

PlayOnline Casinos Player Analysis Report

Exploratory Business Analysis

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Introduction

PlayOnline Casino is an online company that is responsible for providing marketing, support, and technical solutions for various online gaming groups that manage a wide range of casino brands. The purpose of this research is to analyse large, complex data sets representing users' behaviour from various regions, to see beyond numbers, develop insights and guide the decision makers to make informed business decisions by providing actionable recommendations.

Data Structure and Preparation

The data provided lists users across the 8 most successful online brands. The data set in each brand will provide Region, Language, life span, registration date, first deposit date, last deposit date, last login date, last game played, Favourite type. Gender, Birthdate, account status.

The company allows for user registration from all over the globe, however the target markets that our research will focus are GB : Great Britain, FR : France, ES : Spain, NL : Netherlands, IT : Italy and DE : Germany.

File 1 – Brand: CasinoA, Total Registrations – 40,795
File 2 – Brand: CasinoB, Total Registrations – 90,483
File 3 – Brand: CasinoC, Total Registrations – 313,504
File 4 – Brand: CasinoD, Total Registrations – 270,119
File 5 – Brand: CasinoE, Total Registrations – 81,231
File 6 – Brand: CasinoF, Total Registrations – 194,585
File 7 – Brand: CasinoG, Total Registrations – 126,277
File 8 – Brand: CasinoH, Total Registrations – 296,384

Each file was provided in Excel. Python (via Jupyter Notebook) was used to carry out statistical analysis and visualisation. Attached to this report is the Syntax.

As the behaviour of a user does not differ from one brand to the next, each file has been joined.

Research Questions

The research questions will provide insights as to current user behaviour and what kind of profile the company should be targeting.

1. What percentage age group and gender are mostly likely to register and thereafter convert.
2. What is the Region breakdown and average longevity of users?
3. Different types of Closure account requests
4. How soon is a user likely to start deposit from date of registration?
5. Profiling most valuable users (high depositors) and understanding what the correlation with type of games is (Slots or Table) and Average Bet.
6. User preference platform.

Research Goal

- The basis of my study will be to determine trends from different Markets (Regions)
- Provide Analysis of user behaviour to enable more precise target marketing to most valuable user profile.
- Understand user behaviour and determine what profile of user are more likely to be conversions (Becoming an active casino player by make a first-time deposit)

Research Question 1

Age

For the purposes of this research, we will categorise different age groups

18-30

31-40

41-50

51-60

61-70

70+

Figure 1.1 will illustrate the difference in age groups in terms of registrations vs conversions. In terms of adherence to every regulator's licence, user over the age of 18 may only register and open an account.

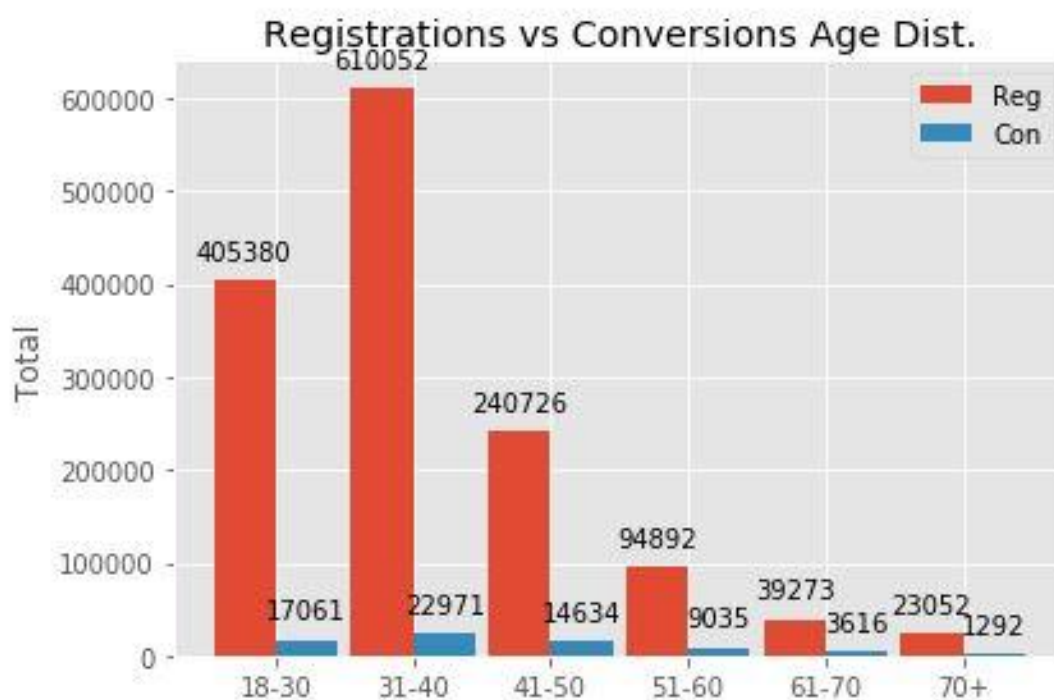


Fig 1.2 - Summarising above graph as below:

