INTERNATIONAL BREWERIES ANALYSIS

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International Breweries

This analysis is meant to look at the profitability of some of the products of International breweries across two Anglophone countries and three Francophone countries in Africa. A data recorded for a duration of three years is provided for analysis to aid better decision making in order to maximise profit and reduce loss to the lowest minimal.

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.4.4     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(readxl)
International_Breweries <- read_excel("C:/Users/User/Downloads/International-Breweries.xlsx",
    sheet = "International-Breweries")
International_Breweries
```

```
## # A tibble: 1,047 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10101 Jardine   jard@~ trophy        150        200      725 145000  36250
##  2    10102 Gill      gillh~ budwe~        250        500      815 407500 203750
##  3    10103 Sorvino   sorvi~ castl~        180        450      937 421650 252990
##  4    10104 Jones     jone.~ eagle~        170        250      765 191250  61200
##  5    10105 Andrews   andy@~ hero          150        200      836 167200  41800
##  6    10106 Jardine   jard@~ beta ~         80        150      798 119700  55860
##  7    10107 Thompson  thomp~ grand~         90        150      954 143100  57240
##  8    10108 Jones     jone.~ trophy        150        200      812 162400  40600
##  9    10109 Morgan    morga~ budwe~        250        500      700 350000 175000
## 10    10110 Howard    howar~ castl~        180        450      745 335250 201150
## # i 1,037 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

Profit Analysis

1. The profit worth of the countries within the last three years.

```
ib<-International_Breweries
x<-ib$PROFIT
sum(ib$PROFIT)
```

```
## [1] 105587420
```

After running the code above, the TOTAL WORTH OF PROFIT = 105587420

2.Comparing the profits of the francophone and anglophone countries.

```
AngloPhone<-ib%>%filter(COUNTRIES=="Ghana" |COUNTRIES=="Nigeria")
AngloPhone
```

```
## # A tibble: 420 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10101 Jardine   jard@~ trophy        150        200      725 145000  36250
##  2    10102 Gill      gillh~ budwe~        250        500      815 407500 203750
##  3    10106 Jardine   jard@~ beta ~         80        150      798 119700  55860
##  4    10107 Thompson  thomp~ grand~         90        150      954 143100  57240
##  5    10111 Parent    paren~ eagle~        170        250      861 215250  68880
##  6    10112 Jones     jone.~ hero          150        200      902 180400  45100
##  7    10116 Jones     jone.~ budwe~        250        500      709 354500 177250
##  8    10117 Parent    paren~ castl~        180        450      837 376650 225990
##  9    10121 Gill      gillh~ grand~         90        150      898 134700  53880
## 10    10122 Smith     smith~ trophy        150        200      860 172000  43000
## # i 410 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

```
x<-AngloPhone$PROFIT
sum(AngloPhone$PROFIT)
```

```
## [1] 42389260
```

The anglophone countries made a total profit of 42389260.

```
FrancoPhone<-ib%>%filter(COUNTRIES=="Benin" |COUNTRIES=="Senegal" | COUNTRIES=="Togo")
FrancoPhone
```

```
## # A tibble: 627 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10103 Sorvino   sorvi~ castl~        180        450      937 421650 252990
##  2    10104 Jones     jone.~ eagle~        170        250      765 191250  61200
```

```
##  3    10105 Andrews   andy@~ hero          150        200      836 167200  41800
##  4    10108 Jones     jone.~ trophy        150        200      812 162400  40600
##  5    10109 Morgan    morga~ budwe~        250        500      700 350000 175000
##  6    10110 Howard    howar~ castl~        180        450      745 335250 201150
##  7    10113 Smith     smith~ beta ~         80        150      731 109650  51170
##  8    10114 Jones     jone.~ grand~         90        150      843 126450  50580
##  9    10115 Morgan    morga~ trophy        150        200      939 187800  46950
## 10    10118 Kivell    kivel~ eagle~        170        250      910 227500  72800
## # i 617 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

```
x<-FrancoPhone$PROFIT
sum(FrancoPhone$PROFIT)
```

```
## [1] 63198160
```

The francophone countries made a total profit of 63198160

Therefore, they both made a difference of 20808900 in profit, making the francophone countries the most profitable.

