



ER DIAGRAM

Dates				
PK	transaction_date	date, not null		
	date_id	datetime2(7), not null		
	week_id	tinyint, not null		
	week_desc	nvarchar(50), not null		
	month_id	tinyint, not null		
	month_name	nvarchar(50), not null		
	quarter_id	tinyint, not null		
	quarter_name	tinyint, not null		
	year_id	smallint, not null		

Pastry inventory					
FK	sales_outlet_id	tinyint, not null			
FK	transaction_date	date, not null			
FK	product_id	tinyint, not null			
	start_of_day	tinyint, not null			
	quantity_sold	tinyint, not null			
	waste	tinyint, not null			
	waste%	nvarchar(50), not null			



	Sales	targets
FK	sales_outlet_id year_month beans_goal beverage_goal food_goal merchandise total_goal	tinyint, not null nvarchar(50), not null smallint, not null smallint, not null smallint, not null smallint, not null smallint, not null

transaction_id	smallint, not null		
transaction_date	date, not null		
transaction_time	time(7), not null		
sales_outlet_id	tinyint, not null		
staff_id	tinyint, not null		
customer_id	smallint, not null		
instore_yn	bit, not null		
order	tinyint, not null		
line_item_id	tinyint, not null		
product_id	tinyint, not null		
quantity	tinyint, not null		
line_item_amount	float, not null		
unit price	float, not null		
promo_item_yn	nvarchar(50), not null		
	transaction_date transaction_time sales_outlet_id staff_id customer_id instore_yn order line_item_id product_id quantity line_item_amount unit_price		

201904 sales reciepts

	Product						
PK	product_id product_group product_category priduct_type product product_description unit_of_measure current_wholesale_price current_retail_price tax_exempt_yn promo_yn	tinyint, not null nvarchar(50), not null nvarchar(50), not null nvarchar(50), not null nvarchar(50), not null nvarchar(100), not null nvarchar(1), not null nvarchar(1), not null bit, not null bit, not null					
	new_product_yn	bit, not null					

Staff					
PK	staff_id	tinyint, not null			
	first_name	nvarchar(50), not null			
	last_name	nvarchar(50), not null			
	position	nvarchar(50), not null			
	start_date	date, not null			
	location	nvarchar(50), not null			

Customer				
PK	customer_id	int, not null		
	home_store	tinyint, not null		
	customer_first_name	nvarchar(50), not null		
	customer_email	nvarchar(50), not null		
	customer_since	date, not null		
	loyalty_card_number	nvarchar(50), not null		
	birthdate	date, not null		
	gender	nvarchar(50), not null		
FK	birth_year	smallint, not null		

Generations						
PK	birth_year	smallint, not null				
	generation	nvarchar(50), not null				

DATA PREPARATION

```
--CLEANING DATA
--1. remove empty column
--alter table staff
| drop column column7, column8;
```

Remove empty column.

--2. change column name

EXEC sp_rename 'dbo.[pastry inventory].waste1', 'waste%', 'COLUMN';

Rename column.

```
update [pastry inventory]
set waste = start_of_day, [waste%] = '100%'
where quantity_sold = 0
```

	sales_outlet_id	transaction_date	product_id	start_of_day	quantity_sold	waste	waste%	
1	3	2019-04-05	69	18	0	0	0	
2	3	2019-04-18	69	18	0	0	0	
3	5	2019-04-12	73	18	18	0	0%	
4	8	2019-04-14	69	18	18	0	0%	1

```
--3. set PK & FK
alter table customer
 add constraint FK generations
 foreign key(birth_year) references generations(birth_year)
 alter table dates
 drop constraint PK dates
alter table dates
 add constraint PK_Dates Primary key(transaction_date)
alter table [sales targets]
 add constraint FK outlet target
 foreign key(sales_outlet_id) references sales_outlet(sales_outlet_id)
alter table [sales targets]
 drop constraint [PK_sales targets]
alter table [pastry inventory]
 add constraint FK_outlet
     foreign key(sales outlet id) references sales outlet(sales outlet id),
     constraint FK_trans_date
     foreign key(transaction_date) references dates(transaction date),
     constraint FK_product
     foreign key(product id) references product(product id)
```

Set Primary Key and Foreign Key.

Update the data.

