

Olist a Brazilian e-commerce

IUT

Table of Contents

Principal Dataset.....	2
Other Datasets	3
Customers dataset	3
Geolocation dataset.....	4
Items dataset	4
Payments dataset	5
Products dataset	6
Reviews dataset	7
Sellers dataset.....	8
Statistiques Descriptives	9
Graphiques des valeurs manquantes.....	17
Jointure des tables	22
Création d'indicateurs pertinents	22
Représentation graphique des indicateurs.....	22

```
library(dplyr)

##
## Attachement du package : 'dplyr'

## Les objets suivants sont masqués depuis 'package:stats':
##
##     filter, lag

## Les objets suivants sont masqués depuis 'package:base':
##
##     intersect, setdiff, setequal, union

library(ggplot2)

## Warning: le package 'ggplot2' a été compilé avec la version R 4.3.3

library(lubridate)

## Warning: le package 'lubridate' a été compilé avec la version R 4.3.3
```

```

## 
## Attachement du package : 'lubridate'

## Les objets suivants sont masqués depuis 'package:base':
## 
##     date, intersect, setdiff, union

library(knitr)
library(gridExtra)

## Warning: le package 'gridExtra' a été compilé avec la version R 4.3.3

## 
## Attachement du package : 'gridExtra'

## L'objet suivant est masqué depuis 'package:dplyr':
## 
##     combine

library(lattice)
library(caret)

## Warning: le package 'caret' a été compilé avec la version R 4.3.3

library(kableExtra)

## Warning: le package 'kableExtra' a été compilé avec la version R 4.3.3

## 
## Attachement du package : 'kableExtra'

## L'objet suivant est masqué depuis 'package:dplyr':
## 
##     group_rows

Customers = read.csv("data/olist_customers_dataset.csv", header = TRUE)
Geolocation = read.csv("data/olist_geolocation_dataset.csv", header = TRUE)
Items = read.csv("data/olist_order_items_dataset.csv", header = TRUE)
Payments = read.csv("data/olist_order_payments_dataset.csv", header = TRUE)
Reviews = read.csv("data/olist_order_reviews_dataset.csv", header = TRUE)
Orders = read.csv("data/olist_orders_dataset.csv", header = TRUE)
Products = read.csv("data/olist_products_dataset.csv", header = TRUE)
Sellers = read.csv("data/olist_sellers_dataset.csv", header = TRUE)
Pdttrans = read.csv("data/product_category_name_translation.csv", header =
TRUE)

```

Principal Dataset

Orders dataset

- Order ID
- Customer ID
- Order Status

- Order Purchase Timestamp
- Order Approved at
- Order Delivered Carrier date
- Order Delivered Customer date
- Order Estimated delivered date

Orders dataset

order_id	customer_id	ord er_ sta tus	order_p urchape_ stima mp	order_ appro ved_at	order_deli vered_car rier_date	order_deli vered_cust omer_date	order_esti mated_deli very_date
e481f51cbd	9ef432eb62	del	2017- 10-02	2017- 10-02	2017-10- 04	2017-10- 10	2017-10- 18
c54678b7cc	51297304e	ive	10:56:3	11:07:	19:55:00	21:25:13	00:00:00
f7	76186b10a	red	3	15			
53cdb2fc8b	b0830fb474	del	2018- 07-24	2018- 07-26	2018-07- 26	2018-08- 07	2018-08- 13
c7dce0b674	7a6c6d20de	ive	20:41:3	03:24:	14:31:00	15:27:45	00:00:00
1e2150273	a0b8c802d	red	7	27			
451	7ef						
47770eb91	41ce2a54c0	del	2018- 08-08	2018- 08-08	2018-08- 08	2018-08- 17	2018-09- 04
00c2d0c449	b03bf3443c	ive	08:38:4	08:55:	13:50:00	18:06:29	00:00:00
46d9cf07ec	3d931a367	red	9	23			
65d	089						
949d5b44d	f88197465e	del	2017- 11-18	2017- 11-18	2017-11- 22	2017-12- 02	2017-12- 15
bf5de918fe	a7920adcdb	ive	19:28:0	19:45:	13:39:59	00:28:42	00:00:00
9c16f97b45	ec7375364	red	6	59			
f8a	d82						
ad21c59c08	8ab97904e	del	2018- 02-13	2018- 02-13	2018-02- 14	2018-02- 16	2018-02- 26
40e6cb83a9	6daea8866	ive	21:18:3	22:20:	19:46:34	18:17:02	00:00:00
ceb5573f81	dbdbc4fb7a	red	9	29			
59	ad2c						
a4591c265e	503740e9ca	del	2017- 07-09	2017- 07-09	2017-07- 11	2017-07- 26	2017-08- 01
18cb1dcee5	751ccdda7b	ive	21:57:0	22:10:	14:58:04	10:57:55	00:00:00
2889e2d8ac	a28e9ab8f6	red	5	13			
c3	08						

Other Datasets

Customers dataset

- Customer ID
- Customer Unique ID
- Customer Zip Code prefix
- Customer City
- Customer State

Customers dataset

customer_id	customer_unique_id	customer_zip_code_prefix	customer_city	customer_state
06b8999e2fba1a1fbc	861eff4711a542e4b9	14409	franca	SP
88172c00ba8bc7	3843c6dd7febb0			
18955e83d337fd6b2	290c77bc529b7ac93	9790	sao bernardo	SP
def6b18a428ac77	5b93aa66c333dc3		do campo	
4e7b3e00288586ebd	060e732b5b29e8181	1151	sao paulo	SP
08712fdd0374a03	a18229c7b0b2b5e			
b2b6027bc5c5109e5	259dac757896d24d7	8775	mogi das	SP
29d4dc6358b12c3	702b9acbbff3f3c		cruzes	
4f2d8ab171c80ec836	345ecd01c38d18a90	13056	campinas	SP
4f7c12e35b23ad	36ed96c73b8d066			
879864dab9bc30475	4c93744516667ad3b	89254	jaragua do sul	SC
22c92c82e1212b8	8f1fb645a3116a4			

Geolocation dataset

- Geolocation Zip Code prefix
- Geolocation Lat.
- Geolocation Lng.
- Geolocation City
- Geolocation State

Geolocation dataset

geolocation_zip_code_prefix	geolocation_lat	geolocation_lng	geolocation_city	geolocation_state
1037	-23.54562	-46.63929	sao paulo	SP
1046	-23.54608	-46.64482	sao paulo	SP
1046	-23.54613	-46.64295	sao paulo	SP
1041	-23.54439	-46.63950	sao paulo	SP
1035	-23.54158	-46.64161	sao paulo	SP
1012	-23.54776	-46.63536	são paulo	SP

Items dataset

- Order ID
- Order Item ID
- Seller ID
- Shipping limit date
- Price
- Freight Value

Items dataset

order_id	order_item_id	product_id	seller_id	shipping_limit_date	price	freight_value
00010242fe8c5a6d1ba2dd792cb16214	1	4244733e06e7ecb4970a6e2683c13e61	48436dade18ac8b2bce089ec2a041202	2017-09-1909:45:35	5.890	13.29
00018f77f2f0320c557190d7a144bdd3	1	e5f2d52b802189ee658865ca93d83a8f	dd7ddc04e1b6c2c614352b383efe2d36	2017-05-0311:05:13	2.399.0	19.93
000229ec398224ef6ca0657da4fc703e	1	c777355d18b72b67abbeef9df44fd0fd	5b51032eddd242adc84c38acab88f23d	2018-01-1814:48:30	1.990.0	17.87
00024acbcdf0a6daa1e931b038114c75	1	7634da152a4610f1595efa32f14722fc	9d7a1d34a5052409006425275ba1c2b4	2018-08-1510:10:18	1.2.99.0	12.79
00042b26cf59d7ce69dfabb4e55b4fd9	1	ac6c3623068f30de03045865e4e10089	df560393f3a51e74553ab94004ba5c87	2017-02-1313:57:51	1.990.0	18.14
00048cc3ae777c65dbb7d2a0634bc1ea	1	ef92defde845ab8450f9d70c526ef70f	6426d21aca402a131fc0a5d0960a3c90	2017-05-2303:55:27	2.1.90.0	12.69

