

# International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

## A Survey of Privacy of Users' Information Obtained by Web Services

Kirti Patil, Anubha Shahane, Shantanu Londhe, Prof. Prashant S. Dhotre

Department of Computer Engineering, Sinhgad Institute of Technology and Science, Pune, India

**ABSTRACT:** Today, internet has become a significantly dependent source for people, providing huge number of services for their day to day living. Varieties of web services are being used by a large number of people. However, there is a growing concern of the personal information privacy. The objective of this paper is to study and analyze the information acquired by web services from the users in Indian context. Study and analysis of more than 50 most used web services in India is made with reference to their privacy policy documents. The studied information is further visually represented using pie charts in order to give the user a clear idea of up to what extent his personal information is accessed by web services. Thus, the awareness regarding information privacy is brought to light through this survey.

**KEYWORDS:** Privacy; Service providers; Web services; Information; Personal information; Awareness; Privacy policy; Internet.

### 1. INTRODUCTION

Have we ever thought how internet has gradually brought transformation into human lives? Earlier everything was used to be done without internet, and now almost everything is done through internet. The growth of internet is constantly expanding and it is quite true that we are enormously dependent on it. From booking a ticket to buying clothes, from finding a job to finding a spouse and from maintaining contact with friends to internet banking, internet has turned out to be the primary medium. But in this world where people are using internet in tremendous amount, how many of us have an idea of how our personal data is acquired, processed and exposed, without our consent? [1]

While talking about use of internet on smart phones, in a survey of more than 2000 Americans, the research showed that 54% of users chose not to install an application after knowing how much personal information is actually acquired by the application. 30% of users uninstalled the application present on their phone because they realized that it collected their personal information that they were not willing to share [5]. In another survey, 70% of the users said that they would "definitely not allow" a service provider to use their location for their advertisement purpose [6]. Also, a survey showed that 60% of users were very upset when they knew the app shares their location to advertisers [7].

Information privacy is something which most users are not aware of, but still is an issue to be concerned of. Whenever we start to use any web service, we are provided with privacy policy. How many of us read that policy document properly? And even if we read the document, how can we assure that everything mentioned is correct and followed properly by the web services. Also, many times we receive SMS or email from random senders related to loan, offers or any other advertisement. How many of us know from exactly where do they acquire our phone number or email id? The most common web services we use are the major providers of our personal data to those third parties. This paper will clarify most of these doubts.

### II. TERMS AND MOTIVATION

**Privacy** refers to information shared with visiting sites, how that information is used, who that information is shared with, or if that information is used to track users [8].

# International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

**Personally identifiable information(PII)** is information that identifies you personally, such as your name, postal address, telephone number, or email address [9].

**Non-Personal information** can be technical information or it can be demographic information, such as your age, gender, ZIP code or other geo location data, or interests. Non-personal information does NOT identify you personally.

**Third party cookies** - When users visit APA websites third-party cookies (such as Google advertising cookies) may be sent to their computers by APA's advertisers or service providers.

They may use the information obtained from these cookies:

- To track users browsing across multiple websites.
- To build profiles of users' Web surfing.
- To target advertisements that may be of particular interest to users.

**Behavioral information** is the capture of interaction, click, engagement, movement through a website, actions taken via email marketing across the buyer journey, user movement through digital content and more.

## III. SURVEY AND METHODOLOGY

The aim of the survey mentioned in this paper is to analyze and understand different type of users' data collected by different web services. Also, this paper focuses on awareness regarding user's privacy of information. This survey was done by the authors.

### *Method of survey*

The following method is followed while carrying out the survey. Initially, 52 most commonly used web services in Indian context were taken into consideration. This was done based on the Alexa rankings of the web services. This ranking is as per the visits made by Indians. Further, the privacy policy documents of each service were studied thoroughly by the authors. Study was made regarding what type of users' personal data is collected by those services. For example, service 'xyz' has mentioned in their privacy policy that they are collecting following data – First name, email id, phone number, IP address. They are not collecting – location, password. And it has not mentioned if they collect - Birth date, banking details.

### *Data Analysis*

The studied data was collected in a spreadsheet. In all 83 attributes like first name, last name, email id etc. were formulated. With reference to what is mentioned in the privacy policy, in front of each web service, it was specified that if they collect a particular data attribute or not or is not mentioned. ('Yes', 'No', 'Not Specified') This information was then visualized using a tool 'Tableau' which is a business intelligence tool [[www.tableausoftware.com](http://www.tableausoftware.com)]. This tool enables us to visualize data. This is a very simple-to-use tool which also supports drag and drop facility. Pie charts were formed depicting the data. Further, the data attributes were classified into - PII (Personally identifiable information), Behavioral, Device information and other. information. Finally, this processed information was represented to user along with suitable description.

## IV. RESULT AND DISCUSSION

### **A. Understanding the end results of survey**

In the following, we have evaluated the survey results. The results of survey have been described in tabular format. The table contains the name of a particular attribute of personal data, a pie chart depicting the proportion between number of web services collecting that data, web services not collecting that data and web services that have not mentioned it in their privacy policy document. Here, "Yes" denotes the web service has mentioned that

## International Journal of Innovative Research in Science, Engineering and Technology

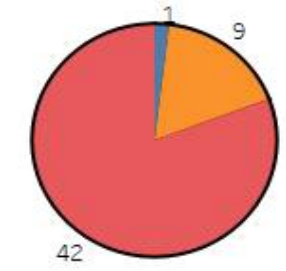

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

they collect the type of data,” No” denotes they have mentioned that they do not collect,” Not specified” denotes they have not mentioned whether they collect or not in their privacy policy document.

**TABLE 4.1.1 PERSONALLY IDENTIFIABLE INFORMATION**

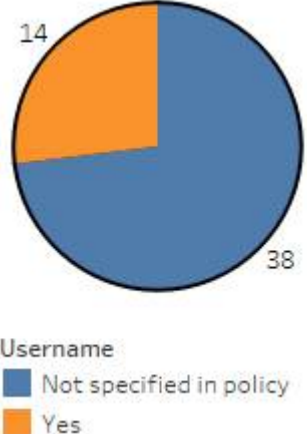
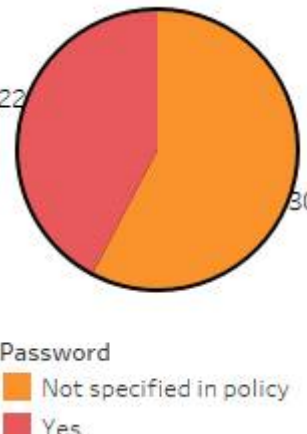
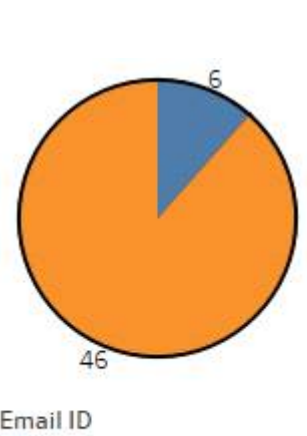
<p><b>First Name</b></p>	 <p style="text-align: center;">Fig. 4.1.1.1</p>	<p>4.1.1.1 gives representation of service providers acquiring the first name of users. Among 52 service providers, 42 service providers say that they take users’ first name (e.g. Amazon, Flipkart, Paytm, Naukri etc.), 1 says that it does not take users’ first name. (Wikipedia), 9 have not specified it in the privacy policy (e.g. HDFC, Quikr etc.) Thus, it is observed that most of the web services collect first name from the user.</p>
<p><b>Last Name</b></p>	 <p style="text-align: center;">Fig. 4.1.1.2</p>	<p>4.1.1.2 gives representation of service providers acquiring the last name of users. Among 52 service providers, 41 service providers say that they take users’ last name (e.g. Flipkart, Amazon, Bookmyshowetc), 2 say that they do not take users’ last name. (e.g. CartoonNetworkIndia, Wikipedia), 9 have not specified it in the privacy policy (e.g HDFC, Quikr, Stackoverflow etc.). Thus, it is observed that most of the web services also collect last name from the user.</p>
<p><b>Username</b></p>		<p>4.1.1.3 gives representation of service providers acquiring the username of users. Among 52 service providers, 14 service providers say that they take users’ username (e.g. Amazon, Hotstar,Goibibo etc.), No service provider say that they do not take users’ username, 38 have not specified it in the privacy policy (e.g. Godaddy, Indian express, Shaadi, Yahoo etc.). Thus, it is observed that</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

