

Eye Tracking & Visual Marketing

A STUDY ON THE VIETNAMESE BEER MARKET



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I. Introduction:

Our vision is what connects us most to the world around us. It is so natural and effortless that we don't even think about it. Yet, it helps us through a complex process build our opinions and make most of our decisions. That's the reason why the visual system is the focus of much research in psychology, neuroscience and cognition.

Given that the buyer decision process is also mainly influenced by his visual perception, being able to track, record and analyze their gaze sounds like an outstanding way of performing market research, and understanding more about shopping behavior.

During the four months spent within **The Faculty of Chemical Engineering** in **Ho Chi Minh City University of Technology**, I was responsible for setting up a new eye tracking device, and getting it started with data collection and analysis protocols. I also accomplished a test study on the Vietnamese beer market, comparing the "efficiency" of eight brands' beer labels, the purpose being to determine which design elements draw the most attention to the product, and to extract some actionable insight about the Vietnamese customer's visual preferences.

For the sake of brevity, I will not broach the topic of how the hardware and software were installed and configured in this paper (These aspects are gathered in a 30-page illustrated guidebook), but only introduce Eye tracking technology and visual marketing in a first part before moving on to presenting the study I conducted and its results.

II. Background of the study

1. Context of the study and assignments

This study was performed from August to December 2013 in the Ho Chi Minh City University of Technology. My principal assignment was to install and put into operation an *Arrington Research Head-Fixed Eye Tracker*, purchased in 2012. Consequently, my work first consisted in installing the device and the hardware associated, and setting up the software. I then had to configure it and understand how it works and how to operate it. The complete protocol appears in a guidebook I wrote in French and English which can serve as an easy, quick, concrete illustrated user guide to install and fully operate the machine.



The Faculty of Chemical Engineering also has a Sensory Lab focusing on consumer taste, preferences and behavior; and eye tracking can be a valuable source of information in this area of knowledge when suitably used. It's especially the case when studying how people visually interact with food products, or the attractiveness of packaging or labels. From this perspective, a case study was performed as well, as a way of testing the method, and getting access to some marketing-related information about the products.

2. Eye tracking and visual perception

a) About visual perception and cognition

Before approaching the eye tracking technology, it is important to understand what determines our eyeballs motion, and the motivation to record it. We naturally move our eyes through the visible field in order to bring a particular area into high resolution, making its fine details available for our brain to recognize, process, analyze and memorize. We also most often focus our attention on that point so that we can focus our concentration (even for a very short moment) on the object or region of interest. Therefore, we can assume that if we can track an observer's eye movements, we can follow the path of his attention as well. We can that way get access to some insight concerning what the observer found interesting or attractive, or even get knowledge about how she or he perceived what she (he) was viewing (A. Duchowski, 2007).

Without getting into the neural and physiological mechanisms driving visual attention, vision is an inner cognitive process that seems to work similarly among people. Indeed, if you pay attention to your eyes conduct, you'll easily notice it is a succession of visual axes movements to point to a new location on which you will perform a fixation, during which you will perform minor eye movement and major focus and concentration. The very fast eye movements are called saccades, and are essential in the process of 'scanning' space and building up mental 3D maps of the watched scenes. In brief, our gaze follows a saccades-fixation pattern (P. Hallett, 1986). The diagram below (Figure1) was designed like an eye tracking experiment output and illustrates the elements mentioned above. The numbered red circles represent fixations and their radius represents duration. They are connected by red lines that represent the saccades. We should note that vision doesn't follow a constant smooth trajectory across the stimulus as we could believe. Instead, our eyes move around the image, stopping on a section for a lapse of time and then moving to another and so on.

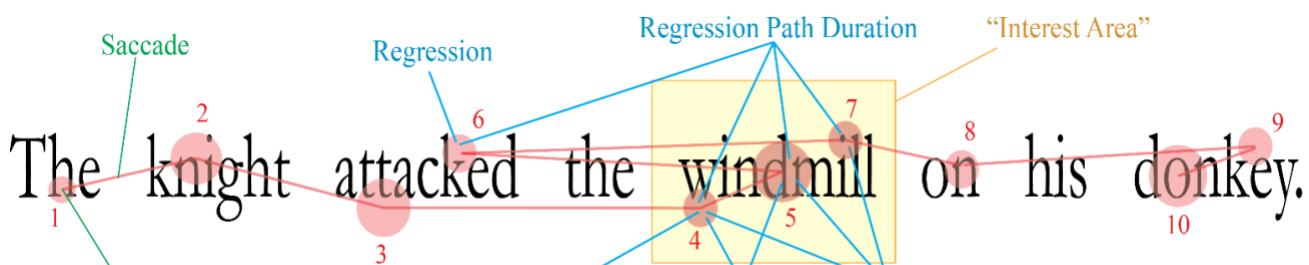


Figure 1 The visual path is made of saccades and fixation. Source: <http://goo.gl/oLFzpT>

In the 1800s, eye movement was studied using direct observations, but it got much more interest in the 1900s and researchers started building observation instruments, helped by the progress made in optics. The first devices were very intrusive and used special lenses, but today they are very sophisticated pieces of technology, relying on high definition cameras, computers and sophisticated video-based software which can perform real-time acquisition and processing.

b) About the eye tracking technology today

Eye tracking today is a well-developed technology, mostly used in medical research, psychology, virtual reality, cognitive science, etc... In the last century, eye tracking have been limited essentially to research institutes, hospitals and very big tech companies because of its high cost and the expertise it requires.

