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Acquisition and Behavior Among Male and Female Audience in the Institutional Online Site Visits

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Abstract – Understanding the demographics of the website visitor could contribute to better decision making in writing personalized content. Gender information is essential to know the number of visitors and which a gender dominate the visits for future decision making. This two-year data focuses on the acquisition and behavior of male and female audience on the institutional website of Pangasinan State University which can be accessed at psu.edu.ph. The data scope is from January 1, 2017, to December 31, 2018, which was extracted an hour before the end of 2018. The methodology of the study includes the installation of Analytical code which tracks the audience from the website which generates reports and to monitor the performance of the website for future reference. The researcher found that there are more female visitors than male. The study also shows the behavior of male and female and other information that could help the information officer of the University to provide personalized content for the year 2019. Since the audience of the website is more female than male, it is recommended that the content of the website should be gender sensitive.

Keywords – behavior and content, institutional website, website content, gender and website

INTRODUCTION

Knowing the visitor's demographics could contribute to decision making in writing content and other essential decisions related to web development [1]. Website visitor tracking focuses on individuals' behavior while they're on the website, including gender-related information, location, activities which include downloading, and engaging with, how recently, and how frequently. With the increasing need to meet customer preferences and to understand customer behavior, web analytics plays an important role to approach and fulfill the needs [2], [3]. Thus, the Pangasinan State University, followed this best practices to determine the visitor in the previous years for future analysis.

The researcher itself, as the former web administrator, generates reports based on data analytics of website visits since 2016. Understanding the visitor's demographics especially the gender is sometimes missed in the reports generated by the webmaster where the importance may sometimes overlook. Thus, this study promotes the inclusion and emphasize the importance of gender-related information in the web reports.

Based on data generated by installed Analytics, In 2017 there are 17,171 unique users who visited the website psu.edu.ph, while in 2018 there are 27,928 unique users, with a total of 25,047 and 43,514 sessions respectively. There is a vast increase in traffic in the web visits since 2016, making the website ranked first in the region [4].

Figure 1 Percentage of Increase from 2018 vs. 2017

While generally, visitor tracking has a significant impact on the decision, this study focuses on behavior and acquisition among male and female visitors for the year 2017 and 2018.

OBJECTIVES OF THE STUDY

The primary objective of this study is to determine the acquisition and behavior of male and female visitors of Pangasinan State University institutional website. It also investigates the sessions, average durations, the device used, and the source of audience. This study also determines the traffic type and average session duration of male and female visitors. It aims to understand the importance of gender-related information in web design.

THE SCOPE OF THE STUDY

This study focus on the web analytics of www.psu.edu.ph, the Official Website of the Pangasinan

State University. The duration of sessions is from January 1, 2017, to December 31, 2018. This study only focuses on the acquisition and behavior of male and female visitors; other demographical information is not included in this study.

MATERIALS AND METHODS

In order to monitor the audience in the website, last August 2016, the web administrator installed a Google Analytical to track the visitors from the website which generate reports such as the audience report that includes gender, and to monitor the performance of the website future reference [2], [5].

A script was generated in HTML form and transferred to the CMS website of the institution via cPanel [5]–[7]. One of the important report needed is the audience reports which provide insight into the demographics which includes the gender of the website audience. All the data was generated using Google Analytics.

RESULTS

During the year of 2017, there 57.74% with an equivalent number of 10,089 female users who visited the website compared to 7,385 male users. In the year 2018, there is an increase in visitors to the University

website, where there are 16,669 or 58.85% female visitor, while there are 11,655 male visitors. This shows that there is more female visitor compared to male visitors in the website as shown in Figure 2.

Figure 2 Percentage of Sex
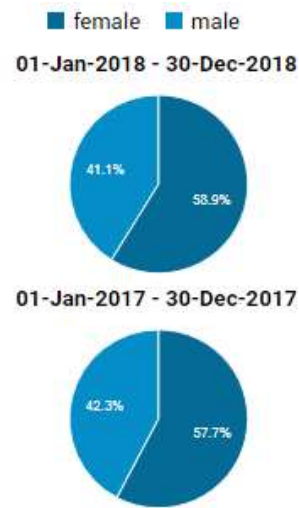
An increase in visits from 2017 to 2018 was seen, but the distribution and percentage of the audience from male and female still close. The figure shows that there are more female visitors than male.

