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Game of Eyeballs: What Should Be Above and Below the Fold of an E-Commerce Website: A Biometric Study

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Abstract

With the advent of Web 2.0, there has been a comprehensive paradigm shift in the way people communicate and interact on the web. While the time before the Y2K focused on unilateral communication from the website owners to the viewers; the modern era has brought with it a whole new dimension of how organizations interact with their customers and prospects online. One of the major components of this ecosystem is the buzzing industry of E-Commerce. Today, amongst the top five most swiftly growing industries globally E-commerce is one of them. Organizations have made a beeline to market their products online to get their fair share of the online tech-savvy customers. In Pakistan, the E-Commerce marketplace is set to cross the magical USD1Billion this year. It is a big feat in a country where online payments are still not applicable and most of the business is done on Cash on Delivery. The purpose of this research is to narrow down on the subliminal and overt factors which contribute to making an E-Commerce platform/website stand out. The study takes into account the neurological factors that include eye-tracking as well as emotional recognition tools to study how online consumers interact with a particular website. The results revealed very interesting facts about how users interact with a particular E-Commerce website where findings revealed that most of the attention is given to data above the fold while screen flashers are the most premium real estate for these websites. Additionally, the space below the fold should not be ignored by these websites since most of the shoppers scroll down unconsciously. In order to promote engagement, these websites should focus on promoting discounts and sales messages.

Keywords: *Biometric, E-Commerce Website, Eyeballs, Web 2.0*

JEL Classification: *L81*

INTRODUCTION

The study analyses five different top Pakistani E-Commerce websites to understand the visual attention sequence on above and below the fold through qualitative data and biometric tools. The term "Above the Fold" originated from newspapers. It is actually the upper half of

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the front page of a newspaper where usually top stories are published. People, who might not read the entire newspaper, might read the front page. Online above the fold is exactly the same since it is the content which is displayed here gets the most attention. On the other hand, as soon as you scroll down; below the fold real estate starts. The scope of the study also includes the interaction of online shoppers below the fold. This will help us form an opinion as to what segments/portions of a particular e-commerce platform attract the most attention. Following is the diverse mix of Pakistani E-Commerce websites which we analyzed.

Table 1: Mix of Pakistani E-Commerce Websites

Website	Rank In Pakistan	Bounce Rate*	Daily Pageviews per Visitor	Daily Time on Site	Search Traffic	Total Sites Linking In
daraz.pk (electronics, general items)	*9*	*57.60%*	*3.10*	*4:19*	*10.70%*	*667*
yayvo.com (electronics & Home Living)	*264*	*32.90%*	*4.35*	*5:34*	*26.50%*	*558*
homeshopping.pk (Electronics)	*313*	*63.70%*	*1.84*	*2:15*	*47.10%*	*263*
Ishopping.pk (Electronics & Home Living)	*446*	*62.40%*	*1.98*	*2:08*	*51.40%*	*731*
mycart.pk (Grocery)	*2,299*	*34.30%*	*4.5*	*6:34*	*11.00%*	*18*

Source: Amazon Alexa (2018)
**Bounce Rate refers to the number of people who leave a particular website after viewing the first page only. The stats have been displayed to show how people are interacting with these E-commerce websites.*

Reasons for the Selection of Sample Size

The total e-commerce merchants operating in Pakistan are around 20 (having a nationwide presence). That forms our total population. Out of these 20, we have selected 5 platforms as a sample size keeping in mind there popularity and usage (which is depicted from the table above).

Daraz.pk

Daraz.pk has been one of the pioneers of the e-commerce industry in Pakistan. During the past decade, it has established itself as the leader when it comes to the online landscape of the country. When it comes to online shopping daraz.pk is the first player to recall from the top of the mind. With over 9.3 million unique visitors every month, Daraz.pk is one the most visited website in Pakistan. The overall look and feel of the website are engaging. On average, every user spends 4 minutes and 19 seconds on the website viewing 3.1 pages on average.