However, it is getting more accessible and trendier thanks to some new eye tracking companies who are making it more usable (plug and play devices) and cheaper like Tobii, a Swedish firm founded in 2001 that became the leader of that market.

The increased sophistication and accessibility of eye tracking technologies have generated a lot of interest in the commercial sector. Applications include web usability, advertising, package design. In general, commercial eye tracking studies function by presenting a stimulus to a sample of consumers while an eye tracker is used to record the activity of their eyes. Examples of target stimuli include websites, films, commercials, magazines, newspapers, packages, shelf pictures, consumer systems like ATMs, and software. Still, it is widely used by internet companies like Facebook, Google, Amazon and Twitter to test the usability of their website and optimize it. For instance, if Amazon wants to make their website more profitable, they will use a small panel of consumers and ask them to search and purchase a specific item on Amazon.com while recording the gaze paths. The resulting data can be analyzed and graphically rendered to detect specific visual patterns showing how easy it is to perform the asked task. If the user takes much time or has trouble making the purchase, the research team can figure out the reason that may be an inappropriate positioning of the buttons, distracting objects that disturb the attention like banners, important items that are not visible enough, etc... The purpose being to highlight the essential (and productive!) parts of the interface in order to increase its efficiency. The picture below (Figure2) is a 'fixation map' extracted from a real video-based study led on the Australian Asthma Foundation website. As it clearly shows, the users didn't pay much attention to the 'Donate' button which is integrated to the right of the big picture in the center; on the other hand, their attention was drawn by the upper part of the page, suggesting that the people tested would expect to see the link in that location. The website was changed according to these result to make the 'Donate' button stand out from the rest of the page (Figure 3).



Figure 2 A fixation map of a website, studying how much attention does the "DONATE" button gets. Source: <http://goo.gl/3bjAfQ>



Figure 3 The same website as in Fig2, after optimization. Source: <http://goo.gl/3bjAfQ>

Also, Google used eye tracking in order to boost the visibility of their ads by putting them in the most viewed area of their search results page, called the “Golden Triangle” (R.E Ferguson, 2013) (Figure4).

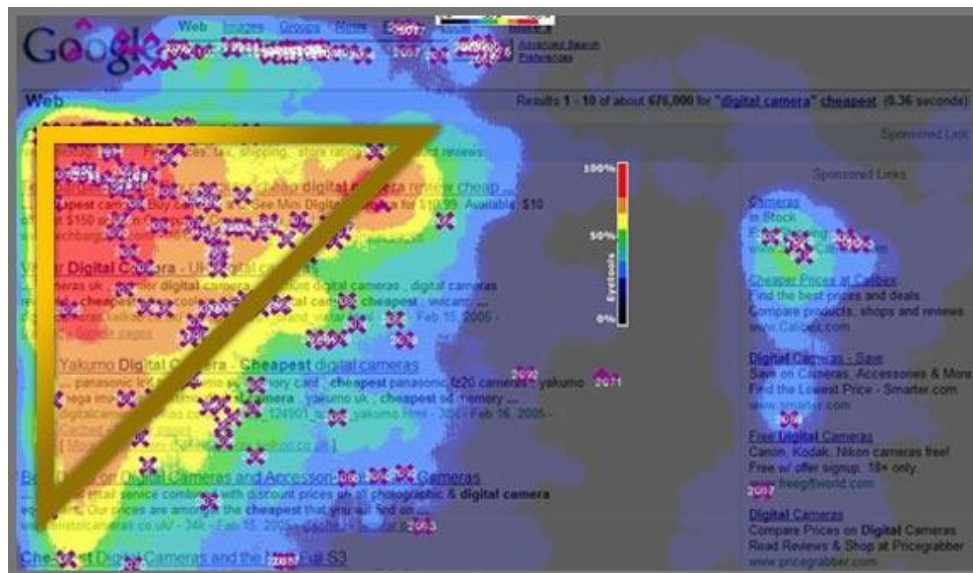


Figure 4 The Google Golden Triangle illustrated by eye tracking. Source: <http://goo.gl/qxwDFj>

Eye tracking gives insight about visitor behavior and allows to improve a website’s navigation and linking strategy, making it more cost-effective and increasing its conversion rate¹.

c) About eye tracking and food market research

Within the food industry sector, eye tracking can be a good way for package testing and design optimization. Indeed, before a food company releases a product, they can use eye tracking to choose the best (Most attractive and appealing) packaging design, and perform shelf tests that compare their products to others from the same category. This is actually used by big companies like Unilever and Heinz and Kellogg (Figure5).



Figure 5 Shopper behavior can also be tracked in real situations using eye tracking. Source: <http://goo.gl/e7wfmU>

$$^1 \text{ Conversion rate} = \frac{\text{Number of buyers}}{\text{Number of visitors}}$$

d) Marketing is visual

Visual marketing is a key component of modern product marketing focusing on studying and analyzing how image can be used to make products the center of visual communication. Indeed, the visual identity of a product is what makes it pleasant, attractive and especially memorable. Therefore, it appears as an essential component of the branding of a product or a company. Moreover, in today's free and diversified market, the overload of brands, products and advertising makes it imperative to produce eye-catching visual content to attracting target market and connecting with the consumers. Visual marketing is a great part of what makes a product well-liked and popular. To implement these aspects using eye tracking technology, an experiment was set.