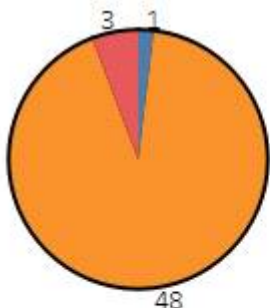
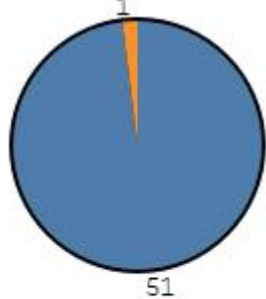
	 <p style="text-align: center;">Username  <span style="color: blue;">■</span> Not specified in policy  <span style="color: orange;">■</span> Yes</p> <p style="text-align: center;">Fig. 4.1.1.3</p>	<p>most web services have not specified if they collect username from the user.</p>
<p><b>Password</b></p>	 <p style="text-align: center;">Password  <span style="color: orange;">■</span> Not specified in policy  <span style="color: red;">■</span> Yes</p> <p style="text-align: center;">Fig. 4.1.1.4</p>	<p>4.1.1.4 gives representation of service providers acquiring the password of users. Among 52 service providers, 22 service providers say that they take users' password (e.g. Snapdeal, Flipkart, Goibibo, Hotstar etc.), no service provider mention that they do not take users' password, 30 have not specified it in the privacy policy (e.g. Bookmyshow, Yahoo, Godaddy etc.) Thus, it is observed that almost half of the web services acquire password whereas half have not specified. This can be concern of privacy.</p>
<p><b>Email ID</b></p>	 <p style="text-align: center;">Email ID  <span style="color: blue;">■</span> Not specified in policy  <span style="color: orange;">■</span> Yes</p> <p style="text-align: center;">Fig. 4.1.1.5</p>	<p>4.1.1.5 gives representation of service providers acquiring the email id of users. Among 52 service providers, 46 service providers say that they take users' email id (e.g. Makemytrip, Flipkart, Snapdeal, Amazon etc.), no service provider say that they do not take users' email id, 6 have not specified it in the privacy policy (e.g. Bookmyshow, HDFC, ICICI etc.) Thus, it is observed that almost all web services collect email id from the user.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

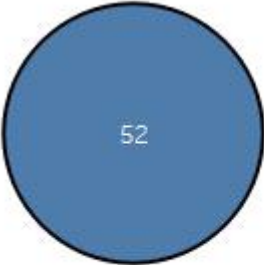
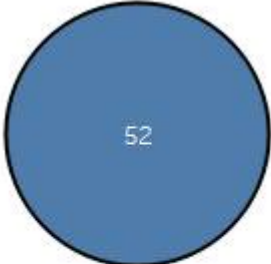
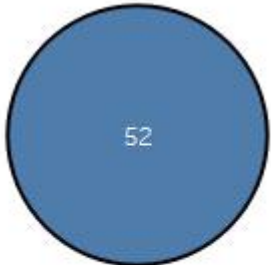
<p><b>National identification number</b></p>	 <p style="text-align: center;">National Identification Number (Social Security Number)</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.6</p>	<p>4.1.1.6 gives representation of service providers acquiring the national identification number of users. Among 52 service providers, 3 service providers say that they take users' national identification number (e.g. Axis bank, Paypal, Olx), 1 say that they do not take users' national identification number. (e.g. Hotstar), 9 have not specified it in the privacy policy (e.g. GoDaddy, ongcindia, justdial etc.). Thus, it is observed that most of the web services have not specified if they collect national identification number.</p>
<p><b>Passport Number</b></p>	 <p style="text-align: center;">Passport Number</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.7</p>	<p>4.1.1.7 gives representation of service providers acquiring the passport number of users. Among 52 service providers, 1 service provider says that it takes users' passport number (Axis bank), none say that they do not take users' passport number. (e.g.), 51 have not specified it in the privacy policy (e.g. Makemytrip, ICICI bank etc.) Thus, it is observed that most of the web services have not specified if they collect national identification number. Thus, it is observed that most of the web services have not specified if they collect passport number.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Vehicle registration plate number</b></p>	 <p style="text-align: center;">52</p> <p>Vehicle Registration Plate Number</p> <ul style="list-style-type: none"> <li>■ Not specified in policy</li> </ul> <p style="text-align: center;">Fig. 4.1.1.8</p>	<p>4.1.1.8 gives representation of service providers acquiring the vehicle plate number of users. Among 52 service providers, all service providers have not mentioned if they take users' vehicle plate number (e.g. passportindia, indianarmy, goibibo etc.).</p>
<p><b>Fingerprints</b></p>	 <p style="text-align: center;">52</p> <p>Fingerprints</p> <ul style="list-style-type: none"> <li>■ Not specified in policy</li> </ul> <p style="text-align: center;">Fig. 4.1.1.9</p>	<p>4.1.1.9 gives representation of service providers acquiring the fingerprints of users. Among 52 service providers, all service providers have not mentioned if they take users' fingerprints (e.g. Indian express, askmebazaar, passportindia etc.).</p>
<p><b>Genetic Number</b></p>	 <p style="text-align: center;">52</p> <p>Genetic Information</p> <ul style="list-style-type: none"> <li>■ Not specified in policy</li> </ul> <p style="text-align: center;">Fig. 4.1.1.10</p>	<p>4.1.1.10 gives representation of service providers acquiring the genetic information of users. Among 52 service providers, all service providers have not mentioned if they take users' genetic information (e.g. passportindia, indianarmy, naukri etc.).</p>

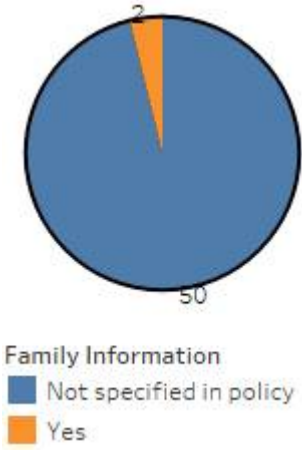
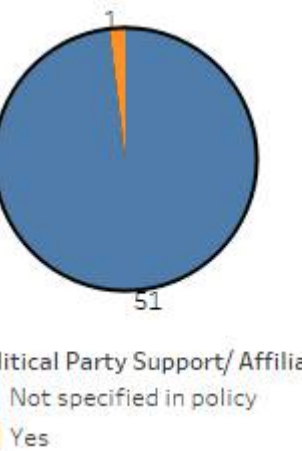
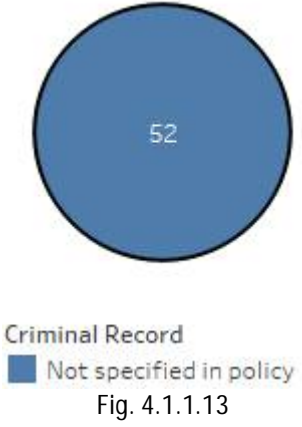


## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

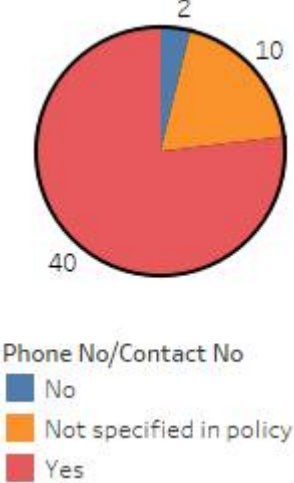
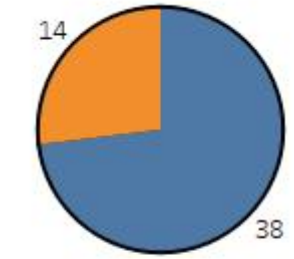
<p><b>Family Information</b></p>	 <p style="text-align: center;">Fig. 4.1.1.11</p>	<p>4.1.1.11 gives representation of service providers acquiring the family information of users. Among 52 service providers, 2 service providers say that they take users' family information (e.g. Cartoon network India, Hinkhoj), none say that they do not take users' family information, 50 have not specified it in the privacy policy (e.g. shaadi, naukri, passportindia etc.). Thus it is observed that most of the web services have not specified if they collect family information.</p>
<p><b>Political Party Support/Affiliation</b></p>	 <p style="text-align: center;">Fig. 4.1.1.12</p>	<p>4.1.1.12 gives representation of service providers acquiring the political part support information of users. Among 52 service providers, 1 service provider says that it takes users' political part support information (e.g. Stackoverflow), none say that they do not take users' political part support information, 51 have not specified it in the privacy policy (e.g. Rediff, HDFC bank, Shaadi)</p>
<p><b>Criminal Record</b></p>	 <p style="text-align: center;">Fig. 4.1.1.13</p>	<p>4.1.1.13 gives representation of service providers acquiring the criminal record of users. Among 52 service providers, all service providers have not mentioned if they take users' criminal record (e.g. passportindia, indianarmy, goibibo etc.).</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Phone number/Contact number</b></p>	 <p style="text-align: center;">Phone No/Contact No</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.14</p>	<p>4.1.1.14 gives representation of service providers acquiring the phone/contact number of users. Among 52 service providers, 40 service providers say that they take users' phone/contact number (e.g. Amazon, Snapdeal, Naukri etc.), 2 say that they do not take users' phone/contact number. (e.g. Wikipedia, Mysmartprice), 10 have not specified it in the privacy policy (e.g. HDFC bank, ICIC bank, reddit etc.). Thus it is observed that most of the web services collect phone number from the user which can affect users' privacy.</p>
<p><b>Photograph</b></p>	 <p style="text-align: center;">Photograph</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.15</p>	<p>4.1.1.15 gives representation of service providers acquiring the photograph of users. Among 52 service providers, 14 service providers say that they take users' photograph (e.g. olx, commonfloor, Zomato etc.), none say that they do not take users' photograph, 38 have not specified it in the privacy policy (e.g. yahoo, bookmyshow, ebay etc.)</p>

