

Master of Big Data Analytics

Open Source Programing

Final Report Actual Internet Sports Gambling Activity



Group Members:

Arnaud Vandelaer.

Andres Olivera Caceres

Xuejie M

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Introduction

This report is based on data of a collaborative Internet gambling research project between the Division on Addictions (DOA) and bwin Interactive Entertainment, AG (bwin). The latter is an Internet betting platform with headquarters in Viena, Austria, founded in 1997 and today is one of the biggest online betting platforms in the world.

Based on 4 different tables containing data of 40,499 customers who opened an account from February of 2005 to September of 2005 ('Demographics', 'Aggregation', 'Activity' and 'Conversions'), the final output required of the project is to create a marketing data mart, a manual for marketing analyst and a shiny application displaying the results.

In order to accomplish these goals, all the process will be carry down on R language.

Data Mart

The marketing data mart consist of unique information of each client. The process to create it started by cleaning the data sets, understanding the information and its relationship, then creating new variables containing relevant information about the clients and finally merging everything in one big table. The final table has 40.499 observations, which is the number of clients that registered during the time frame of analysis and 324 distinct variables.

The table below contains all the variables, which are available in the final data mart and its description.

Variable	Description
UserID	User ID was assigned to each participant by bwin at time of registration.
RegistrationDate	Date of registration.
Age	Years from birth
FOTotalStakes	Total stakes each participant betted on fixed-odds plays from February 1, 2005 through September 30, 2005
FOTotalWinnings	Total winnings each participant received on fixed-odds plays from February 1, 2005 through September 30, 2005.
FOTotalBets	Total number of bets each participant betted on fixed-odds

	plays from February 1, 2005 through September 30, 2005.
FOFirstActiveDate	First date of fixed-odds play of each participant from February 1, 2005 through September 30, 2005.
FOLastActiveDate	Last date of fixed-odds play of each participant from February 1, 2005 through September 30, 2005.
FOTotalDaysActive	Total days of active fixed-odds plays of each participant from February 1, 2005 through September 30, 2005.
LATotalStakes	Total stakes each participant betted on live-action plays from February 1, 2005 through September 30, 2005.
LATotalWinnings	Total winnings each participant received on live-action plays from February 1, 2005 through September 30, 2005.
LATotalBets	Total number of bets each participant betted on live-action plays from February 1, 2005 through September 30, 2005.
LAFirstActiveDate	First date of live-action play of each participant from February 1, 2005 through September 30, 2005.

LALastActiveDate	Last date of live-action play of each participant from February 1, 2005 through September 30,
LATotalDaysActive	Total days of active live-action plays of each participant from February 1, 2005 through September 30, 2005.
FirstSportsActiveDate	First date of active sports book play for each participant from February 1, 2005 through September 30, 2005.
avg_Age_for_country	Avg age in each country
Stakes_tot_monthFebruary	Total amount of stake in that month
Stakes_tot_monthMarch	Total amount of stake in that month
Stakes_tot_monthApril	Total amount of stake in that month
Stakes_tot_monthMay	Total amount of stake in that month
Stakes_tot_monthSeptember	Total amount of stake in that month
Stakes_tot_monthJune	Total amount of stake in that month
Stakes_tot_monthJuly	Total amount of stake in that month
Stakes_tot_monthAugust	Total amount of stake in that month
Winnings_tot_monthFebruary	Total amount of winnings (win of customer) in that month

Winnings_tot_monthMarch	Total amount of winnings (win of customer) in that month
Winnings_tot_monthApril	Total amount of winnings (win of customer) in that month
Winnings_tot_monthMay	Total amount of winnings (win of customer) in that month
Winnings_tot_monthSeptember	Total amount of winnings (win of customer) in that month
Winnings_tot_monthJune	Total amount of winnings (win of customer) in that month
Winnings_tot_monthJuly	Total amount of winnings (win of customer) in that month
Winnings_tot_monthAugust	Total amount of winnings (win of customer) in that month
Bets_tot_monthFebruary	Total amount of Bets made in that month
Bets_tot_monthMarch	Total amount of Bets made in that month
Bets_tot_monthApril	Total amount of Bets made in that month
Bets_tot_monthMay	Total amount of Bets made in that month
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Bets_tot_monthJuly	Total amount of Bets made in that month
Bets_tot_monthAugust	Total amount of Bets made in that month