III. Materials and methods

1. The eye tracking device

The machine we used is a fixed-head 90Hz binocular eye tracker (BHU903) conceived by **ARRINGTON RESEARCH**, Inc. mounted on a *HeadLock™ Ultra Precision Head Positioner™*. It is basically an adjustable structure supposed to immobilize the head of the user on which are settled two high resolution cameras and two infrared lamps. The whole device is fixed on a desk and linked to a desktop computer by 4 cables via a self-powered USB hub. The computer uses a dual-screen configuration: The first screen is a control panel we use to supervise and monitor the experiment, and the second one is used to display the stimuli in front of the subject's eyes (Figure6).

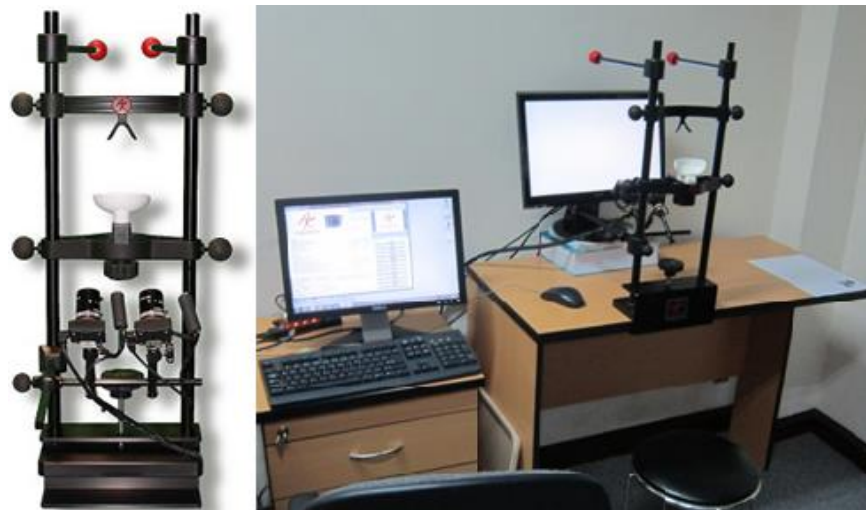


Figure 6 The eye tracking device and the experimentation office.

We use the software supplied with the device, called *ViewPoint EyeTracker®* that handles data acquisition and recording. It can also display fixation location and duration over stimuli pictures afterward in the form of videos for analysis purposes. The user interface is a multi-window panel and also provides a command line terminal for advanced tasks. Once the device and software are installed and working, we can start thinking about how to design and perform a complete study, starting with the assumptions we make and the experimental conditions we establish.

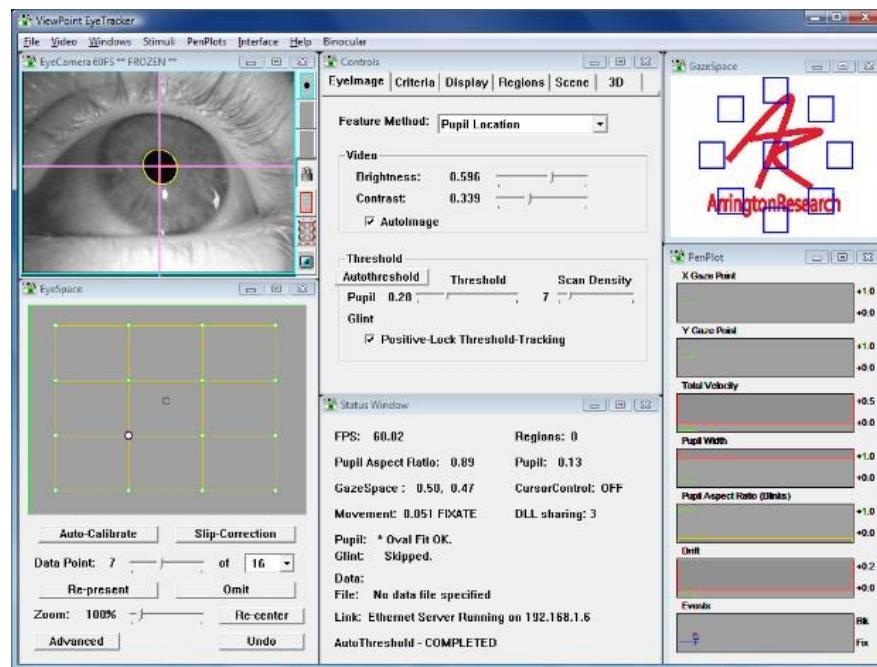


Figure 7 The graphical interface of ViewPoint Eyetracker®

2. Conditions and circumstances of the study

a) Some preliminary hypotheses

We assume when doing Eye-tracking research that if we can observe where a respondent places his visual attention, we may better understand where that respondent places his mental attention. This is not a recent acceptance; researchers have been tracking eye movements and publicizing their theories on the subject for almost three centuries (e.g. Porterfield, 1737; Delabarre, 1898; Dodge, 1900 and 1907; Nixon, 1924; Yarbus, 1967; Pieters & Wedel, 2004).