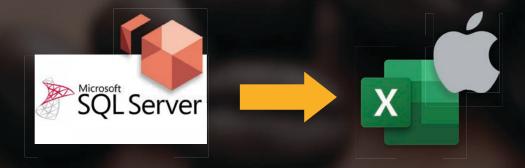
Data Analysis of Coffee Shop

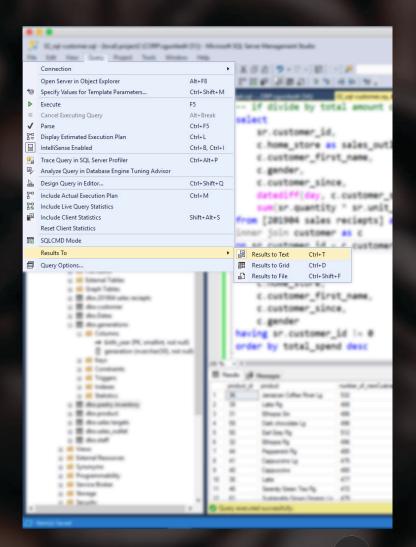
Λ

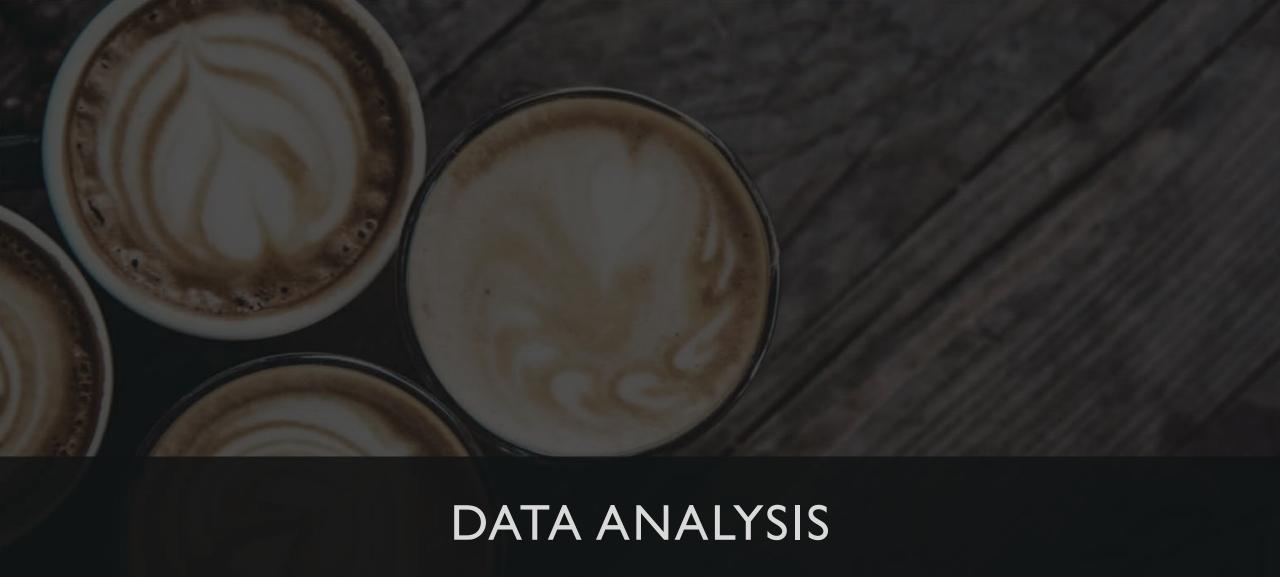
DATA PREPARATION

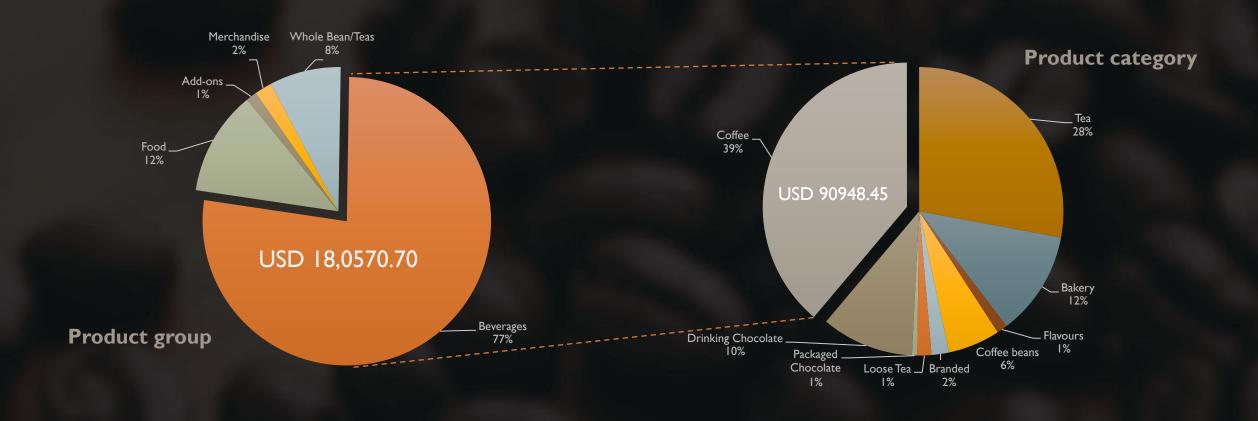
There are 2 ways:

- 1. Result to text, save it as txt format, then transfer other computer.
- 2. copy the table with header and paste it directly in excel.



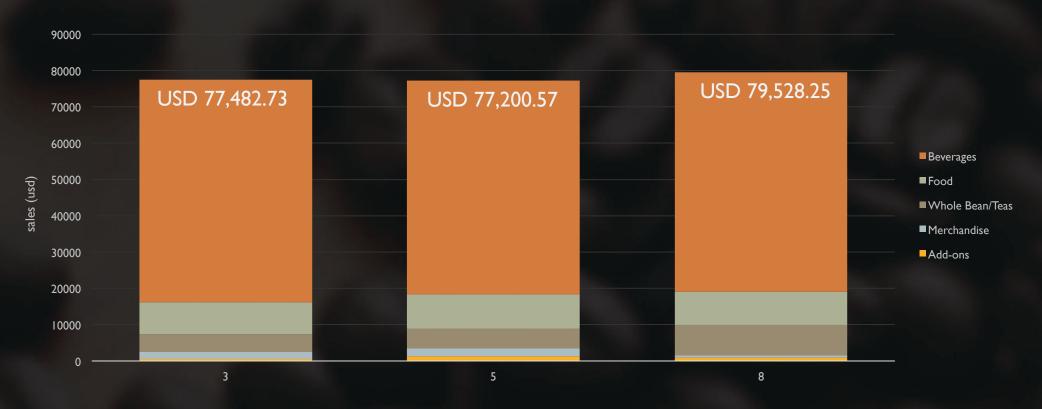




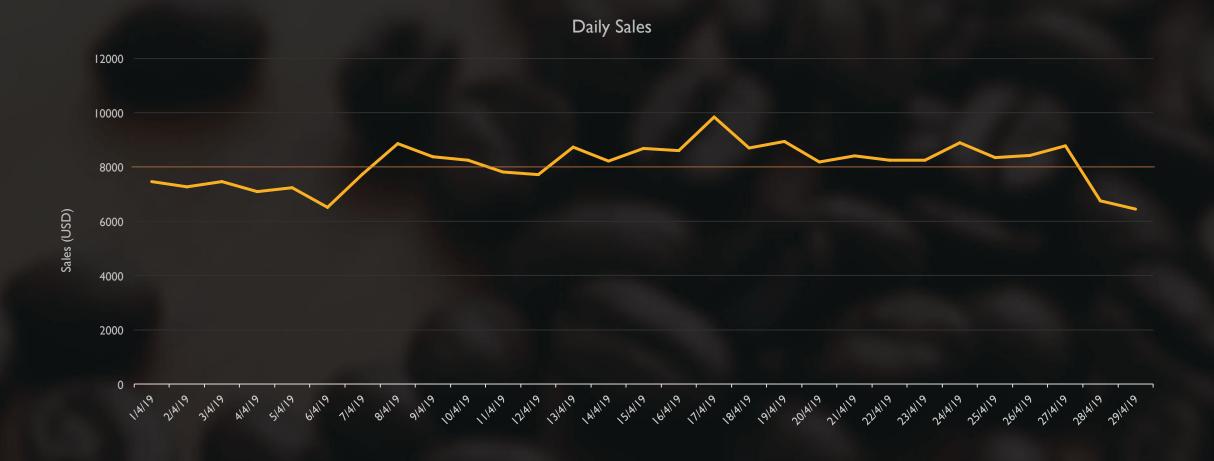


ANALYSIS OF SALES (BY PRODUCT GROUP AND CATEGORY)