Yayvo

Yayvo.com takes its strength from the most successful courier company in Pakistan; TCS. Compared to other e-commerce platforms it is relatively new to the game. The smart and

creative advertising campaigns that it has executed in the recent past have made it prominent amongst the online community of shoppers. The flow of traffic has significantly increased in the past 12 months. Yayvo's e-commerce website is designed in a way that it generates a lot of engagement compared to other industry players. If we analyse the traffic it shows that on an average user spends about 5 minutes 34 seconds on the website and visits about 4.35 pages.

HomeShopping.pk

Compared to the other platforms homeshopping.pk is an old player in the e-commerce landscape. Due to long tenure in the industry, it has developed a decent shopper base, though it lacks in terms of top of the mind marketing campaign and promotions. If we analyse the traffic flow of homeshopping.pk it reveals that most of the visitors make their way to the website through a search engine. The duration of average visit on the website is 2 minutes 15 seconds while pages viewed by an average user are 1.84.

iShopping.pk

iShopping.pk showed a lot of promise since its inception but has failed to show the expected growth. Although it has continued to scale up its SKU during the past 12 months. It has stepped up on its marketing effort to gain more share of the e-commerce space. If we see the design of the website, its good but suffers in terms of customer engagement due to lack of recommendations on product pages. On average, users stay on the website for just 2 minutes 8 seconds and view only 1.98 pages.

My Cart

Mycart.pk has grown in leaps and bounds over the past 18 months. It is the biggest online grocery store in the country with over 300,000 unique users every month. After establishing itself in Karachi mycart.pk has started its operations in Lahore as well. The aim of mycart.pk is to make online shopping ubiquitous across the country. On average, users stay on the website for just 6 minutes 34 seconds and view 4.5 pages.

Research Gap

In the local context of E-Commerce, there hasn't been biometric-based comprehensive research (which falls under the greater umbrella of neuromarketing) followed by extensive qualitative data analysis in the Pakistani market. We see it as a big gap since for an E-commerce website it's all about the game of eyeballs and how do their online prospects respond to their website. Through this research, we are presenting a framework which will serve as a toolkit for existing and upcoming E-commerce businesses to model their website in a way which attracts eyeballs and leads to a call to action. The research will have significant implications since we are getting primary information from the prospective online shoppers about how do they see a particular E-commerce platform and what are the key things that actually attract them to stay connected, engage and respond to a particular stimulus which leads to a sale. Through our research, we have looked to answer the following questions. These questions can also be considered our research objectives.

- How do online shoppers browse above and below the fold on an E-commerce website?
- What captures the eye of an online prospect on an E-commerce website?

- How do the emotions of online shopper respond to particular stimuli on an E-commerce website?

The purpose of this research is to infer and study how online shoppers interact with a particular E-commerce platform. Emphasis has been laid on understanding shoppers behaviour above and below the fold. Based on these observations using qualitative data analysis tools we have come up with a toolkit which will help existing and upcoming E-commerce platforms to design their websites keeping in mind the key factors which can influence shoppers buying behaviour online.

This is the first of its kind research in Pakistan using qualitative data generated through interviews and biometrics. We are taking the initial steps to inform the E-commerce platforms about what should be above and below the fold on their website. In terms of limitations, the only limitation we see is the sample size which is limited due to the extensive nature of the research whereby a single individual had to go through each and every website part of the sample and along with that go through an in-depth interview as well to see whether what he is saying correlates with what his biometrics reveal. Another limitation we see is the interpretive approach since it can always be challenged as the premise of the idea is subjective.

LITERATURE REVIEW

In today's cluttered online world where people are bombarded with advertisements, 56.1% of the ads are never seen by people (Google, 2014) which makes it extremely important for website developers to make websites in a way which attracts people to view the complete page i.e. above and below the fold. The quintessential question is does the website fold in today's age exist? The answer to this question is a 'Yes' but the definition of above and below the fold is changing since people are moving towards multi-screening and therefore there are no accurate dimensions of what above or below the fold is. A good website which is also responsive may have 2, 3, 4 or even more folds. Each device like a desktop computer, mobile, tablet, smart TV etc. have their own fold to consider (Schade, 2015). The world of the internet defines online navigation in a different way. Several researchers have looked to define navigation (Kalbach, 2007) as the online shoppers' practice of moving from one page to the other. It can also be described as the process which involves seeking online in pursuit of a goal or following hyperlinked information. Rosenfeld (2006) define the terminology of navigation as the combination of GUI tools that help an online prospect move through different websites so they can act on a particular call to action.