Stakes_tot_Prod_Sports book fixed-odd	Total amount of stakes of that product
Stakes_tot_Prod_Sports book live-action	Total amount of stakes of that product
Stakes_tot_Prod_Casino BossMedia	Total amount of stakes of that product
Stakes_tot_Prod_Supertoto	Total amount of stakes of that product
Stakes_tot_Prod_Games VS	Total amount of stakes of that product
Stakes_tot_Prod_Games bwin	Total amount of stakes of that product
Stakes_tot_Prod_Casino Chartwell	Total amount of stakes of that product
Winnings_tot_Prod_Sports book fixed-odd	Total winnings of stakes of that product
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Winnings_tot_Prod_Casino BossMedia	Total winnings of stakes of that product
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Bets_tot_Prod_Games bwin	Total number of bets of that product
Bets_tot_Prod_Casino Chartwell	Total number of bets of that product
Stakes_2005	total amount of stakes in that year
Winnings_2005	total amount of winnings in that year
Bets_2005	total amount of bets in that year
Revenue	Revenue of the company
Avg_stake	average stake of customer
Avg_rev	average revenue of the company per customer
rank_stakes	rank from 1 to 4. 4 being the higher by amount of stakes
rank_bets	rank from 1 to 4. 4 being the higher by amount of bets
rank_rev	rank from 1 to 4. 4 being the higher by amount of rev
rank_avg_stake	rank from 1 to 4. 4 being the higher by the average stake per customer

Stakes_tot_Wday	Tot amount of stakes during weekdays
Stakes_tot_Wknd	total amount of stakes during the weekend
Winnings_tot_Wday	total amount of winnings during the weekdays
Winnings_tot_Wknd	total amount of winnings during the weekend
Bets_tot_Wday	total amount of bets during the weekdays
Bets_tot_Wknd	total amount of bets during the weekend
Stakes_tot_Prod_Sports book fixed-odd_February	total stakes by that product in that month
Stakes_tot_Prod_Sports book fixed-odd_March	total stakes by that product in that month
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Bets_tot_Prod_Casino Chartwell_February	total stakes by that product in that month
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freq_monthFebruary	Number of bets in that month
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freq_monthApril	Number of bets in that month
freq_monthMay	Number of bets in that month
freq_monthSeptember	Number of bets in that month
freq_monthJune	Number of bets in that month
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freq_Prod_Supertoto	Number of bets in that product

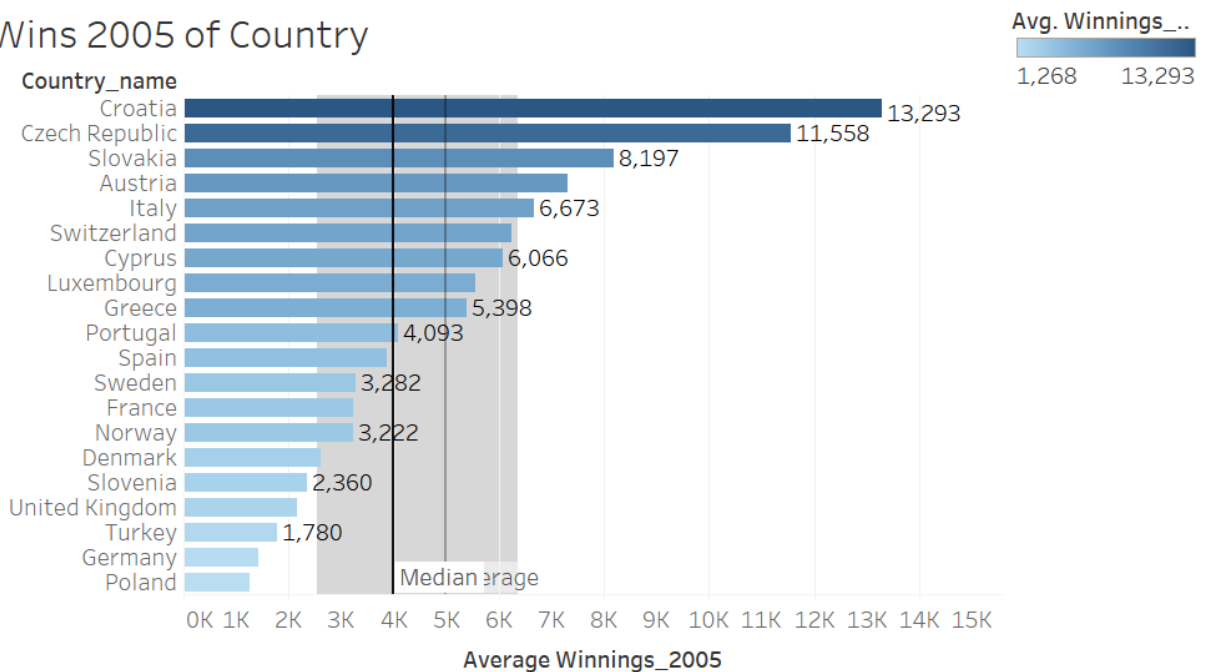
freq_Prod_Games VS	Number of bets in that product
freq_Prod_Games bwin	Number of bets in that product
freq_Prod_Casino Chartwell	Number of bets in that product
freq_Wday	numbers of bets during weekdays
freq_Wknd	numbers of bets during weekends
freq_year2005	total number of bets
rank_freq_y	ranking from 1 to 4. Being 4 the highest amount of bets during the year
RegDate	Date of registration.
FirstPay	Participant's first betting money deposits date.
FirstAct	Participant's first active play date.
FirstSp	Participant's first sports book play date.
FirstCa	Participant's first casino play date.
FirstGa	Participant's first games play date.
FirstPo	Participant's first poker play date.
Gender	is male or female
Country_name	Name of the country
Language Description	Language spoken
Application Description	Different route of access to bwin. Please see appendix 4.
poker_rev_monthJune	total rev by client in that month
poker_rev_monthApril	total rev by client in that month
poker_rev_monthMay	total rev by client in that month
poker_rev_monthMarch	total rev by client in that month
poker_rev_monthFebruary	total rev by client in that month
poker_rev_monthSeptember	total rev by client in that month