Also, Duchowski affirms in his reference book "Eye Tracking Methodology: Theory and Practice" (2007, p. 14) that an eye tracker can only track the apparent movement of the eyes, however, it cannot track the furtive activity of visual attention. Hence, in all eye tracking works, a tacit but essential hypothesis is usually accepted:

we assume that attention is exclusively limited to foveal² gaze direction, but we acknowledge that this might not always be true. Actually, a respondent's mental attention can be elsewhere instead of where his visual focus is. He may totally be lost in thought and not even paying attention to his vision. Or he may be deliberately using his peripheral vision. For instance, a driver stopped at a traffic light, looking at it while waiting for it to turn green may be thinking about something entirely different.

Still, neither of these can be currently measured, so researchers have to assume that visual attention is a good proxy for mental attention. In practice, this has worked quite well.” (L. Gentry, 2007).

b) The testing environment

The eye tracking experimentation being a kind of simulation, we should give a great importance to its conditions, in order to make it valid and significant. Indeed, the gaze data collection must be performed under fixed, controlled and constant conditions, and the office we use must suit the experiment's characteristics.

Indeed the office used as a laboratory is kept very quiet and with nobody inside except the tested subject and the experimenters; we were two, Mr Nguyen Quoc Dzung, an AGROCAMPUS OUEST's former Statistics Master Student who works today as a Lecturer in Hô Chi Minh City's university had the kindness to accompany me during my experiments. There must be no visual or auditory distractions for the person while data is recorded.

Regarding hardware, we use a desktop computer with a dual screen. Before starting the experiment, the judge must be well installed. He must be at ease, and the cameras must be positioned in front of the eyes, focus and aperture adjusted. We use a fixed stool, and make sure all the screws of the eye tracker are tight. More precisions about the setting up can be found in the EyeTracking Guide.

c) The judges preparation

Given the nature of the experimentation, we must prepare the subjects. Indeed, the Eye Tracking device is very intrusive and using it can be stressful, leading one to act differently from how he would in normal conditions.

First, knowing that the experiment involves human contact and interaction, it is very important to make the respondents feel as comfortable as possible, and lead team to freely expressing their thoughts. In order to do that, they all read an instructions sheet before coming in the experimentation room. It is written in an informal tone and clearly explains how the event goes in Vietnamese. The sheet clearly stipulates that the study is about beers and not about the judges, and that they don't need to know or do anything in order to prepare for the test. The purpose is to make them understand that participating as a judge is no big deal and let them act spontaneously, in the most natural way (See [appendix 1](#)). That is why when the respondents come to the

² Foveal: related to the fovea, the central small area of the retina that allows precise and accurate vision.



'laboratory', it is important to welcome them in a warm way and talk to them ordinarily. Also, the presence of a native Vietnamese speaking experimenter is an important point. He is an intermediary who knows the subjects best and can explain the experiment's details to those who may ask for information, and give precise instructions when necessary. Their presence also seems to be very reassuring.

3. Purposes and design of the study

a) Presentation of the study

The study we conducted focuses on 8 widely consumed beers and consisted in comparing closely how attractive were their labels. The idea came out because of the partnership between the University's Sensory Lab and Vietnam's leading beer producer, SABECO (Saigon Beer-Alcohol-Beverage Joint Stock Corporation) which is based in Ho Chi Minh City and holds a total national volume share of 48% in 2012 (Euromonitor International, 2013). Vietnam, with a population of about 90 million is one of the most attractive markets in Asia for breweries, with estimated beer sales growing by 10% annually from 2010 to 2020 (The Voice Of Vietnam, 2013).

The purposes we chose are the following:

- Make a shelf test-like study³, in order to simulate and monitor a shopping experience based on labels.
- Extract, from a visual standpoint, some insight about SABECO's principal beers, their closest competitors, and newly imported foreign products.
- Aim at precise results by focusing on the design of the labels only, regardless of the bottles shape or color. Evaluate and compare the "quality" (in terms of saliency⁴) of the different labels through the analysis of their elements' visual attractiveness.
- At last, extract actionable and concrete insight about the Vietnamese customer's visual preferences: What is a good (attractive) label? How to get increased attention to a beer label?

Given that this experiment is a first actual test for the device, it is the opportunity to implement a complete method, identify the potential obstacles that can possibly be met, document them and think about ways to bypass them. As a matter of fact, this is the main purpose of the study.

As part of the analytical approach, we consider each label as a set of elements that can be classified in two categories: **Colors & Shapes** (They happen to be inseparable knowing that shapes are delimitate areas of

³ A shelf test is a type of eye tracking test where the products are presented just the way they are disposed on a supermarket's shelf: next to each other in front of the shopper (Tobii Technology, 2008)

⁴ The saliency (or salience) of an item is the state or quality by which it stands out relative to its neighbors (wikipedia.com)

different colors), and **Text elements** (They are characterized by their font, size, spatial disposition, content and abundance).

b) Products

We chose eight beers from the Vietnamese market that we can classify in two categories:

- Local brands from breweries like SABECO or HABECO (Hanoi Beer Alcohol and Beverage Joint Stock Corporation). These brands have a popular branding, target the mass market and do not take benefit from a substantial marketing budget and strategy compared to the international beer brands. They have a reasonable cost, what makes them consumed in huge quantities, but their branding is basically average. However, they exist on the Vietnamese market since decades and are consumed in huge quantities what makes them nationwide notorious. In this category we include the following products:

	Manufacturer	Made in	Country of origin	Cost
Bia Hà Nội	HABECO Corp.	Vietnam	Vietnam	€
Bière Larue	Atlantic International Co. Ltd.	Vietnam	Laos/France	€
Saigon Export	SABECO Corp.	Vietnam	Vietnam	€
Saigon Special	SABECO Corp.	Vietnam	Vietnam	€

Table 1 The four low-priced products we chose and some of their characteristics.