Jacob and Karn (2003) during their research on eye-tracking found out that the use of eye-tracking devices help us understand human-computer interaction profoundly. They looked to work on several usability studies which showed that research has focused on the extraction of information from web pages. Aaltonen, Hyrskykari, and Räihä (1998) through their research tried to investigate how online prospects spend time to go through menus. Their research identified that users tend to go through menus by sweeping over the entire menu in one go and then keep on sweeping till the time they feel like clicking any item which suits what they are looking for. Hornof (2001) and Halverson (2003) investigated into tasks which were reduced to the matching of a pattern and concluded that when the information is sorted in groups it helps in the visual processing of information. If we trace the eye movement of users online we

can infer that they go through group labels to decide whether they want to read more or not. In a study conducted by Hornof (2001), it was concluded that there is a big research gap in the layout presentation and overall design of screen as well as menu research. On the basis of information foraging theory (Pirolli & Card, 1999; Pirolli, 2007) he has advocated that it is uncertain as to why screen layout is left blank in screen design. He has attributed this to information overload since the cost of moving from one page to other is always high.

A few other research scholars like Jacob and Karn (2003) have observed that there has been a dearth of eye-tracking studies despite the fact that there has been exponential betterment in the associated technology. They attribute this to a few reasons for instance, eye trackers have to be carefully calibrated to get the right data from each person who is part of the eye-tracking study. Moreover, once the practical eye-tracking study is completed it takes a lot of time to extract the data and interpret it for meaningful use and application. According to an eye-tracking study, Jackob Nielsen (Fessenden, 2018) did find out that people do read the entire page but not all of them so one really needs to prioritize the content being displayed on the home page. Also for some tabs like Frequently Asked Questions(FAQs) and Contact details, people exactly know that they will be found at the bottom of the page, so they scroll down. In short, for whatever reasons we cannot ignore the fact that people do scroll down.

In an eye-tracking study by Click Tale (Frankel, 2017) of around 100,000 page views, the results showed that people scrollbar on around 76% of the total pages out which 22% were scrolled all the way to the bottom. Another eye-tracking study by CX Partners (Yazdi, 2009) also suggests that people do scroll but only if certain design guidelines are followed along with right motivational cues. Now that it has been established that people scroll down, we need to understand what are the things which entice people to scroll down. Chartbeat (Schwartz) in 2013 conducted a study of around 25 million user sessions across different websites and found out that around 66% of attention on a normal page was spent on above the fold but at the same time many websites had content that was extended further down the page, they found that on such websites people not only scrolled down faster but also stayed there for longer time. Also, according to an eye-tracking study done for Bristol Airport (Yazdi, 2009), you can encourage people to scroll down by adding less content above the fold which will ultimately force people to explore below the fold as well and visual attention can be equally divided above and below the fold.

Another experiment of online consumer reaction was done by doing some changes on the home page, sometimes it was positive and sometimes it was negative, it totally depends upon the reaction of the consumer. A lot of research work has revealed that navigation designs can be observed using eye-tracking. A few researchers (Jacob and Karn, 2003) have shown that we can significantly increase our knowledge of how our eye fixations happen and what factors contribute to catching our attention. This will help us infer and make a strong recommendation about what online users for in the hunt for. The results of the previous study on eye-tracking have revealed that for online users text-based websites are more attractive than images (Ellis et al., 1998). This was carefully studies by carrying our eye-tracking on a number of websites.

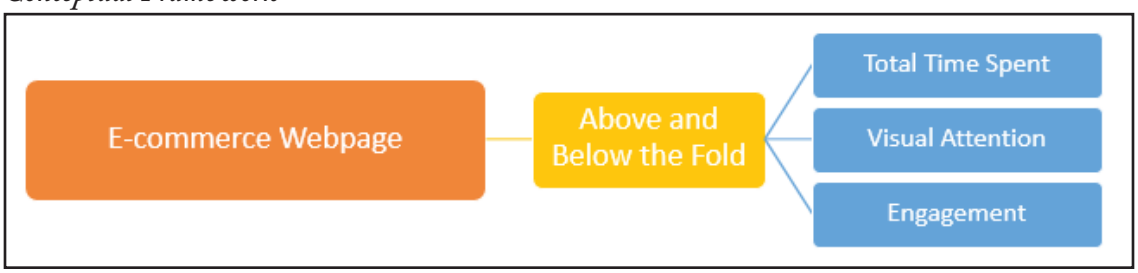
In one of the researches Goldberg et al., (2002) instructed the users to navigate on various websites as per their will without any external influence. The findings revealed an almost similar pattern of browsing amongst all the users. In another study, Josephson & Holmes (2002)

