

Data Analysis Report

Topic:- Analysis of the International Car Racing Organization and local governing car racing body with drivers and Winng journey at both levels.

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Github link:- https://github.com/nimishavilayatrani/Home_Assignment1.git

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Introduction:- FIA is a leading international car racing organization that governs various motorsport events worldwide. It consists of several member countries, each contributing to the global landscape of motorsport. FIC is a global organization that oversees both sports and mobility initiatives, including various motorsport events and activities. Within FIC, there are local federations representing different regions and countries.

This is the list that we found from our first data source.

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| List of country who conduct car racing at local-level having sports club  
| :-----  
| Mechanical Sports Federation of Algeria (FASM) - Sport and Mobility  
| Touring Club of Algeria (TCA) - Mobility  
| Botswana Motor Sports - Sport  
| Emergency Assist 991 - Mobility  
| Automobile Club of Burundi (CAB) - Sport and Mobility  
| Automobile Federation of the Democratic Republic of Congo (FEDACO) - Sport and Mobility  
| Automobile and Touring Club of Egypt (ATCE) - Sport and Mobility  
| Ministry of Tourism of the Arab Republic of Egypt - Mobility  
| National Federation Motor Racing Eritrea - Sport  
| Ethiopian Motor Association (EMA) - Sport and Mobility  
| Automobile Club of Gabon - Sport and Mobility  
| Federation Ivoirienne Du Sport Automobile (FISAM) - Sport  
| Automobile Association of Kenya (AAK) - Mobility  
| Kenya Motor Sports Foundation (KMSF) - Sport  
| Automobile and Touring Club of Libya (ATCL) - Sport and Mobility
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Kenya Motor Sports Foundation (KMSF) – Sport
Automobile and Touring Club of Libya (ATCL) – Sport and Mobility
Automobile Sport Federation of Madagascar (FSAM) – Sport
Mechanical Sports Federation of Mauritania – Sport
Club Automobile de Rallye (CAR) – Sport
Royal Moroccan Federation of Motor Sport (FRMSA) – Sport
Royal Automobile Club of Morocco (RACM) – Mobility
Automobile and Touring Club of Mozambique (ATCM) – Sport and Mobility
Automobile Association of Namibia (AAN) – Mobility
Namibia Motor Sport Federation (NMSF) – Sport
Automobile Sports Club of Nigeria (ASCN) – Sport
Automobile and Touring Club of Nigeria – Mobility
Rwanda Automobile Club (RAC) – Sport and Mobility
Senegalaise Federation of Motor Sport and Motorcycle (FSSAM) – Sport
Federation Senegalaise Des Rally (FSR) – Sport
Automobile Association of South Africa (AASA) – Mobility
Motorsport South Africa (MSA) – Sport
Sudan Automobile and Tourism Club (SAC) – Mobility

Federation Senegalaise Des Rally (FSR) – Sport
Automobile Association of South Africa (AASA) – Mobility
Motorsport South Africa (MSA) – Sport
Sudan Automobile and Tourism Club (SAC) – Mobility
Sudanese Automobile and Touring Club (SATC) – Sport and Mobility
Automobile Association of Tanzania (AAT) – Sport and Mobility
National Automobile Club of Tunisia (NACT) – Sport and Mobility
Touring Club of Tunisia (TCT) – Mobility
Automobile Association of Uganda (AA Uganda) – Mobility
Federation of Motor Sports Clubs of Uganda (FMU) – Sport
Zambia Motor Sport Association (ZMSA) – Sport
Automobile Association of Zimbabwe (AAZ) – Mobility
Zimbabwe Motor Sports Federation (ZMSF) – Sport
Arvikon Automobile and Tourist Club – Mobility
Automobile Federation of Armenia (FAA) – Sport and Mobility
Azerbaijan Automobile Federation (AAF) – Sport
Bahrain Motor Federation (BMF) – Sport and Mobility
Automobile Association of Bangladesh (AAB) – Sport and Mobility
Automobile Association of Cambodia – Sport and Mobility

Automobile and Touring Club of Israel (MEMSI) – Sport and Mobility
Japan Automobile Federation (JAF) – Sport and Mobility
Royal Automobile Club of Jordan (RACJ) – Sport and Mobility
Automotorsport Federation of Republic of Kazakhstan – Sport
Off Road Kazakhstan – Mobility
Kuwait Automobile and Touring Club (KATC) – Mobility
Kuwait International Automobile Club (KIAC) – Sport and Mobility
Auto Motor Sport and Road Safety Federation – Sport
Automobile and Touring Club of Lebanon (ATCL) – Sport and Mobility
Automobile General Association Macao-China (China-Macau Autosports Club) – Sport and Mobility
Motorsports Association of Malaysia (MAM) – Sport
Nepal Automobiles' Association – Sport
Oman Automobile Association (OAA) – Sport and Mobility
Automobile Association of Pakistan (AAP) – Mobility
Motorsport Association of Pakistan (MAP) – Sport
Palestinian Motor Sport and Motorcycle Federation – Sport and Mobility
Automobile Association Philippines (AAP) – Sport and Mobility
Qatar Automobile and Touring Club (QATC) – Mobility
Saudi Motor Vehicle Federation (SMVF) – Sport