- Foreign, international beer brands. These beers are held in high esteem by the consumers who perceive them as premium and luxury products. They enjoy an aggressive, advanced advertising that makes them very attractive today and therefore more and more consumed, despite of their high price that can be up to four times the cost of a national popular beer. Their consumption figures are growing with the fast development of the country and as the average income grows, and their manufacturers are progressively settling in Vietnam. The following beers are quite recent on the Vietnamese market and belong to this second category:

	Manufacturer	Made in	Country of origin	Cost
Budweiser	Anheuser-Busch Companies, Inc.	USA	USA	€€€€
Heineken	Heineken International	Vietnam	Deutschland	€€€
Sapporo	Sapporo Breweries Limited	Vietnam	Japan	€€€
Tiger	Asia Pacific Breweries	Vietnam	Singapore	€€

Table 2 The premium products we chose and some of their characteristics

c) Stimuli

A stimulus is an image on which is performed an eye tracking test. The stimuli we use are made of the eight beer labels.

Eye tracking technology will be used to follow up the gaze of a test panel, and determine which parts of the different labels draw the most attention. We will use three types of stimuli: the whole beer labels, the colors & shapes of the labels and finally the text only of the labels. The different stimuli are displayed in the following order: For the first session, we use the Colors & Shapes picture, and ask the respondents if they can recognize the different brands. At the second session, the text is used and we monitor which typographies are most attractive. Finally, for the third session, the whole labels are used. We will state what informations we extract from each session later.

For making the images, we used high definition images that were modified using an image processing program. The position of the labels were randomized for each session. Please refer to [Appendix 2](#) to see the stimuli images in big size.

d) Panel composition

This experiment is first of all a test for a machine, an experimental protocol and an analysis method. It does not target a particular population and that is why the students and staff of the Food Science department of the university were chosen as judges, without any particular distinction. The only criteria to participate is to be a regular beer consumer over 18 and to consent to participate to three testing sessions on 3 different days in the same week. The panel we used was constituted of 22 judges which is enough (K. Pernice & J. Nielsen, 2009) for a qualitative study performed with the help of a homogeneous population (All HCMUT students living in Ho Chi Minh City, beer consumers, average age 22.8, standard deviation 1.3).

e) Testing procedures

Given that our experiment focuses on visual attractiveness and saliency of graphical elements, each stimulus is shown for a 5 second duration only. This choice returns clear and simple data. After displaying the stimulus and recording the gaze path video, it is shown to the subject and he is asked about why he looked at each label, which element attracted his gaze, and why. This is crucial considering the hypotheses we made and knowing that eye tracking technologies only answer “what did the subject look at” and do not give a clue about “why the subject looked at that particular element”. Proceeding this way, the results of the analysis are easier to interpret and can be accurately explained a posteriori. All the statements of the participant are written down on a stimuli picture that we printed to that matter.

Regarding the data we collect, they are of two types: data that compares the eight labels (inter-individual) and data about each labels' elements (intra-individual). We have two data sources: the eye tracking recording which is just raw data and the sayings of the participants, which make us able to give sense to the observations. The [Table 4](#) presents what we collect for each session:

	1st session: Colors & Shapes	2nd session: Text elements	3rd session: Whole labels
Inter-individual data	<ul style="list-style-type: none"> Which labels were looked at within the 5 seconds? Which beer brands were recognized by the participant? This is a measure of how <i>memorable</i> each label is. 	<ul style="list-style-type: none"> Again, which labels were looked at during the limited time? 	<ul style="list-style-type: none"> Which labels were looked at?
Intra-individual data	<ul style="list-style-type: none"> For the labels that people look at, what particular elements did attract their attention, and why? 	<ul style="list-style-type: none"> What particularity(s) of each label's text made it attractive? 	<ul style="list-style-type: none"> Why?

Table 3 The data collected at each session

As we can see, **for each testing session**, the same key question appears in order to guarantee a certain cohesion that permits comparison in the course of the analysis, we try to answer the following question: "Within a very short time, what labels will attract the eye of the participant?" However, we also collect some additional information that permits better understanding of the results, or that gives additional insight about "beer visual appreciation". Data samples can be found in [Appendix 3](#). The eye tracking data is binary and is converted into a contingency table.