Figure 3 Acquisition and Behaviour Summary

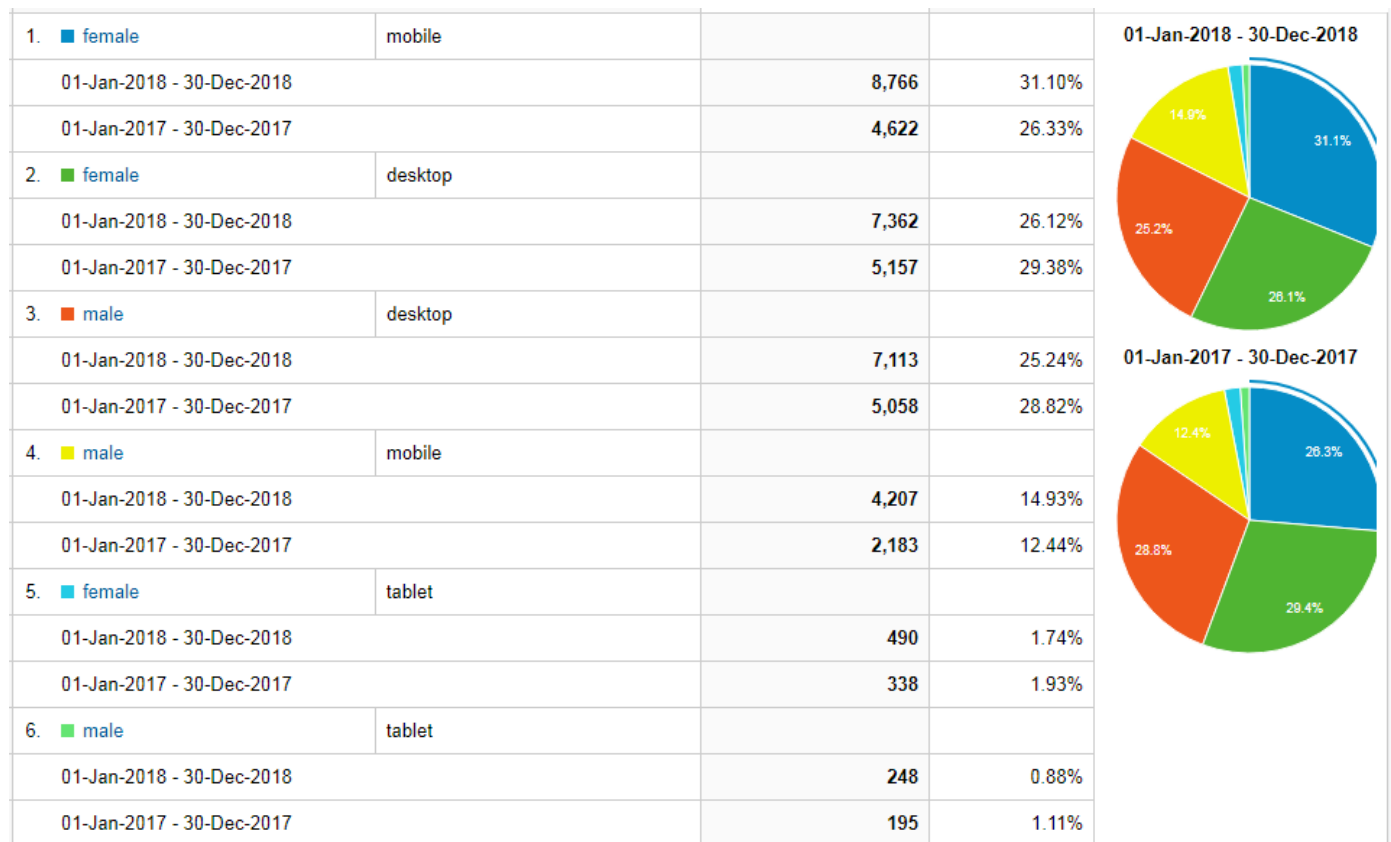| Gender	Acquisition			Behaviour		
	Users	New Users	Sessions	Bounce Rate ↓	Pages/Session	Avg. Session Duration
	62.65% ▲ 27,928 vs 17,171	63.76% ▲ 27,020 vs 16,500	73.73% ▲ 43,514 vs 25,047	7.39% ▼ 49.23% vs 53.16%	10.12% ▲ 2.68 vs 2.43	2.18% ▲ 00:03:31 vs 00:03:26
1. female						
01-Jan-2018 - 30-Dec-2018	16,669 (58.85%)	15,984 (59.16%)	26,190 (60.19%)	49.60%	2.68	00:03:34
01-Jan-2017 - 30-Dec-2017	10,089 (57.74%)	9,505 (57.61%)	14,560 (58.13%)	53.79%	2.46	00:03:25
% Change	65.22%	68.16%	79.88%	-7.80%	9.13%	4.04%
2. male						
01-Jan-2018 - 30-Dec-2018	11,655 (41.15%)	11,036 (40.84%)	17,324 (39.81%)	48.67%	2.68	00:03:26
01-Jan-2017 - 30-Dec-2017	7,385 (42.26%)	6,995 (42.39%)	10,487 (41.87%)	52.27%	2.40	00:03:27
% Change	57.82%	57.77%	65.20%	-6.90%	11.52%	-0.55%