	Registration_Date	First_Deposit_Date	Conversion_Rate_%
AgeRange			
0-17	3	1	33.333333
18-30	405380	17061	4.208644
31-40	610052	22971	3.765417
41-50	240727	14634	6.079085
51-60	94892	9035	9.521351
61-70	39273	3616	9.207343
70+	23052	1292	5.604720

It is interesting to note that whilst the number of registrations decrease as you reach the older age groups, the higher conversion rate. This may indicate an inclination that the older the user, the more likely they are satisfied with their choice of brand to start depositing.

Gender

For this purpose of this research, we will view the distribution of gender for registrations and conversions.

Fig 1.4 – Gender distribution according to Registrations



Figure 1.4 will illustrate the registration: From a total count of 1,413,291, 938,859 (66%) and 474,432 (34%) of registrations were male and female, respectively.

Fig 1.5 – Gender distribution according to Conversions

Gender Distribution (Conversions)

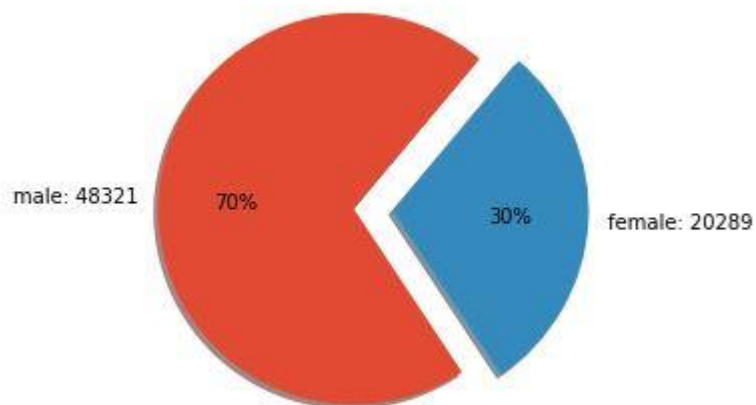


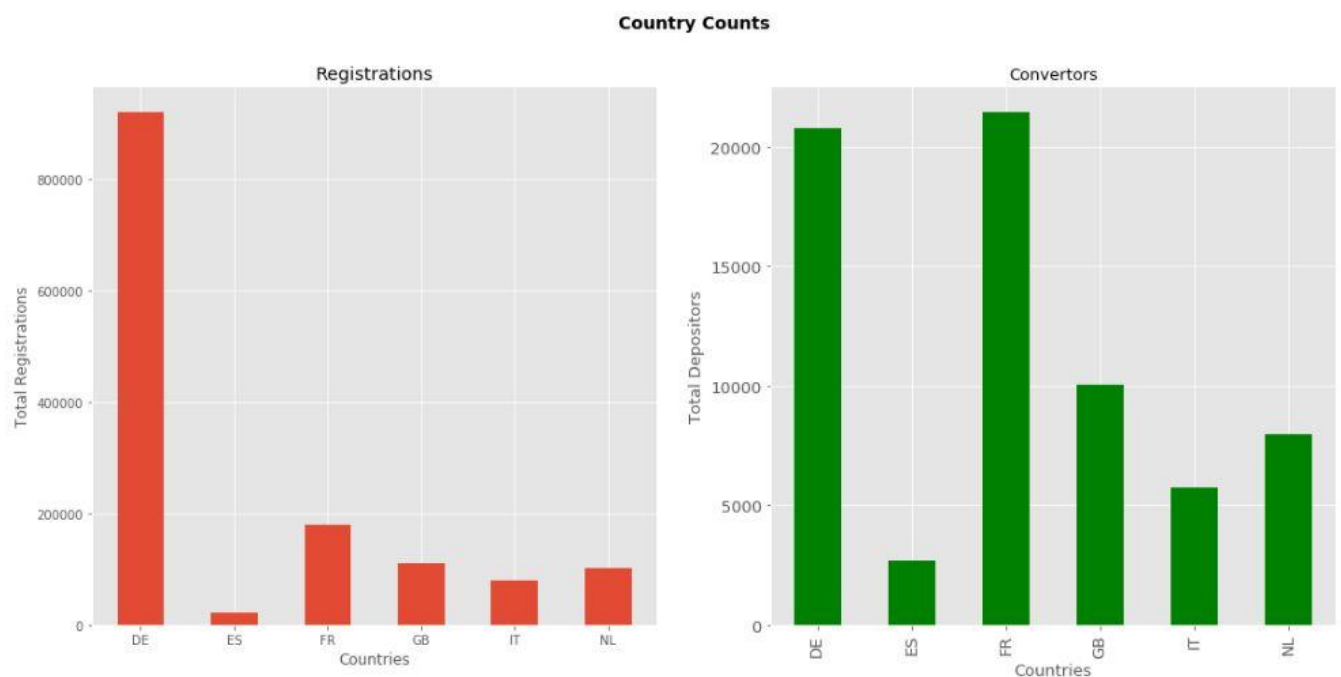
Figure 1.5 will illustrate the conversion: From a total count of 68,610, 48321 (70%) and 20289 (30%) of registrations were male and female, respectively.