poker_rev_monthOctober	total rev by client in that month
poker_rev_monthJuly	total rev by client in that month
poker_rev_monthAugust	total rev by client in that month
poker_rev_year2005	total rev by client in that year
poker_rev_wdayWknd	total rev by client in weekends
poker_rev_wdayWday	total rev by client in weekdays
poker_freq_monthJune	number of bets in that month
poker_freq_monthApril	number of bets in that month
poker_freq_monthMay	number of bets in that month
poker_freq_monthMarch	number of bets in that month
poker_freq_monthFebruary	number of bets in that month
poker_freq_monthSeptember	number of bets in that month
poker_freq_monthOctober	number of bets in that month
poker_freq_monthJuly	number of bets in that month
poker_freq_monthAugust	number of bets in that month
poker_freq_year2005	number of bets in that year (all time-frame)
poker_type_sell	total amount after playing
poker_type_buy	total chips bought

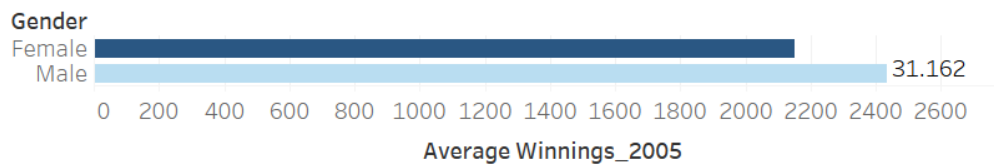
Analysis and visualization

As we can see in the figure below, in average, people in Croatia wins the most in 2005, which is 13293. Next, people in Czech Republic and Slovakia are following. From the perspective of gender, male wins a little bit more than female.

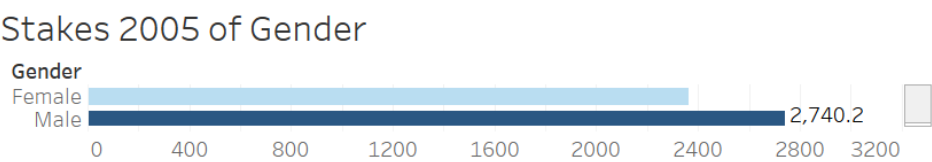
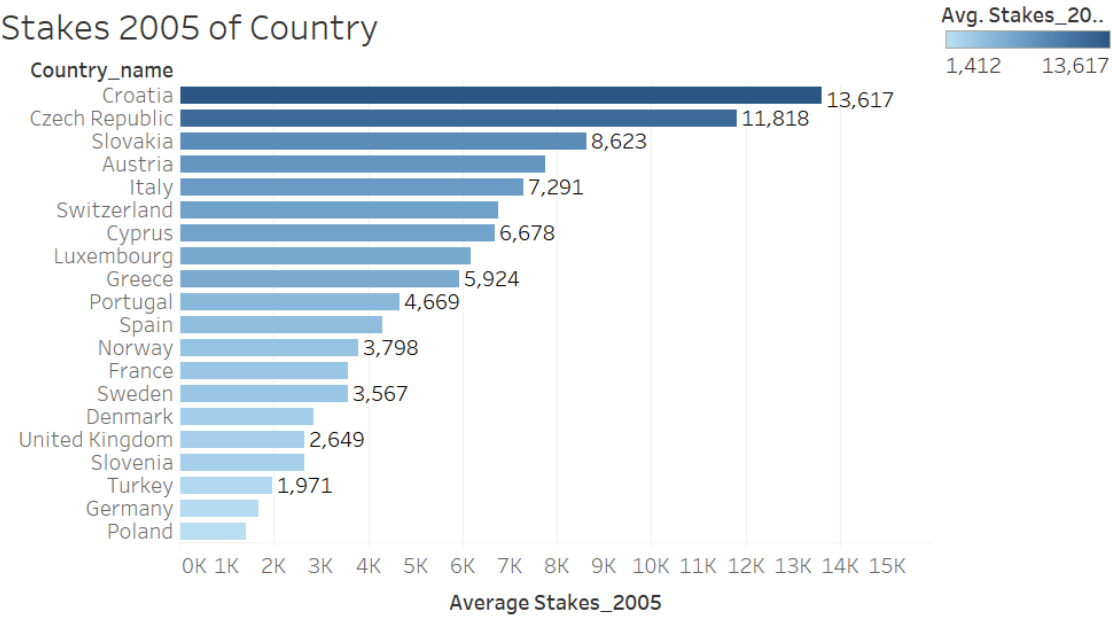
Wins 2005 of Country



