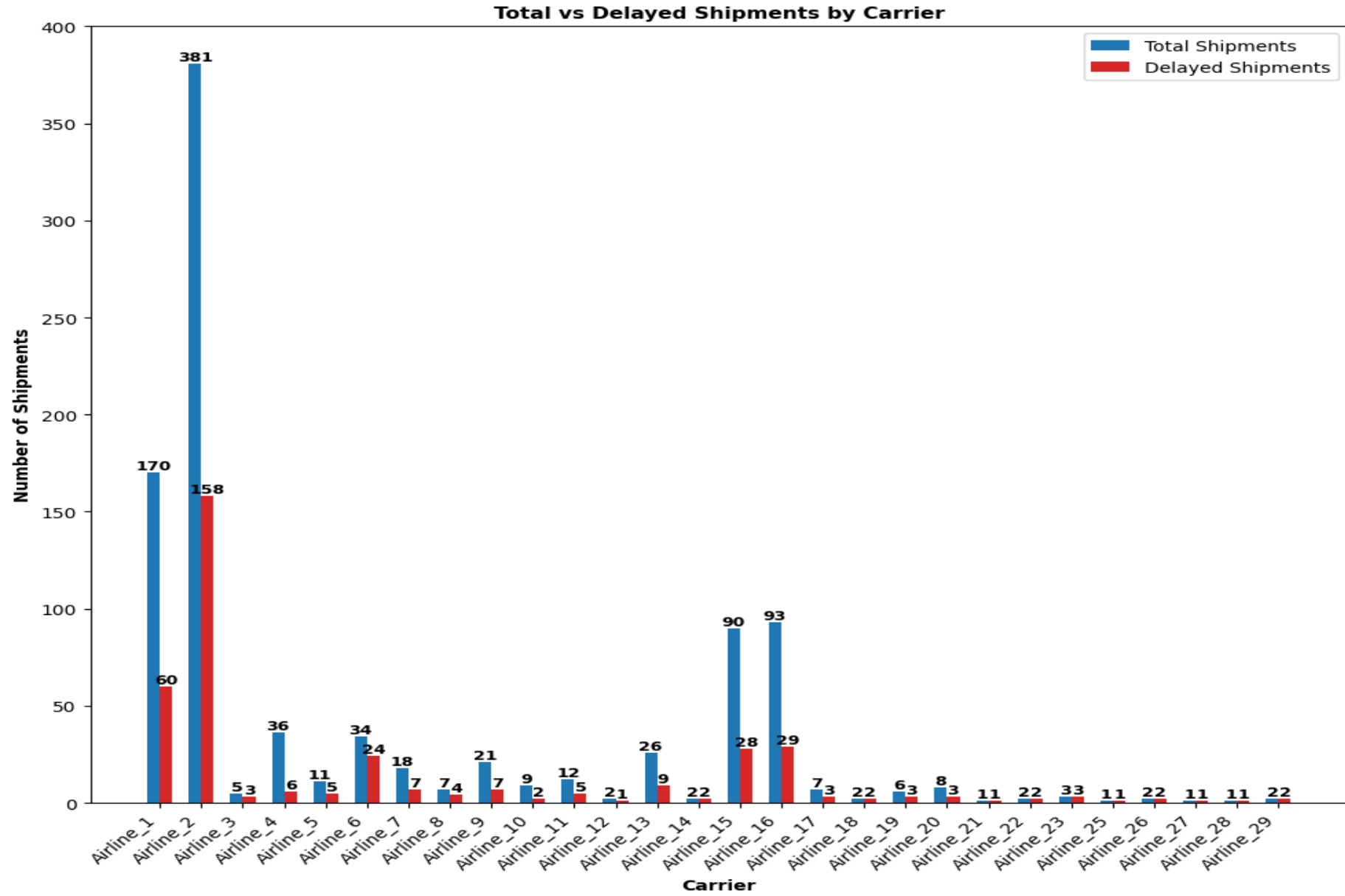
Uncovering Insights:

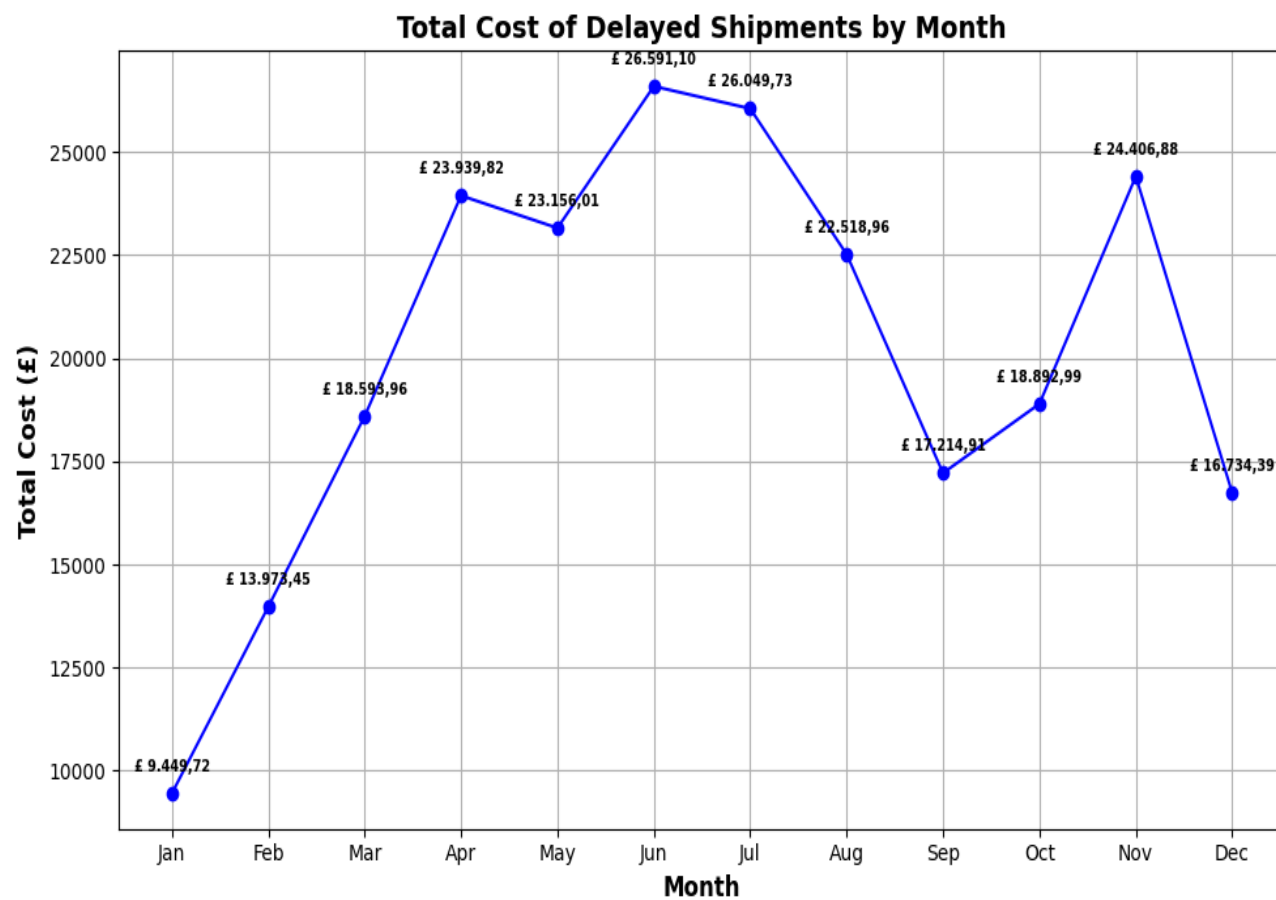


Shipment Delays by Destination Country





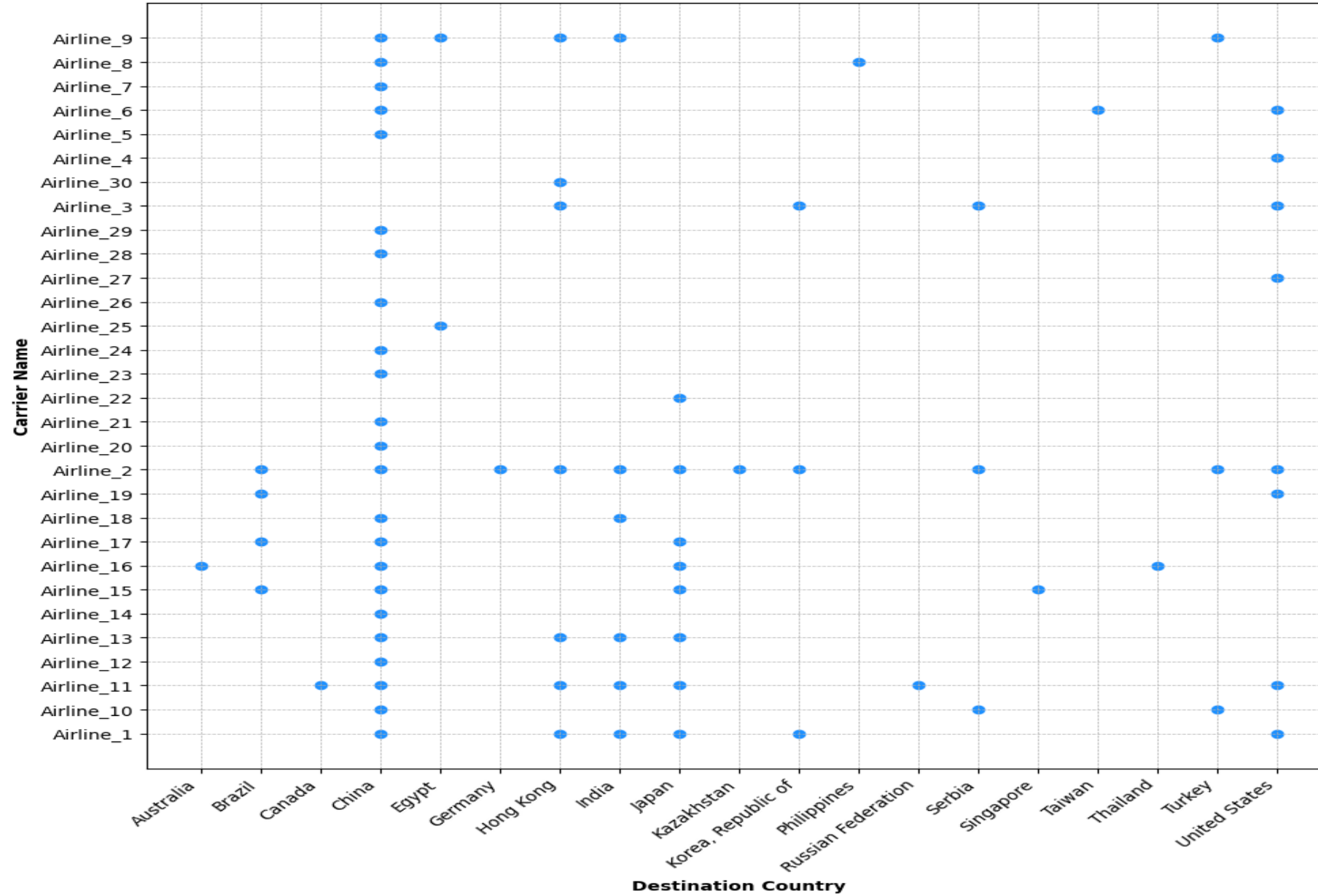




**Total Annual Costs for Delayed Shipments:
£ 241.521,91**

Airlines & Destination Countries

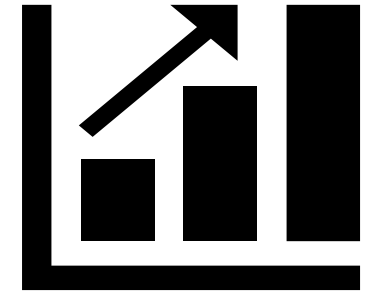
Carrier Name	Australia	Brazil	Canada	China	Egypt	Germany	Hong Kong	India	Japan	Kazakhstan	Korea, Republic of	Philippines	Russian Federation	Serbia	Singapore	Taiwan	Thailand	Turkey	United States
Airline_9				X	X		X	X				X						X	
Airline_8				X								X							
Airline_7				X												X			X
Airline_6				X												X			X
Airline_5				X															X
Airline_4							X												X
Airline_30							X					X		X					X
Airline_3							X					X			X				X
Airline_29				X															
Airline_28				X															
Airline_27																			X
Airline_26				X															
Airline_25					X														
Airline_24				X															
Airline_23				X															
Airline_22									X										
Airline_21				X															
Airline_20				X															
Airline_2		X		X		X	X	X	X	X	X			X				X	X
Airline_19		X																	X
Airline_18				X				X											
Airline_17		X		X					X										
Airline_16	X			X					X								X		
Airline_15		X		X					X						X				
Airline_14				X					X										
Airline_13				X			X	X	X										
Airline_12				X				X	X										
Airline_11			X	X			X	X	X				X						X
Airline_10				X			X	X	X					X				X	
Airline_1				X			X	X	X			X		X				X	X



Conclusion

Data Analytics

- **Process Optimisation**
- **Customer Satisfaction**
- **Sales & Profit**



Thank you