observed and recorded eye movement of online users by exposing them to three different websites of unrelated domains. On the basis of their study, they suggested that a few users have a habitual visual and scan path all the way across the visual display of user interfaces. The eye-tracking studies that have strived to navigate a website have unanimously shown that the use of eye-tracking tools is an efficient way of understanding human behaviour online.

Literature Gap and Contribution

With the huge influx and growth of e-commerce in Pakistan, it is pertinent to understand how online prospects interact with the particular e-commerce website. A thorough review of literature, especially in the context of Pakistani e-commerce landscape, revealed that there is very little evidence of a formal biometric study which leads to the understanding of human behaviour. This is a significant gap keeping in mind that user interaction with an e-commerce platform makes or breaks the deal in this business model. Another experiment of online consumer reaction was done by doing some changes on the home page, sometimes it was positive and sometimes it was negative, it totally depends upon the reaction of the consumer. A lot of research work has revealed that navigation designs can be observed using eye-tracking. A few researchers (Jacob and Karn, 2003) have shown that we can significantly increase our knowledge of how our eye fixations happen and what factors contribute to catching our attention. This will help us infer and make a strong recommendation about what online users for in the hunt for. The results of the previous study on eye-tracking have revealed that for online users text-based websites are more attractive than images Ellis et al., (1998). This was carefully studies by carrying our eye-tracking on a number of websites. In one of the researches Goldberg et al., (2002) instructed the users to navigate on various websites as per their will without any external influence. The findings revealed an almost similar pattern of browsing amongst all the users. In another study, Josephson & Holmes (2002) observed and recorded eye movement of online users by exposing them to three different websites of unrelated domains. On the basis of their study, they suggested that a few users have a habitual visual and scan path all the way across the visual display of user interfaces. The eye-tracking studies that have strived to navigate a website have unanimously shown that the use of eye-tracking tools is an efficient way of understanding human behaviour online.

Conceptual Framework



METHODOLOGY

The research methodology involved two tools to conduct the research.

a) In-depth qualitative interviews

b) Eye Tracking (screen-based remote eye tracker(Tobii Pro X2-30) which is being

used to understand the Online Shopper Behaviour has been provided by Tobii Pro)

We shall understand two key behaviours with these tools.

Shopper's Conscious Shopping Behavior

In order to understand the conscious behaviour of the online shopper, we used in-depth qualitative interview questions to understand the visual attention sequence of Pakistani shoppers. The users were shown each website and their behaviour was recorded by using semi-structured interview questions

1. What was the first thing that grabbed your attention on the home page?
2. Why did it catch your attention?
3. What was the first thing you clicked on the website? If yes, what was the reason for the click?
4. Did you scroll the homepage? If yes, what made you scroll down the page? If no, Why?
5. What are the main things which you remember from the website homepage? Positive and negatives