Payments dataset

- Order ID
- Payment Sequential
- Payment Type
- Payment Installments
- Payment Value

Payments dataset

order_id	payment_sequence	payment_type	payment_installments	payment_value
----------	------------------	--------------	----------------------	---------------

order_id	payment_sequential	payment_type	payment_installments	payment_value
b81ef226f3fe1789b1e8b2acac839d17	1	credit_card	8	99.33
a9810da82917af2d9aefd1278f1dcfa0	1	credit_card	1	24.39
25e8ea4e93396b6fa0d3dd708e76c1bd	1	credit_card	1	65.71
ba78997921bbcdc1373bb41e913ab953	1	credit_card	8	107.78
42fdf880ba16b47b59251dd489d4441a	1	credit_card	2	128.45
298fcdf1f73eb413e4d26d01b25bc1cd	1	credit_card	2	96.12

Products dataset

- Product ID
- Product Category name
- Product Name length
- Product Photos (quantity)
- Product Weight (grams)
- Product Length (cm)
- Product Height (cm)
- Product Width (cm)

Products dataset

product_id	product_category_name	product_length	product_description_length	product_photos_qty	product_weight_g	product_length_cm	product_height_cm	product_width_cm
1e9e8ef04dbcff4541ed26657ea517e5	perfumeria	40	287	1	225	16	10	14
3aa071139cb16b67ca9e5dea641aaa2f	artes	44	276	1	1000	30	18	20
96bd76ec8810374ed1b65e291975717f	esporte_lazer	46	250	1	154	18	9	15
cef67bcfe19066a932b7673e239eb23d	bebés	27	261	1	371	26	4	26

product_id	product_name	product_length	product_description_length	product_photos_qty	product_weight_g	product_length_cm	product_height_cm	product_width_cm
9dc1a7de274	utilidad	37	402	4	625	20	17	13
444849c219c	es_dome							
ff195d0b71	sticas							
41d3672d47	instrum	60	745	1	200	38	5	11
92049fa1779	entos_m							
bb35283ed13	usicais							

Reviews dataset

- Review ID
- Order ID
- Review Score
- Review Comment title
- Review Comment message
- Review Creation date
- Review Answer timestamp

Reviews dataset

review_id	order_id	reviewer_id	reviewer_name	review_text	review_score	review_time	review_answer_timestamp
7bc24061	73fc7af87	4				2018-01-18	2018-01-18
10b92639	114b3971					18	21:46:59
3aa56f80	2e6da79b					00:00	:00
a40eba40	0a377eb						
80e641a1	a548910a	5				2018-03-10	2018-03-11
1e56f04c	1c614779					10	03:05:13
1ad469d5	6b98fdf73					00:00	:00
645fdfde	dbeba33						
228ce550	f9e4b658	5				2018-02-17	2018-02-18
0dc1d8e0	b201a9f2					17	14:36:24
20d8d132	ecdecbb3					00:00	:00
2874b6f0	4bed034b						

review_id	order_id	reviewer_id	reviewer_name	review_text	review_score	review_time	reviewer_location	reviewer_creation_date	reviewer_answer_timestamp
e64fb393	658677c9	5		Recebi bem antes do prazo estipulado.	5	2017-04-21T22:00:00	2017-04-21T22:02:06	2017-04-21	2017-04-21T22:06:00
e7b32834	7b385a9b								
bb789ff8b	e1707378								
b30750e	59d3511b								
f7c4243c	8e6fb81	5		Parabéns lojas lannister adorei comprar pela Internet seguro e prático Parabéns a todos feliz Páscoa	5	2018-03-01T10:26:00	2018-03-01T10:26:53	2018-03-01	2018-03-01T10:26:53
7fe1938f1	e283fa7e								
81bec41a	4f11123a								
392bdeb	3fb894f1								
15197aa6	b18dcdf7	1							
6ff4d065	3be66366								
0b5434f1	873cd26c								
b46cda19	5724d1dc								

Sellers dataset

- Seller ID
- Seller Zip Code prefix
- Seller City
- Seller State

Sellers dataset

seller_id	seller_zip_code_prefix	seller_city	seller_state
3442f8959a84dea7ee197c632cb2df15	13023	campinas	SP
d1b65fc7debc3361ea86b5f14c68d2e2	13844	mogi guacu	SP
ce3ad9de960102d0677a81f5d0bb7b2d	20031	rio de janeiro	RJ
c0f3eea2e14555b6faeea3dd58c1b1c3	4195	sao paulo	SP
51a04a8a6bdcb23deccc82b0b80742cf	12914	braganca paulista	SP
c240c4061717ac1806ae6ee72be3533b	20920	rio de janeiro	RJ

Statistiques Descriptives

```
## df1
##
##   3 Variables      99441 Observations
## -----
##
## -----
## customer_zip_code_prefix
##       n    missing  distinct      Info      Mean      Gmd      .05      .10
##   99441        0    14994         1    35137    32672    3315    4686
##   .25        .50    .75        .90      .95
##   11347    24416    58900     86755    90550
##
## lowest :  1003  1004  1005  1006  1007, highest: 99960 99965 99970 99980
## 99990
## -----
## -----
## customer_city
##       n    missing  distinct
##   99441        0    4119
##
## lowest : abadia dos dourados abadiania          abaete
## abaetetuba      abaiara
## highest: xinguara      xique-xique      zacarias      ze
## doca           zortea
## -----
## -----
## customer_state
##       n    missing  distinct
##   99441        0      27
##
## lowest : AC AL AM AP BA, highest: RS SC SE SP TO
## -----
## -----
## df2
##
##   3 Variables      112650 Observations
## -----
##
## -----
## shipping_limit_date
##       n    missing  distinct
##  112650        0    93318
##
## lowest : 2016-09-19 00:15:34 2016-09-19 23:11:33 2016-10-08 10:34:01 2016-
## 10-08 10:45:33 2016-10-08 13:26:12
## highest: 2018-09-14 12:30:56 2018-09-18 21:10:15 2020-02-03 20:23:22 2020-
## 02-05 03:30:51 2020-04-09 22:35:08
## -----
## -----
## price
```

```

##      n  missing distinct      Info      Mean      Gmd      .05      .10
## 112650      0    5968       1    120.7    124.6    17.00    23.80
##   .25      .50      .75      .90      .95
##   39.90    74.99   134.90    229.80   349.90
##
## lowest : 0.85 1.2 2.2 2.29 2.9 , highest: 4690 4799 6499 6729 6735
## -----
-----
## freight_value
##      n  missing distinct      Info      Mean      Gmd      .05      .10
## 112650      0    6999       1    19.99    12.32    7.78     8.73
##   .25      .50      .75      .90      .95
##   13.08    16.26   21.15    34.04   45.12
##
## lowest : 0      0.01  0.02  0.03  0.04 , highest: 322.1 338.3 339.59
375.28 409.68
## -----
-----
## df3
##
## 6 Variables 99441 Observations
## -----
##
## order_status
##      n  missing distinct
## 99441      0      8
##
## Value      approved      canceled      created      delivered      invoiced
## Frequency      2          625          5        96478        314
## Proportion      0.000      0.006      0.000      0.970      0.003
##
## Value      processing      shipped      unavailable
## Frequency      301         1107         609
## Proportion      0.003      0.011      0.006
## -----
##
## order_purchase_timestamp
##      n  missing distinct
## 99441      0    98875
##
## lowest : 2016-09-04 21:15:19 2016-09-05 00:15:34 2016-09-13 15:24:19 2016-
09-15 12:16:38 2016-10-02 22:07:52
## highest: 2018-09-29 09:13:03 2018-10-01 15:30:09 2018-10-03 18:55:29 2018-
10-16 20:16:02 2018-10-17 17:30:18
## -----
##
## order_approved_at
##      n  missing distinct
## 99281      160    90733