The ratio conversion between Male and Female is 5.1% and 4.3%. As there is a ratio difference of 0.8%, this can be considered negligible.

Research Question 2

Firstly, it's important to get a picture of regional breakdown of users registering with our respective brands and depositing. As below, Figure 2.1 will plot the breakdown.

Fig. 2.1 – Comparative Graphs Registrations vs. Conversions by Countries



What is interesting to know here is that the conversion rate of the German market is extremely low in comparison to the rest of the markets, whereas the Spanish and French market sees the highest conversion rate. Let us assess this further by reviewing the conversion rates.

Fig 2.2 – Conversion rate table by Countries

	Registration_Date	First_Deposit_Date	Conversion_Rate-%
Country			
DE	920930	20752	2.253374
ES	20810	2660	12.782316
FR	180164	21467	11.915255
GB	110103	10021	9.101478
IT	78814	5748	7.293121
NL	102557	7962	7.763488

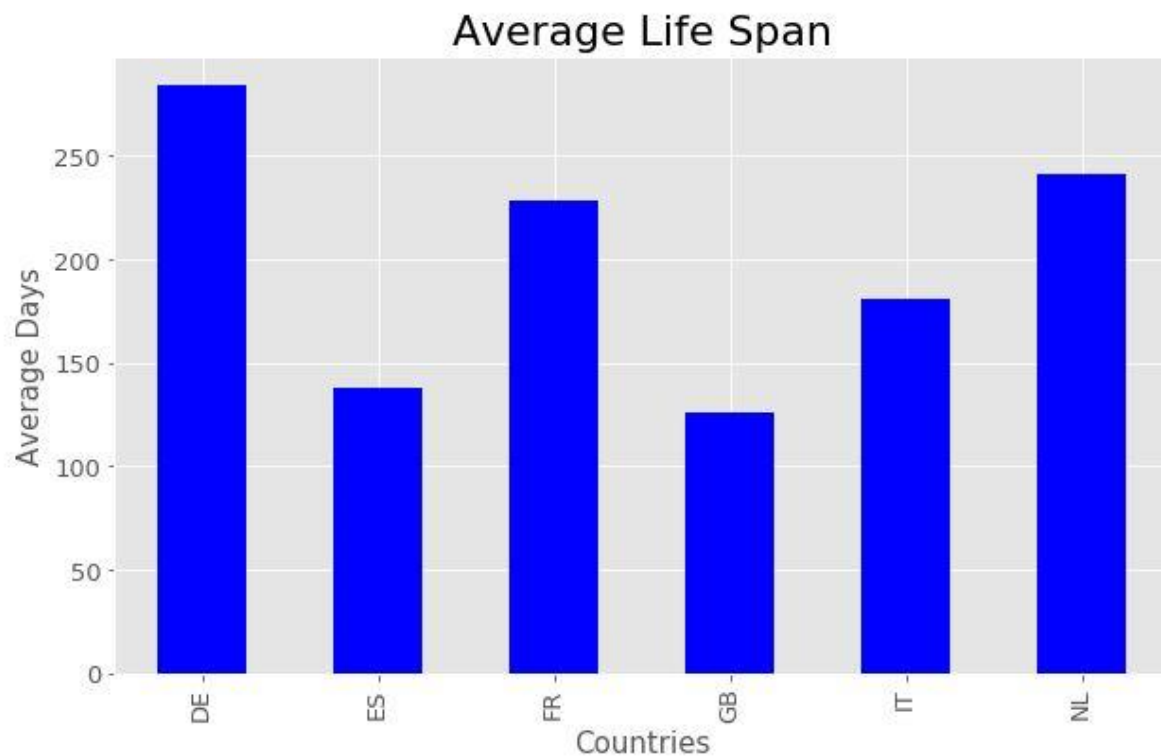
Average Longevity

User longevity is important to view as the longer than life span of a user, the greater the potential to generate revenue and strengthen working relationship with our affiliate partners.