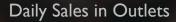
Product Sales by Group on Outlets

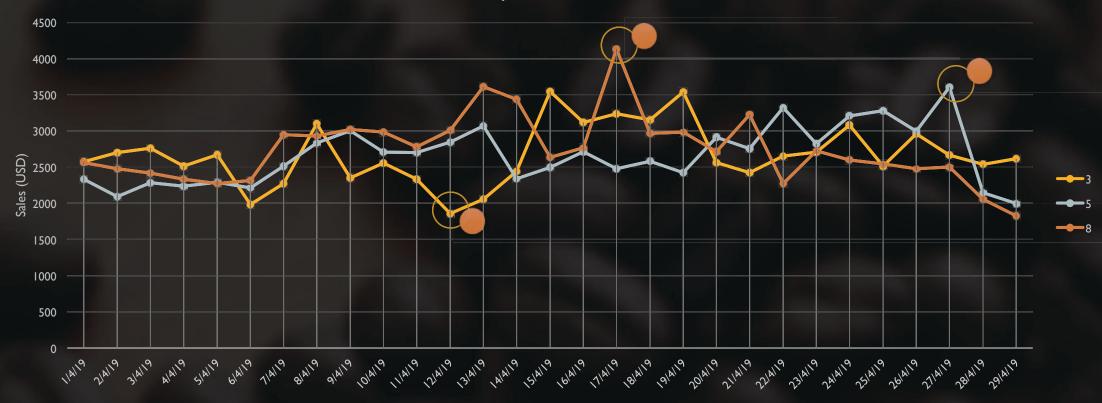


ANALYSIS OF SALES



ANALYSIS OF SALES (BY TIMESERIES)





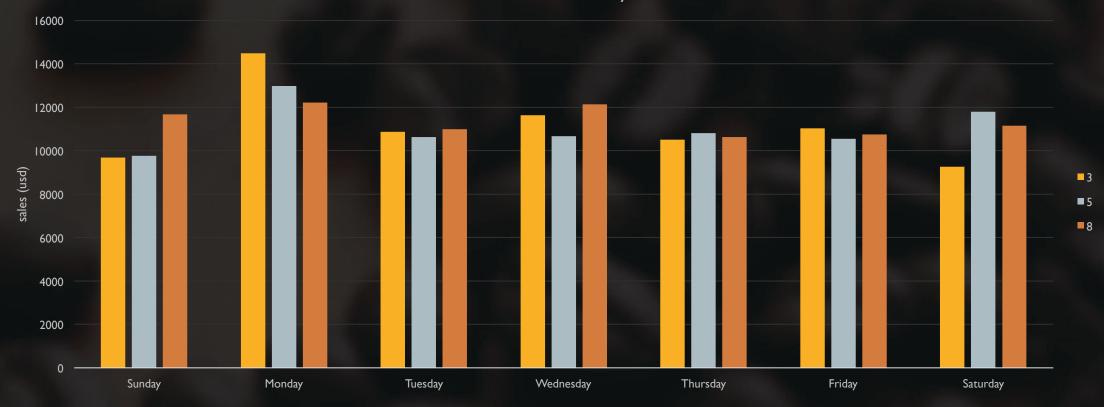
ANALYSIS OF SALES

(BY OUTLET IN TIMESERIES)