```

```

## 
## lowest : 2016-09-15 12:16:38 2016-10-04 09:43:32 2016-10-04 10:18:57 2016-
## 10-04 10:19:23 2016-10-04 10:25:46
## highest: 2018-08-29 14:30:23 2018-08-29 14:31:07 2018-08-29 15:05:22 2018-
## 08-29 15:10:26 2018-09-03 17:40:06
## -----
-----

## order_delivered_carrier_date
##      n    missing   distinct
##    97658     1783     81018
##
## lowest : 2016-10-08 10:34:01 2016-10-08 13:46:32 2016-10-08 14:46:49 2016-
## 10-09 02:45:17 2016-10-09 03:45:42
## highest: 2018-08-31 15:09:00 2018-08-31 15:25:00 2018-09-03 12:56:00 2018-
## 09-04 15:25:00 2018-09-11 19:48:28
## -----
-----

## order_delivered_customer_date
##      n    missing   distinct
##    96476     2965     95664
##
## lowest : 2016-10-11 13:46:32 2016-10-11 14:46:49 2016-10-13 03:10:34 2016-
## 10-13 07:45:48 2016-10-13 15:44:27
## highest: 2018-09-25 00:47:25 2018-09-27 02:24:33 2018-10-02 00:18:50 2018-
## 10-11 16:41:14 2018-10-17 13:22:46
## -----
-----

## order_estimated_delivery_date
##      n    missing   distinct
##    99441       0       459
##
## lowest : 2016-09-30 00:00:00 2016-10-04 00:00:00 2016-10-20 00:00:00 2016-
## 10-24 00:00:00 2016-10-25 00:00:00
## highest: 2018-10-17 00:00:00 2018-10-23 00:00:00 2018-10-25 00:00:00 2018-
## 10-30 00:00:00 2018-11-12 00:00:00
## -----
-----

## df4
## 
## 4 Variables      103886 Observations
## -----
-----

## payment_sequential
##      n    missing   distinct      Info      Mean      Gmd      .05      .10
##    103886       0       29     0.125     1.093    0.1808       1         1
##      .25       .50       .75       .90       .95
##      1         1         1         1         1
##
## lowest : 1 2 3 4 5, highest: 25 26 27 28 29

```

```

## -----
## payment_type
##   n missing distinct
##   103886      0      5
##
## Value          boleto credit_card debit_card not_defined      voucher
## Frequency     19784      76795      1529            3      5775
## Proportion    0.190      0.739      0.015        0.000      0.056
## -----
## payment_installments
##   n missing distinct      Info      Mean      Gmd      .05      .10
##   103886      0      24      0.867      2.853      2.593      1      1
##   .25      .50      .75      .90      .95
##   1       1       4       8       10
##
## lowest :  0  1  2  3  4, highest: 20 21 22 23 24
## -----
## payment_value
##   n missing distinct      Info      Mean      Gmd      .05      .10
##   103886      0    29077      1    154.1    151.5    26.11    35.00
##   .25      .50      .75      .90      .95
##   56.79    100.00    171.84    297.27    437.63
##
## lowest : 0      0.01      0.03      0.05      0.07
## highest: 6726.66 6922.21 6929.31 7274.88 13664.1
## -----
## df5
##
## 8 Variables      32951 Observations
## -----
## product_category_name
##   n missing distinct
##   32341      610      73
##
## lowest : agro_industria_e_comercio alimentos
##           alimentos_bebidas      artes                  artes_e_artesanato
## highest: sinalizacao_e_seguranca tablets_impressao_imagem  telefonia
##           telefonia_fixa      utilidades_domesticas
## -----
## product_name_lenght
##   n missing distinct      Info      Mean      Gmd      .05      .10
##   32341      610      66      0.998      48.48      11.27      29      33
##   .25      .50      .75      .90      .95

```

```

##      42      51      57      59      60
##
## lowest :  5  6  7  8  9, highest: 67 68 69 72 76
## -----
##
## product_description_lenght
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32341     610     2960          1    771.5    631.4    150    207
##   .25     .50     .75     .90     .95
##   339     595     972        1578    2063
##
## lowest :  4     8    15    20    23, highest: 3963 3976 3985 3988 3992
## -----
##
## product_photos_qty
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32341     610      19     0.858    2.189    1.63      1      1
##   .25     .50     .75     .90     .95
##   1       1       3          5       6
##
## Value      1      2      3      4      5      6      7      8      9      10
11
## Frequency 16489   6263   3860   2428   1484    968    343   192   105    95
46
## Proportion 0.510 0.194 0.119 0.075 0.046 0.030 0.011 0.006 0.003 0.003
0.001
##
## Value      12     13     14     15     17     18     19     20
## Frequency 35      9      5      8      7      2      1      1
## Proportion 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.000
##
## For the frequency table, variable is rounded to the nearest 0
## -----
##
## product_weight_g
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32949      2     2204     0.999    2276    3171    105    175
##   .25     .50     .75     .90     .95
##   300     700    1900        6300   10850
##
## lowest :  0     2     25     50     53, highest: 29700 29750 29800 30000
40425
## -----
##
## product_length_cm
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32949      2      99     0.994    30.82   17.06     16      16
##   .25     .50     .75     .90     .95
##   18     25      38        53      65
##

```

```

## lowest : 7 8 9 10 11, highest: 101 102 103 104 105
## -----
-----
## product_height_cm
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32949      2      102      0.998     16.94     13.46      3       4
##   .25      .50      .75      .90      .95
##    8      13      21      33      44
##
## lowest : 2 3 4 5 6, highest: 100 102 103 104 105
## -----
-----
## product_width_cm
##      n missing distinct      Info      Mean      Gmd      .05      .10
## 32949      2      95      0.996     23.2      12.46     11      11
##   .25      .50      .75      .90      .95
##   15      20      30      40      47
##
## lowest : 6 7 8 9 10, highest: 102 103 104 105 118
## -----
-----
## df6
##
## 5 Variables      99224 Observations
## -----
-----
## review_score
##      n missing distinct      Info      Mean      Gmd
## 99224      0      5      0.798     4.086     1.296
##
## Value      1      2      3      4      5
## Frequency 11424  3151  8179 19142 57328
## Proportion 0.115  0.032  0.082 0.193 0.578
##
## For the frequency table, variable is rounded to the nearest 0
## -----
-----
## review_comment_title
##      n missing distinct
## 11566    87658    4526
##
## lowest : -          - Luminária de Mesa pelic 10
## 4          5 estrelas
## highest: 
##     
## 
##     
## -----
##
## review_comment_message
##      n missing distinct