From working in the customer support division, retention practises contribute greatly to increasing the life span, however user from different regions have different mentalities and it is important to understand where to invest in retention practises and where to invest in affiliation programs by inviting inactive/block users to different brands.

First it is important to define what is the longevity of a converter. For the purposes of this research, we will use the last login date, as effectively, if a user is not logging in, either they have no more desire to play online games(temporarily or permanent) or they are active on another brands, irrespective of the status of the account i.e. active or blocked.

Fig 2.3 – Average life Span of Users per Region measured in days



From Fig 2.3, it is interesting to note that the longevity of all regions, differs significantly with Great Britain being the lowest. This clearly indicates that most resources in terms of retention should be focused on all other regions, with the least amount of resources to Great Britain.

Furthermore, what is interesting to from the statistic table below:

Lifespan	
count	6.000000
mean	199.666667
std	61.969885
min	126.000000
25%	148.750000
50%	204.500000
75%	237.750000
max	284.000000

The average life span is 200 days for each user, whereby users from Great Britain is only 126 days and Germany with 284 days. A few factors of such a drastic difference is that the Great Britain Market is heavily regulated in that consumer protection is greater i.e. if a user wants to close their account, retention efforts may not be as successful due to regulator directives to Casino operators.

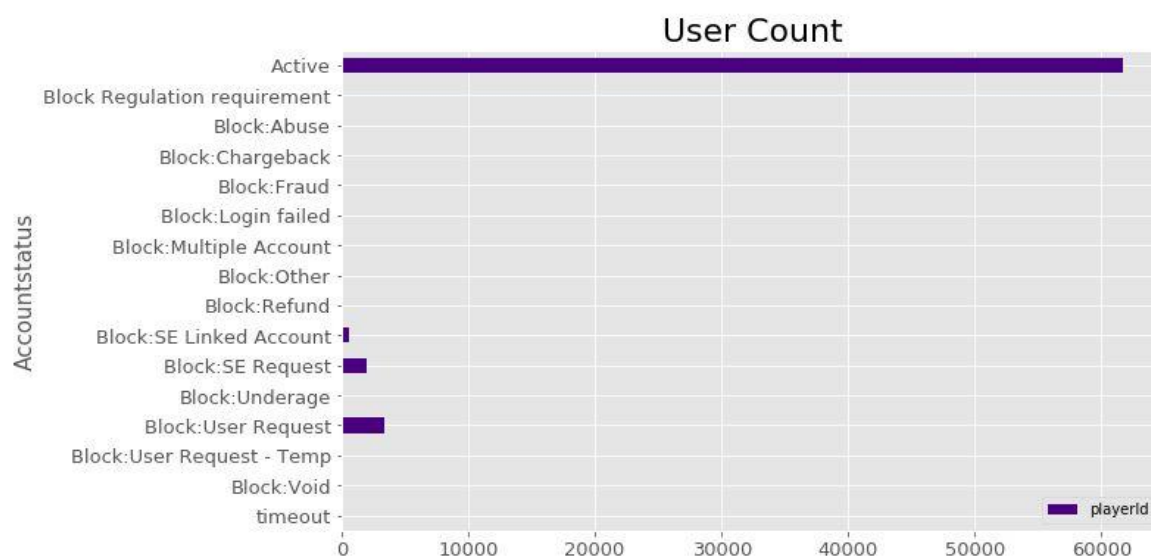
In this case, both Mean and Median (50%) representation is a fair as the Great Britain and Germany users do not heavily affect the Mean value.

Research Question 3

Reasons for Blocking

For the data where users are blocked, it will be important to understand the breakdown of why users are block and whether the insights are insufficient which may lead to recommendations by trying to define from the user as to why they are closing their accounts. In this part of the research, we will review each the percentage breakdown of the type of account closure applied.

Fig 3.1 – Breakdown of Account status for user that have made a deposit



As Fig 3.1 is highly skewed towards active accounts; below is a table totaling the types of account status currently – applicable to Convertors only.

Fig 3.2 – Total Summary of Account statuses

Number_of_users	
Active	61716
Block: User Request	3434
Block: SE Request	1960
Block: SE Linked Account	587
Block: Chargeback	192
Block: Fraud	163
Block: Multiple Account	160
Block: Abuse	142

With reference to figure 3.1 and 3.2, a large majority of closures is related to users declaring themselves a gambling addict or deciding to Self Exclude themselves from the casino. In the same vain, SE linked accounts will refer to users that have an account on a sister casino and in terms of regulations, the account must be closed as well.

In line with responsible business practises, such requests from must be respected and thus, nothing more can be done – the category for this is Block: SE Request and SE Linked accounts is applicable. As we see 3.7% of users have admitted suffering from some form of Gambling addiction.