Shopper's Unconscious Shopping Behavior

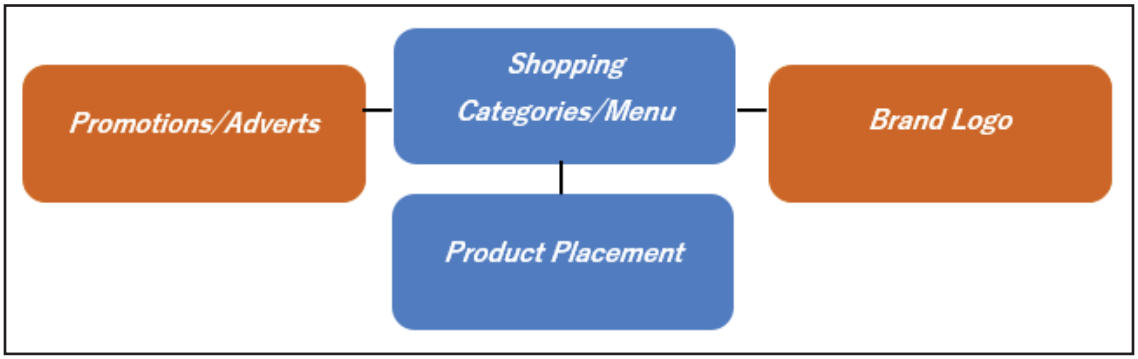
To see the correlation between conscious and unconscious behaviour we used the Tobii Screen-Based Eye-tracking tool which helped understand what shoppers look at the most while shopping. The eye tracker was positioned near the object to be tracked, usually, in our case, a screen and the respondents were placed in a stationary position in front of the screen-based eye-tracking system. The five selected websites were shown to each respondent and their visuals were tracked to generate a heat map for understanding and make sense of their eye movements with respect to particular stimuli. The framework of the study is based on interpretivism approach which concentrates on understanding and interpreting how and why different people have different ways of experiencing a situation. Within the interpretivist approach, the phenomenological line of inquiry was selected which assumes that human experience is inherently subjective. It is very important to make a logical algorithm out of this subjective data so that E-commerce platforms can understand the placement of items on their web page.

Qualitative Data Analysis Approach

The tools used for data gathering have been explained above. Qualitative data was gathered through interviews to see the parity and difference between what people actually feel to what people actually say. The tool used for qualitative data analysis was NVIVO. With the help of NVIVO, we were able to generate themes which formed the main tenets of the research. The themes helped us narrow down on the focus areas which are of particular interest for a shopper.

Themes

We were able to narrow down on 4 themes after careful analysis of the qualitative interviews.

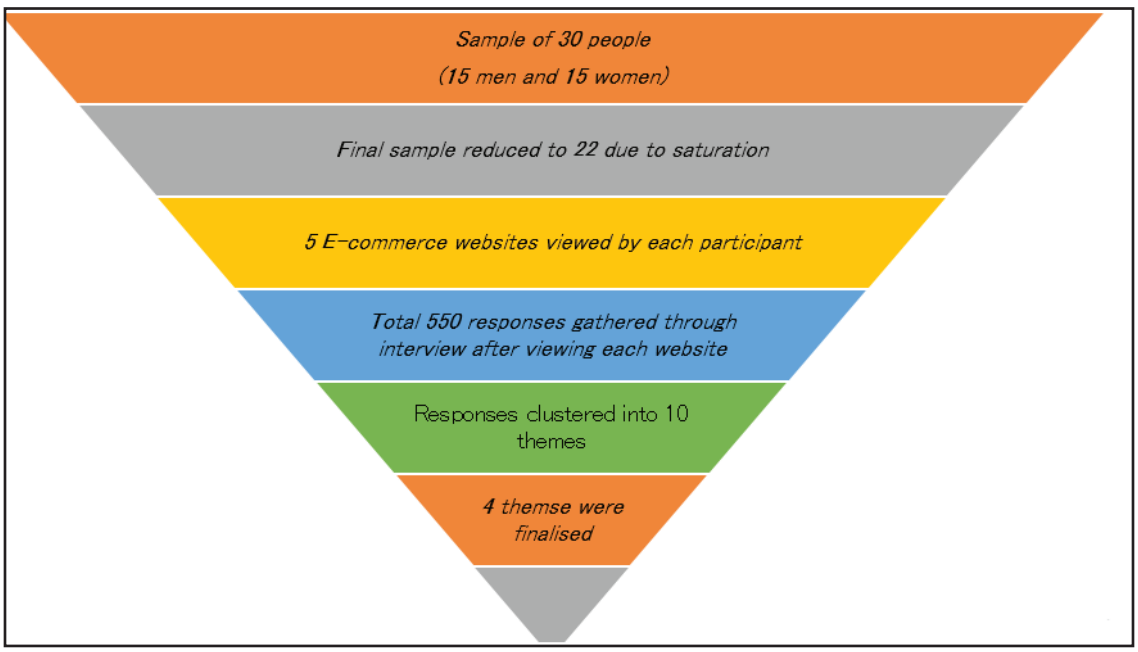


The above-mentioned themes were derived from the frequency of words which were used to discuss these items. The themes helped us further narrow down on the important elements which constitute a major part of the e-commerce platform that has a direct impact on the user shopping experience. We were further able to consolidate our recommendations keeping in mind these four themes.