Motorsport Association of Pakistan (MAP) – Sport	
Palestinian Motor Sport and Motorcycle Federation – Sport and Mobility	
Automobile Association Philippines (AAP) – Sport and Mobility	
Qatar Automobile and Touring Club (QATC) – Mobility	
Qatar Motor and Motorcycle Federation (QMMF) – Sport	
Saudi Arabian Motor Sport Federation (SAMSF) – Sport	
Saudi Automobile and Touring Association (SATA) – Mobility	
Saudi Automobile Federation (SAF) – Mobility	
Automobile Association of Singapore (AAS) – Mobility	
Motor Sports Singapore (MSS) – Sport and Mobility	
Korea Automobile Association (KAA) – Mobility	
Korea Automobile Racing Association (KARA) – Sport	
Automobile Association of Ceylon (AAC) – Mobility	
Ceylon Motor Sports Club (CMSC) – Sport	
Automobile and Touring Club of Syria (ATCS) – Mobility	
Syrian Automobile Club (SAC) – Sport and Mobility	
Chinese Taipei Automobile Association (CTAA) – Mobility	
Chinese Taipei Motor Sports Association (CTMSA) – Sport	
Royal Automobile Association of Thailand (RAAT) – Sport and Mobility	
Polish Automobile and Motorcycle Association (PZM) – Sport and Mobility	
Automobile Club of Portugal (ACP) – Mobility	
Portuguese Federation of Auto Racing and Karting (FPAK) – Sport	
Federation of Portuguese Cycling and Bike Users (FPCUB) – Mobility	
Automobile Club of Romania (ACR) – Sport and Mobility	
Autoclub Assistance-Rus (ACAR) – Mobility	
Russian Automobile Federation (RAF) – Sport and Mobility	
Russian Automobile Society (RAS) – Mobility	
Russian Federation Auto Sport and Tourism (RFAST) – Mobility	
Auto Motoring Federation of San Marino (FAMS) – Sport	
Auto-Moto Association of Serbia (AMSS) – Sport and Mobility	
Slovak Association of Motor Sport (SAMS) – Sport	
Slovakian Autotourist Club (SATC) – Mobility	
Autoklub Slovakia Assistance – Mobility	
Dominican Motor Racing Federation – Sport	
Automobile Club of El Salvador (ACES) – Sport and Mobility	
Automobile Club of Guatemala – Sport	
Auto Sport Haiti – Sport and Mobility	
Honduran Association of Motor Sport – Sport	
Jamaica Automobile Association (JAA) – Mobility	
Jamaica Millennium Motoring Club (JMMC) – Sport and Mobility	
Mexican Association Automotives (AMA) – Mobility	
Domestic Car Association – Mobility	
Automovil Club de Mexico	
Mexican International Motor Sport Federation (OMDAI) – Sport	
Automotive Club of Nicaragua – Sport	
Automotive Association of Touring and Sports of Panama (ASAI) – Sport and Mobility	
Racing Federation of Puerto Rico – Sport and Mobility	
Trinidad and Tobago Automobile Association (TAA) – Mobility	
Trinidad and Tobago Automobile Sports Association (TTASA) – Sports	
American Automobile Touring Alliance (AATA) – Mobility	
Automobile Competition Committee for the United States (ACCUS) – Sport	

Then by specifically analyzing the data of 2020 and 2021, we found that these clubs and local federations are combined based on the region and funding provided to them on the basis of region in other words In 2020 and 2021, FIC allocated funding to its member countries to support motorsport development and infrastructure. The analysis reveals that funding was primarily distributed across five key regions, as shown below:

Funding by Region in 2020 by FIA

	Region	Funding Amount (€)	Percentage (%)
0	Americas	466220	15.4
1	Asia Pacific	600426	19.8
2	Europe	877256	29.0
3	MENA	706160	23.4
4	Saharan Africa	375623	12.4

2021 FUNDING BY FIC to the region

	Region	Funding Amount (€)	Percentage (%)
0	Americas	933493	16.6
1	Asia Pacific	846304	15.0
2	Europe	1807964	32.1
3	MENA	1126642	20.0
4	Sub-Saharan Africa	915488	16.3

When we merged both these tables for further analysis we found that.