When a player declares to be Self Excluded, a certain period can be nominated for a certain period, starting from 6 months to lifetime. Designing a system that will allow players the support centre agents to input the Self Exclusion period may prove to be beneficial long term – for example, should a player decide to Self Exclude for 6 months and when the said period has expired, we should be inviting such user back to our respective brand.

Furthermore, there is a higher trend of User Request closures in comparison to SE Request. Reasons for user request closure can be because of various reasons such as customer dissatisfaction, poor customers service, poor withdrawal process, unhappy with bonuses on offer, not enjoying the games anymore, losing too much, no luck, etc. – the category for this is Block : User Request. Based on this dataset, 5% of users will close under the User Request function.

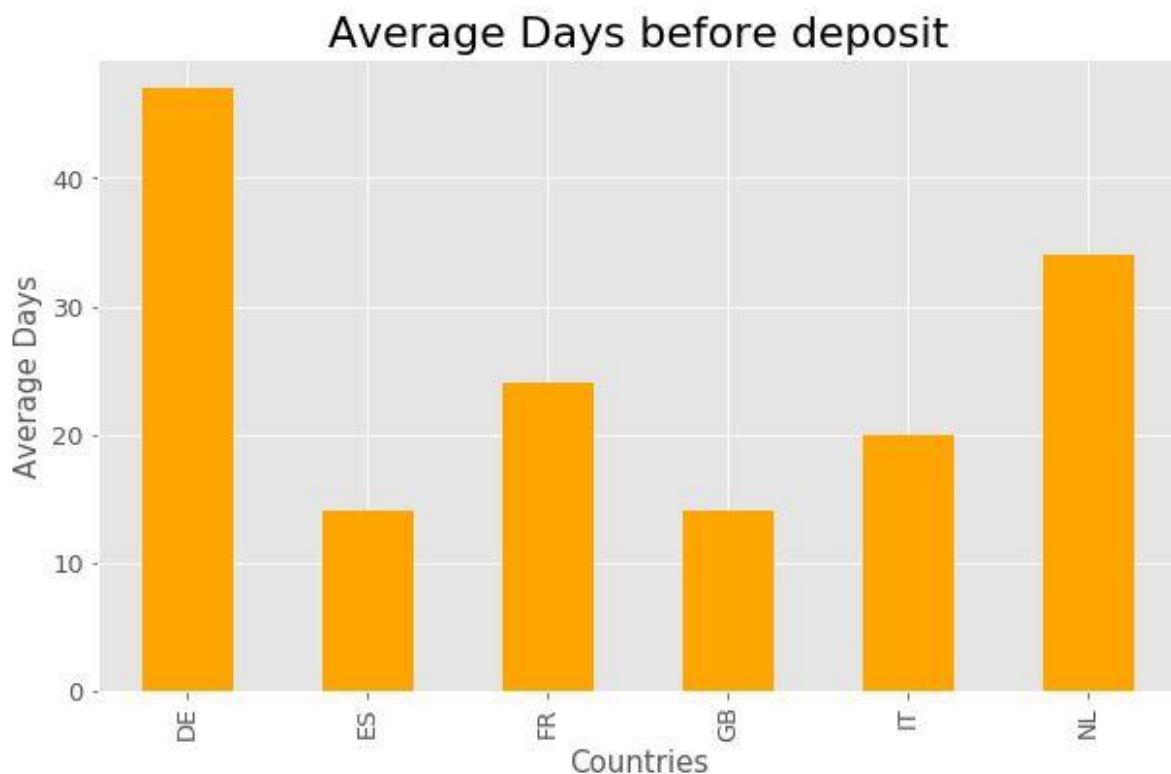
Whilst the support department aims to retain users where they wish to close in various situations, this data unfortunately does not provide such insights. Providing such insights will allow the company to focus on which areas it can provide to increase the longevity of the user. Such recommendations will form apart of the conclusion.

Research Question 4

Conversion Period

One of the success of a casino brand is to aim to get user registrations to start depositing. Ultimately, playing online games is a user experience product and attracting players to start depositing is dependent on the game provider on offer, sign up bonuses, user friendliness of the website. This part of the study will review the average period of days from registration to first deposit date from the respective regions.

Fig 4.1 - Average period before a player decides to make a deposit per region



From Fig 4.1, we can see that users from Great Britain and Spain are more likely to deposit faster than the rest of the regions in this study. What we can derive from this is that the Marketing department can now be directed to improve offers or focus on affiliation programs for the specific regions.

On the other end of this spectrum, we see the German market as EXTREMELY cautious users. Not only we see an extremely low conversion rate, but for the ones that do convert, they take about 45 days to decide to make a deposit.