Sample

The sample chosen was based on random sampling. Sample of 30 people was chosen out of which 15 were men and 15 were women so we have equal gender ratio. The diagrammatic representation is below. As we started our interview we came to a point, where after 10 interviews we had a pattern developing. By the time we interviewed the 9th and the 10th person we touched the saturation point. Our claim was further supported by a case study by Nielsen. However, to have a substantial sample size we went ahead and conducted 22 interviews. The breakup of our research flow is as follows.

Research Flow



Data Collection Procedure

In order to learn, make sense and understand interviewee's feedback about the E-commerce websites; face- to- face interviews were carried out with the help of open-ended semi-structured questions. The purpose of this practice was to seek the thematic structure and to reveal the intricate meanings through their experiences (Demir & Abell, 2010). All the interviews were recorded to make sense of the data afterwards by converting them to transcripts. The interview questions were crisp and to the point, so the respondents can be objective in their responses.

Data Analysis Procedure

The recorded interviews were transcribed precisely, and then entire written transcripts were read several times to attain the complete sense of them. To analyse the data NVIVO software was used which proved to be very beneficial in terms of generation of themes. This software facilitated us in assigning codes to each statement of all transcripts by using complete coding method and identify the significant statements from all transcripts that pertain directly to the phenomenon and formulated the meanings from those statements. After that, child nodes were aggregated into parent node to generate particular themes. NVIVO Text Analysis feature was used to identify the themes and explore the ways of people talking about particular phenomena.

Findings from Heat Maps

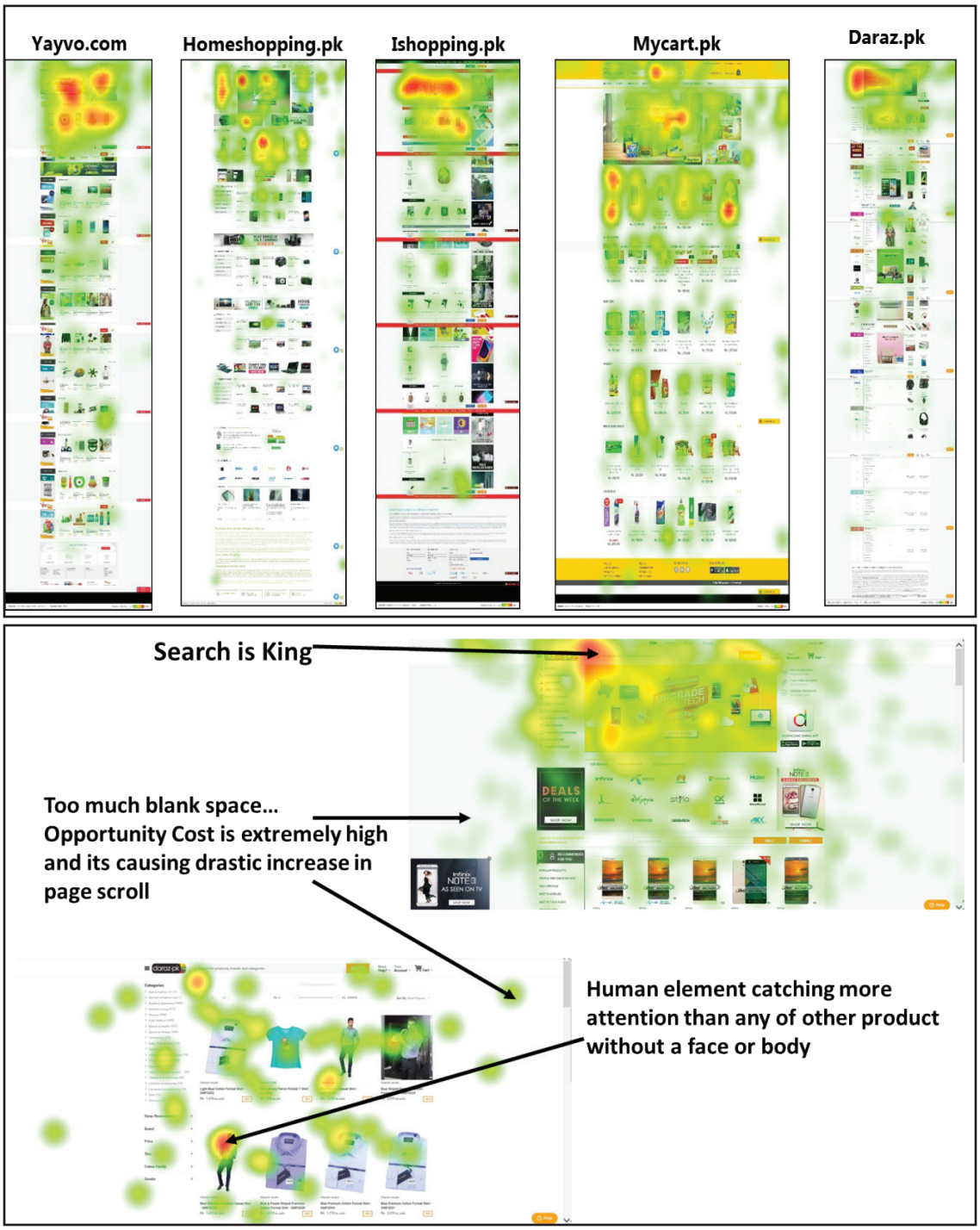
Before discussing the findings of the interview questions, let's have a look at the heat maps for each individual website which was part of the sample. The eye-tracking results show that there are three main things where the attention is focused on.