Wins 2005 of Gender

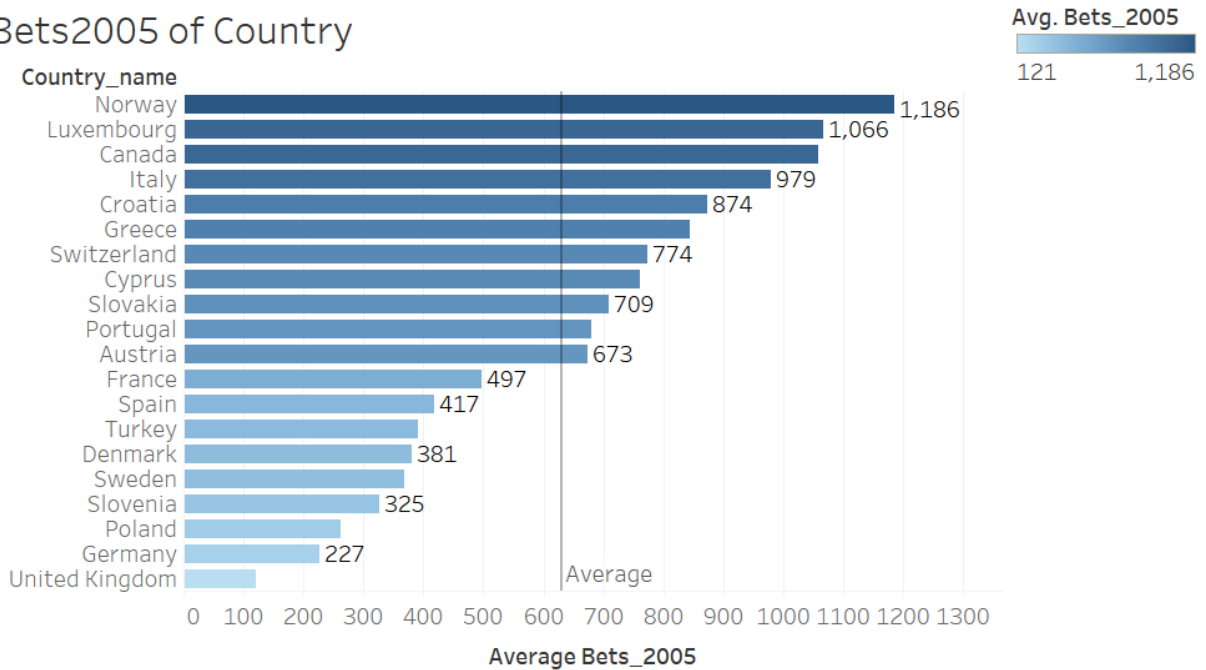


As we can see in the below figure, it's very similar to the "Wins", top 3 countries are Croatia, Czech Republic and Slovakia. In addition, male wins a little bit more than female.

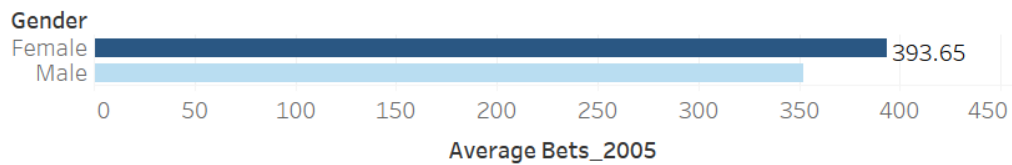


As what we can see in the figure below, from the perspective of total amount of bets, Norway has the greatest number. Then, Luxembourg and Canada are following. From the perspective of gender, Female has a greater number than male.