Funding based on the Region

Region	Funding Amount (€)_2020	Percentage (%)_2020	Funding Amount (€)_2021	Percentage (%)_2021
Americas	466220	15.4	933493	16.6
Asia Pacific	600426	19.8	846304	15
Europe	877256	29	1807964	32.1
MENA	706160	23.4	1126642	20
Saharan Africa	375623	12.4	915488	16.3

Analysis Results:

Mean Funding Amount (€) 2020: 605137.0
Mean Funding Amount (€) 2021: 1125978.2
Mean Percentage (%) 2020: 20.0
Mean Percentage (%) 2021: 20.0

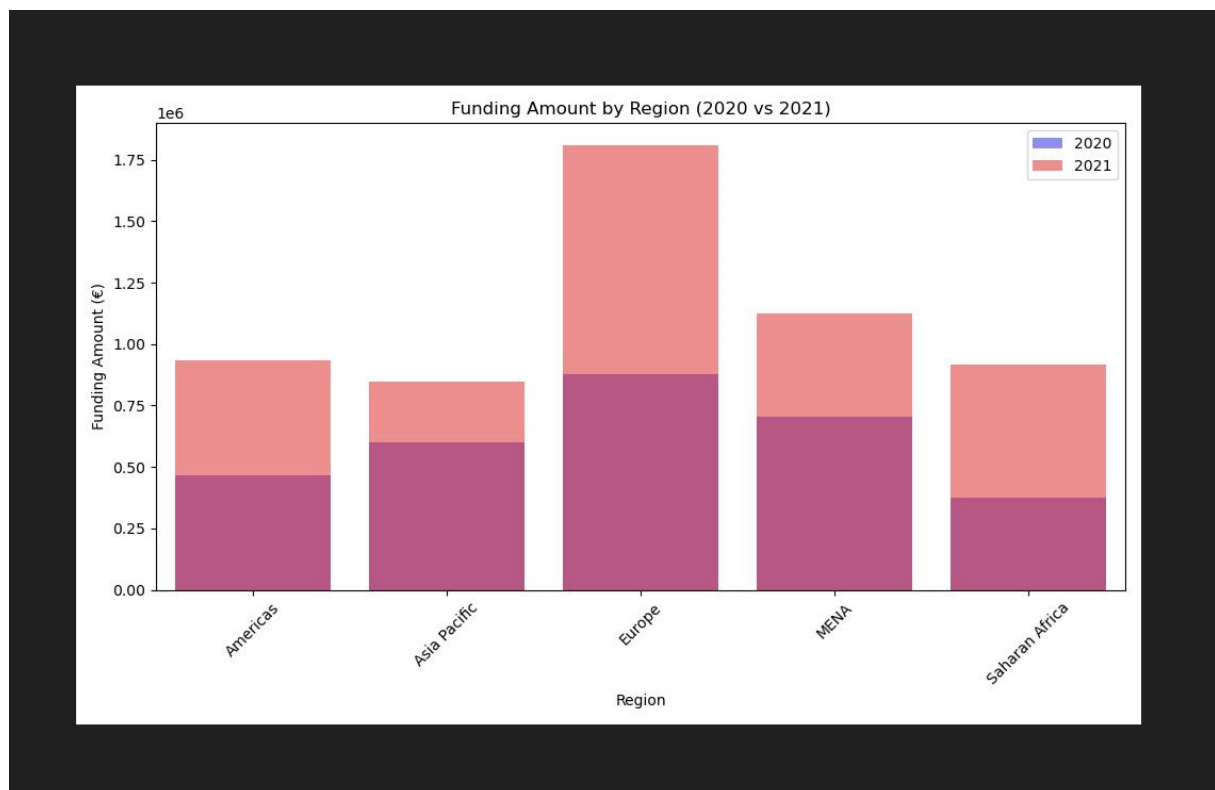
Median Funding Amount (€) 2020: 600426.0
Median Funding Amount (€) 2021: 933493.0
Median Percentage (%) 2020: 19.8
Median Percentage (%) 2021: 16.6

Mode Funding Amount (€) 2020: 375623
Mode Funding Amount (€) 2021: 846304
Mode Percentage (%) 2020: 12.4
Mode Percentage (%) 2021: 15.0