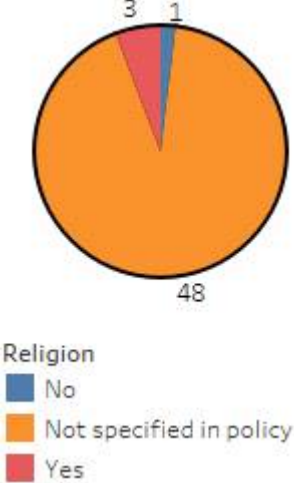
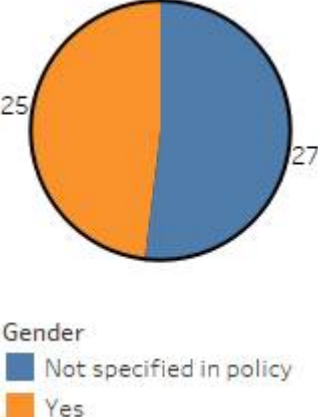
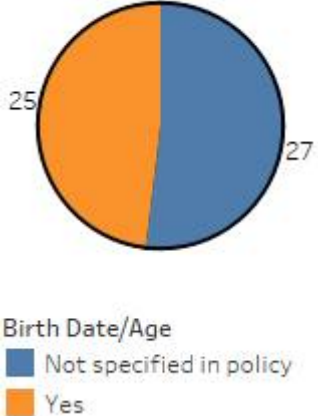


## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

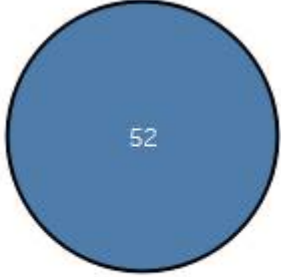

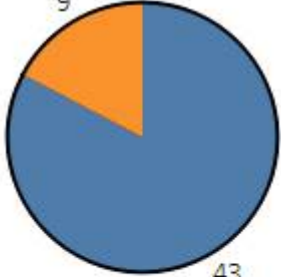
<p><b>Religion</b></p>	 <p style="text-align: center;">Fig. 4.1.1.16</p>	<p>4.1.1.16 gives representation of service providers acquiring the religion information of users. Among 52 service providers, 3 service providers say that they take users' religion information (e.g. shaadi, stackoverflow, goibibo), 1 say that they do not take users' religion information. (Wikipedia), 48 have not specified it in the privacy policy (e.g. linkedin, naukri, ask etc.)</p>
<p><b>Gender</b></p>	 <p style="text-align: center;">Fig. 4.1.1.17</p>	<p>4.1.1.17 gives representation of service providers acquiring the gender of users. Among 52 service providers, 25 service providers say that they take users' gender (e.g. snapdeal, wikipedia, linkedin, paytm etc.), none say that they do not take users' gender, 27 have not specified it in the privacy policy (e.g. Twitter, ICICI, Naukri etc.). This shows nearly half of the web services collect users' gender information whereas half have not specified.</p>
<p><b>Birth Date/Age</b></p>	 <p style="text-align: center;">Fig. 4.1.1.18</p>	<p>4.1.1.18 gives representation of service providers acquiring the birth date/age of users. Among 52 service providers, 25 service providers say that they take users' birth date/age (e.g. Flipkart, Amazon, Ebay etc.), none say that they do not take users' birth date/age, 27 have not specified it in the privacy policy (e.g. Naukri, Zomato etc.) We can convey that nearly half of the web services collect users' birth date or age whereas half have not specified. This shows that nearly half of the web services acquire birth date or age of the user,</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

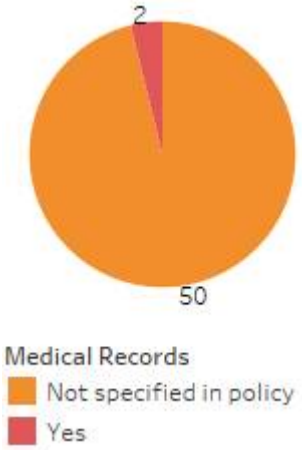
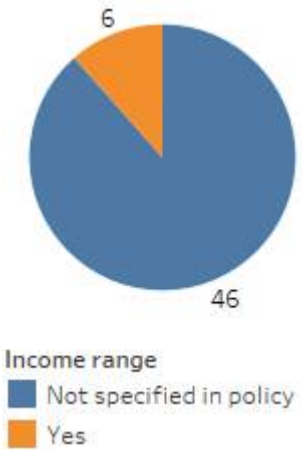
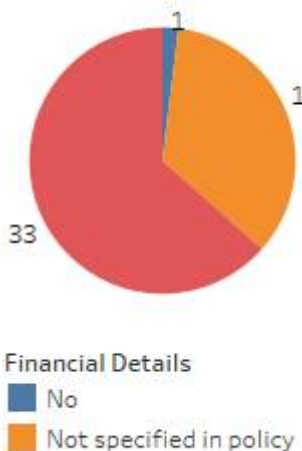
<p><b>Weight</b></p>	 <p style="text-align: center;">Weight ■ Not specified in policy Fig. 4.1.1.19</p>	<p>whereas half have not specified.</p> <p>4.1.1.19 gives representation of service providers acquiring the weight of users. Among 52 service providers, all service providers have not specified if they take users' weight (e.g. passportindia, indianarmy, goibibo etc.).</p>
<p><b>Height</b></p>	 <p style="text-align: center;">Height ■ Not specified in policy ■ Yes Fig. 4.1.1.20</p>	<p>4.1.1.20 gives representation of service providers acquiring the height of users. Among 52 service providers, 1 service provider says that it takes users' height (Shaadi), none say that they do not take users' height, 51 have not specified it in the privacy policy (e.g. naukri, amazon, passportindia etc.)</p>
<p><b>Occupation</b></p>	 <p style="text-align: center;">Occupation ■ Not specified in policy ■ Yes Fig. 4.1.1.21</p>	<p>4.1.1.21 gives representation of service providers acquiring the occupation of users. Among 52 service providers, 9 service providers say that they take users' occupation (e.g. Yahoo, LinkedIn, Rediff etc.), none say that they do not take users' occupation, 43 have not specified it in the privacy policy (e.g. Bookmyshow, Makemytrip, Ongcindia etc.). Thus, user can have privacy issues regarding their professional lifestyle.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

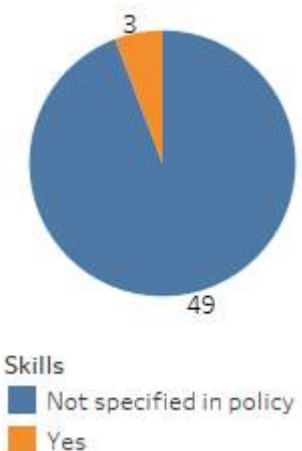
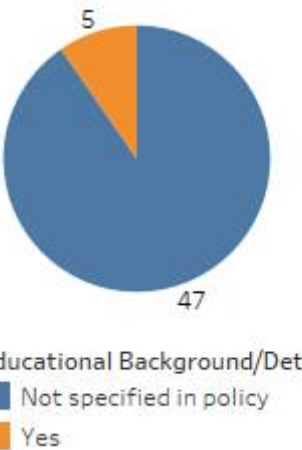
<p><b>Medical records</b></p>	 <p style="text-align: center;">Fig. 4.1.1.22</p>	<p>4.1.1.22 gives representation of service providers acquiring the medical records of users. Among 52 service providers, 2 service providers say that they take users' medical records (e.g. HDFC), 50 have not specified it in the privacy policy (e.g. Amazon, flipkart, book my show). Since many services do not specify if they take medical records, it can be a concern to health privacy.</p>
<p><b>Income Range</b></p>	 <p style="text-align: center;">Fig. 4.1.1.23</p>	<p>4.1.1.23 gives representation of service providers acquiring the income range of users. Among 52 service providers, 6 service providers say that they take users' income range (e.g. flipkart, HDFC), 50 have not specified it in the privacy policy (e.g. snapdeal, amazon, yahoo). Since, most of the services have not specified if they ask for income range, it can also be a concern regarding privacy in professional life of user.</p>
<p><b>Financial Details</b></p>	 <p style="text-align: center;">Fig. 4.1.1.24</p>	<p>4.1.1.24 gives representation of service providers acquiring the financial details of users. Among 52 service providers, 33 service providers say that they take users' financial details (e.g. flipkart, yahoo, Wikipedia), 1 say that they do not take users' financial details (e.g. naukri), 18 have not specified it in the privacy policy (e.g. book my show, reddit, Quora). This suggests that many web services take financial details from the user and rest except only one service have not specified. Thus, privacy regarding user's financial details is exposed in a large amount which can prove risk to user's</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