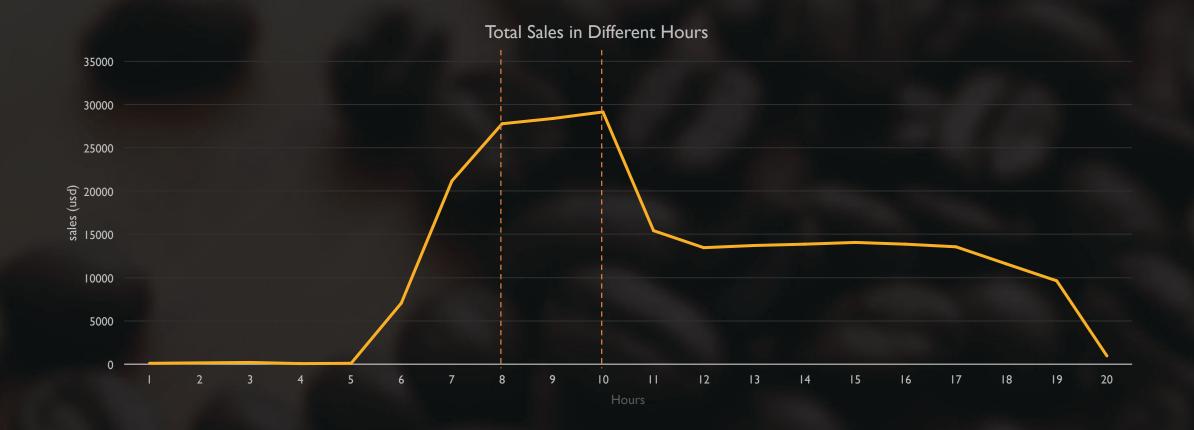


ANALYSIS OF SALES (BY PRODUCT IN TIMESERIES)

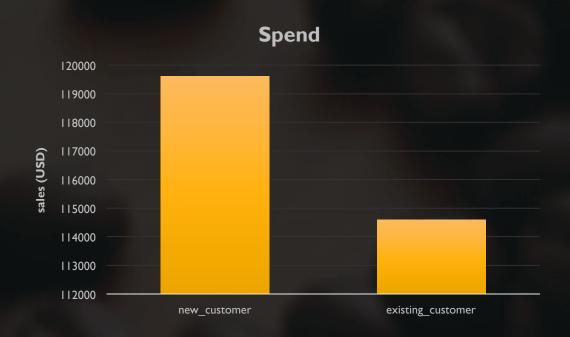
Product Sales in Weekday View



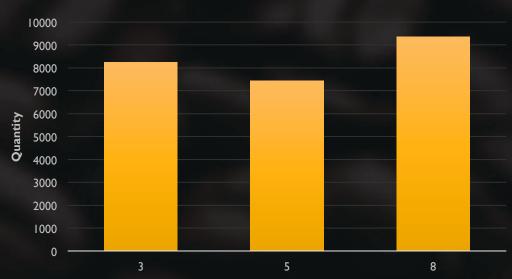
ANALYSIS OF SALES (BY OUTLETS AND WEEKDAY)



ANALYSIS OF SALES (BY TIMESERIES)

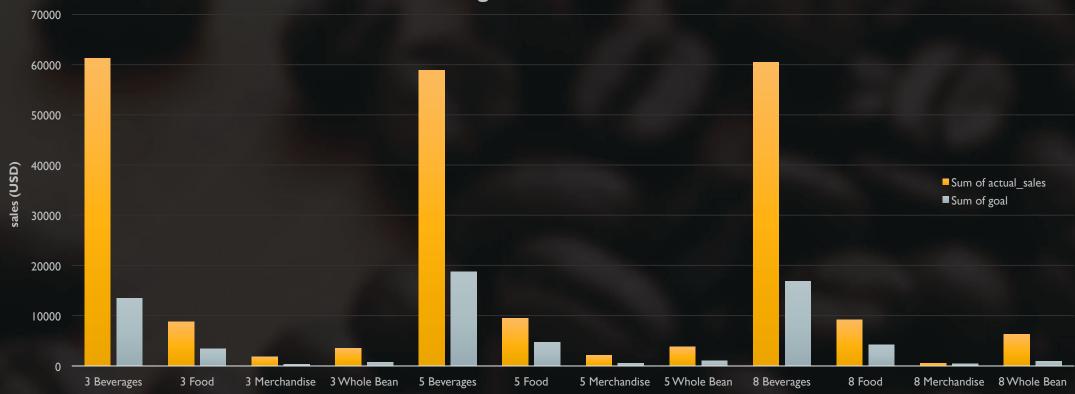


Most new customer outlet



ANALYSIS OF CUSTOMER (BY SALES AND OUTLETS)