Based on Figure 3, the summary of visits, Female visitor has a more significant number than male in 2017 and 2018. Sessions for a female is also higher than male visitors. While the average number of Pages visited per sex is the same for male and female for 2018, the female has a higher number of average pages visit in the year 2017. Female spend more time in the website in 2018 with an average session duration of 3:34 minutes compared to 3:26 minutes for males in 2018, while in 2017 there is a higher number of average session duration for male than female. This result shows that despite female has a higher number of visits, Pages and Session duration is closer to each other.

The two-year data also shows that female has a higher number of increases compared to male in terms of users, new users, and sessions. The result of this study may contradict results where in some studies, women remain less frequent and less intense users of the Internet [8], and Male internet users are higher than female in the Asian Region.

There is even digital divide in some developing countries, where women in developing countries face in accessing the Internet that Current gender disparities in Internet use will be outlined and the barriers that potentially hinder women's access and participation in the online world [9]. But despite the result of another study, the Philippines has freedom for internet use and the education sector is dominated by more females than males [10].

Figure 4 Device Usage

					01-Jan-2018 - 30-Dec-2018
1. ■ female	mobile				
01-Jan-2018 - 30-Dec-2018		8,766	31.10%		
01-Jan-2017 - 30-Dec-2017		4,622	26.33%		
2. ■ female	desktop				
01-Jan-2018 - 30-Dec-2018		7,362	26.12%		
01-Jan-2017 - 30-Dec-2017		5,157	29.38%		
3. ■ male	desktop				01-Jan-2017 - 30-Dec-2017
01-Jan-2018 - 30-Dec-2018		7,113	25.24%		
01-Jan-2017 - 30-Dec-2017		5,058	28.82%		
4. ■ male	mobile				
01-Jan-2018 - 30-Dec-2018		4,207	14.93%		
01-Jan-2017 - 30-Dec-2017		2,183	12.44%		
5. ■ female	tablet				
01-Jan-2018 - 30-Dec-2018		490	1.74%		
01-Jan-2017 - 30-Dec-2017		338	1.93%		
6. ■ male	tablet				
01-Jan-2018 - 30-Dec-2018		248	0.88%		
01-Jan-2017 - 30-Dec-2017		195	1.11%		

In terms of device usage, more female prefer using mobile devices such as mobile unit and tablet when accessing the website compared to male visitors. While male visitors prefer to use desktop computers than using a mobile device, this shows that female may access the website while on the go or anywhere while male access the website in a fixed location.

It is also shown in the result that female mobile and female desktop users increase for the year 2018 version 2017. While in male users, desktop users decrease and mobile users increase. This data showed that there is an increasing number of male users who access the website thru mobile. This result agrees with one study that males, regardless of race, were the most intense video game players, and females, regardless of race, were the most intense cell phone users [16]
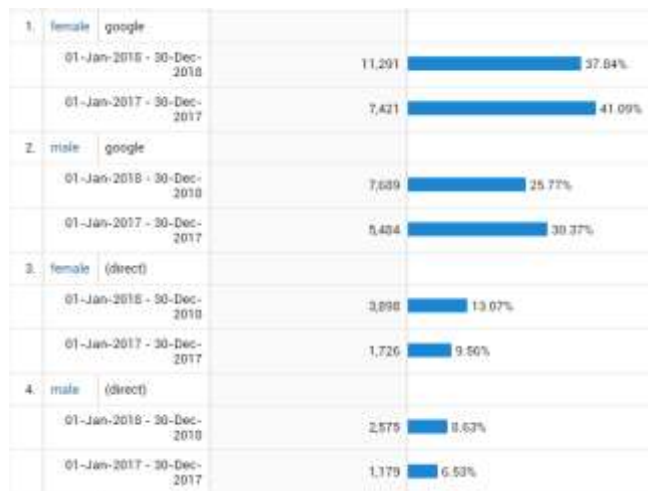
Figure 5 Source