Research Question 5

Profile of most valuable players:

For this part of the research, we will determine what type of profile is most profitable. The data provided already defines who is a valuable is primarily based on the Total amount of money deposited in the casino as follows:

Black VIP = Total Deposits > 10,001

Platinum VIP = Total Deposits between 5,001 and 10,000

Gold VIP = Total Deposits between 2,001 and 5,000

Silver VIP = Total Deposits between 1,001 and 2,000

Bronze VIP = Total Deposits between 0 and 1,000

The profiling for this research will focus on Black, Platinum and Gold users. Included in our profiling, we will review age, gender, region and establish what is the correlation with the game type (either slots or table games)

Table games will include any game title with Blackjack, Roulette, Poker and Baccarat.

Slot games will be all other games (under the column favorite game)

Fig 5.1 – Black VIP players

VIP_Status	Country	gender	Favorite_game	Total_Deposit_Amount		Age	Average_bet	Lifespan
				sum	mean	mean	mean	mean
Black	DE	female	Slot	198384.00	18034.909091	52.181818	3.762727	552.090909
		male	Slot	1007023.00	29618.323529	45.205882	17.658529	514.235294
			Table	13281.00	13281.000000	52.000000	163.900000	269.000000
	ES	female	Slot	78329.00	26109.666667	47.666667	5.590000	411.333333
		male	Slot	1386129.82	35541.790256	44.512821	21.675641	477.333333
			Table	38514.00	19257.000000	32.500000	27.105000	319.500000
	FR	female	Slot	4058637.50	36564.301802	49.333333	3.429730	815.378378
		male	Slot	4847388.50	34873.298561	46.244604	11.925468	841.410072
			Table	311761.00	38970.125000	41.000000	76.212500	662.500000
	GB	female	Slot	527991.99	26399.599500	44.600000	6.290000	225.400000
		male	Table	41900.00	41900.000000	56.000000	391.000000	59.000000
			Slot	610769.93	18508.179697	40.696970	16.301212	185.727273
	IT	female	Table	65641.00	16410.250000	37.750000	275.665000	85.500000
		male	Slot	85167.49	17033.498000	45.600000	3.940000	639.600000
			Slot	1184375.90	31167.786842	42.447368	12.994737	533.631579
	NL	female	Table	47656.00	47656.000000	49.000000	5.550000	114.000000
		male	Slot	148966.00	21280.857143	48.857143	5.080000	438.428571
			Slot	827560.00	37616.363636	47.136364	12.189091	372.545455
		female	Table	38396.00	12798.666667	40.333333	133.343333	172.000000

In table Fig 5.1, we notice besides users from Great Britain, all Black VIP Female users only play slot games.

As we noticed in our previous questions, Great Britain users are the shortest-term players and, in this case, table players have an even short life span. In the same token, such players have the highest average bet.

Furthermore, there is a correlation with all regions that players with a higher average bet prefer table games.

Another correlation is that all male players will have a higher average bet than females for both table and slot games, across all regions.

The overall highest valuable players come from French Female and Male players due to their total deposits reaching in excess of €4 mill and their average life span is over > 800 days.

Fig 5.2 – Platinum VIP players

VIP_Status	Country	gender	Favorite_game	Total_Deposit_Amount		Age	Average_bet	Lifespan
				sum	mean	mean	mean	mean
platinum	DE	female	Slot	4520.00	904.000000	35.800000	2.762000	369.000000
		male	Slot	87819.00	3136.392857	39.035714	9.368929	541.037037
			Table	450.00	450.000000	60.000000	24.130000	573.000000
	ES	female	Slot	2970.00	1485.000000	48.000000	6.555000	335.500000
		male	Slot	40542.00	3118.615385	43.846154	58.133846	303.076923
			Table	23268.00	3324.000000	46.714286	25.860000	288.714286
	FR	female	Slot	124983.00	3787.363636	54.878788	4.847273	531.878788
		male	Table	1070.00	535.000000	44.500000	19.760000	25.000000
			Slot	196039.71	2481.515316	41.341772	6.732405	428.366667
	GB	female	Table	66510.00	3023.181818	43.636364	79.855000	469.272727
		male	Slot	222633.96	3049.780274	45.863014	15.437397	99.780822
			Table	2303.12	1151.560000	34.000000	127.980000	8.500000
	IT	female	Slot	448893.48	3053.697143	41.591837	35.395850	100.523810
		male	Table	45386.56	2521.475556	41.277778	127.204444	69.388889
			Slot	5118.00	5118.000000	64.000000	1.380000	632.000000
	NL	female	Slot	49189.00	3513.500000	48.000000	4.483571	408.928571
		male	Table	4800.00	2400.000000	50.000000	13.575000	384.000000
			Slot	19451.00	2161.222222	44.444444	5.185556	431.333333
		male	Table	3050.00	3050.000000	36.000000	38.550000	72.000000

In table Fig 5.2, The trends here are also like Black VIP players. However, the lower the VIP level, the more we find female players that have preference for table games. What is unusual here is that Spanish male players have a higher average bet on slot game vs table games.