```

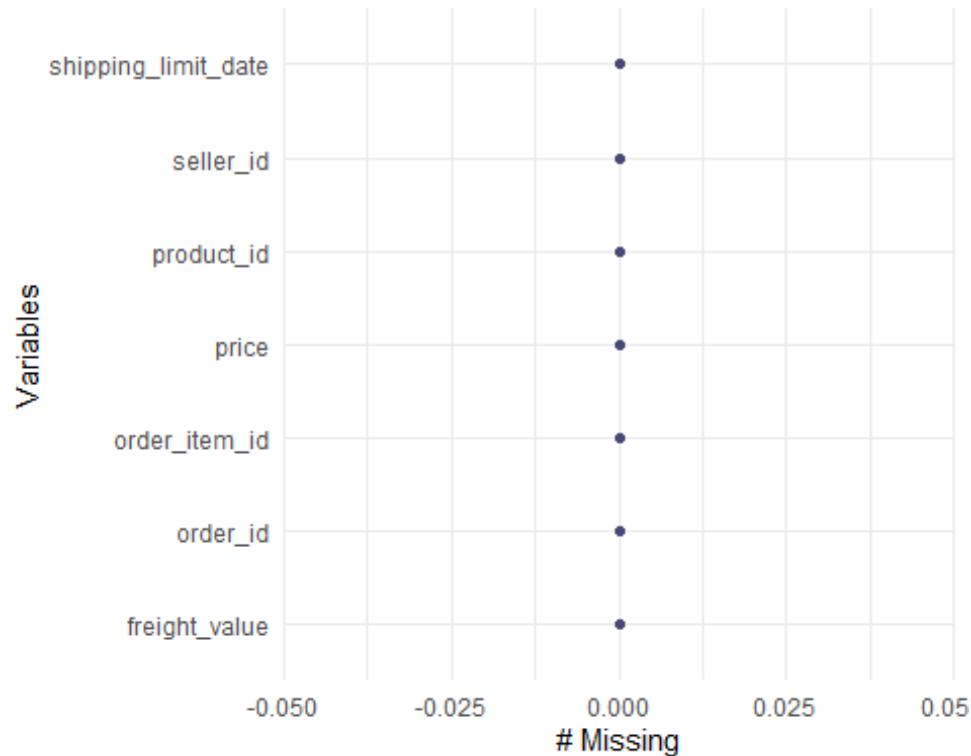
```

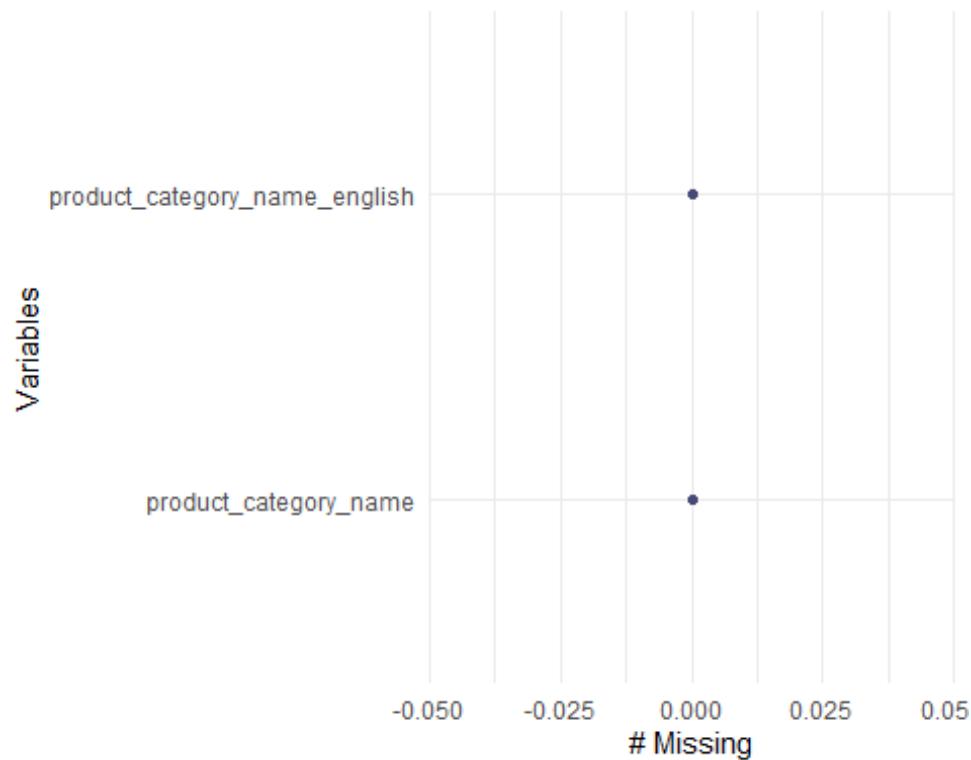
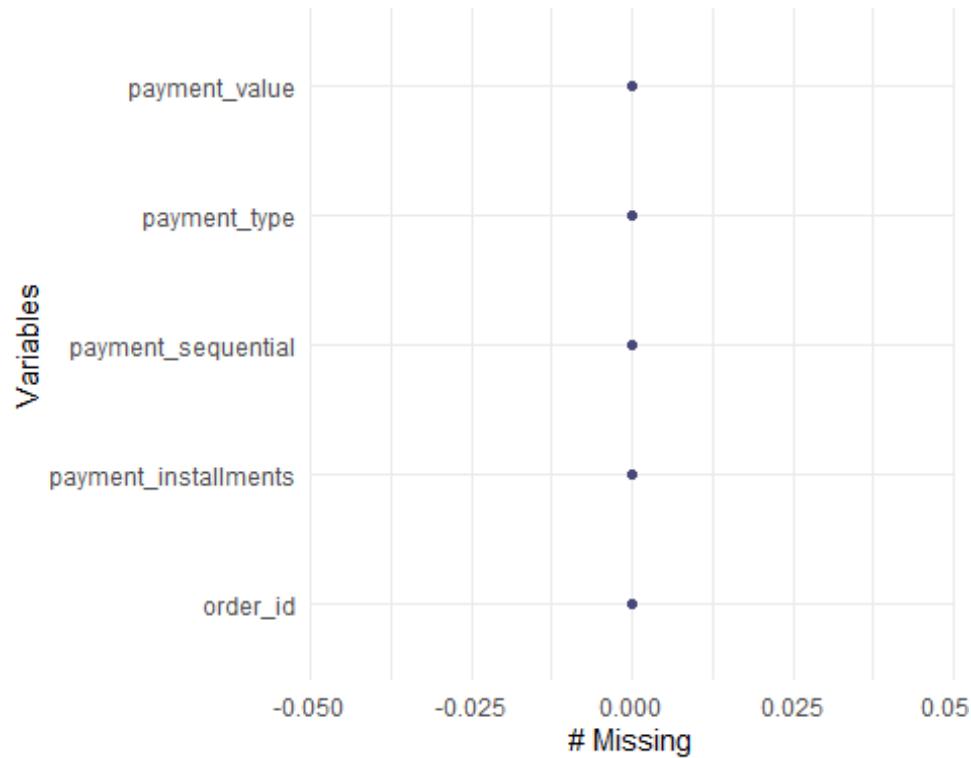
##      40968    58256    36158
##
## lowest : 'entrega feita dentro do prazo
'produto bom, só chegou com atraso.
-
- a compra foi efetuada em 30/01
## - a emissão da nota fiscal emitida em 05/02
## - até 16/03 ainda não recebemos a mercadoria
## - que avaliação deveríamos dar a isto?
## - desonestos? ineficientes? etc, et - Estou testando.
## highest: 😊 ótimo 👍
😊 😊 😊 😊 😊
😊 😊 😊 😊 😊 😊
🎉 🎉 🎉 🎉 🎉 🎉 amei e chegou até antes do esperado
😡 😡 😡 😡 😡 😡 😡 😡 😡
## Empresa sem compromisso com o cliente
## -----
-----
## review_creation_date
##      n  missing  distinct
##    99224        0       636
##
## lowest : 2016-10-02 00:00:00 2016-10-06 00:00:00 2016-10-09 00:00:00 2016-
10-15 00:00:00 2016-10-16 01:00:00
## highest: 2018-08-27 00:00:00 2018-08-28 00:00:00 2018-08-29 00:00:00 2018-
08-30 00:00:00 2018-08-31 00:00:00
## -----
-----
## review_answer_timestamp
##      n  missing  distinct
##    99224        0     98248
##
## lowest : 2016-10-07 18:32:28 2016-10-11 14:31:29 2016-10-16 03:20:17 2016-
10-16 15:45:11 2016-10-17 21:02:49
## highest: 2018-10-24 16:27:36 2018-10-24 18:26:25 2018-10-24 21:34:38 2018-
10-26 21:36:41 2018-10-29 12:27:35
## -----
-----
## df7
##
## 3 Variables    3095 Observations
## -----
##
## seller_zip_code_prefix
##      n  missing  distinct      Info      Mean      Gmd      .05      .10
##    3095        0     2246        1    32291    34091    2464    3470
##    .25        .50     .75        .90      .95
##    7094    14940    64553    88088    89290
##
```