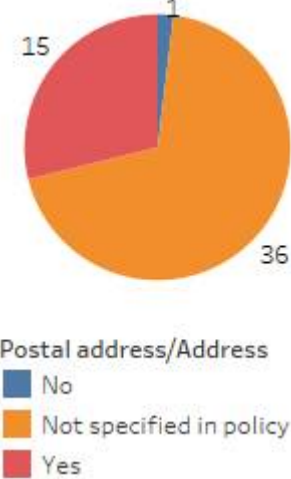
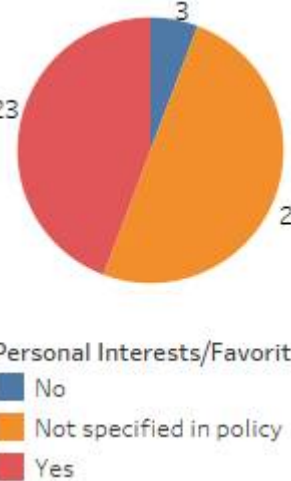
		privacy.
<b>Skills</b>	 <p style="text-align: center;">Fig. 4.1.1.25</p>	<p>4.1.1.25 gives representation of service providers acquiring the skills of users. Among 52 service providers, 3 service providers say that they take users' skills (e.g. LinkedIn, tinder), 49 have not specified it in the privacy policy (e.g. hotstar, Goibibo, Coursera)</p>
<b>Educational Background/Details</b>	 <p style="text-align: center;">Fig. 4.1.1.26</p>	<p>4.1.1.26. gives representation of service providers acquiring the educational background/details of users. Among 52 service providers, 5 service providers say that they take users' educational background/details (e.g. rediff LinkedIn), 47 have not specified it in the privacy policy (e.g. ICICI bank, HDFC, naukri).</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

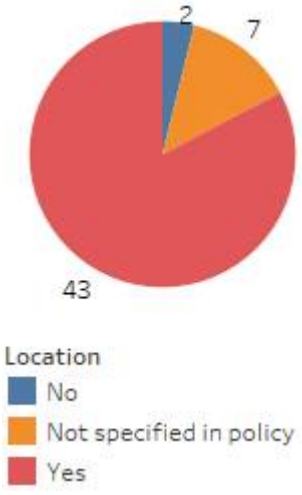
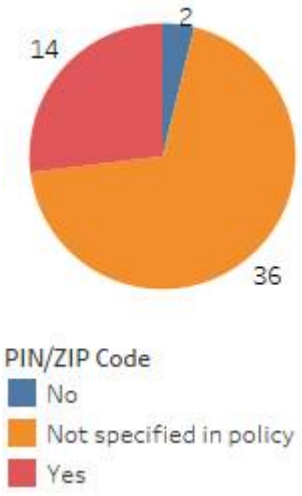
<p><b>Postal Address/Address</b></p>	 <p style="text-align: center;">Postal address/Address</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.27</p>	<p>4.1.1.27 gives representation of service providers acquiring the postal address of users. Among 52 service providers, 15 service providers say that they take users' postal address (e.g. Snapdeal, yahoo, amazon), 1 say that they do not take users' postal address (e.g. Wikipedia), 36 have not specified it in the privacy policy (e.g. LinkedIn, Twitter). This conveys that some services ask for user's address, while most of all have not specified. Thus, it is a need to find out actually how many services collect our address.</p>
<p><b>Personal Interests/Favourites</b></p>	 <p style="text-align: center;">Personal Interests/Favorites</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.28</p>	<p>4.1.1.28 gives representation of service providers acquiring the personal interest/favourites of users. Among 52 service providers, 23 service providers say that they take users' personal interests/favourites (e.g. flipkart, twitter, ebay), 3 say that they do not take users' postal address (e.g. jabong, Indian army, Indian air force), 26 have not specified it in the privacy policy (e.g. Justdial, pass port India). Thus, it can be said that some web services can provide our details to third parties regarding personal interest, for the purpose of targeted advertisement.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Location</b></p>	 <p style="text-align: center;">Fig. 4.1.1.29</p>	<p>4.1.1.29 gives representation of service providers acquiring the location of users. Among 52 service providers, 43 service providers say that they take users' location (e.g. flipkart, twitter, ebay), 2 say that they do not take users' location (e.g. passport India), 7 have not specified it in the privacy policy (e.g. book my show, HDFC, Stackover flow). We can observe that users' location is collected by most of the web services, which is a sensitive aspect regarding user's privacy.</p>
<p><b>PIN/ZIP Code</b></p>	 <p style="text-align: center;">Fig. 4.1.1.30</p>	<p>4.1.1.30 gives representation of service providers acquiring the PIN/ZIP code of users. Among 52 service providers, 14 service providers say that they take users' PIN/ZIP code (e.g. flipkart, yahoo, ebay), 2 say that they do not take users' PIN/ZIP code (e.g. passport India, Indian air force), 36 have not specified it in the privacy policy (e.g. book my show, HDFC, Stackover flow). It can be seen that some web services collect pin code from user, whereas most of them have not specified in the privacy policy document. So, we don't get a clear idea about most web services.</p>

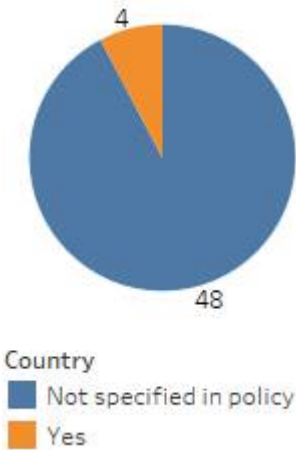

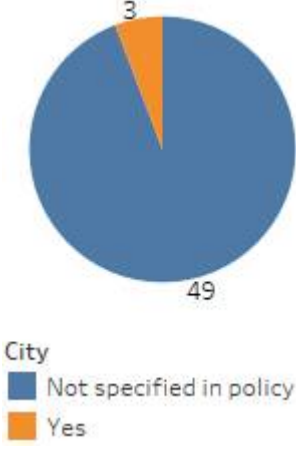


## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

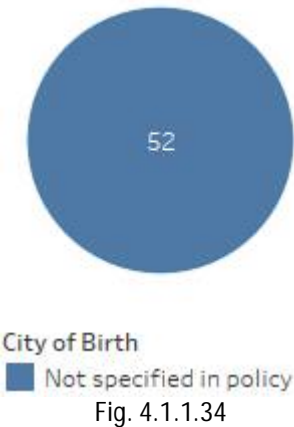
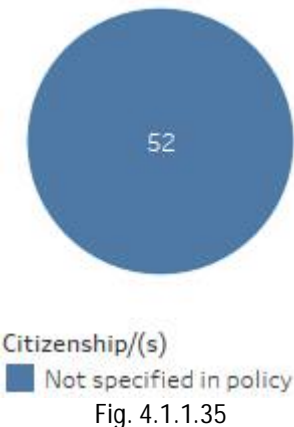
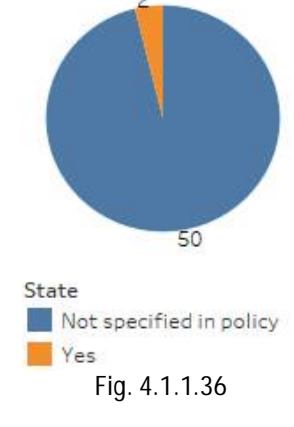
<p><b>Country</b></p>	 <p style="text-align: center;">Country</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.31</p>	<p>4.1.1.31 gives representation of service providers acquiring the country of users. Among 52 service providers, 4 service providers say that they take users' country (e.g. twitter, Olx), 48 have not specified it in the privacy policy (e.g. Snapdeal, amazon). Thus, most of the services have not specified if they ask for country name.</p>
<p><b>Country of Birth</b></p>	 <p style="text-align: center;">Country of Birth</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.32</p>	<p>4.1.1.32 gives representation of service providers acquiring the country of birth of users. Among 52 service providers, 1 service providers say that they take users' country of birth (e.g. Olx), 51 have not specified it in the privacy policy (e.g. Snapdeal, amazon). Thus, most of the services have not specified if they ask for country of birth.</p>
<p><b>City</b></p>	 <p style="text-align: center;">City</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.1.33</p>	<p>4.1.1.33 gives representation of service providers acquiring the city of users. Among 52 service providers, 3 service providers say that they take users' city (e.g. ebay), 51 have not specified it in the privacy policy (e.g. Snapdeal, amazon). Thus, most of the services have not specified if they ask for city.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