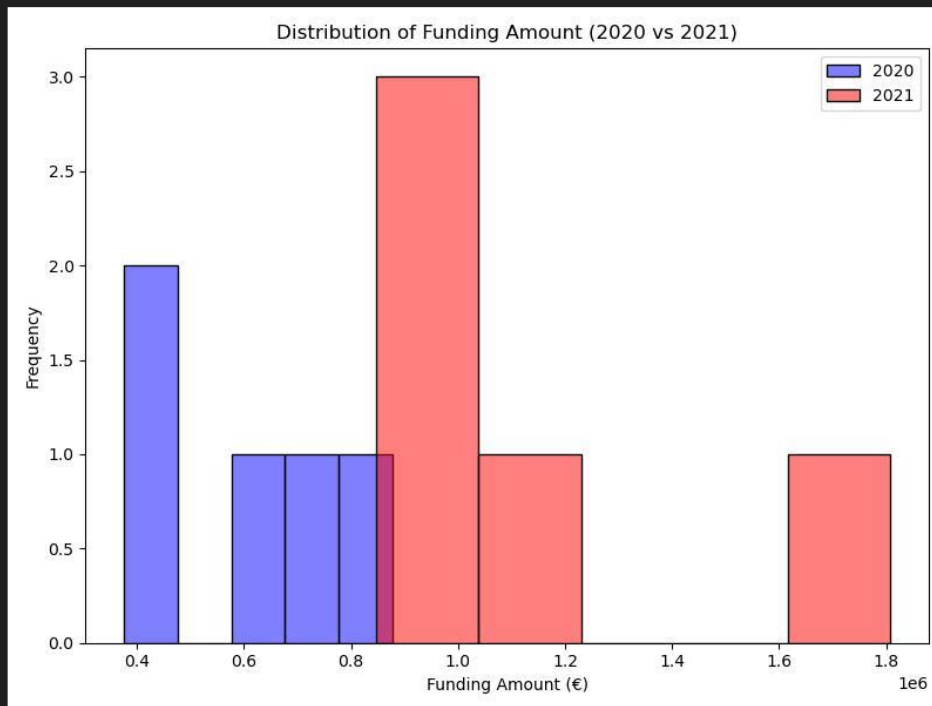
Correlation Coefficient (Funding Amount vs. Percentage) 2020: 0.9999854140840502
Correlation Coefficient (Funding Amount vs. Percentage) 2021: 0.9999923666866517

It is very clear from the analysis that funding amount in 2021 is more than the 2020 in terms of mean, median, and mode at the same time. The funding amount allocated to different regions or categories correlates highly with the percentage of total funding for both 2020 and 2021. This indicates that the distribution of funding is consistent across different categories or regions relative to the total funding amount.

More with visual analysis.



Europe get the maximum amount of funding in both year. Asia pacific is stay at least corner.



This is very much clear with the above graph that funding in 2021 is more as compared to 2020.

There are other analyses also that funding is not only based on region but also there are other factors which describe the situation such as Safety', 'ASN Structure & Management', 'Motor Sport Development', 'Social Responsibility that are categories as pillar divisions here analysis is made also on both the phrases 2020 and 2021. Given below

2020 FUNDING BY PILLAR DIVISION

	Category	Funding Amount (€)	Percentage (%)
0	Safety	515903	17.0
1	ASN Structure & Management	77983	2.6
2	Motor Sport Development	2244969	74.2
3	Social Responsibility	186830	6.2

2021 FUNDING BY PILLAR DIVISION

	Division	Funding Amount (€)	Percentage (%)
0	Safety	745747	13.2
1	ASN Structure & Management	509677	9.1
2	Motor Sport Development	3662014	65.0
3	Social Responsibility	712453	12.7

Funding Based on other factors Which are pillar for sports car Racing

Category	Funding Amount (€)_2020	Percentage (%)_2020	Funding Amount (€)_2021	Percentage (%)_2021
Safety	515903	17	745747	13.2
ASN Structure & Management	77983	2.6	509677	9.1
Motor Sport Development	2244969	74.2	3662014	65
Social Responsibility	186830	6.2	712453	12.7

Mean Funding Amount (€) 2020: 756421.25
Mean Funding Amount (€) 2021: 1407472.75
Mean Percentage (%) 2020: 25.000000000000004
Mean Percentage (%) 2021: 25.0

Median Funding Amount (€) 2020: 351366.5
Median Funding Amount (€) 2021: 729100.0
Median Percentage (%) 2020: 11.6
Median Percentage (%) 2021: 12.95

Mode Funding Amount (€) 2020: 77983
Mode Funding Amount (€) 2021: 509677
Mode Percentage (%) 2020: 2.6
Mode Percentage (%) 2021: 9.1

Correlation Coefficient (Funding Amount vs. Percentage) 2020: 0.9999854140840502
Correlation Coefficient (Funding Amount vs. Percentage) 2021: 0.9999923666866517