Another anomaly is the average bet for Great Britain Female and Male players is equivalent to each other. However, GB Female table players have an extremely low life span of 9 days on average.

The highest Value players in the Platinum group are users from Great Britain that enjoy Slot games.

Fig 5.3 – Gold VIP players

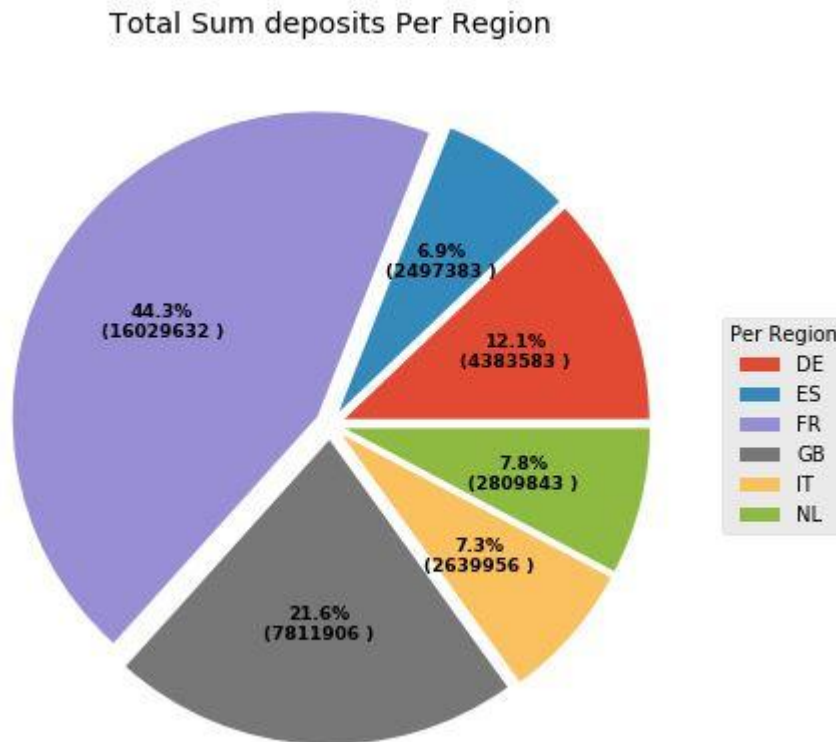
VIP_Status	Country	gender	Favorite_game	Total_Deposit_Amount		Age	Average_bet	Lifespan
				sum	mean	mean	mean	mean
gold	DE	male	Table	3350.00	478.571429	44.714286	27.805714	243.428571
		female	Slot	5392.00	898.666667	49.000000	5.608333	408.666667
	ES	male	Table	150.00	150.000000	58.000000	7.120000	4.000000
		female	Slot	10871.00	494.136364	43.272727	7.415455	287.545455
	FR	male	Table	1580.00	790.000000	33.500000	12.065000	625.500000
		female	Slot	160839.00	908.694915	51.401130	4.497740	415.779661
	GB	male	Table	11599.00	773.266667	50.066667	13.002000	396.000000
		female	Slot	274189.95	651.282542	42.657957	8.493848	372.800475
	IT	male	Table	52014.45	468.598649	40.774775	18.084595	345.648649
		female	Slot	221372.65	938.019703	46.372881	5.427712	77.427966
	NL	male	Table	1083.07	216.614000	44.600000	31.450000	11.600000
		female	Slot	323588.96	700.409004	41.768398	7.310887	115.476190
	NL	male	Table	15779.95	478.180303	38.393939	40.223939	48.303030
		female	Slot	9586.00	1369.428571	56.428571	4.521429	144.714286
	NL	male	Table	26862.00	447.700000	39.333333	4.555167	128.033333
		female	Slot	7365.00	736.500000	60.700000	27.606000	220.700000
	NL	male	Table	6077.00	675.222222	42.222222	6.020000	242.888889
		female	Slot	140.00	140.000000	25.000000	3.090000	7.000000
	NL	male	Table	22402.00	574.410256	40.692308	5.236410	243.948718
		female	Slot	380.00	380.000000	48.000000	50.420000	12.000000

In table Fig 5.3, we notice a higher majority group of value players group together are from France and Great Britain. We can conclude that both France and Great Britain provide the most revenue

The trend analysis here is that Table game players tend to have a higher bet Average and a short life span.

This is a clear indication that Table players tend to lose their money faster and therefore increase the likelihood of closing their account quicker than slot players.