The Most Profitable Country of 2019

```
ib%>%
  filter(YEARS==2019)%>%
  arrange(desc(PROFIT))
```

```
## # A tibble: 313 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10411 Jones     jone.~ castl~        180        450      997 448650 269190
##  2    10810 Howard    howar~ castl~        180        450      997 448650 269190
##  3    11118 Jones     jone.~ castl~        180        450      968 435600 261360
##  4    10684 Jones     jone.~ castl~        180        450      947 426150 255690
##  5    10628 Thompson  thomp~ castl~        180        450      940 423000 253800
##  6    10971 Morgan    morga~ castl~        180        450      939 422550 253530
##  7    10355 Andrews   andy@~ castl~        180        450      931 418950 251370
##  8    10775 Kivell    kivel~ castl~        180        450      929 418050 250830
##  9    10782 Jardine   jard@~ castl~        180        450      927 417150 250290
## 10    10600 Jones     jone.~ castl~        180        450      925 416250 249750
## # i 303 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

The table above clearly shows Ghana and Senegal as the most profitable countries with profit of 269,190

4. Which year had the most profit?

```
ib%>%
  group_by(YEARS==2019)%>%
  summarise(sum(PROFIT))
```

```
## # A tibble: 2 x 2
##   `YEARS == 2019` `sum(PROFIT)`
##   <lgl>                   <dbl>
## 1 FALSE                75567170
## 2 TRUE                 30020250
```

```
ib%>%
  group_by(YEARS==2018)%>%
  summarise(sum(PROFIT))
```

```
## # A tibble: 2 x 2
##   `YEARS == 2018` `sum(PROFIT)`
##   <lgl>                   <dbl>
## 1 FALSE                68523570
## 2 TRUE                 37063850
```

```
ib%>%
  group_by(YEARS==2017)%>%
  summarise(sum(PROFIT))
```

```
## # A tibble: 2 x 2
##   `YEARS == 2017` `sum(PROFIT)`
##   <lgl>                   <dbl>
## 1 FALSE                67084100
## 2 TRUE                 38503320
```

According to the data above, in the year 2017 the profit was at 38503320 In 2018 the profit was at 37063850. In the year 2019 they made 30020250. Making 2017 there most profitable year in the last three (3) years.

5. The months with the least profit in the last three(3) years.

Filtering and analyzing the data with the inbuilt tool in the Rstudio, it was discovered that the least profit was recorded in December 2017 with a profit of 35000.

6. What was the minimum profit of December 2018

```
ib%>%
  filter(YEARS==2018 & MONTHS=="December")%>%
  arrange((PROFIT))
```

```
## # A tibble: 32 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    11120 Jones     jone.~ hero          150        200      763 152600  38150
##  2    10304 Jones     jone.~ trophy        150        200      764 152800  38200
##  3    10280 Morgan    morga~ hero          150        200      777 155400  38850
##  4    10604 Gill      gillh~ grand~         90        150      702 105300  42120
##  5    10784 Jardine   jard@~ hero          150        200      864 172800  43200
##  6    10436 Morgan    morga~ grand~         90        150      761 114150  45660
```

```
##  7    10688 Jones     jone.~ grand~         90        150      784 117600  47040
##  8    10196 Sorvino   sorvi~ hero          150        200      959 191800  47950
##  9    10388 Kivell    kivel~ trophy        150        200      962 192400  48100
## 10    11024 Howard    howar~ grand~         90        150      818 122700  49080
## # i 22 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

The minimum profit according to the data above is 38150.

7. Compare the profits for each month in 2019 in percentage

From our previous calculation we discovered that the total profit for the year 2019 is 30020250. Therefore, to get the percentage, we divide the total of each month in 2019 by the overall total all multiplied by 100. Mathematically; (total of months/Overall total)*100. Then tabulate the answer.

```
MONTHS_PERC <- tibble(
MONTHS=c("January","February","March","April","May","June","July","August","September","October","Novem
TOTAL_PROFIT=c(32613160,1366880,2530620,2851470,2573040,2669080,2945340,2982800,1892600,2220870,2675610
PERCENT=c(10.87,4.55,8.43,9.50,8.57,8.90,9.81,9.94,6.30,7.40,8.91,6.82),
)
MONTHS_PERC
```

```
## # A tibble: 12 x 3
##    MONTHS    TOTAL_PROFIT PERCENT
##    <chr>            <dbl>   <dbl>
##  1 January       32613160   10.9
##  2 February       1366880    4.55
##  3 March          2530620    8.43
##  4 April          2851470    9.5
##  5 May            2573040    8.57
##  6 June           2669080    8.9
##  7 July           2945340    9.81
##  8 August         2982800    9.94
##  9 September      1892600    6.3
## 10 October        2220870    7.4
## 11 November       2675610    8.91
## 12 December       2048780    6.82
```