Beer	Colors&Shapes		Text	Whole labels
	CS_Fixations	CS_Recognition	T_Fixations	W_Fixations
budweiser	54,55%	18,18%	90,91%	59,09%
hanoi	54,55%	13,64%	68,18%	86,36%
heineken	86,36%	95,45%	54,55%	77,27%
larue	81,82%	9,09%	36,36%	63,64%
saigonexp	77,27%	72,73%	86,36%	45,45%
saigonspe	68,18%	27,27%	77,27%	86,36%
sapporo	95,45%	68,18%	86,36%	100,00%
tiger	54,55%	77,27%	63,64%	36,36%

Table 4 The fixation and recognition data, summarized in a table

Moreover, before starting the testing and while recruiting the judges, we made them fill in a survey about the way they consume beer (Frequency, place of purchase, price category, and favorite beer brand). This gives us some material about the sample we use.

IV. Findings and discussion

Because of the nature of the data imposed by the experiment, the analysis is simple (almost simplistic) and can be summed up using uncomplicated histograms and curves. The statements we collected will be used for interpreting it. In the following, we will denote the labels by the beer brands. Percentages will be used to render the proportions.

1. Colors and shapes

What comes out first is that the most famous beers are not the most viewed (Figure8). This approves the importance of the graphical design of labels, but also shows that it is not the only element necessary for making a beer successful and famous. For instance, the Larue that is visually very attractive (81.8%) here seems unknown to the panel (9%), and this is because it is a low-priced beer manufactured by a medium company with few advertising. In the other hand, the Singaporean Tiger which is passably attractive (54.4%) is very recognizable (77.3%) because of the consequent advertising effort.

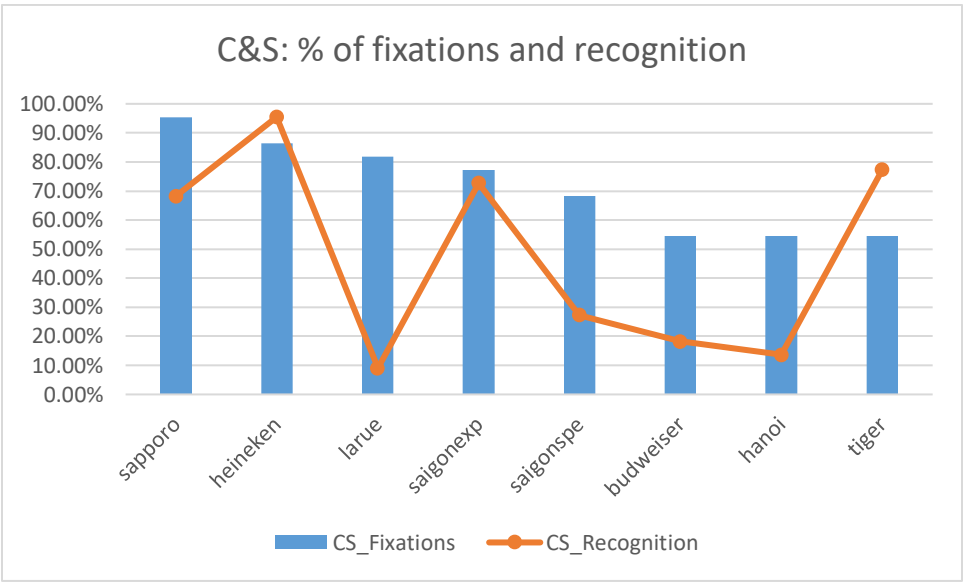


Figure 8 The results of the Colors & Shapes experiment. The histogram refers to the percentage of viewers while the curve concerns the proportion of people that recognized each beer

Concerning the most viewed beers, Sapporo comes first (95.5%) mainly because of its big golden star that recalls the Vietnamese national flag, and because of its very high contrast (41%) highlighted by its simplicity. Indeed, the Sapporo label is all shiny black, printed on bright plastic and contains gold and silver elements. Then comes the Heineken label (86.4%) which is attractive thanks to its famous green (60%), its black banner (40%) and the ovals (40%). The tiger, looked at by 81.8% of the judges stands out because of its characteristic tiger looking right in the eyes of the observer (82%). Concerning the Saigon Export which is ubiquitous in the Vietnamese urban landscape, it emerges because of the saturated red oval on a clear white background (27%) and the yellow barley ear (27%). In opposition, we find the least efficient designs: Budweiser, Hanoi and Tiger. They are characterized by very poor color contrast and a small number of noticeable drawings. For instance, Hanoi and Tiger have a single prevailing color tone.

To summarize, the most important elements while making the color and shape arrangement of a label are: Taking advantage of contrasts which naturally catches the eye (I. Perello, 2011) especially those who take advantage of the fascinating Color Theory (Color Matters, 2013) to make harmonious and pleasant arrangements; Use brightness while choosing the color shades; and use drawings or paintings: The tiger from the Larue label is an outstanding example where a practically unknown beer is highly attractive thanks to an admirable drawing. This part of the design of a label appears to be the most important, it gives the structure and the visual identity more than anything else, and it conditions the text elements including the brand name, the ultimate purpose being to create a design that highlights and enhances the brand while perfectly matching its identity and values. That is the reason why most of the beer labels are built according to a radial pattern that canalizes the attention to its center.

2. Text elements

The American Budweiser is the most attractive item here (90% of the participants), thanks to its font that was described as “authentic”, “special”, “beautiful” and “impressive” by 81% of those who looked at it (Figure9). The size of the brand name also came out for 60% of them. Saigon Export stood out again thanks to its huge popularity in Vietnam (55%). Concerning the Sapporo (86.3%), the curved disposition of the text was attractive for 50% of the observers. Saigon special was attractive because of the SAIGON name that was described as “very big”, “massive” and “remarkable” by the respondents.