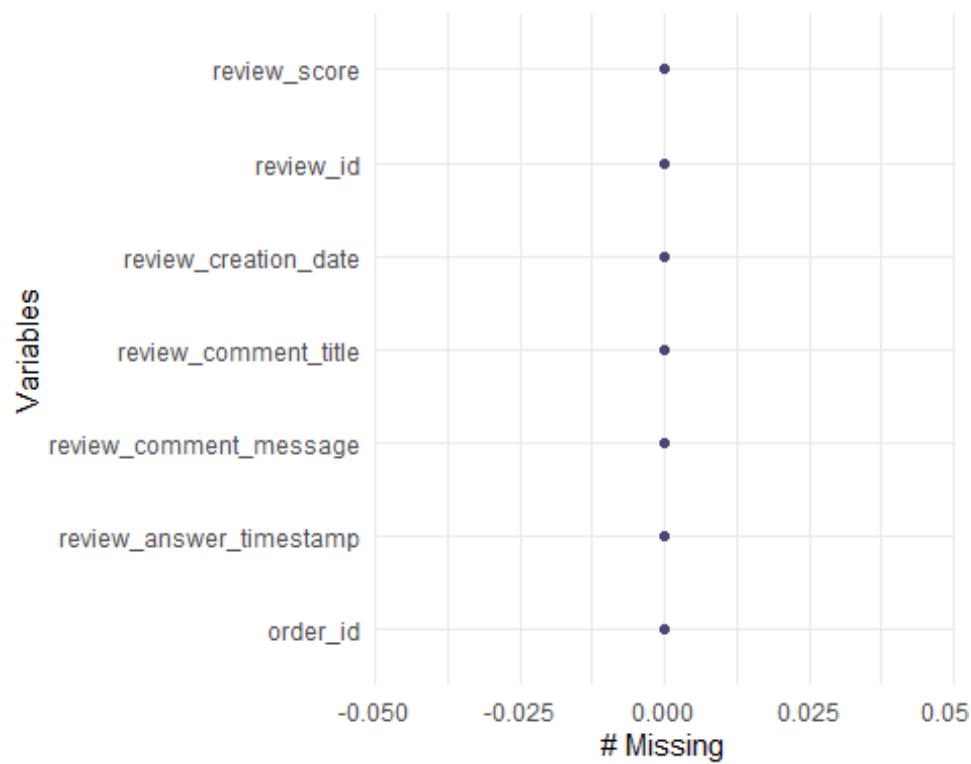
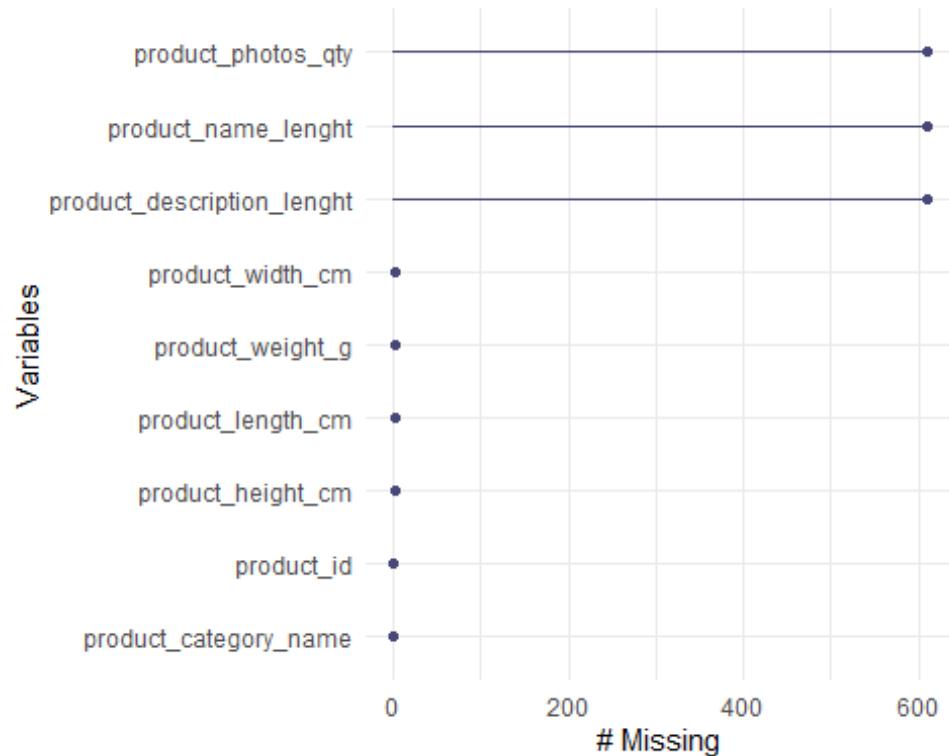
```
## lowest : 1001 1021 1022 1023 1026, highest: 99300 99500 99670 99700  
99730  
## -----  
----  
## seller_city  
##      n  missing distinct  
##    3095       0     611  
##  
## lowest : 04482255      abadia de goias afonso claudio aguas claras df  
alambari  
## highest: volta redonda   votorantim   votuporanga   xanxere  
xaxim  
## -----  
----  
## seller_state  
##      n  missing distinct  
##    3095       0      23  
##  
## lowest : AC AM BA CE DF, highest: RO RS SC SE SP  
## -----  
----
```