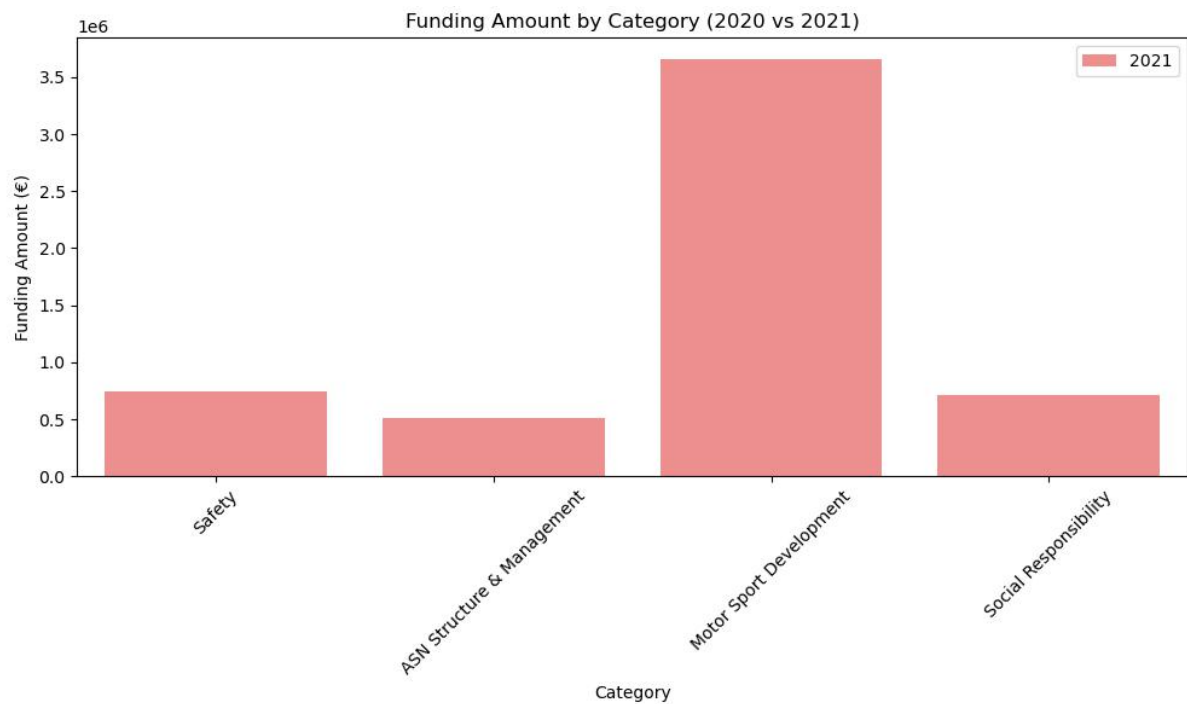
For Mean Analysis in both years, when data compared:- The mean funding amount in 2021 (€1,407,472.75) significantly surpassed that of 2020 (€756,421.25), indicating a substantial increase in overall funding allocation.

For Median Analysis:- Similarly, the median funding amount in 2021 (€729,100.0) was notably higher than in 2020 (€351,366.5), suggesting a general upward trend in funding levels.

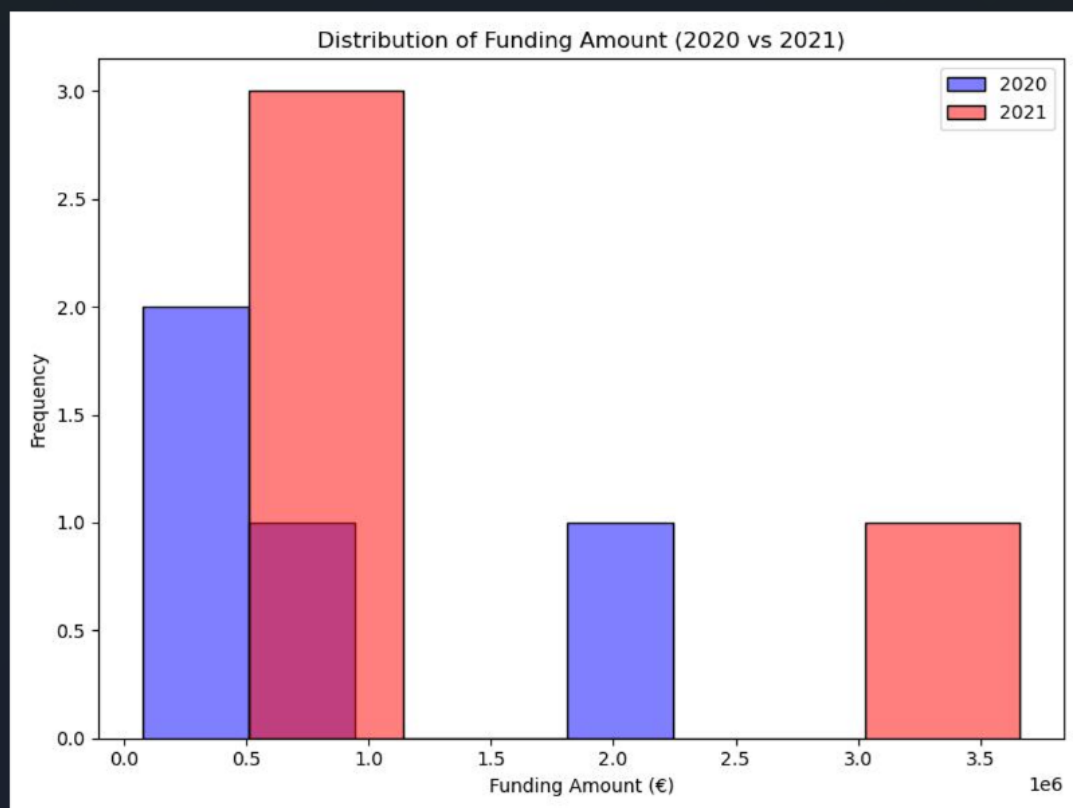
For Mode Analysis:- The mode funding amount in 2021 (€509,677) was substantially higher than in 2020 (€77,983), indicating a shift towards larger funding allocations being more common in 2021.