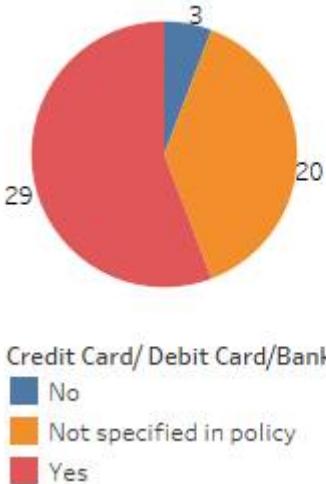
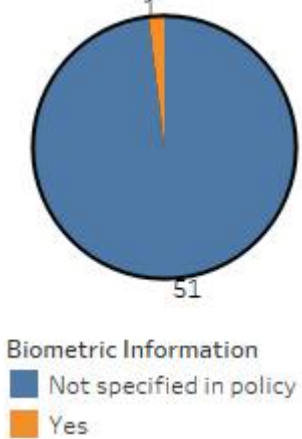
<p><b>City of Birth</b></p>	 <p style="text-align: center;">City of Birth ■ Not specified in policy Fig. 4.1.1.34</p>	<p>4.1.1.34 gives representation of service providers acquiring the city of birth of users. Among 52 service providers, all 52 service providers say that they take users' city of birth (e.g. ebay, amazon, yahoo). Thus, all of the services have not specified if they ask for city of birth.</p>
<p><b>Citizenship</b></p>	 <p style="text-align: center;">Citizenship/(s) ■ Not specified in policy Fig. 4.1.1.35</p>	<p>4.1.1.35 gives representation of service providers acquiring the city of birth of users. Among 52 service providers, all 52 service providers say that they take users' city of birth (e.g. ebay, amazon, yahoo). Thus, all of the services have not specified if they ask for citizenship.</p>
<p><b>State</b></p>	 <p style="text-align: center;">State ■ Not specified in policy ■ Yes Fig. 4.1.1.36</p>	<p>4.1.1.36 gives representation of service providers acquiring the state of users. Among 52 service providers, 2 service providers say that they take users' state (e.g. ebay), 50 have not specified it in the privacy policy (e.g. Amazon, flipkart, book my show). Thus, most of the services have not specified if they ask for state name.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

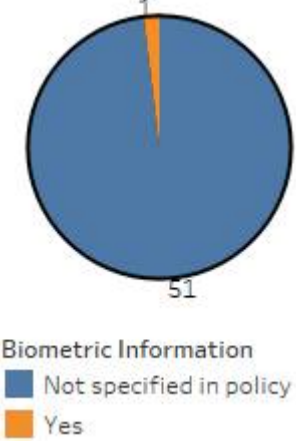
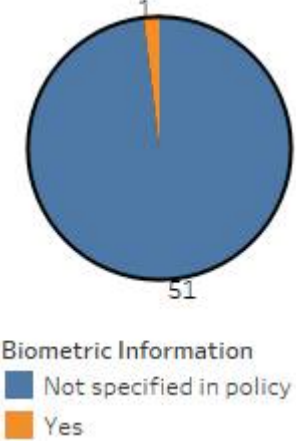
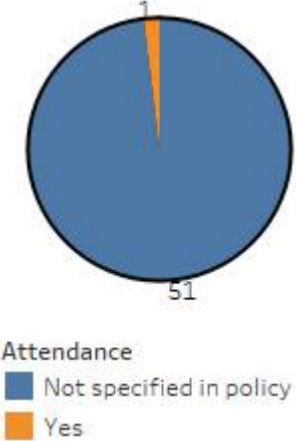
<p><b>Credit card/Debit card</b></p>	 <p style="text-align: center;">Credit Card/ Debit Card/Bank Account details</p> <p style="text-align: center;">Fig. 4.1.1.37</p>	<p>4.1.1.37 gives representation of service providers acquiring the credit card/Debit card of users. Among 52 service providers, 29 service providers say that they take users' credit card/debit card (e.g. flipkart, yahoo, ebay), 3 say that they do not take users' credit card/debit card (e.g. naukri), 20 have not specified it in the privacy policy (e.g. book my show, ICICI, Stackoverflow). Thus, we can see that nearly half of the web services ask for credit/debit card details, whereas many have not specified it. Only 3 say that they do not collect card details. Hence this can also involve privacy risk.</p>
<p><b>Biometric information</b></p>	 <p style="text-align: center;">Biometric Information</p> <p style="text-align: center;">Fig. 4.1.1.38</p>	<p>4.1.1.38 gives representation of service providers acquiring the biometric information on website. Among 52 service providers, 1 service provider says that they take users' biometric information on website (e.g.HDFC bank ), 51 have not specified it in the privacy policy (e.g.Ebay).</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Teacher's Assessment</b></p>	 <p style="text-align: center;">Fig. 4.1.1.39</p>	<p>4.1.1.39 gives representation of service providers acquiring the teacher's assessment on website. All 52 providers have not specified it in privacy policy(eg.Rediff)</p>
<p><b>Student's Characteristics</b></p>	 <p style="text-align: center;">Fig. 4.1.1.40</p>	<p>4.1.1.40 gives representation of service providers acquiring the student's characteristics on website. All 52 providers have not specified it in privacy policy(eg.Rediff)</p>
<p><b>Attendance</b></p>	 <p style="text-align: center;">Fig. 4.1.1.41</p>	<p>4.1.1.41 gives representation of service providers acquiring the attendance on website. Among 52 service providers, 1 service provider says that they take users' attendance on website (e.g.Coursera),51have not specified it in the privacy policy (e.g.Ebay)</p>

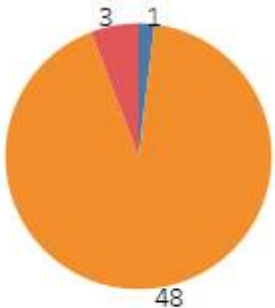
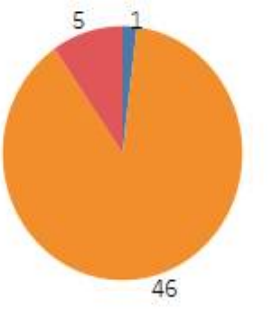
## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

**TABLE 4.1.2 BEHAVIORAL INFORMATION**

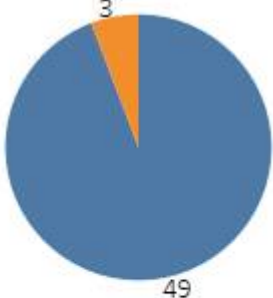
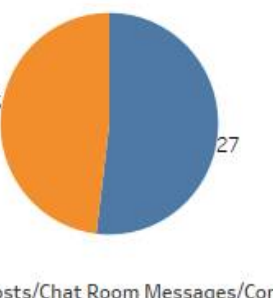
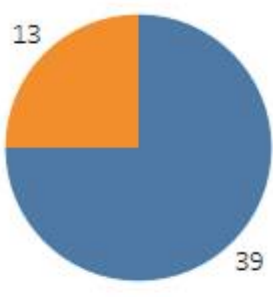
<p><b>Email Contacts</b></p>	 <p style="text-align: center;">48</p> <p>3 1</p> <p><b>Email Contacts</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Conditional</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p>Fig. 4.1.2.1</p>	<p>4.1.2.1 gives representation of service providers acquiring the email contacts of users. Among 52 service providers, 3 service providers say that they take users' email contacts (e.g. LinkedIn), 1 say that they do not take users' email contacts. (e.g. flip kart, Snapdeal, paytm), 9 have not specified it in the privacy policy (e.g. twitter). Thus, almost all of the web services have not specified if they take email contacts. Hence a clear idea is not available.</p>
<p><b>Buying, bidding or selling information</b></p>	 <p style="text-align: center;">46</p> <p>5 1</p> <p><b>Buying, bidding or selling information</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p>Fig.4.1.2.2</p>	<p>4.1.2.2 gives representation of service providers acquiring the buying, bidding or selling information of users. Among 52 service providers, 5 service providers say that they take users' buying, bidding or selling information (e.g. flipkart, amazon, ebay), 1 say that they do not take users' buying, bidding or selling information (e.g. cartoon network), 18 have not specified it in the privacy policy (e.g. book my show, yahoo, Wikipedia)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Facebook Friend List</b></p>	 <p style="text-align: center;">Facebook Friend List</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig.4.1.2.3</p>	<p>4.1.2.3 gives representation of service providers acquiring the facebook friend list of users. Among 52 service providers, 3 service providers say that they take users' facebook friend list (e.g. Zomato, Tinder, Glassdoor), 49 have not specified it in the privacy policy (e.g. hotstar, Goibibo, Coursera). Since most of the services do not mention if they acquire Facebook friend list, it is necessary to find out what is the actual scenario.</p>
<p><b>Posts/Comments</b></p>	 <p style="text-align: center;">Posts/Chat Room Messages/Comments</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig.4.1.2.4</p>	<p>4.1.2.4 gives representation of service providers acquiring the posts/comments of users. Among 52 service providers, 25 service providers say that they take users' posts/comments (e.g. yahoo, Snapdeal), 27 have not specified it in the privacy policy (e.g. HDFC, ICICI). Thus, we can see that nearly half of the web services collect post or comments from user.</p>
<p><b>Billing Information</b></p>	 <p style="text-align: center;">Billing Information</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig.4.1.2.5</p>	<p>4.1.2.5 gives representation of service providers acquiring the billing information of users. Among 52 service providers, 13 service providers say that they take users' billing information (e.g. flipkart, twitter ebay), 39 have not specified it in the privacy policy (e.g. Snapdeal, amazon).</p>