Comparing there profit according to the data above, January recorded the highest profit with 10.87%

BRAND ANALYSIS

1. Top three (3) brands in the Francophone Countries

```
FrancoPhone%>%
  filter(YEARS!=2017)%>%
  arrange(desc(QUANTITY))
```

```
## # A tibble: 403 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
```

```
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10133 Kivell    kivel~ hero          150        200     1000 200000  50000
##  2    10899 Morgan    morga~ trophy        150        200     1000 200000  50000
##  3    10140 Jardine   jard@~ hero          150        200      999 199800  49950
##  4    10469 Thompson  thomp~ hero          150        200      999 199800  49950
##  5    10949 Thompson  thomp~ budwe~        250        500      999 499500 249750
##  6    10609 Jardine   jard@~ hero          150        200      998 199600  49900
##  7    10810 Howard    howar~ castl~        180        450      997 448650 269190
##  8    10119 Smith     smith~ hero          150        200      996 199200  49800
##  9    10470 Jones     jone.~ beta ~         80        150      996 149400  69720
## 10    11014 Parent    paren~ eagle~        170        250      996 249000  79680
## # i 393 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

According to the data above Hero, Trophy and Budweiser sold the highest, making them the top 3 brands in the region.

2. Top two choice of brands in Ghana

```
AngloPhone%>%
  filter(COUNTRIES=="Ghana")%>%
  arrange(desc(QUANTITY))
```

```
## # A tibble: 210 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10126 Andrews   andy@~ hero          150        200      999 199800  49950
##  2    10411 Jones     jone.~ castl~        180        450      997 448650 269190
##  3    10251 Sorvino   sorvi~ eagle~        170        250      995 248750  79600
##  4    10736 Jones     jone.~ beta ~         80        150      995 149250  69650
##  5    11096 Kivell    kivel~ budwe~        250        500      995 497500 248750
##  6    10486 Sorvino   sorvi~ trophy        150        200      992 198400  49600
##  7    10416 Morgan    morga~ trophy        150        200      991 198200  49550
##  8    10371 Jones     jone.~ hero          150        200      989 197800  49450
##  9    10506 Kivell    kivel~ grand~         90        150      982 147300  58920
## 10    11031 Sorvino   sorvi~ grand~         90        150      981 147150  58860
## # i 200 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

The top two choices of Ghana according to the data above is Hero and Casle lite.

3. Beer consumed by the Oil rich countries of West Africa

The oil rich countries of West Africa are Ghana and Nigeria and in the last three years they've been consuming 256492 volume of beer for the last three years.

```
beer<-AngloPhone%>%filter(BRANDS=="hero" | BRANDS=="trophy" | BRANDS=="castle lite" | BRANDS=="eagle lag
x<-beer$QUANTITY
sum(beer$QUANTITY)
```

```
## [1] 256492
```

```
beer
```

```
## # A tibble: 300 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10101 Jardine   jard@~ trophy        150        200      725 145000  36250
##  2    10102 Gill      gillh~ budwe~        250        500      815 407500 203750
##  3    10111 Parent    paren~ eagle~        170        250      861 215250  68880
##  4    10112 Jones     jone.~ hero          150        200      902 180400  45100
##  5    10116 Jones     jone.~ budwe~        250        500      709 354500 177250
##  6    10117 Parent    paren~ castl~        180        450      837 376650 225990
##  7    10122 Smith     smith~ trophy        150        200      860 172000  43000
##  8    10126 Andrews   andy@~ hero          150        200      999 199800  49950
##  9    10131 Jones     jone.~ castl~        180        450      794 357300 214380
## 10    10132 Morgan    morga~ eagle~        170        250      826 206500  66080
## # i 290 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

4. The malt choice of the Anglophone countries

```
AngloPhone%>%
  group_by(BRANDS)%>%
  summarise(sum(QUANTITY))
```

```
## # A tibble: 7 x 2
##   BRANDS      `sum(QUANTITY)`
##   <chr>                 <dbl>
## 1 beta malt             50789
## 2 budweiser             50572
## 3 castle lite           51487
## 4 eagle lager           51701
## 5 grand malt            50281
## 6 hero                  51465
## 7 trophy                51267
```

The data above shows Betamalt as the most preferred malt brand.

5. Highest sale in 2019