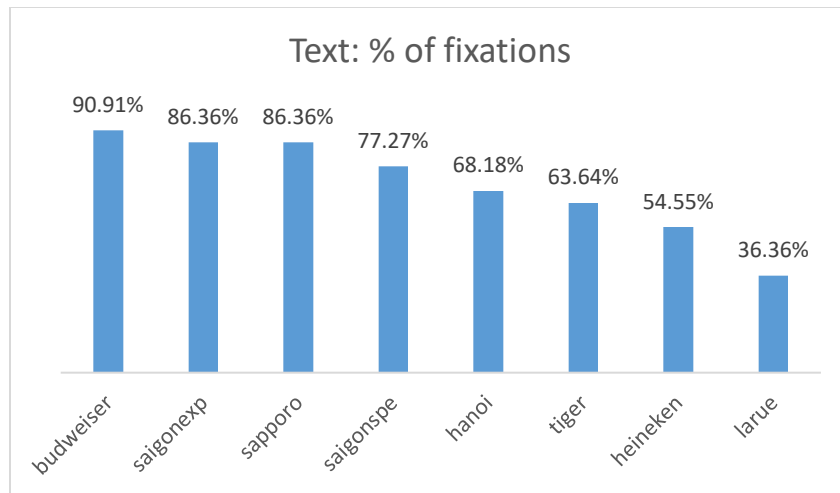


Figure 9 The results of the Text elements experiment

The most important elements here appear to be the choice of the fonts, the disposition of the text on the label space, and its size: a curved text disposition attracts attention to the center and a big brand name is obviously more visible and gets more attention. The Budweiser text is singular in so far as it uses a typical vintage font for the brand name and its description, associated with flattering inscriptions like 'KING OF BEERS' and 'GENUINE' in an imposing uppercase font. This gives the beer a quite convincing authentic and trusty image. In opposition, the less viewed beer, Larue uses a very commonplace and generic font and a small text size, associated with sporadic text.

3. Overall popularity

Concerning the attractiveness of the whole labels, the Japanese Sapporo comes first (100% of the participants looked at it!): It's new on the Vietnamese market, and takes advantage of very aggressive advertising and premium branding (Figure 10). Once again, the shiny contrasted label is described as having a "good & pleasing arrangement". Hanoi is attractive this time (86.3%), mainly because of the big name in a familiar Vietnamese writing "Bia Hà Nội" referring to the name of the political capital of the country associated with the red color which is essential in the Vietnamese (and Asian) symbolism and panorama. It was perceived as "traditional". The same layout is used by Saigon Special that has the old name of the Vietnamese economic capital, in a big white writing on a dark green background. Thus, because of cultural conditioning, it seems that the Vietnamese consumer is attached to their culture and national environment and is naturally drawn to elements that evoke them. On the other hand, the Dutch/international Heineken is watched by 77.3% of the judges. The evoked causes are the "emblematic green color", the "famous white name on black banner", and the "red star". Heineken embodies luxury, openness to the world and high quality as well. It is a high standard beer, consumed by the rich and sold at a high price. It is also associated with partying and festivity.

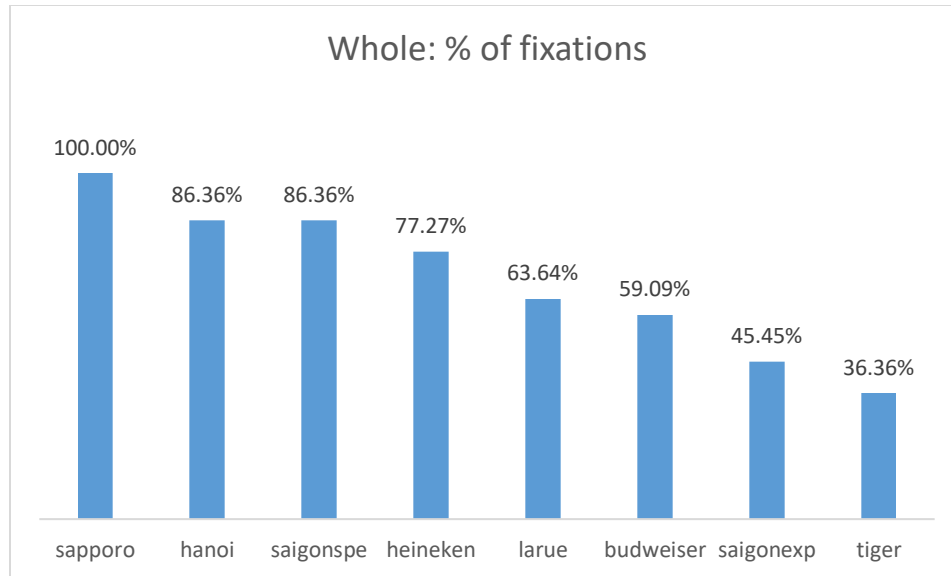


Figure 10 Results of the experiment on the whole labels

V. Conclusions

The label is the identity of a product. It is the element that catches people's attention. It is also beneficial to consumers to let them distinguish goods from one another. It is certain that beers' labels play an important part in their branding, and their sales thus. That's the reason why label designing and conception requires a lot of attention and care from marketers: It has to be distinctive and stand out from the crowd. A good way to make it do so is to work on its visual perception and attractiveness: The colors, shapes and text used on the label must be chosen wisely not only to represent the identity and values of the brand, but also to make it appealing and catchy for the consumer. Regarding the study we made, we can extract some elemental advice about how to make a good label (Table4).