Overall Analysis:- Overall, while both the mean and median funding amounts experienced significant increases from 2020 to 2021, the proportionate allocation of funding remained relatively stable. This suggests that while more funding was allocated overall in 2021, the distribution pattern across categories or regions remained consistent with that of the previous year.

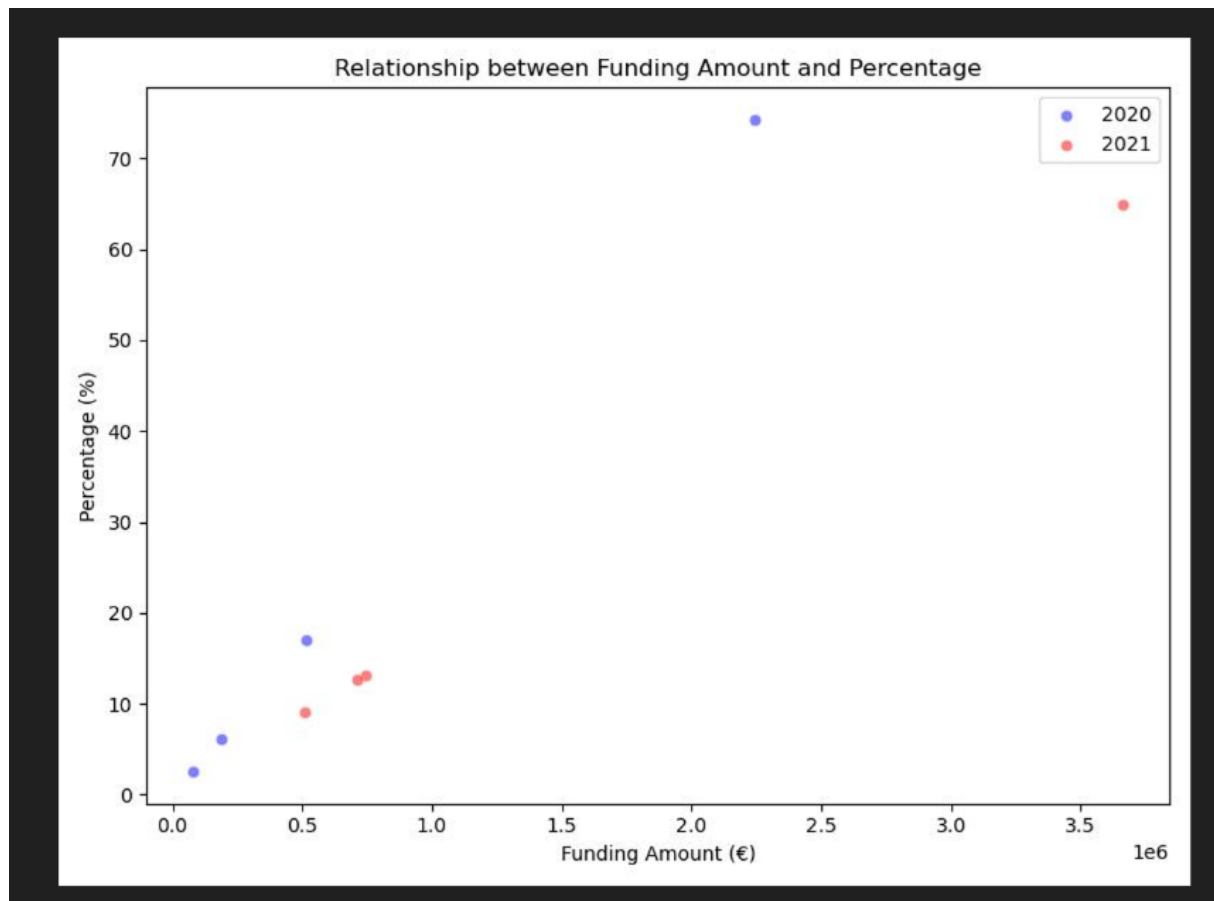
When visualize things through the graph below.



We can analyze that funding is utilized more for motorsport development rather than any other division when signifies the pillar division.



We can conclude that funding was utilised more in 2021 when compared with 2020. For pillar division which are mentioned above.