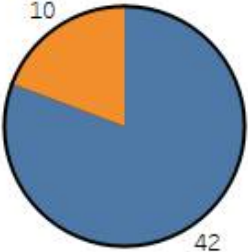
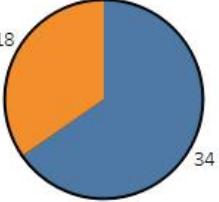
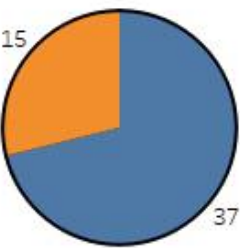


## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

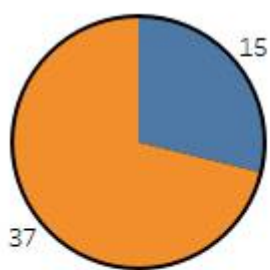
<p><b>Advertising preferences</b></p>	 <p style="text-align: center;">Advertising preferences</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig.4.1.2.6</p>	<p>4.1.2.6 gives representation of service providers acquiring the advertising preferences on website. Among 52 service providers, 10 service providers say that they take users' browsing behavior on website (e.g.Rediff),42 have not specified it in the privacy policy (e.g.HDFC bank)</p>
<p><b>Use of web beacons (Tracking pixels/clear GIFs)</b></p>	 <p style="text-align: center;">Use of Web Beacons (Tracking Pixels/Clear GIFs)</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig.4.1.2.7</p>	<p>4.1.2.7 gives representation of service providers acquiring the use of beacons on website. Among 52 service providers, 18 service providers say that they take web beacons on website (e.g.Coursera),34 have not specified it in the privacy policy (e.g.Naukri). Thus, we see many web services use beacons to track users' activity. And others have not specified.</p>
<p><b>Uses third party beacons</b></p>	 <p style="text-align: center;">Uses Third Party Beacons</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig.4.1.2.8</p>	<p>4.1.2.8 gives representation of service providers acquiring the use of third party beacons on website. Among 52 service providers, 15 service providers say that they take third party beacons on website (e.g.Flipkart),37 have not specified it in the privacy policy (e.g.Snapdeal). This tells us many services use third party beacons which can prove a risk to users' privacy.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

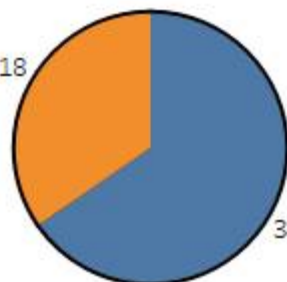

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Browsing behavior on website</b></p>	 <p style="text-align: center;">Browsing Behaviour on Website</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig.4.1.2.9</p>	<p>4.1.2.9 gives representation of service providers acquiring the browsing behavior on website. Among 52 service providers, 37 service providers say that they take users' browsing behavior on website (e.g. Amazon), 15 have not specified it in the privacy policy (e.g. BookMyShow). Hence, can see that user's browsing behavior is tracked by a large number of web services.</p>
--	--	--

**TABLE 4.1.3 DEVICE INFORMATION**

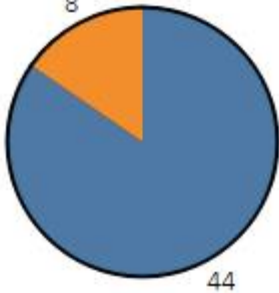
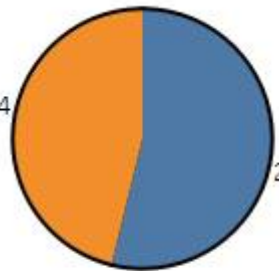
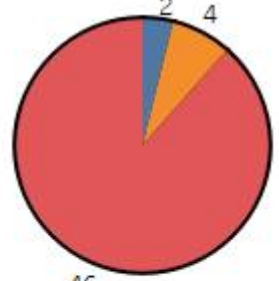
<p><b>Internet Service Provider</b></p>	 <p style="text-align: center;">Internet Service Provider</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig. 4.1.3.1</p>	<p>Fig. 4.1.3.1 gives representation of service providers acquiring the internet service providers. Among 52 service providers, 18 service providers say that they take internet service provider name (e.g. Coursera), 34 have not specified it in the privacy policy (e.g. Flipkart)</p>
<p><b>Operating System/Platform</b></p>	 <p style="text-align: center;">Operating System/ Platform</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig. 4.1.3.2</p>	<p>Fig. 4.1.3.2 gives representation of service providers acquiring the operating system/platform. Among 52 service providers, 26 service providers say that they take users' operating system name (e.g. Snapdeal), 26 have not specified it in the privacy policy (e.g. Flipkart)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

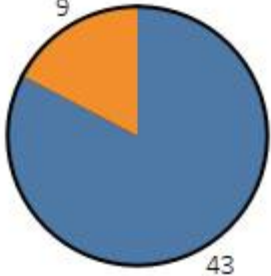
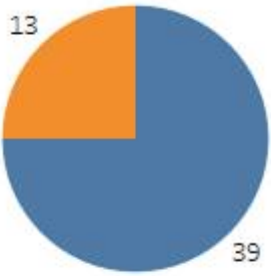
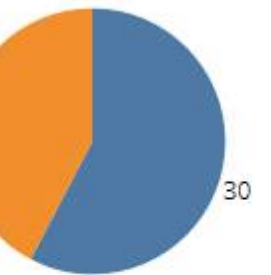
<p>Uses flash cookies</p>	 <p style="text-align: center;">Uses Flash Cookies</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.3</p>	<p>Fig. 4.1.3.3 gives representation of service providers acquiring the flash cookies on website. Among 52 service providers, 8 service providers say that they take flash cookies on website (e.g. Amazon), 44 have not specified it in the privacy policy (e.g. Flipkart)</p>
<p>Uses third party cookies</p>	 <p style="text-align: center;">Uses Third Party Cookies</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.4</p>	<p>Fig. 4.1.3.4 gives representation of service providers acquiring the third-party cookies on website. Among 52 service providers, 24 service providers say that they take third party cookies on website (e.g. Flipkart), 34 have not specified it in the privacy policy (e.g. Snapdeal)</p>
<p>Use of cookies</p>	 <p style="text-align: center;">Use of Cookies</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.5</p>	<p>Fig. 4.1.3.5 gives representation of service providers acquiring the cookies on website. Among 52 service providers, 46 service providers say that they take cookies on website (e.g. Amazon), 2 don't take cookies (eg. passportindia), 4 have not specified it in the privacy policy (e.g. MoneyControl)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

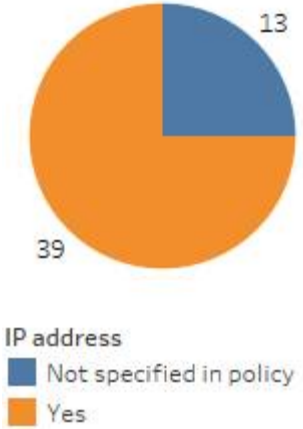
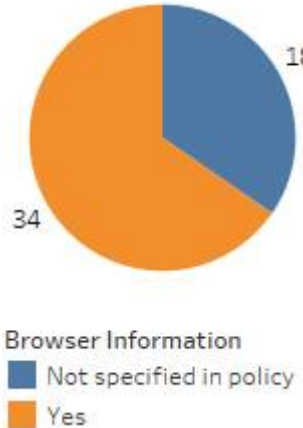
<p>Data storage location</p>	 <p style="text-align: center;">Data Storage Location</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.6</p>	<p>Fig. 4.1.3.6 gives representation of service providers acquiring the data storage location on website. Among 52 service providers, 9 service providers say that they take data storage location on website (e.g. Coursera), 34 have not specified it in the privacy policy (e.g. Naukri)</p>
<p>Social networking sites ID</p>	 <p style="text-align: center;">Social Networking Sites ID</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.7</p>	<p>Fig. 4.1.3.7 gives representation of service providers acquiring the social networking sites ID of users. Among 52 service providers, 13 service providers say that they take users' social networking sites ID (e.g. Snapdeal, LinkedIn), 39 have not specified it in the privacy policy (e.g. Paytm, twitter)</p>
<p>Physical Address/MAC address</p>	 <p style="text-align: center;">Physical Address/Device ID/MAC Address</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.3.8</p>	<p>Fig. 4.1.3.8 gives representation of service providers acquiring the physical address of users. Among 52 service providers, 22 service providers say that they take users' physical address (e.g. yahoo, Snapdeal), 30 have not specified it in the privacy policy (e.g. flipkart, amazon)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