```
AngloPhone%>%
  group_by(YEARS==2019, BRANDS, COUNTRIES=="Nigeria")%>%
  summarise(sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'YEARS == 2019', 'BRANDS'. You can override
## using the `.groups` argument.
```

```
## # A tibble: 28 x 4
## # Groups:   YEARS == 2019, BRANDS [14]
```

```
##    `YEARS == 2019` BRANDS      `COUNTRIES == "Nigeria"` `sum(QUANTITY)`
##    <lgl>           <chr>       <lgl>                                <dbl>
##  1 FALSE           beta malt   FALSE                                15220
##  2 FALSE           beta malt   TRUE                                 16992
##  3 FALSE           budweiser   FALSE                                16306
##  4 FALSE           budweiser   TRUE                                 20663
##  5 FALSE           castle lite FALSE                                18170
##  6 FALSE           castle lite TRUE                                 22293
##  7 FALSE           eagle lager FALSE                                18077
##  8 FALSE           eagle lager TRUE                                 17471
##  9 FALSE           grand malt  FALSE                                14312
## 10 FALSE           grand malt  TRUE                                 16541
## # i 18 more rows
```

Castle lite had the highest sale of 22293 in Nigeria.

6. Favorite brand in the South_South Region of Nigeria.

```
AngloPhone%>%
  group_by(BRANDS, COUNTRIES=="Nigeria",REGION=="southsouth")%>%
  summarise(sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'BRANDS', 'COUNTRIES == "Nigeria"'. You can
## override using the `.groups` argument.
```

```
## # A tibble: 28 x 4
## # Groups:   BRANDS, COUNTRIES == "Nigeria" [14]
##    BRANDS      `COUNTRIES == "Nigeria"` `REGION == "southsouth"` `sum(QUANTITY)`
##    <chr>       <lgl>                    <lgl>                                <dbl>
##  1 beta malt   FALSE                    FALSE                                21151
##  2 beta malt   FALSE                    TRUE                                  4257
##  3 beta malt   TRUE                     FALSE                                21124
##  4 beta malt   TRUE                     TRUE                                  4257
##  5 budweiser   FALSE                    FALSE                                20549
##  6 budweiser   FALSE                    TRUE                                  3870
##  7 budweiser   TRUE                     FALSE                                21825
##  8 budweiser   TRUE                     TRUE                                  4328
##  9 castle lite FALSE                    FALSE                                21314
## 10 castle lite FALSE                    TRUE                                  4492
## # i 18 more rows
```

The favorite brand of South_South region is Eagle lager with a figure of 4552.

7. Beer Consumption in Nigeria

```
beer_n<-beer%>%filter(COUNTRIES=="Nigeria")
x<-beer_n$QUANTITY
sum(beer_n$QUANTITY)
```

```
## [1] 129260
```

```
beer_n
```

```
## # A tibble: 150 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10102 Gill      gillh~ budwe~        250        500      815 407500 203750
##  2    10112 Jones     jone.~ hero          150        200      902 180400  45100
##  3    10117 Parent    paren~ castl~        180        450      837 376650 225990
##  4    10122 Smith     smith~ trophy        150        200      860 172000  43000
##  5    10132 Morgan    morga~ eagle~        170        250      826 206500  66080
##  6    10137 Thompson  thomp~ budwe~        250        500      821 410500 205250
##  7    10147 Jardine   jard@~ hero          150        200      952 190400  47600
##  8    10152 Parent    paren~ castl~        180        450      878 395100 237060
##  9    10157 Jones     jone.~ trophy        150        200      920 184000  46000
## 10    10167 Andrews   andy@~ eagle~        170        250      769 192250  61520
## # i 140 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

The total consumption of beer in Nigeria according to the data above, stands at 129260.

8. Level of consumption of Budweiser in the regions in Nigeria.

```
beer_n%>%
  group_by(BRANDS=="budweiser",REGION)%>%
  summarise(level_of_consumption=sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'BRANDS == "budweiser"'. You can override
## using the `.groups` argument.
```

```
## # A tibble: 12 x 3
## # Groups:   BRANDS == "budweiser" [2]
##    `BRANDS == "budweiser"` REGION       level_of_consumption
##    <lgl>                   <chr>                       <dbl>
##  1 FALSE                   Southeast                   17673
##  2 FALSE                   northcentral                16799
##  3 FALSE                   northeast                   17550
##  4 FALSE                   northwest                   16720
##  5 FALSE                   southsouth                  17762
##  6 FALSE                   west                        16603
##  7 TRUE                    Southeast                    4113
##  8 TRUE                    northcentral                 4498
##  9 TRUE                    northeast                    4320
## 10 TRUE                    northwest                    4274
## 11 TRUE                    southsouth                   4328
## 12 TRUE                    west                         4620
```

The table above shows the consumption of budweiser in the regions in Nigeria. The value with the TRUE statement shows the real distinct values.