Fig 5.4 – Breakdown of Total Sum deposits per Region



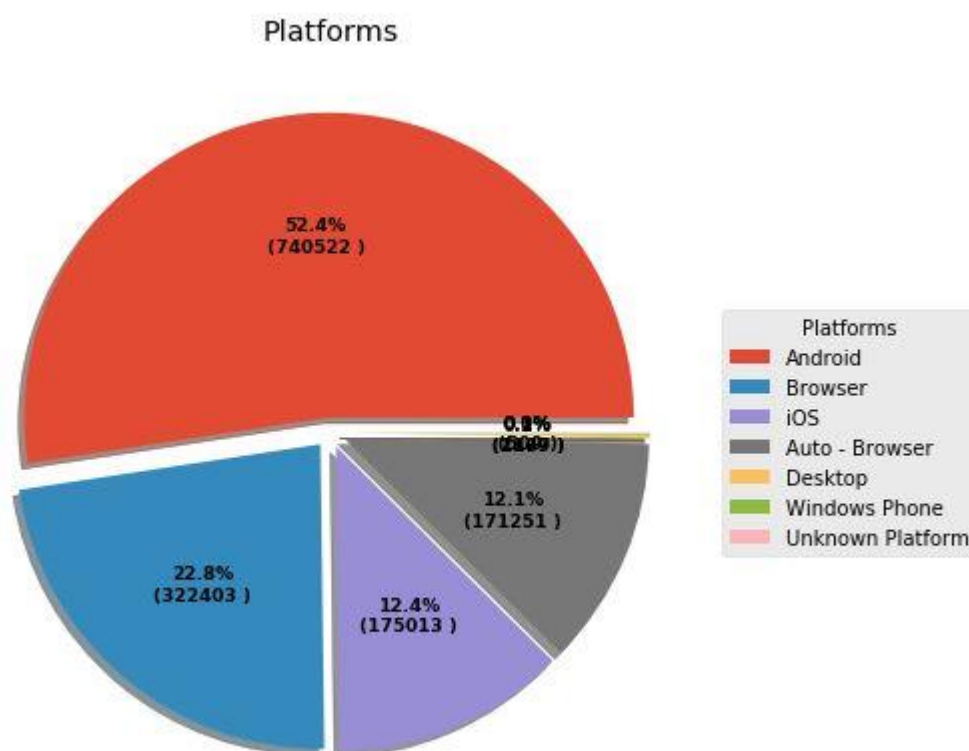
The pie will further confirm that France and then Great Britain possess the highest value players that require most resources to be focused on these markets

Research Question 6

User preference platform

This topic of research will find its relevance in that we can identify what is the user preference platform for the user experience. Based on the results, it will allow the relevant marketing and design department to focus its resources on user friendliness and design for the most desirable platform

Fig 6 – User Platform distribution



The far higher percentage of users enjoy using their Android and Apple devices (iOS) – in total 64,8% (52,3% + 12.4%) of users whereas 34,9% user Desktop Browser. This boils down to the convenience of playing on your smart phone or any hand held device.

Conclusion and Business insights

To increase revenue from registrations and conversions, it is recommended the following is considered.

1. Design and then implement a procedure that will allow for customer agents to close user accounts based on their reasoning. Therefore, a further breakdown of User Request closure is necessary.
This will lead to a process whereby monthly data can be extracted, analysed to see whether progress is being made to avoid **unnecessary closures**.
Essentially, we cannot avoid losing users to Gambling problems nor personal issues, however if we target that closures are only narrowed down to these reasons and the like, then the business is on the correct path to sustain ongoing revenue.
2. Further Target market current registrations that fit the profile of a user that is most likely to make a deposit – for the purposes of this study, the company should target 51 – 70 age group to make a deposit with tempting offers.
3. Focus on improving user experience with on Andriod and iOs devices due to convenient purposes. A further recommendation would be to analyse user experience with a competitor and see what could work to improve designs.
4. For the German market, greater research is required to determine what will trigger a German player to make a deposit. Once this insight is gained, we can use the knowledge gained to start a mass first deposit offer campaign.
5. As Table players have a higher average bet and shorter life span, research into providing greater incentives to increase the life span such of such players is necessary and a greater understanding as well. We can make assumptions that when players are losing money quickly, they quickly close their account to avoid further losses.
A rewarding scheme of issuing pay-outs to heavy losers may prove to be beneficial as user should recycle any pay-outs back to the casino and additional revenue.
6. With Great Britain users proving to be the most profitable group of players under the platinum and gold groups with the shortest life span, greater focus on affiliation is required to ensure a continued flow of players entering the casino – this is imperative.
7. Create a procedure that will allow support agents to close users that request for Self Exclusion and define the period of closure, to enable inviting user back to play when their Self excluded period has expired.

*For purposes of anonymity, the names of the casino group and casino brands have been changed.