Bets2005 of Country

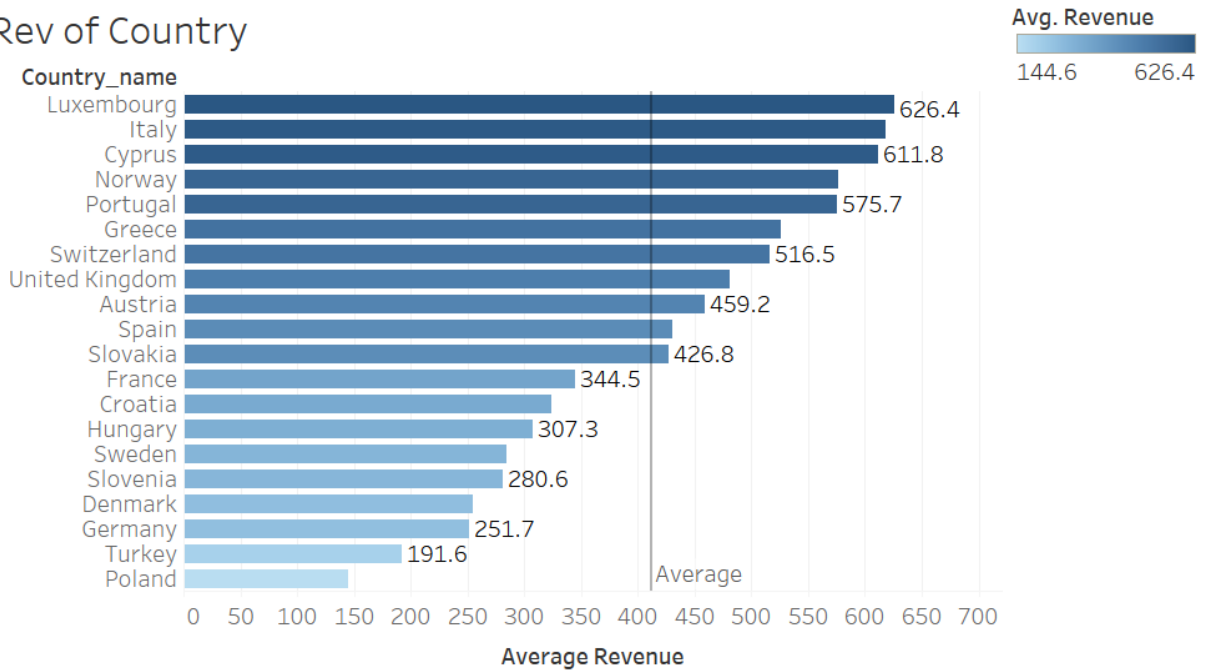


Bets2005 of Gender

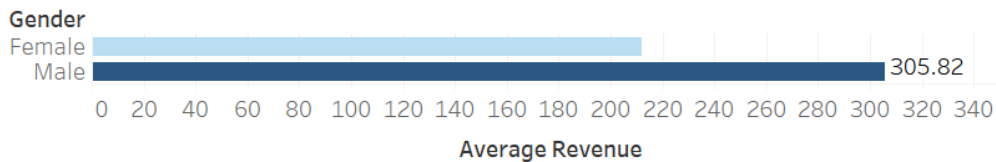


As what we can see in the figure below, from the perspective of revenue, Luxembourg has the greatest number. Then, Italy and Cyprus are following. From the perspective of gender, male has a greater number than female.

Rev of Country

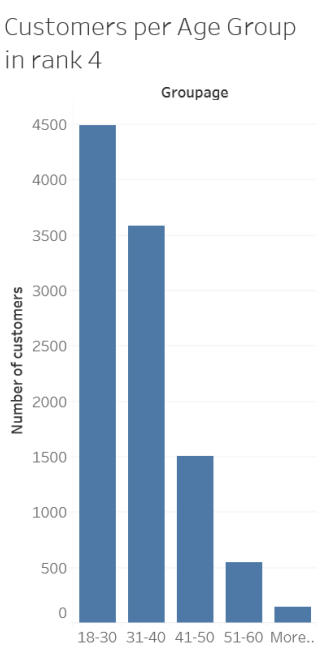
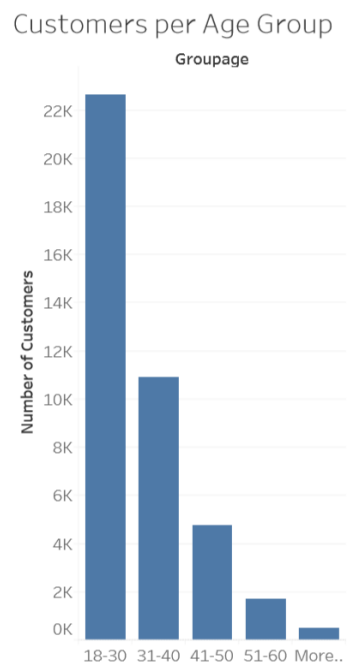


Rev of Gender



Description of the clients and demographics

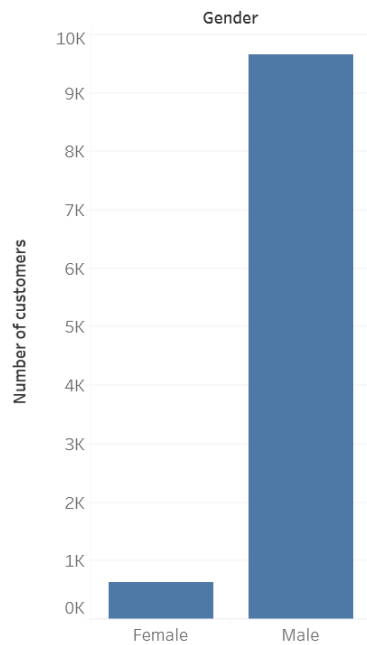
As can be seen in the graph on the left, the majority of the clients are in the first agegroup '18-30', representing 56% of total customers. Moreover, our best clients in terms of revenue brought to the company, which number four in the ranking, are also in the first group age. In this case, they represent the 44% of the total number of customers that are in ranking 4.