9. Level of consumption of Budweiser in the Regions in Nigeria in 2019.

```
beer_n%>%
  group_by(BRANDS=="budweiser",REGION, YEARS==2019)%>%
  summarise(sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'BRANDS == "budweiser"', 'REGION'. You can
## override using the `.groups` argument.
```

```
## # A tibble: 23 x 4
## # Groups:   BRANDS == "budweiser", REGION [12]
##    `BRANDS == "budweiser"` REGION       `YEARS == 2019` `sum(QUANTITY)`
##    <lgl>                   <chr>        <lgl>                     <dbl>
##  1 FALSE                   Southeast    FALSE                     13275
##  2 FALSE                   Southeast    TRUE                       4398
##  3 FALSE                   northcentral FALSE                     11751
##  4 FALSE                   northcentral TRUE                       5048
##  5 FALSE                   northeast    FALSE                     13492
##  6 FALSE                   northeast    TRUE                       4058
##  7 FALSE                   northwest    FALSE                     10820
##  8 FALSE                   northwest    TRUE                       5900
##  9 FALSE                   southsouth   FALSE                     12496
## 10 FALSE                   southsouth   TRUE                       5266
## # i 13 more rows
```

Due to the promo offered on Budweiser, the demand for it increased as seen on the table. The TRUE statement values are the real distinct values.

COUNTRIES ANALYSIS

1. Countries with highest consumption of beers.

```
beer_c<-ib%>%filter(BRANDS=="hero" | BRANDS=="trophy" | BRANDS=="castle lite" | BRANDS=="eagle lager" |
beer_c
```

```
## # A tibble: 749 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10101 Jardine   jard@~ trophy        150        200      725 145000  36250
##  2    10102 Gill      gillh~ budwe~        250        500      815 407500 203750
##  3    10103 Sorvino   sorvi~ castl~        180        450      937 421650 252990
##  4    10104 Jones     jone.~ eagle~        170        250      765 191250  61200
##  5    10105 Andrews   andy@~ hero          150        200      836 167200  41800
##  6    10108 Jones     jone.~ trophy        150        200      812 162400  40600
##  7    10109 Morgan    morga~ budwe~        250        500      700 350000 175000
##  8    10110 Howard    howar~ castl~        180        450      745 335250 201150
##  9    10111 Parent    paren~ eagle~        170        250      861 215250  68880
## 10    10112 Jones     jone.~ hero          150        200      902 180400  45100
## # i 739 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

```
beer_c%>%
  group_by(BRANDS,COUNTRIES)%>%
  summarise(Consumption=sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'BRANDS'. You can override using the
## `.groups` argument.
```

```
## # A tibble: 25 x 3
## # Groups:   BRANDS [5]
##    BRANDS      COUNTRIES Consumption
##    <chr>       <chr>           <dbl>
##  1 budweiser   Benin           25156
##  2 budweiser   Ghana           24419
##  3 budweiser   Nigeria         26153
##  4 budweiser   Senegal         25923
##  5 budweiser   Togo            24623
##  6 castle lite Benin           25639
##  7 castle lite Ghana           25806
##  8 castle lite Nigeria         25681
##  9 castle lite Senegal         25974
## 10 castle lite Togo            25074
## # i 15 more rows
```

```
beer_c%>%
  group_by(COUNTRIES)%>%
  summarise(Consumption=sum(QUANTITY))
```

```
## # A tibble: 5 x 2
##   COUNTRIES Consumption
##   <chr>           <dbl>
## 1 Benin          127455
## 2 Ghana          127232
## 3 Nigeria        129260
## 4 Senegal        129875
## 5 Togo           125548
```

The data above shows the consumptions of beer according to the countries. The first data shows shows the countries and the brands while the second shows the total amount of beer consumed by each countries.

##2. The best Sales Rep in Senegal.