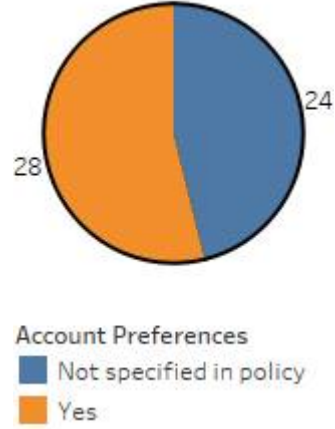
(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p>IP address</p>	 <p style="text-align: center;">Fig. 4.1.3.9</p>	<p>Fig. 4.1.3.9 gives representation of service providers acquiring the IP address of users. Among 52 service providers, 39 service providers say that they take users' IP address (e.g. yahoo, Snapdeal), 13 have not specified it in the privacy policy (e.g. HDFC, ICICI)</p>
<p>Browser information</p>	 <p style="text-align: center;">Fig. 4.1.3.10</p>	<p>Fig. 4.1.3.10 gives representation of service providers acquiring the browser information of users. Among 52 service providers, 34 service providers say that they take users' browser information (e.g. yahoo, Snapdeal), 18 have not specified it in the privacy policy (e.g. github, ICICI)</p>

**TABLE 4.1.4 OTHER INFORMATION**

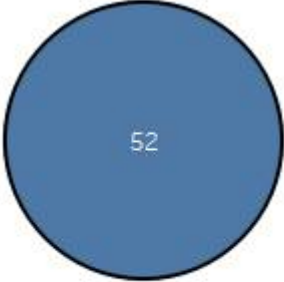
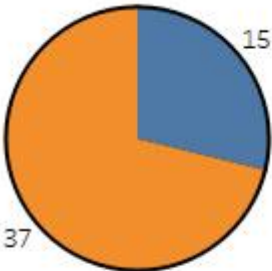
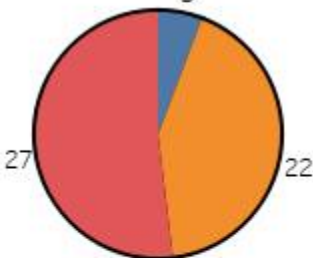
<p>Account Preferences</p>	 <p style="text-align: center;">Fig. 4.1.4.1</p>	<p>Fig. 4.1.4.1 gives representation of service providers acquiring the account preferences on website. Among 52 service providers, 28 service providers say that they take account preferences on website (e.g. Yahoo), 24 have not specified it in the privacy policy (e.g. Twitter)</p>
----------------------------	---	--

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<p><b>Exam Results</b></p>	 <p style="text-align: center;">Exam Results ■ Not specified in policy</p> <p style="text-align: center;">Fig. 4.1.4.2</p>	<p>Fig. 4.1.4.2 gives representation of service providers acquiring the exam results on website. All 52 providers have not specified it in privacy policy (eg.Rediff)</p>
<p><b>Rights to access or modify data</b></p>	 <p style="text-align: center;">Rights to access or Modify Data: ■ Not specified in policy ■ Yes</p> <p style="text-align: center;">Fig. 4.1.4.3</p>	<p>Fig. 4.1.4.3 gives representation of service providers acquiring the rights to access or modify data on website. Among 52 service providers, 37 service providers say that they take rights to access on website (e.g. JustDial), 15 have not specified it in the privacy policy (e.g. BookMyshow)</p>
<p><b>Will share data in case of sale</b></p>	 <p style="text-align: center;">Will Share data in case of Sale ■ No ■ Not specified in policy ■ Yes</p>	<p>Fig. 4.1.4.4 gives representation of service providers acquiring the sharing of data in case of sale on website. Among 52 service providers, 27 service providers say that they take this data on website (e.g. Coursera), 22 have not specified it in the privacy policy (e.g.Naukri), 3 do not share the data (e.g. indianarmy.nic)</p>

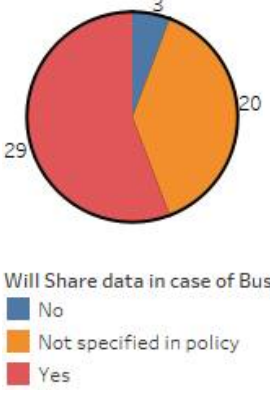
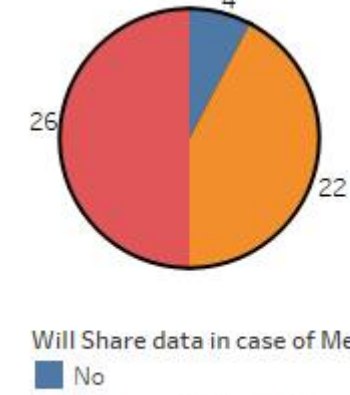
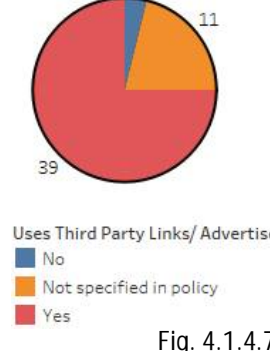


## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

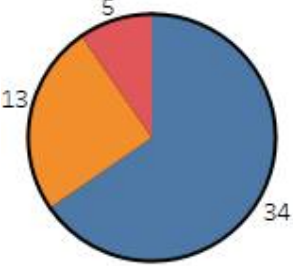
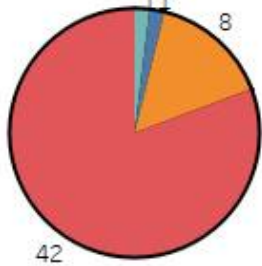
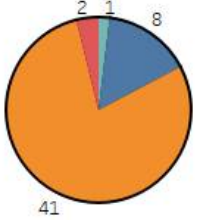
<p><b>Will share data in case of business acquisition</b></p>	<p style="text-align: center;">Fig. 4.1.4.4</p>  <p style="text-align: center;">Will Share data in case of Business acquisition</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul>	<p>Fig. 4.1.4.5 gives representation of service providers acquiring the sharing of data in case of business acquisition on website. Among 52 service providers, 29 service providers say that they take this data on website (e.g. Coursera), 20 have not specified it in the privacy policy (e.g. Naukri), 3 do not share the data (e.g. indianarmy.nic)</p>
<p><b>Will share data in case of merger</b></p>	<p style="text-align: center;">Fig. 4.1.4.5</p>  <p style="text-align: center;">Will Share data in case of Merger</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul>	<p>Fig. 4.1.4.6 gives representation of service providers acquiring the sharing of data in case of merger on website. Among 52 service providers, 26 service providers say that they take this data on website (e.g. Amazon), 22 have not specified it in the privacy policy (e.g. BookMyshow), 4 do not share the data (e.g. indianarmy.nic)</p>
<p><b>Use of third party links/Advertisement on website</b></p>	<p style="text-align: center;">Fig. 4.1.4.6</p>  <p style="text-align: center;">Uses Third Party Links/ Advertisements on Website</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.7</p>	<p>Fig. 4.1.4.7 gives representation of service providers acquiring the third-party links on website. Among 52 service providers, 39 service providers say that they use third party links on website (e.g. Coursera), 11 have not specified it in the privacy policy (e.g. Naukri), 2 don't use.</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

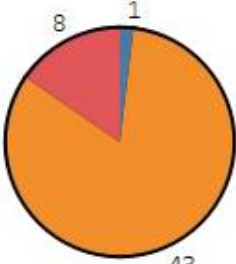
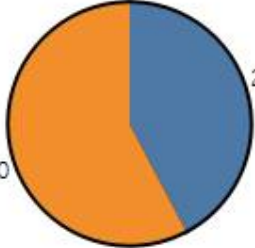
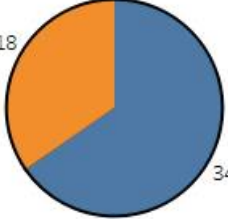
<p><b>Third parties follow this privacy policy</b></p>	 <p style="text-align: center;">Third Parties follow this privacy policy</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.8</p>	<p>Fig. 4.1.4.8 gives representation of service providers acquiring the third parties follow this privacy policy on website. Among 52 service providers, 5 service providers say that they use (e.g. Coursera), 13 have not specified it in the privacy policy (e.g. Twitter), 5 do not use (e.g. Yahoo)</p>
<p><b>Are taking measures to secure data</b></p>	 <p style="text-align: center;">Are taking measures to secure data</p> <ul style="list-style-type: none"> <li><span style="color: teal;">■</span> Null</li> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.9</p>	<p>Fig. 4.1.4.9 gives representation of service providers acquiring the measure to secure data on website. Among 52 service providers, 42 service providers say that they use third party links on website (e.g. Coursera), 8 have not specified it in the privacy policy (e.g. HDFC bank), 1 do not (Indian army)</p>
<p><b>Will respect do not track signal and act accordingly</b></p>	 <p style="text-align: center;">Will Respect Do Not Track Signal and act accordingly</p> <ul style="list-style-type: none"> <li><span style="color: teal;">■</span> Null</li> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul>	<p>Fig. 4.1.4.10 gives representation of service providers acquiring the third-party links on website. Among 52 service providers, 2 service providers say that they will respect do not track signals on website (e.g. Reddit), 41 have not specified it in the privacy policy (e.g. Shine), 8 don't use (e.g. Coursera)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