Figure 6 Sessions and Traffic Type

Gender	Traffic Type	Total	
		Avg. Session Duration	Users
1. male	referral		
01-Jan-2018 - 30-Dec-2018		00:03:55	1,824
01-Jan-2017 - 30-Dec-2017		00:03:37	776
% Change		8.24%	135.05%
2. female	referral		
01-Jan-2018 - 30-Dec-2018		00:03:36	2,282
01-Jan-2017 - 30-Dec-2017		00:02:56	1,046
% Change		22.58%	118.16%
3. female	organic		
01-Jan-2018 - 30-Dec-2018		00:03:33	11,508
01-Jan-2017 - 30-Dec-2017		00:03:35	7,745
% Change		-0.87%	48.59%
4. female	direct		
01-Jan-2018 - 30-Dec-2018		00:03:33	3,898
01-Jan-2017 - 30-Dec-2017		00:02:56	1,726
% Change		21.04%	125.84%
5. male	direct		
01-Jan-2018 - 30-Dec-2018		00:03:28	2,575
01-Jan-2017 - 30-Dec-2017		00:03:09	1,179
% Change		10.12%	118.41%
6. male	organic		
01-Jan-2018 - 30-Dec-2018		00:03:19	7,835
01-Jan-2017 - 30-Dec-2017		00:03:30	5,751
% Change		-5.41%	36.24%

The results in Table 5 show the source of visit where males and females use a search engine before landing to the University website. Most of the traffic from the website is from Google, as the leading search engine [11], [12], which is the result of the search engine optimization during 2016. There is a decrease in search engine source and a visible increase in direct access to the website. This means that most visitors are directly typing the web address in the browser, it is a good indicator that visitor's awareness is higher to the University web address compared to the previous year. The data in Figure 5 also shows that female audience overtakes male users in terms of search engine source and direct access thru browsers. Most website's visitors are from search engines which is the way of SEO to improve the site traffic and finally enhance the website advocacy capacity [13], [14].

The behavior of the audience was analyzed based on traffic source and session. Organic traffic source comes from search engines like Google, Bing, Yahoo, and other search engines. A direct traffic hit is a direct encoding of web address' website directly to the browser. Or, someone could have saved the website address and used a bookmark to get to it. Lastly, referral link consists of traffic from visitors who click on a link from another website such as posts on social media sites [15].

Based on figure 6, there are more female visitors from referral, organic and direct traffic, but the behavior is different. Male visitors from referral spend more time on the website than the female from referral links while female traffic from organic and direct links spend more on the website than male audience.

DISCUSSIONS

The researcher itself generate reports based on data analytics of site visits since 2016, but gender is sometimes missed in the reports generated, and the importance is sometimes overlooked. This study is an eye-opener that knowing the gender of the audience helps the administrators to engage with the audience and reach out to people in a personal way, thus provide a better result in information dissemination.

Based on the findings, females dominate the web visit of the Pangasinan State University website. This is a call for the content writer that the website content should be gender sensitive. Study findings indicate that female and male differ in their behavior but not on the viewing of content and average session durations which is close to each other. There are some reasons why male audience use desktop and females are using a mobile

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device in accessing the website. Because Males, regardless of race, were the most intense video game players, and females, regardless of race, were the most intense cell phone users [16].

On the webmasters perspective, knowing the visitor's demographics could contribute to decision making in writing content and other important decisions related to web design and development. Since it was found out that female audience is more than the male audience, it is essential to review the content of the website and check for possible non-compliance in gender-related language and do a correction. Since the majority of the audience are using a mobile device, webmaster and designers should maintain the mobile friendly environment of the website.

In the side of the Asian region, there are more males who use the internet than females, there are several studies that the findings indicated that males still hold more favorable attitudes toward technology use than females, but such differences would be characterized as small effect sizes [17], [18]. Another study also reported that males are more perceived support from their parents and peers to use computers and more positive computer self-efficacy and value beliefs than girls [17]. But based on the result, there are more female visits than male; this result also shows that females are more interested in educational information than males as one study shows that that women's superior academic performance plays a significant role in producing the gender gap in college completion [19], [20].

CONCLUSION AND RECOMMENDATION

The study focusses on the Data Analytics which was generated and focuses on demographics specifically gender. The result shows that there are more female visitors than male. Despite the increase in web traffic, female still dominated the audience on the website.

It is recommended that the result of this study should be disseminated to the information officer of the University to provide personalized content for the year 2019. Policy and guidelines related to web development should include gender ideas based on the result of this study. Since the audience of the website is more female than male, it is recommended that the content of the website should be gender sensitive.

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