- Moving Banners
- Category List
- Dropdowns from the Category list

Moreover, the biometric research also revealed the following details:

Findings from Qualitative Interviews

The survey results showed that above the fold is the life and blood of the entire E-commerce website. However, what was surprising to see was that the people scroll below the fold unconsciously since it has become a part of their habit. For an e-commerce website, the search bar and the promotion's banner is the most important elements to catch the eyeballs of online prospects. The themes which caught user's attention was the convenience of shopping, better deals, discounts and saving of time. Another unique discovery was that people tend to be associated on an emotional level with these websites as they think it gives them the independence to make decisions and makes them feel trendy as well.



Daraz.pk

Dynamic and sliding banners are extremely effective in Daraz's case. During qualitative interviews, almost all respondents noticed the sliding banners and they also pointed out that most of the sliding banners successfully triggered impulse buying decisions especially in the

case of mobile phones. Sliders, when combined with discount, offer crates the best combination to attract shoppers. Daraz also understands the importance of these dynamic banners which is why the categories usually advertised in these banners are usually generic which are used by the majority of their target audience i.e. mobile phones, apparel, home appliances etc. The heatmap also reflects the potency of this approach. Also, the left side of the website is very important. Most of the written languages around the world use a left to right reading pattern and today the same pattern is reflected on websites as well. Need to make the most out of the left side by placing important elements there and making your search bar strong since in a lot of cases we noticed that the moment of truth for shoppers started from the search bar.

Yayvo.com

Super Deals and the first row of products with all the discounts is catching everybody's attention. Showing discount right at above the fold is a great way to encourage shoppers to further navigate the website. Also, headlines and a great font can draw more attention than a photo. A lot of concentration can be seen on the brand logo and the headline at above the fold, especially in the upper left of the page. So, a good celebrity picture or great scenery is not just enough to catch shopper's attention, it must be backed by a good call to action as well.

Homeshopping.pk

Category sidebars are extremely prominent in-home shopping's website and gained the most shopper attention. While interviewing the respondents a lot of people could recall different categories in the sidebar not because they read all of them but because of the category logos placed right next to the sidebars. Human eyes cannot process large pieces of information at once and therefore small chunks of information are the best way to communicate effectively. Content should be broken down into small packets so shoppers do not have to absorb massive blocks of information. Also, since the home page is such a prime location, website developers should not place all their important content in just one basket.