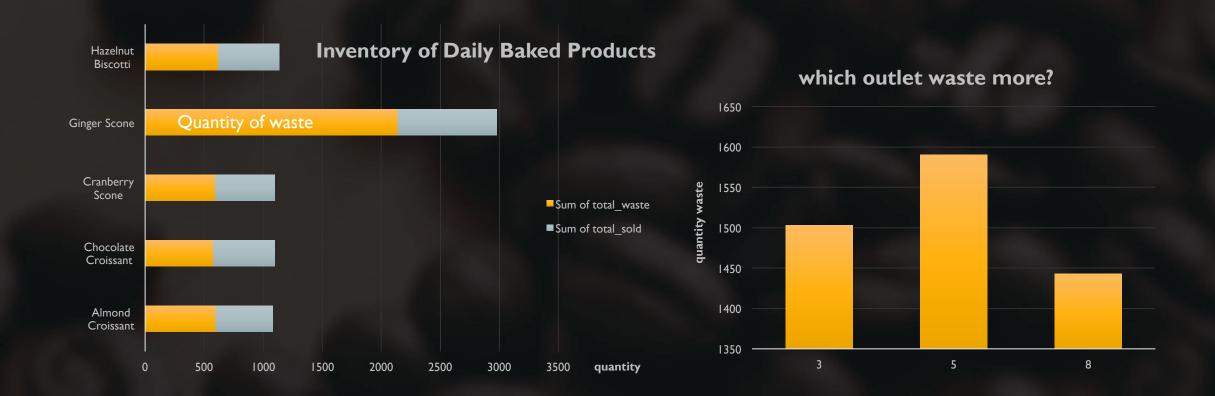




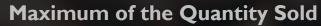
ANALYSIS OF TARGET

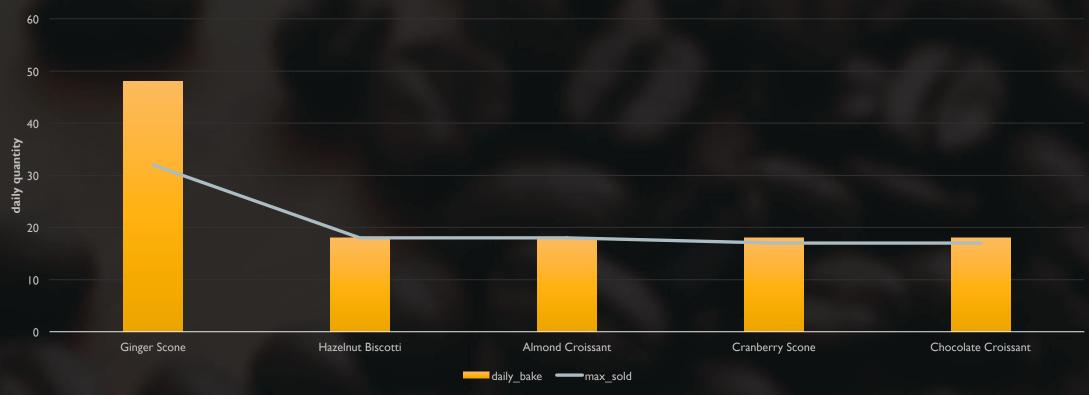


ANALYSIS OF WASTE (BY PRODUCT AND OUTLET)



ANALYSIS OF WASTE (BY PRODUCT AND OUTLETS)





ANALYSIS OF SALES (BY TIMESERIES)

April 2019								
SUN	IN MON TUE WED THU FRI SAT							
	1	2	3	4	5	6		
7	8	9	10	11	12	13		
14	15	16	17	18	19	20		
21	22	23	24	25	26	27		
28	29	30						

with promo



Chocolate Croissant



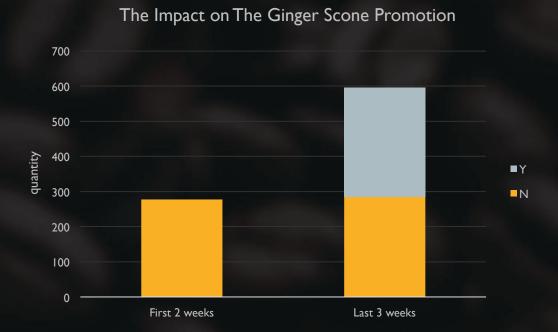
Ginger Scone



Ouro Brasileiso Shot

ANALYSIS OF PROMO
(BY PRODUCT)





ANALYSIS OF PROMO (BY PRODUCT)

CONCLUSION

- I. Their business is doing well.
- 2. Aware of the waste and started their solution.
- 3. Continue with the promotion.
- 4. Consider to introduce the new products around 8 10am on Monday.
- 5. Doing some promotion after 5pm to increase the sales.
- 6. Encourage new customer to sign up as member so that we can better analyze their buying habit.