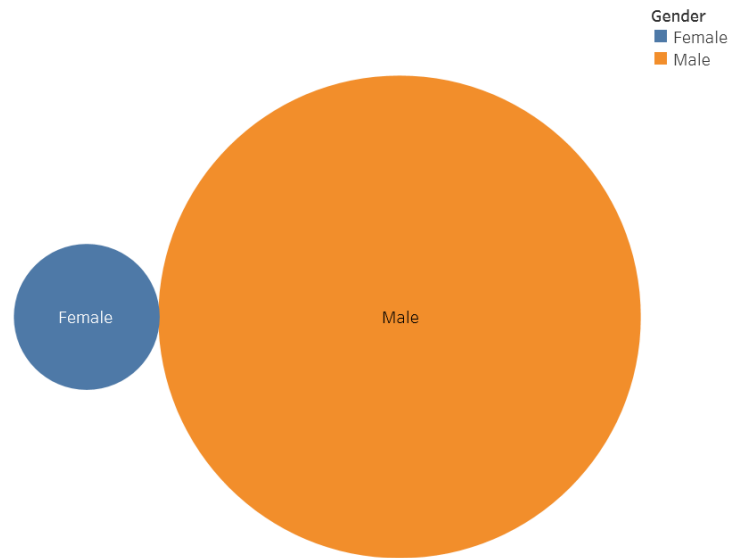
The company’s clients are mostly male, being 37.108 clients and representing the 92 % of total.

The most important clients, as can infer, are males. In rank 4 are 9.654, a 94% of the total group.

Customer gender in rank 4

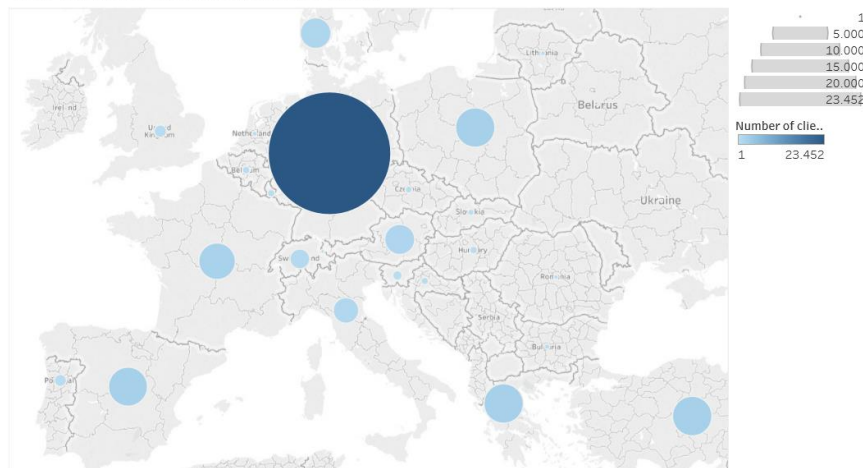


Number of Male and Female

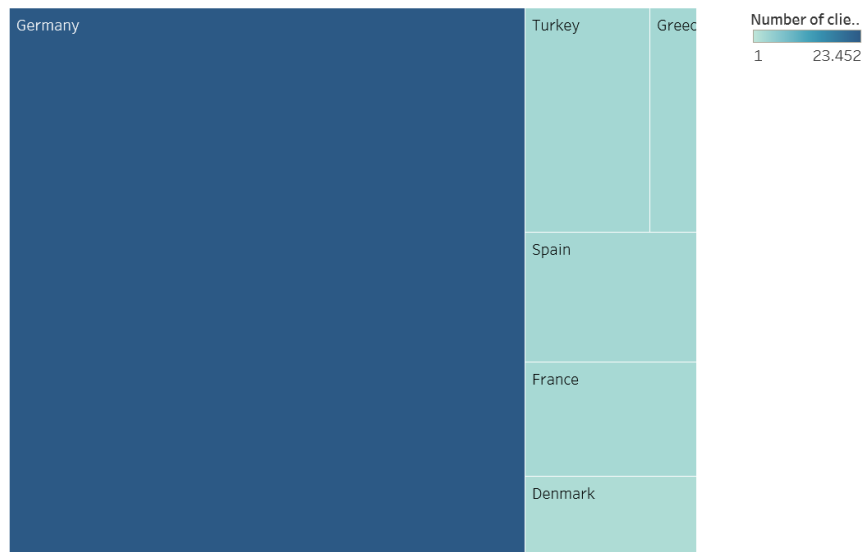


Germany is by far the most important country for the company. Is where the majority of customers is concentrated, 23.452 which means a 58% of the total clients. After Germany, Turkey and Spain are the countries with the higher amount of customers and Europe is the most relevant region since more than 95% of the customers are located there.