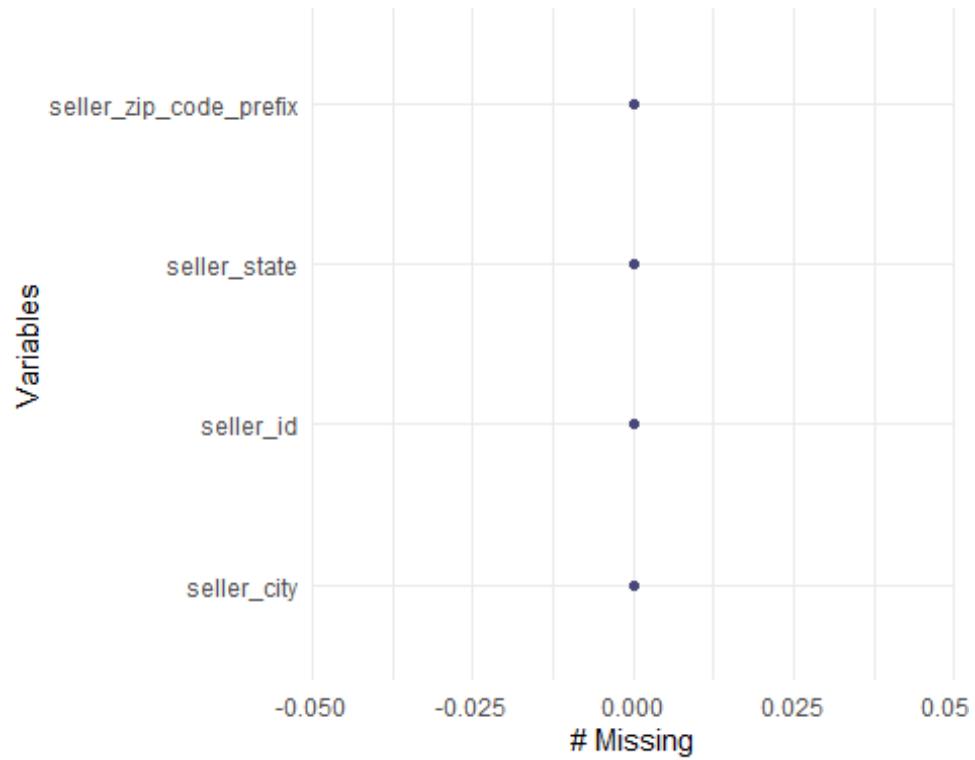
Graphiques des valeurs manquantes









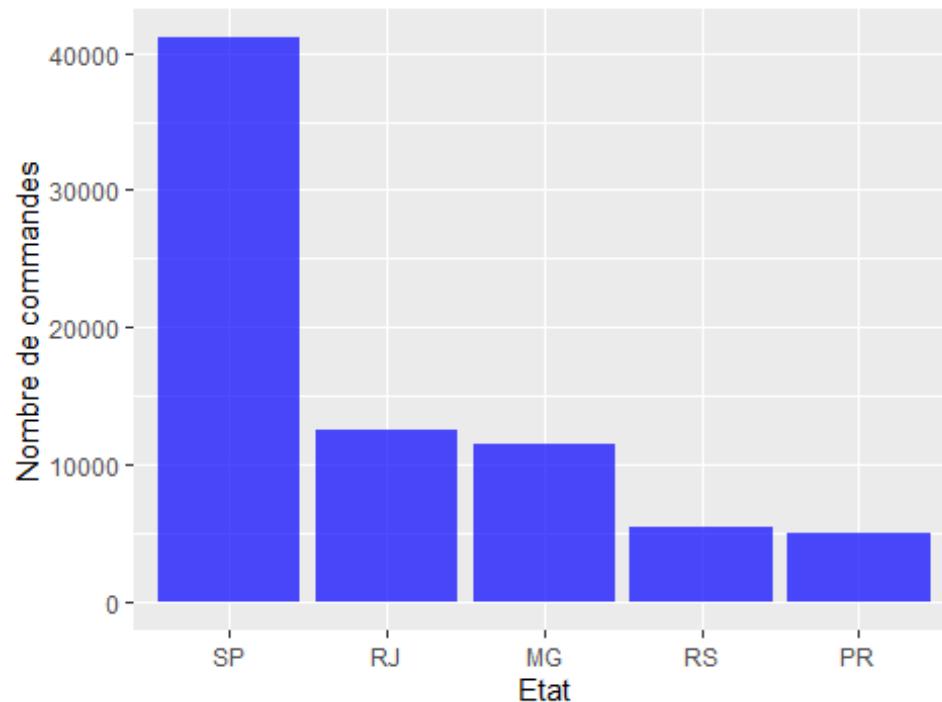


Jointure des tables

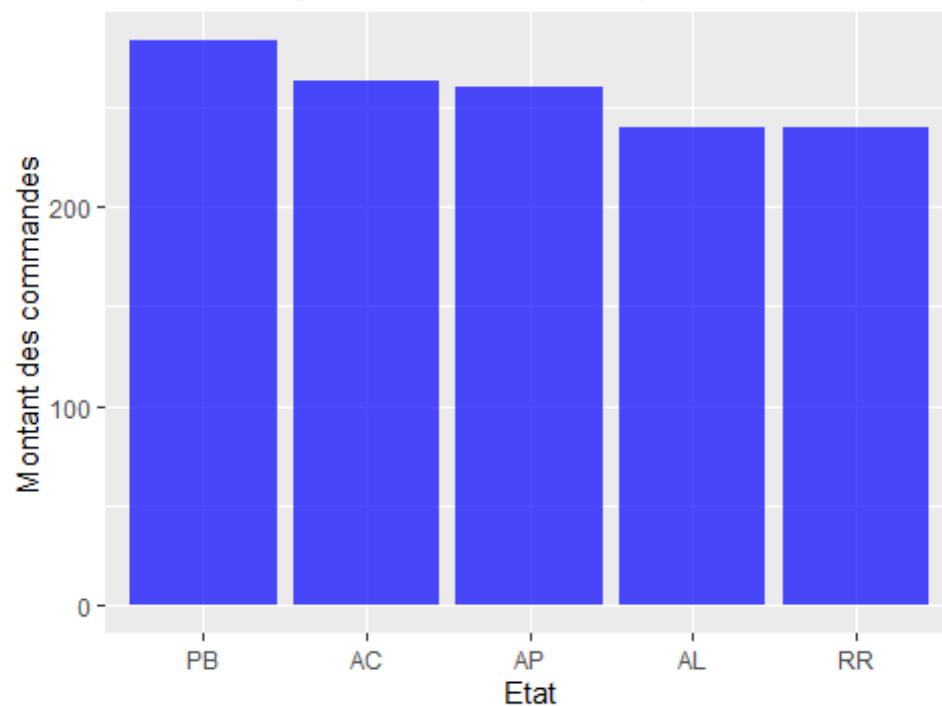
Création d'indicateurs pertinents

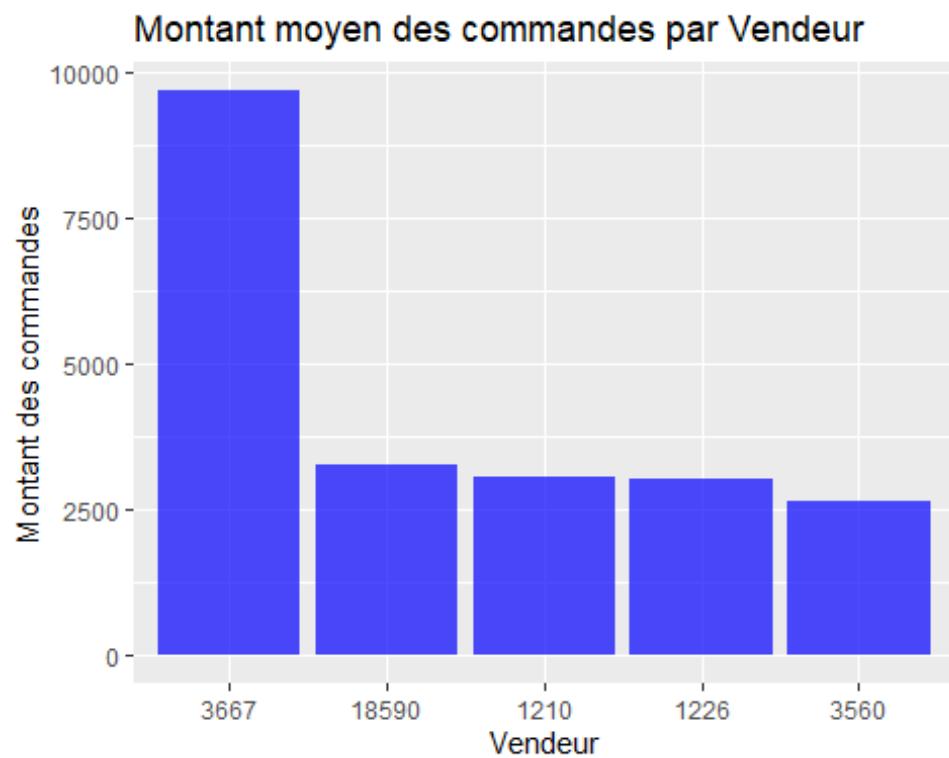
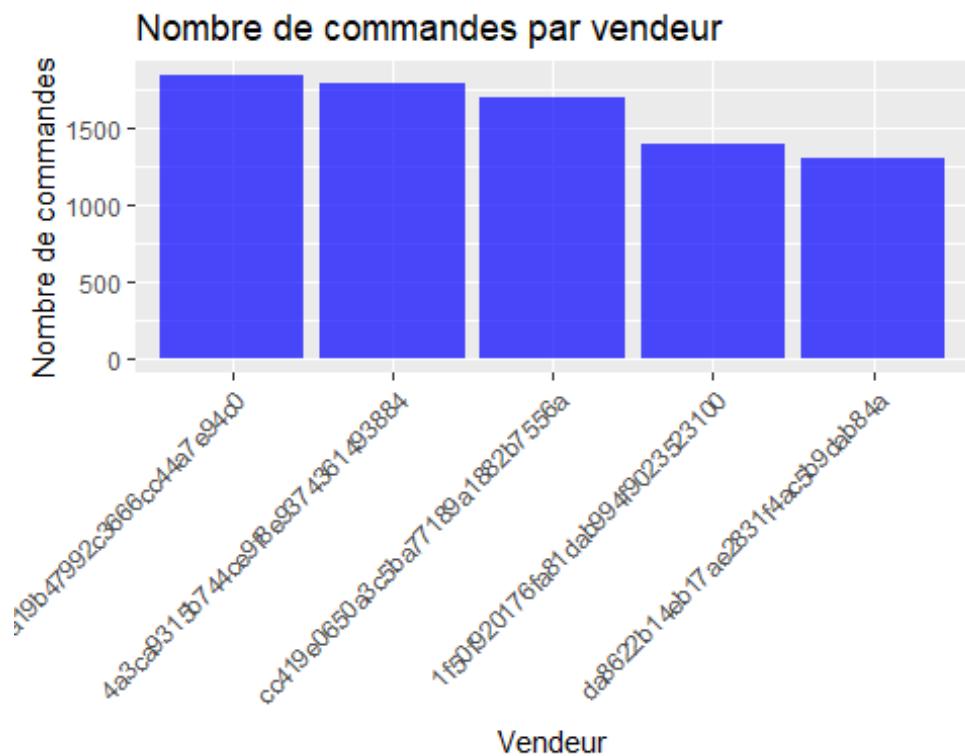
Représentation graphique des indicateurs