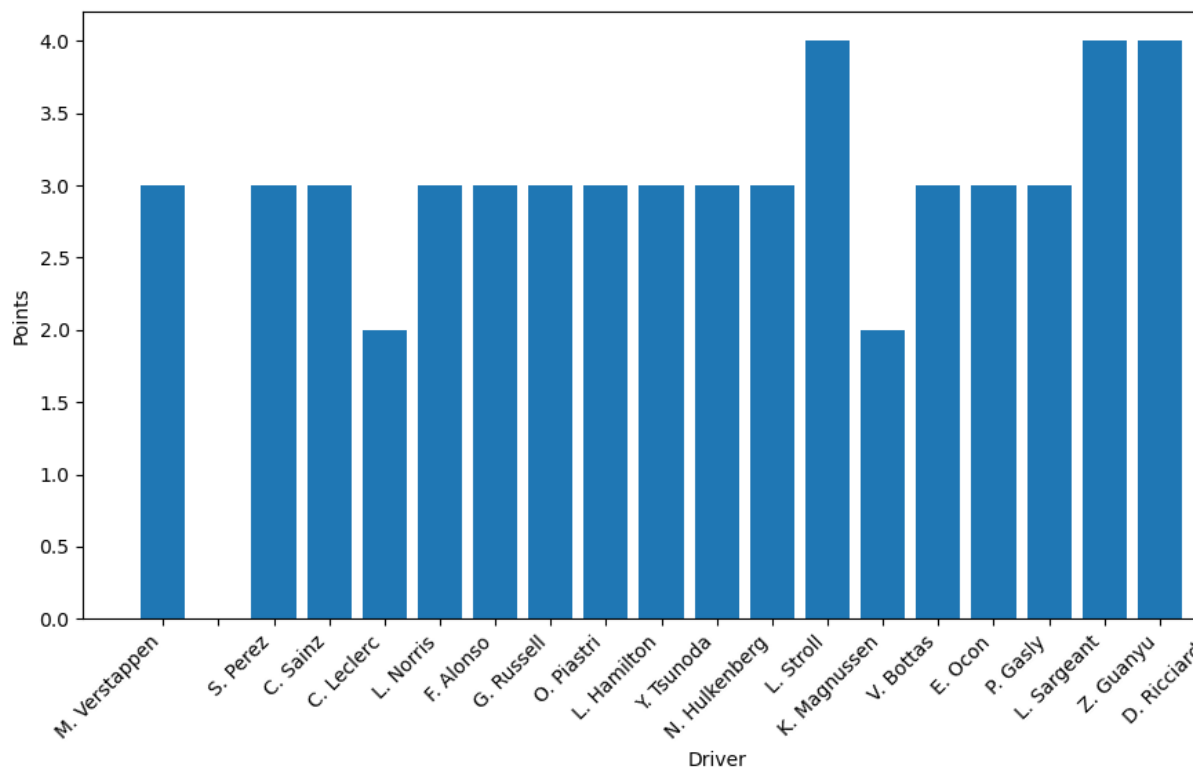


There is a positive relation between the percentage of the overall fund and funding amount for each pillar division in 2020 and 2021 there is a positive relation between them which we already concluded with the correlation between the percentage which is overall and the funding amount in 2020 and 2021.

In the next we found that.

Here we analysis from the data list of Driver and Engine they used with multiple other factors such as Laps and time intervals majorly it is found that the 3 major car Engine they are using such as Ferrari, Red Bull, and Mercedes these 3 engine most commonly found engine is Red Bull with this we also found that driver who win the race is also using engine of Ferrari in addition to this when we analysis the whole table it is found that Red bull engine is showing least time interval and fast racing mechanism.

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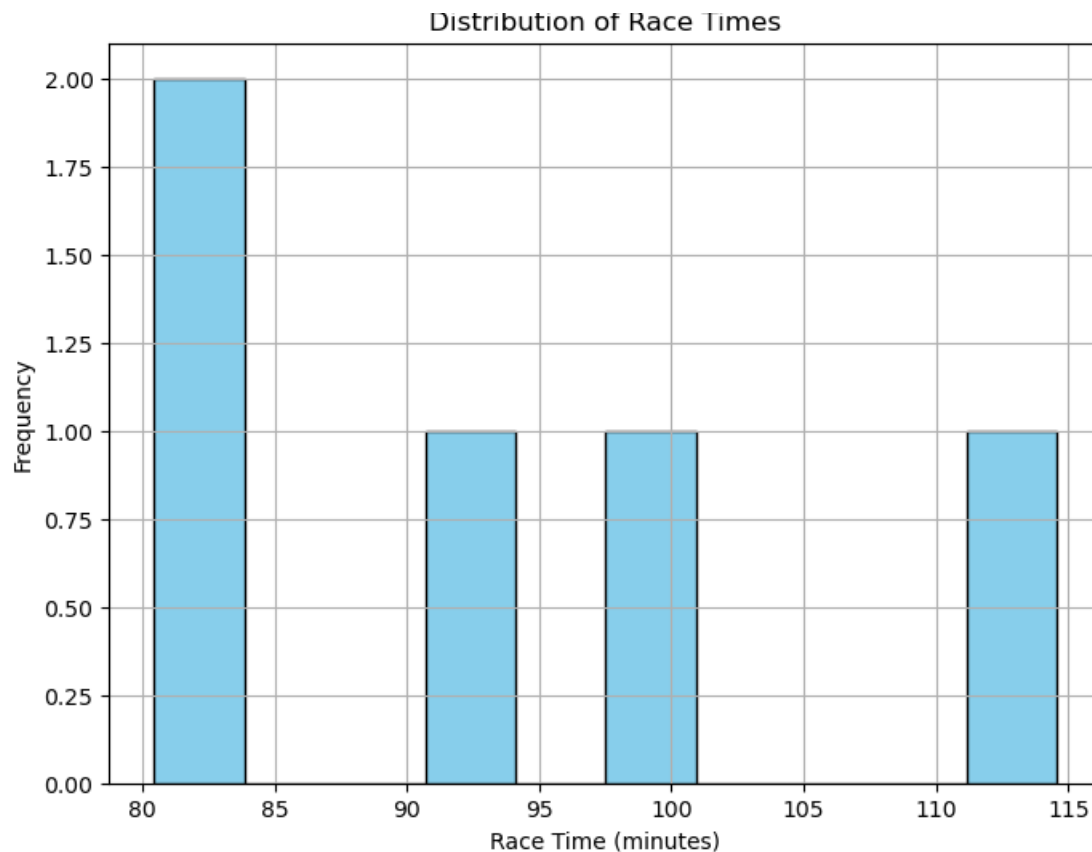