Distribution of clients around the world

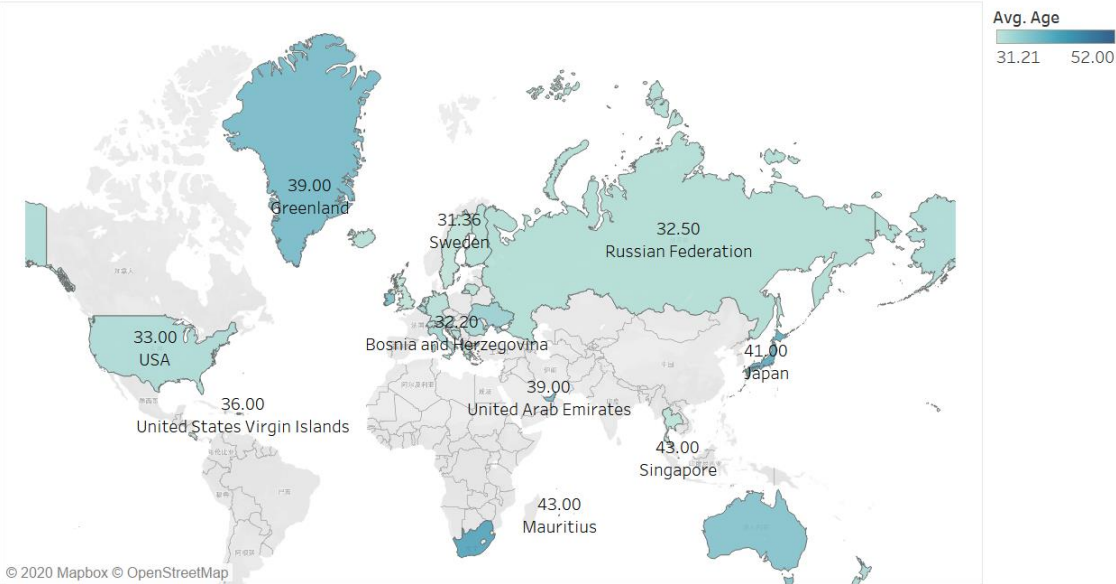


Distribution of clients around the world



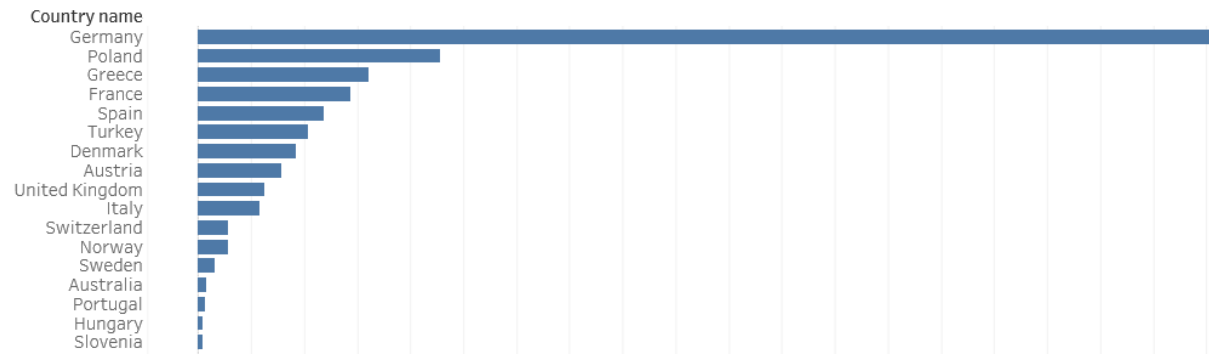
Some country contain older customers on average, such as Japan, Green Island, the oldest one have customers who are 52 years old on average.

Average age by country



However, even though Turkey and Spain are very representative in the number of clients, Poland and Greece are the second and third most profitable countries. In terms of the total average revenue brought by each customer in all countries, Germany keeps being the most relevant country but Poland, which is not in the top 5 countries with more customers, is the second more profitable country for the company.

Avg Revenue



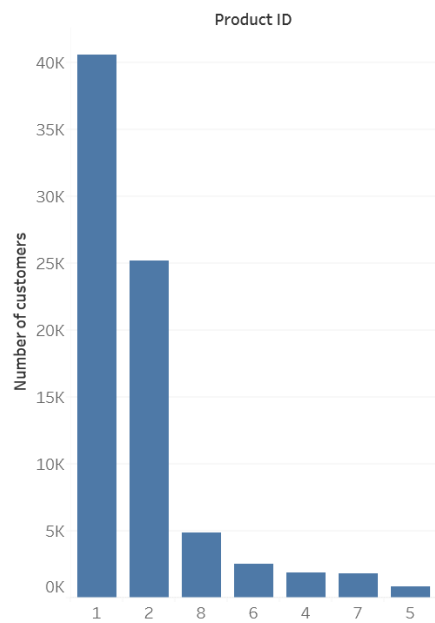
Analysis about company’s products, performance and activities

The company has 2 principal products. ‘Sports book fixed-odd’ and ‘Sports book live-action’, which is 1 and 2 on the table of the left. Almost every client that registered during this time frame plays Sports Book Fixed-odd and more than half of the clients play the second product offer.