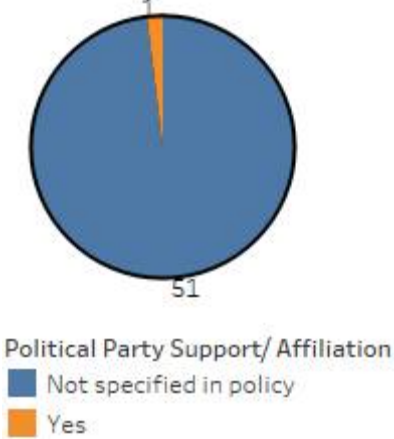
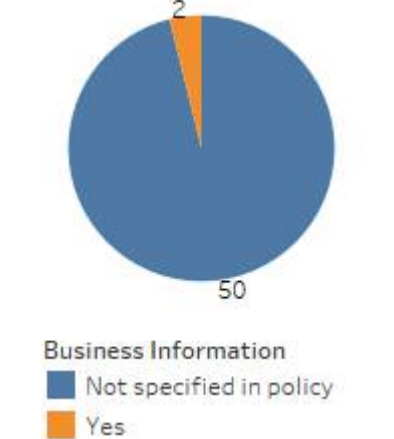
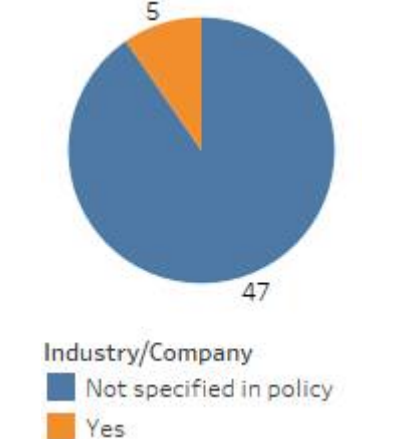
<p><b>Information retention: Temporary</b></p>	<p style="text-align: center;">Fig. 4.1.4.10</p>  <p style="text-align: center;">Information retention: Temporary</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> No</li> <li><span style="color: orange;">■</span> Not specified in policy</li> <li><span style="color: red;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.11</p>	<p>Fig. 4.1.4.11 gives representation of service providers acquiring the information retention: Temporary on website. Among 52 service providers, 8 service providers say that they use (e.g. Coursera), 43 have not specified it in the privacy policy (e.g. Paytm), 1 doesn't use (Flipkart)</p>
<p><b>Information retention: Permanent</b></p>	<p style="text-align: center;">Fig. 4.1.4.12</p>  <p style="text-align: center;">Information retention: Permanent</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.13</p>	<p>Fig. 4.1.4.12 gives representation of service providers acquiring the information retention: Permanent on website. Among 52 service providers, 30 service providers say that they take information retention on website (e.g. Flipkart), 22 have not specified it in the privacy policy (e.g. BookMyshow)</p>
<p><b>Information retention: As long as necessary</b></p>	<p style="text-align: center;">Fig. 4.1.4.13</p>  <p style="text-align: center;">Information retention: As long as necessary</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p style="text-align: center;">Fig. 4.1.4.13</p>	<p>Fig. 4.1.4.13 gives representation of service providers acquiring the information retention: As long as necessary on website. Among 52 service providers, 18 service providers say that they take information retention: As long as necessary on website (e.g. Flipkart), 34 have not specified it in the privacy policy (e.g. Amazon)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

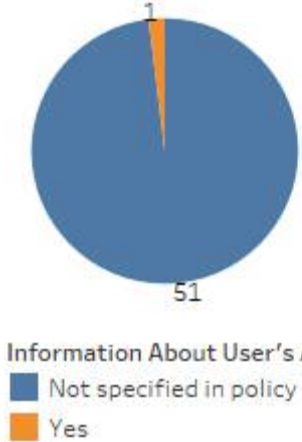
<p><b>Political Party Support/Affiliation</b></p>	 <p style="text-align: center;">Fig. 4.1.4.14</p>	<p>Fig. 4.1.4.14 gives representation of service providers acquiring the political part support information of users. Among 52 service providers, 1 service provider says that it takes users' political part support information (e.g. Stackoverflow), none say that they do not take users' political part support information, 51 have not specified it in the privacy policy (e.g. Rediff, HDFC bank, Shaadi)</p>
<p><b>Business information</b></p>	 <p style="text-align: center;">Fig. 4.1.4.15</p>	<p>Fig. 4.1.4.15 gives representation of service providers acquiring the business information of users. Among 52 service providers, 2 service providers say that they take users' business information (e.g. LinkedIn), 50 have not specified it in the privacy policy (e.g. Amazon, flipkart, book my show)</p>
<p><b>Industry/Company</b></p>		<p>Fig. 4.1.4.16 gives representation of service providers acquiring the industry/company of users. Among 52 service providers, 5 service providers say that they take users' industry/company (e.g. yahoo, LinkedIn), 47 have not specified it in the privacy policy (e.g. Paytm, Wikipedia, HDFC)</p>

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 7, Issue 6, June 2018

<b>Information about user's assets</b>	<p>Fig. 4.1.4.16</p>  <p>Information About User's Assests</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Not specified in policy</li> <li><span style="color: orange;">■</span> Yes</li> </ul> <p>Fig. 4.1.4.17</p>	<p>Fig. 4.1.4.17 gives representation of service providers acquiring the information about user's assets of users. Among 52 service providers, 1 service providers say that they take users' information about user's assets (e.g. yahoo), 51 have not specified it in the privacy policy (e.g. Snapdeal, amazon)</p>
--	---	---

### V. CONCLUSION

In this paper, authors have studied the privacy policy documents of 52 most used web services in India. Based on that, statistical data is formed which helps in clear understanding of the level at which users' personal data is exposed and the level at which it can be at risk.

In this survey, authors initially captured the data in a spreadsheet. Then the gathered data was sorted in 4 categories – PII (Personally Identifiable Information), Behavioral information, Device information and Other information. Then the data was visualized in a user-friendly format using tools like 'Tableau'. And finally, was represented using tables.

This survey implies that among all of the data, PII (Personally Identifiable Information) is majorly collected by the third parties. As per the research [5], generally people aren't willing to provide most of their personal data to the services they use. Hence, we can imply that this is a matter of concern regarding privacy control. Also, many web services have not specified about many types of data. Thus, this creates an obscure scenario and there is a need to find out if they actually collect that data or not.

In the future work, authors will gain information about the third parties to which this data is provided by the web services. They will also develop a system in which user can have information about the names of third parties and information about what types of data is acquired by which third parties.

### REFERENCES

- [1] Dhotre, Prashant Shantaram; Olesen, Henning, "A Survey of Privacy Awareness and Current Online Practices of Indian Users"
- [2] Jinyan Zang, Krysta Dummit, James Graves, Paul Lisker, and Latanya Sweeney, "Who Knows What About Me? A Survey of Behind the Scenes Personal Data Sharing to Third Parties by Mobile Apps"
- [3] "Privacy Scoring and Users' Awareness for Web Tracking" Asma Hamed, Hella affel-Ben Ayed CRISTAL Lab. ENSI, University of Manouba Tunis, Tunisia Hella Kaffel-Ben Ayed Faculty of Science of Tunis University of Tunis El Manar Tunis, Tunisia.
- [4] Kamala D. Harris, "Making your privacy public", Attorney General California Department of Justice.
- [5] Boyles J, Smith A, Madden M. Privacy and Data Management on Mobile Devices. Pew Research Center. September 5, 2012. [http://www.pewinternet.org/files/oldmedia/Files/Reports/2012/PIP\\_MobilePrivacyManagement.pdf](http://www.pewinternet.org/files/oldmedia/Files/Reports/2012/PIP_MobilePrivacyManagement.pdf)
- [6] Urban J, Hoofnagle C, Li S. Mobiles Phones and Privacy. BCLT Research Paper Series. July 10, 2012. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2103405](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2103405)
- [7] Felt A, Egelman S, Wagner D. I've got 99 problems, but vibration ain't one: a survey of smartphone users' concerns. Proceedings of the second ACM workshop on Security and privacy in smartphones and mobile devices. October 19, 2012. <http://dl.acm.org/citation.cfm?id=2381943>
- [8] <https://www.computerhope.com> Dictionary-P-Definitions
- [9] <https://virtualinc.com/legal-privacy-identifiable-information>
- [10] <https://projectinnovation.org/page.php?name=privacy-policy>