Nombre de commandes par Etat

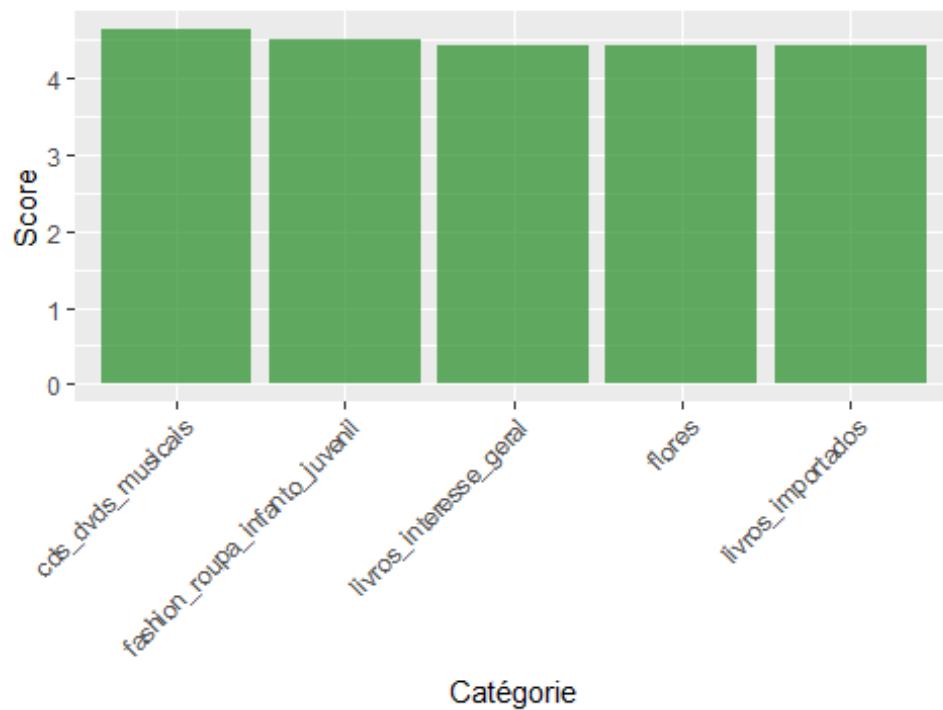


Montant moyen des commandes par Etat

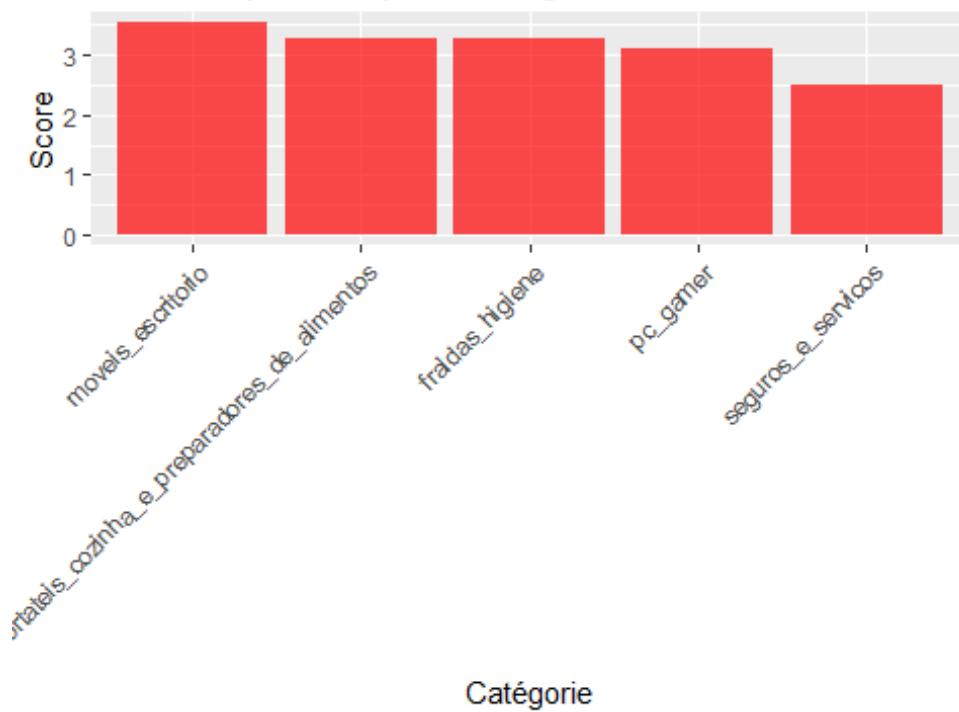




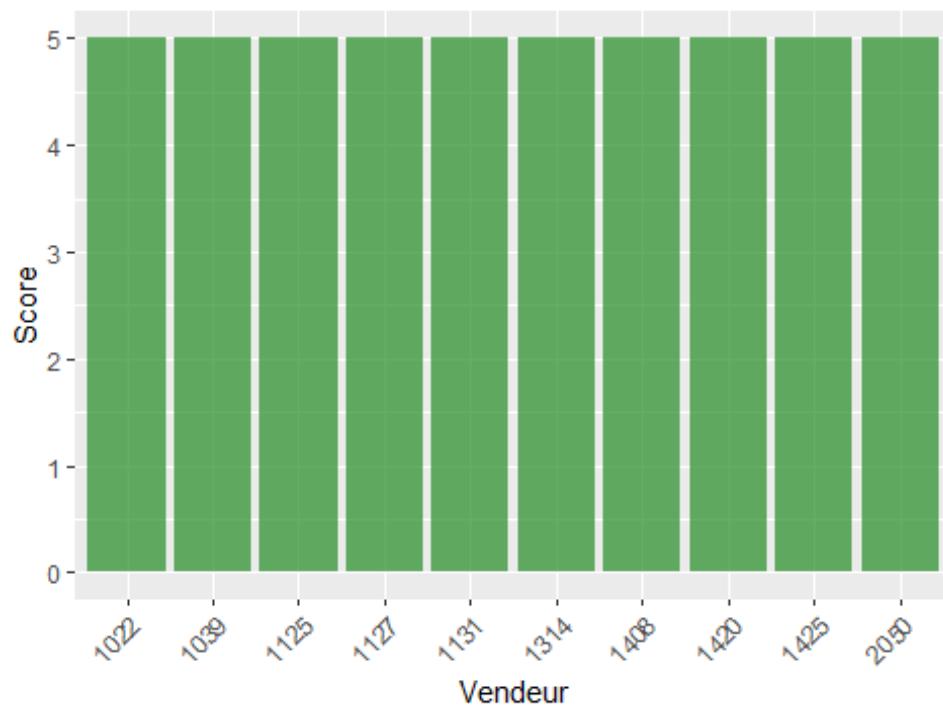
Score moyen des meilleures catégories



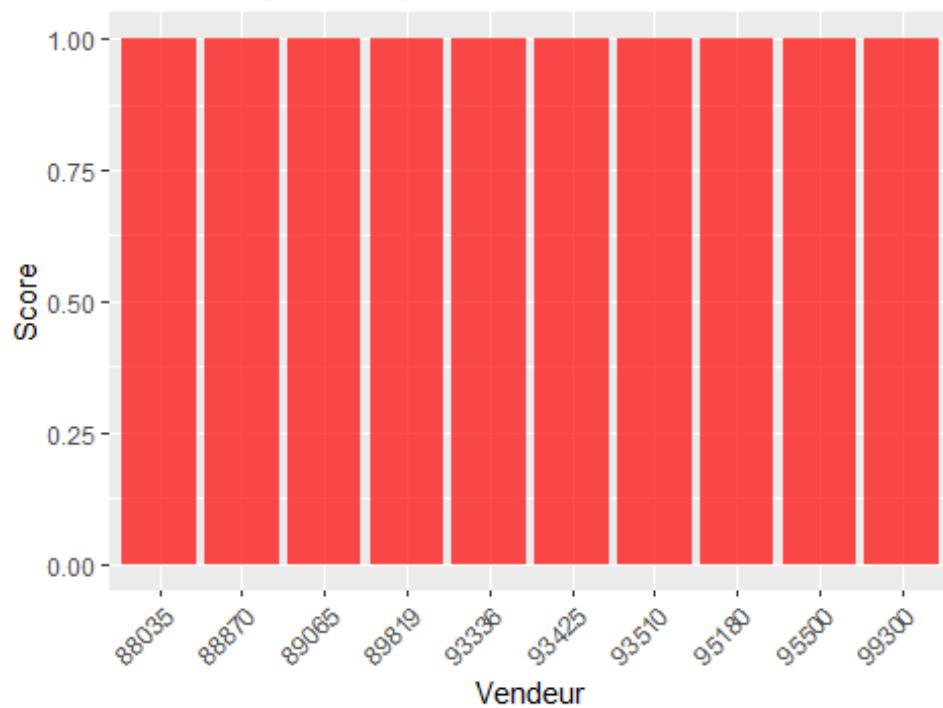