```
FrancoPhone%>%
  group_by(SALES_REP,COUNTRIES=="Senegal")%>%
  summarise(sales=sum(QUANTITY))
```

```
## `summarise()` has grouped output by 'SALES_REP'. You can override using the
## `.groups` argument.
```

```
## # A tibble: 22 x 3
## # Groups:   SALES_REP [11]
##    SALES_REP `COUNTRIES == "Senegal"` sales
```

```
##    <chr>     <lgl>                    <dbl>
##  1 Andrews   FALSE                    35708
##  2 Andrews   TRUE                     18751
##  3 Gill      FALSE                    39663
##  4 Gill      TRUE                     20529
##  5 Howard    FALSE                    16656
##  6 Howard    TRUE                      8342
##  7 Jardine   FALSE                    46262
##  8 Jardine   TRUE                     23416
##  9 Jones     FALSE                    61956
## 10 Jones     TRUE                     30660
## # i 12 more rows
```

According to the table above Jones made the highest sale in Senegal.

3. Country with the highest profit in the fourth quarter.

```
fourth_q<-ib%>%filter(YEARS==2019, MONTHS=="October"|MONTHS=="November"|MONTHS=="December")
fourth_q
```

```
## # A tibble: 75 x 13
##    SALES_ID SALES_REP EMAILS BRANDS PLANT_COST UNIT_PRICE QUANTITY   COST PROFIT
##       <dbl> <chr>     <chr>  <chr>       <dbl>      <dbl>    <dbl>  <dbl>  <dbl>
##  1    10112 Jones     jone.~ hero          150        200      902 180400  45100
##  2    10182 Andrews   andy@~ hero          150        200      773 154600  38650
##  3    10195 Gill      gillh~ eagle~        170        250      910 227500  72800
##  4    10207 Jones     jone.~ budwe~        250        500      990 495000 247500
##  5    10219 Jones     jone.~ grand~         90        150      710 106500  42600
##  6    10220 Smith     smith~ trophy        150        200      917 183400  45850
##  7    10231 Sorvino   sorvi~ hero          150        200      901 180200  45050
##  8    10232 Jardine   jard@~ beta ~         80        150      934 140100  65380
##  9    10254 Jardine   jard@~ grand~         90        150      780 117000  46800
## 10    10255 Thompson  thomp~ trophy        150        200      729 145800  36450
## # i 65 more rows
## # i 4 more variables: COUNTRIES <chr>, REGION <chr>, MONTHS <chr>, YEARS <dbl>
```

```
fourth_q%>%
  group_by(COUNTRIES,MONTHS)%>%
  summarise(Profit_q=sum(PROFIT))
```

```
## `summarise()` has grouped output by 'COUNTRIES'. You can override using the
## `.groups` argument.
```

```
## # A tibble: 15 x 3
## # Groups:   COUNTRIES [5]
##    COUNTRIES MONTHS   Profit_q
##    <chr>     <chr>       <dbl>
##  1 Benin     December   239490
##  2 Benin     November   242580
##  3 Benin     October    627060
```

```
##  4 Ghana     December   641550
##  5 Ghana     November  1040820
##  6 Ghana     October    362860
##  7 Nigeria   December   314100
##  8 Nigeria   November   457730
##  9 Nigeria   October    611450
## 10 Senegal   December   294660
## 11 Senegal   November   481840
## 12 Senegal   October    182760
## 13 Togo      December   558980
## 14 Togo      November   452640
## 15 Togo      October    436740
```

```
fourth_q%>%
  group_by(COUNTRIES)%>%
  summarise(sum(PROFIT))
```

```
## # A tibble: 5 x 2
##   COUNTRIES `sum(PROFIT)`
##   <chr>             <dbl>
## 1 Benin           1109130
## 2 Ghana           2045230
## 3 Nigeria         1383280
## 4 Senegal          959260
## 5 Togo            1448360
```

According to the data above, Ghana has the highest profit in the fourth quarter of 2019 which is from october to december 2019.

SUMMARY

The International Breweries data set contained data from five(5) African Countries (2 Anglophone countries; Nigeria and Ghana and 3 Francophone countries; Benin, Senegal and Togo). The data contained all the records of their sales for the period three (3) years (2017-2019). The sales manager hopes to use the analyses of this data to increase profit and reduce lost to minimum. From the analysis, one can see that certain product dropped in profit over the years, this could be caused by diverse circumstances like economy, weather or the quality of the product. Regions in a country and the country itself also affect the sales and profit over the years.

CONCLUSION

With this analysis, the sales manager can now make effective business decisions that can drive the company further and away from possible losses. Adequate stakeholders will be engaged and tasked to bring these plans to fruition.