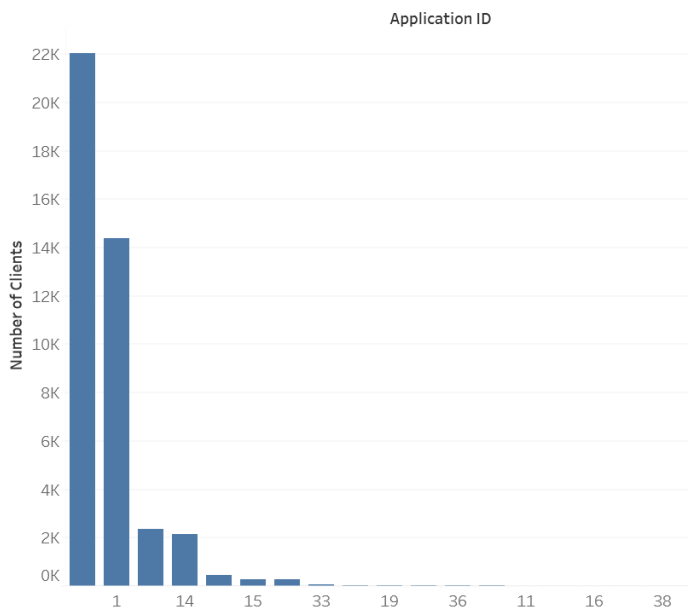
On the other hand, most of the clients access the betting platform through BETANDWIN.DE and BETANDWIN.COM. Both combined sum 36.000 clients, more than 90% of total clients.

Both

Customer per Type of Product

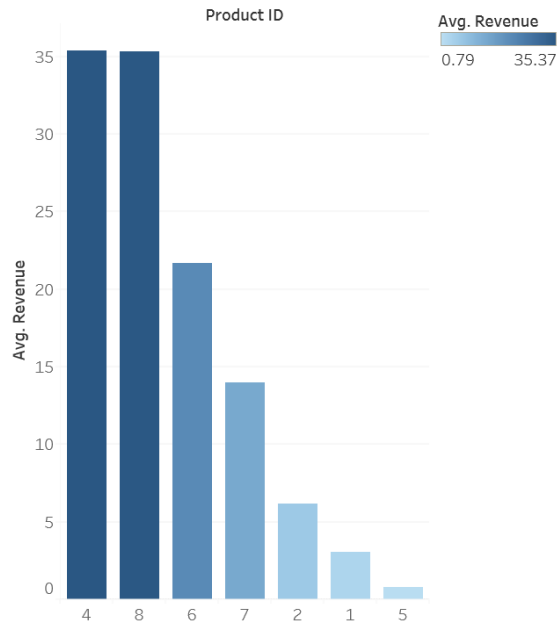


Customer per Channel

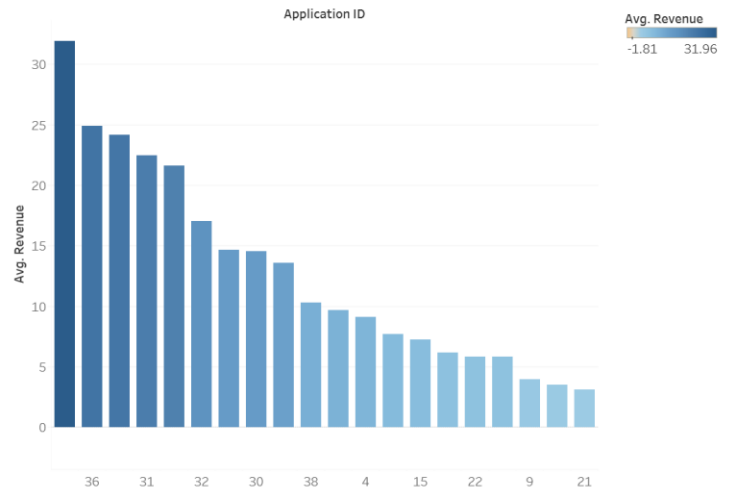


Even though there are two products and applications access that are predominant,

Average Revenue per Product



Average Revenue per Application Access



regarding the average revenue, none of them is the most important. The graphs below shows how product 4 ('Casino BossMedia') and

product 8 ('Casino Chartwell') become more relevant. On the other hand, in application id number 24 ('ANDWIN CASINO') and number 36 ('BETOTO CASINO') become the most profitable in average.

Conclusion

In conclusion, the company should focus in male young players. From 18 to 30 years old. BETANDWIN.DE and BETANDWIN.COM are the two most important channels through which clients reach the company. Should concentrate in offering 'Sports book fixed-odd' and 'Sports book live-action' because are the two most popular products but there is huge potential in expanding the other products, especially 'Casino BossMedia' and 'Casino

Chartwell' that are not the most popular regarding the number but are the most relevant when it comes to revenue average.

Interestingly, Croatia and Slovakia don't have the greatest number of the bets, but they take the most wins and stakes. However, none of these countries don't get the most revenue, Luxembourg, Italy, Cyprus have the most revenue, among them, Luxembourg and Italy have large amounts of bets.

Item	Recommendations
Regions to target (Continent)	Europe + Turkey
Gender	Male
Cards target group	Age group of 18 – 30.
Product	Sports book live-action
Channel	BETANDWIN.DE
Budget (Average Stake)	\$ 236
Bets monthly (Average Bets monthly)	33

DASHBOARD link:

https://aoliveracaceres.shinyapps.io/fix_data/