The highest point made by three drivers L.stroll, L.sargeant, and Z.Guanyu we clearly see this with this analysis from the above list is L.stroll and L. Sargeant is using the engine of Mercedes and ZGuanyu is using the engine of a Ferrari. Overall both the engines equally performed well.

formula1 car winner governed by international oragnisation

Grand Prix	Date	Winner	Car	Laps	Time
Bahrain	02 Mar 2024	MaxVerstappenVER	Red Bull Racing Honda RBPT	57	1:31:44.742
Saudi Arabia	09 Mar 2024	MaxVerstappenVER	Red Bull Racing Honda RBPT	50	1:20:43.273
Australia	24 Mar 2024	CarlosSainzSAI	Ferrari	58	1:20:26.843
Japan	07 Apr 2024	MaxVerstappenVER	Red Bull Racing Honda RBPT	53	1:54:23.566
China	21 Apr 2024	MaxVerstappenVER	Red Bull Racing Honda RBPT	56	1:40:52.554

Every year international governing organizations conduct a race called the Formula 1 car race here are the results for the analysis of the year 2024, the car that is mostly used for this race is “Red Bull Racing Honda RBPT”. These races mostly occur in the months of March and April. We also analysis that mostly time required for completion of this race in minutes is 80 and the driver from the Australia took the least time to completion.



We have a table of the races that are conducted on a local level with analysis of this can be concluded that the number of races conducted at the local level is more than international level as there are different groups and clubs for sports and mobility under the international organization FIC here are only a few results of only one of the local level sports organization which conduct races relatively in the same month as an international organization, in the month march April in addition to February.

2024 Results		WINNER	POLE WINNER
DATE	RACE		
Sat, Feb 3	Clash at The ColiseumLos Angeles Memorial Coliseum	Denny HamlinToyota	Denny HamlinToyota
Thu, Feb 15	Duel #1Daytona International Speedway	Tyler ReddickToyota	Joey LoganoFord
Thu, Feb 15	Duel #2Daytona International Speedway	Christopher BellToyota	Michael McDowellFord
Sun, Feb 18	Daytona 500Daytona International Speedway	William ByronChevrolet	Joey LoganoFord
Sun, Feb 25	NASCAR Cup Series at AtlantaAtlanta Motor Speedway	Daniel SuarezChevrolet	Michael McDowellFord
Sun, Mar 3	NASCAR Cup Series at Las VegasLas Vegas Motor Speedway	Kyle LarsonChevrolet	Joey LoganoFord
Sun, Mar 10	NASCAR Cup Series at PhoenixPhoenix Raceway	Christopher BellToyota	Denny HamlinToyota
Sun, Mar 17	NASCAR Cup Series at BristolBristol Motor Speedway	Denny HamlinToyota	Ryan BlaneyFord
Sun, Mar 24	NASCAR Cup Series at Circuit of the AmericasCircuit Of The Americas	William ByronChevrolet	William ByronChevrolet
Sun, Mar 31	NASCAR Cup Series at RichmondRichmond Raceway	Denny HamlinToyota	Kyle LarsonChevrolet
Sun, Apr 7	NASCAR Cup Series at MartinsvilleMartinsville Speedway	William ByronChevrolet	Kyle LarsonChevrolet
Sun, Apr 14	NASCAR Cup Series at TexasTexas Motor Speedway	Chase ElliottChevrolet	Kyle LarsonChevrolet
Sun, Apr 21	NASCAR Cup Series at TalladegaTalladega Superspeedway	Tyler ReddickToyota	Michael McDowellFord