Ishopping.com

One of the highlights of the home shopping website was the category navigation bar at the middle top. A lot of websites use the side navigation to improve their aesthetics but now when the study is conducted and we have the heat maps in front of us, It is obvious that anything at the top middle of the website will be seen instantly and visual navigation will be much better. Ishopping has the strongest attraction above the fold and the weakest attraction below the fold. The reason why above the fold is attractive is due to the presence of mobile advertisement. Most of the eyeballs get attracted to this slider ad. Eye-tracking, as well as interviews, suggested that most of the clicks that happened on the website were due to the presence of website advertisement. Another strong point of the website which stood out in the eye-tracking, as well as interviews, was the presence of a search bar which most the people found attractive as it allowed an easy search of the products. The interviews also revealed strong engagement above the fold due to strong anatomy of the page above the fold. Most of the people didn't scroll the website down due to the fact the slider elements were strong and the menu bar was also horizontally placed above the fold. This can be considered a weakness for the website sinc (Monica Cortinas & Raquel Choccaro, Attention to online channels across the path to purchase: An eye-tracking study, 2019)e the shopping items which have been placed below

the fold are being neglected. Moreover, Ishopping also needs to pay more attention towards its brand logo as well as present a reason for the people to scroll below the fold.

Mycart.com

A most distinct pattern has been observed in the findings as far as mycart.pk is concerned. In terms of the heatmap analysis, it had the most well spread eye fixation above and below the fold though the fixations were not high in terms of number. Moreover, the website scores a home run as far as above the fold attraction is concerned which was analyzed (Huang, Positive Moods Can Encourage Inertial Decision Making: Evidence from Eye-Tracking Data, 2019) using qualitative interviews. The people who were interviewed exclaimed the greatest attraction on the home page due to the unique colour scheme of the website as well as the presence of discount offers. It has strong visual attention on products on the home page and that is because their first row of products only highlights the products which are a part of top deals, the second row only highlights products which has bundle offers and only after that normal category are lined up. Clearly shows that Pakistani E-commerce shopper is a deal and promotion driven shopper. However, a few handicaps were also observed. People online want a complete bouquet of services which includes electronic gadgets and other accessories which of course doesn't go with the business model of mycart.pk. Therefore, the call to action can be considered weak since it only offers home grocery items. The engagement element is also on the lower side; this can be attributed to the fact that grocery items do not raise the desired sentiments as compared to a mobile phone or an electronic gadget.

RECOMMENDATIONS – A TOOLKIT FOR E-COMMERCE PLATFORMS

Based on our survey the following recommendations have been proposed which can be considered a toolkit for the existing and upcoming e-commerce platforms.

1. The heat maps, as well as qualitative interviews, suggest that the front banner of an e-commerce website has to be really catchy and persuasive. Ideally, it should contain a very potent sale or discount offer. It can also contain a teaser which entices people for a call to action. Moreover, this banner should open a category for the shopper which creates further chances of a sale. Maximum engagement and fixations are observed on the front banner, above the fold.
2. Use of animation also persuades an online shopper to stay on the page. The more they stay on the page chances are higher that he will scroll and surf more.
3. The search bar has to be prominent which gives the shopper a chance to search for the product he requires as well as a chance to the website for a longer presence.
4. In order to create the stickiness, the website can actually communicate with a user with an actual "Scroll down message" which can lead to discounts or promotions.
5. A less cluttered page usually is favourable for the online shopper since it doesn't confuse the shopper and helps him focus more. So steps should be taken to keep the page as simple as possible.
6. The results reveal that most of the shopper's time is spent above the fold. From this, we can infer the fact that maximum persuasion should be tagged to the items which are placed above the fold. This includes flash ads, menu bar, search bar and any other promotion that the website might run.

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ANNEXURE

tobii pro

Certificate of Training

Date: 2nd January, 2018.

To Whom It May Concern.

This is to notify that Mr. Humza Mahfooz, is trained to conduct and analyze eye tracking studies in a lab or real life environment. The screen based remote eye tracker(Tobii Pro X2-30) which is being used to understand the Online Shopper Behaviour has been provided by Tobii Pro for academic research purpose.

For any queries, kindly contact Tobii Pro.

Regards,

For Tobii Pro,

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