Score moyen des pires catégories

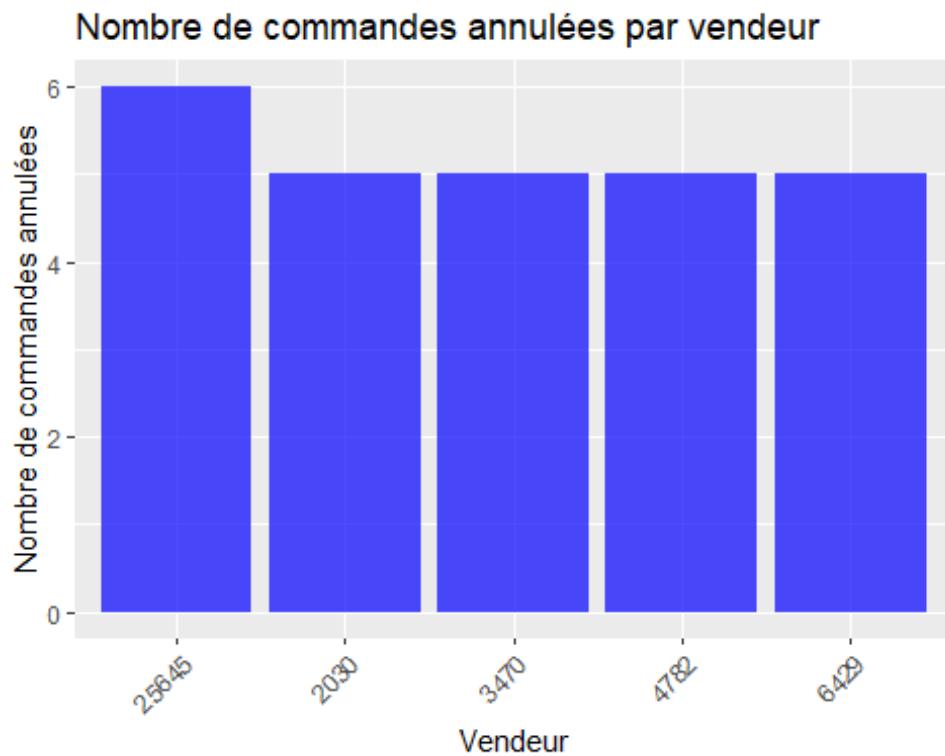
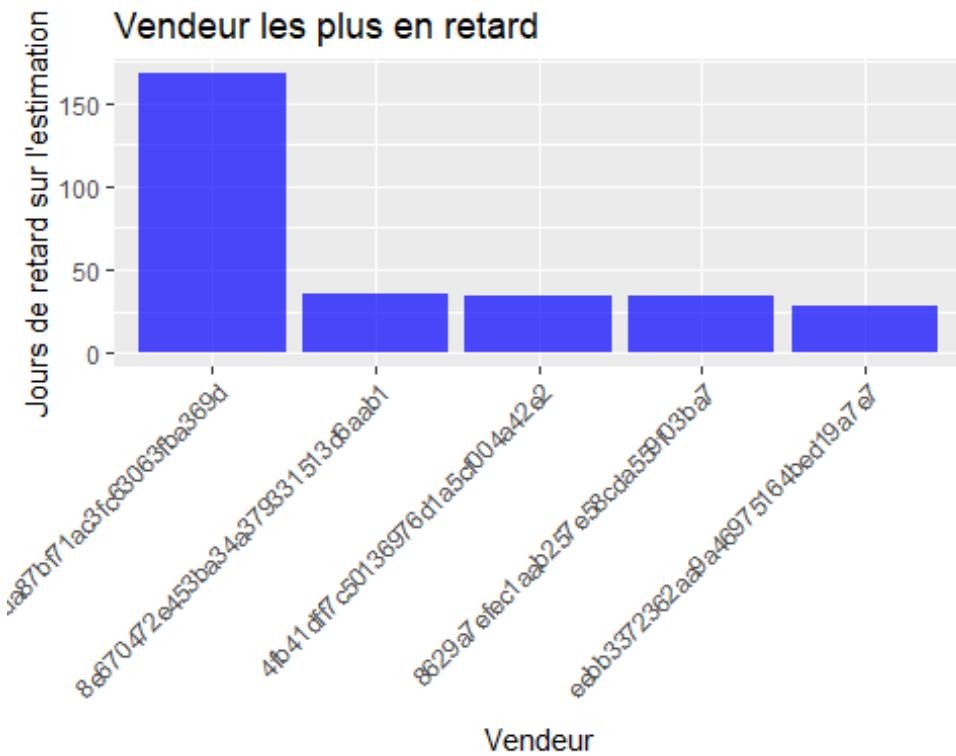


Score moyen des meilleurs vendeurs

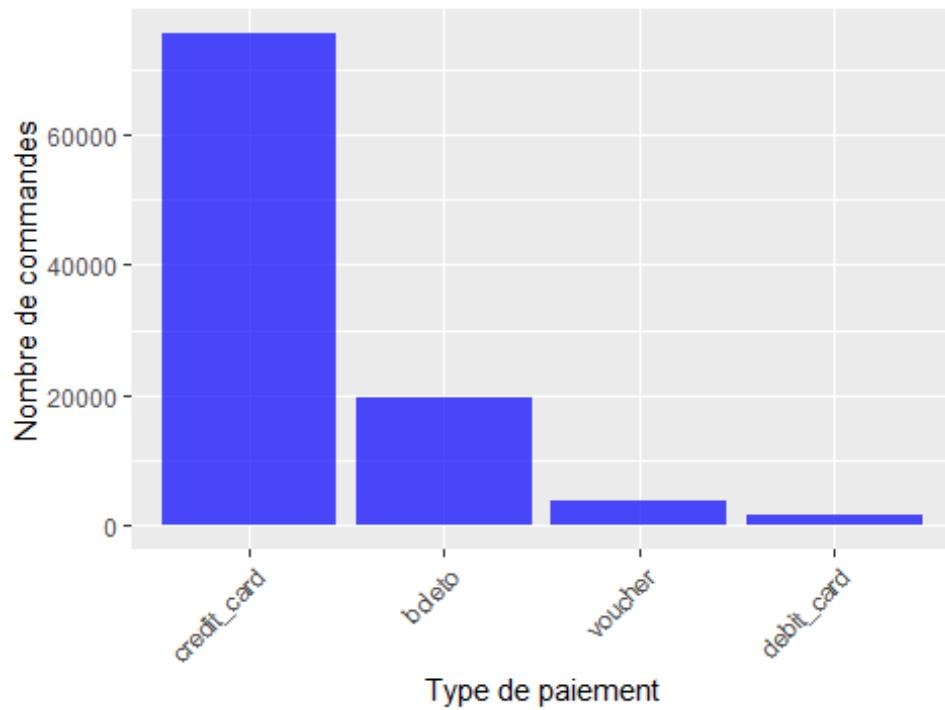


Score moyen des pires vendeurs





Nombre de commandes par type de paiement



Nombre de vendeurs par Etat