Colors and shapes	Text
<ul style="list-style-type: none"> Bright colors: light is attractive. Contrast: Clear/Dark, Blue/Yellow, Blue/Orange, Red/Green, etc... Use complementary colors and color theory. Wise superposition of colors is catchy. Drawings, patterns: They cause interest (ex: The tiger, stars, barley) and can become emblematic. 	<ul style="list-style-type: none"> Curved text elements canalize the attention. Big sized text gets more attention. Font choices have great meanings. Text abundance: find the right balance. Pay attention to the target's culture: get close to them and be consistent with their political, religious and sociological beliefs.

- Ovals draw attention to a central point.

Table 5 A summary of the main design recommendations that came out of the study

The previous recommendations are useful while designing a label for a new beer, or while remodeling an old one to make it more efficient. Of course, the list is not comprehensive and making a nice and efficient label requires much more thinking and expertise.

Concerning the use of eye tracking technology for marketing purposes, it is getting more and more common today (Some Samsung smartphones has built in invisible eye trackers), and it will certainly affect our lives in the following decades. Indeed, tests are being performed to include new generation eye trackers in airport advertisement billboards that will track the gaze of the people passing by without their knowledge in order to make “better” ads. However, the legal vacuum concerning the collection of that kind of information makes it a bit disturbing. Let’s hope that this technique will stay in laboratories and will always be performed on consenting people.



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VII. Appendix

1. Testing document

This document was written in English and Vietnamese to explain how the experiment goes and was read by the testers:

Instructions for respondents:

- The study is about beer, not you. You don't need to do or know anything at all in order to participate.
- The experiment is constituted by 3 sessions. A 'Judge number' will be assigned to you on the first session, please try to remember it☺.
- Here is how a session goes :
 - You have to sit comfortably, and immobilize your head. When you are installed well, please keep your head immobile during all the experiment. It lasts only a few minutes.
 - The first part of the experiment is called a calibration, it shows a shape that moves on the screen. Just look at its center and follow its movements. Once it is finished, keep your head immobile.
 - The second part only lasts a few seconds. All you have to do is to look at the picture freely.

After that, the session is finished and you will be asked one or two easy questions. Just answer freely and say whatever goes through your head.

Thank you very much!

2. Stimuli images

Colors & shapes:



Whole labels:



3. Data samples

Fixation data from the Colors & Shapes experiment (Inter-individual):

ID	fix_saigonexp	fix_sapporo	fix_heineken	fix_budweiser	fix_tiger	fix_saigonspe	fix_larue	fix_hanoi
1	1	1	1	1	1	1	1	1
2	1	1	1	0	1	0	1	0
3	1	1	1	1	0	1	1	0
4	1	1	0	0	0	0	0	0
5	1	1	1	1	0	1	1	1
6	1	1	1	1	1	1	0	1
7	0	1	1	0	0	0	1	0
8	1	1	1	1	1	0	1	0
9	1	1	0	0	0	0	0	0

Intra-individual data from the same experiment, for the Saigon Export beer. The variables were defined a posteriori:

	yellowheat	red oval	ovals overlapping
J1	1	0	0
J2	0	1	0
J3	0	1	0
J4	0	1	0
J5	1	0	0
J6	0	1	0
J7	0	0	0
J8	1	0	0
J9	0	0	0



Abstract:

Eye-Tracking and visual marketing: A study on the Vietnamese beer market.

In the simplest terms, eye tracking is the measurement of eye activity. It tells where one looks, what he ignores, when he blinks, and how does the pupil react to different stimuli. This study uses the eye tracking technology to compare the 'efficiency' of eight brands' beer labels: Budweiser, Larue, Hanoi, Heineken, Saigon Special, Sapporo, and Tiger. The purpose is to determine which design elements draw the most attention to the product, and to extract some actionable insight about the Vietnamese customer visual preferences.

The study was conducted thanks to a 22 people consumer panel in 3 sessions where colors and shapes, and text elements were separated and showed to the participants under identical and controlled circumstances. The judges were also interviewed about their perception of each label, their preferences and their knowledge of the beer brands.

This study compiles these different sources of data attempting to provide elements of response to a few marketing-related questions: what's a good label? How to get increased attention to a beer label on the Vietnamese market?

Assuming that a product that gets higher visual attention probably get higher purchase intent, results show that highly contrasted and bright labels are the most attractive (Therefore the most efficient) and that some geometric shapes like stars can be very favorable as well. Some highly marketed beer brands are so well established that their color is fully sufficient for the consumer to recognize them (Heineken, Tiger). The interesting aspect of this study is that it is using a very reliable high-tech device that directly gives access to what people look at. That makes the results much more unbiased than in the case of an opinion survey.

Nonetheless, these results can hardly be extrapolated to all the beer consuming population, knowing that the average age of the panel was only 23, and that it contained 70% of females and only 30% of males, all Bách khoa University students.

Keywords: Eye tracking; Visual marketing; Beer label; label design.