Online Presence Of Pakistani Population And Suitability Analysis Of The Internet Channels For Localized And Targeted Services

Sajid Khan, Muhammad Sohail Khan, Mushtaq Ahmad, Faiza Tila

Abstract: Smart phones and social media applications have expanded the horizons of digital marketing by providing access to targeted customers. While the new horizons of digital marketing are still being pushed with better advertisement opportunities for global products, it is necessary to explore emerging opportunities in the form of new masses being introduced to the world of digital businesses and digital economy. Pakistani population, an example of such opportunities, has been recently introduced with digital economy and local online businesses are booming. There is huge business potential for global businesses and products in Pakistan. This paper aims at studying the mobile social media apps usage in Pakistani population towards the identification of suitable/appropriate internet/social media channels for global advertisement with maximum exposure. For this purpose, a mobile application has been developed to study the social media usage patterns and Online presence of Pakistani Population on different social media platforms. The mobile application was used to record the social media usage of 101 participants over an average period of 14.52 days. To cross-validate the data, a survey has also been conducted in which a questionnaire was distributed among 101 people, of which 101 responded. Based on the analysis of the data, the study identifies the most appropriate social media channel/apps and the best time slots for global advertisement in Pakistan.

Index Terms: Analysis of the internet/ social media channels, Digital Marketing, Social Media Applications usage, Online mobile usage, Online presence of pakistani populations, Suitable internet channels for digital marketing, Brand promotion among pakistanis.

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1. INTRODUCTION
Since the beginning of the new millennium mobile phones have brought a real revolution, managing to get into people's lives, quickly becoming an accessory that is practically irreplaceable and essential for the majority of the population. The concept of transforming communication and particularly telephony was widely overcome, evolving towards an integration of technologies that can be found in today's phone, such as internet, mobility, communication, services, location and dereferencing, among many others. Nowadays billions of users have access to mobile internet, through their Smart phones, the scope of mobile is large and growing, 90% of world population has access to mobile network [4]. With the increasing penetration toward smart phone mobile internet connections are fast overtaking fixed connections, in addition, a report indicates that there would be 35 million devices of any type connected to mobile internet, of which 45% of them will be Smart phones [7], such a big smart phone users market has brought amazing opportunities for business communities. In recent past years, popularity and user acceptance of social media have rapidly grown, today social interaction, and discussion takes place on social media and has become the main place for communication. Many businesses advertise their products on social media sites and Mobile Applications, for its part, a report indicates that the global spending on mobile advertising will reach 42 billion dollars [5] which clearly shows that it is a nascent market of enormous potential which is still far from finding a ceiling. the Advertiser may be unaware to select a suitable internet channel of its targeted users; furthermore, they may be unaware of Pakistanis community with mobile applications usage, for this purpose we had developed an Android application and is live on Google play store with the name of Mobile Usage Monitoring, the app is installed on 317 participant devices some of them rejected to share their usage data, but we got data from 101 users, further we refined the data and ignored users with less than 5 hours apps usage records, we got 82 users with more than 5 hours usage of our mobile app. The app is used to track one's mobile usage for online activities, and to get real time data from user to understand which mobile social media app is used the most in

which time slot. We also distributed a questionnaire among 101 users which evaluate user behavior toward mobile usage and apps. Furthermore, the mobile application will give us confidence on analyzing online mobile usage and suitable internet channel for targeted services.

2 LITERATURE REVIEW
Smart Phone has tremendous impact on businesses, education, health and social lifestyle of human being in the recent years. Various app markets offer a variety of apps for entertainment, business, health care and social life. According to a report by Android Google Play Store: the number of apps on the store has reached 2.2 million in June 2016 [14]. Studies have showed that the scope of mobile is large and growing, 90% of world population have access to mobile network [4]. The increase with the ability to connect on-the- go and use internet and mobile services, mobile users have not only adopted real-time social networking on their Smart-phone at a growing rate but frequency of access has been also increasing day by day. A study has found smart-phone usage in the United Kingdom that 37% of adults and 60% of teens admit they are highly addicted to their Smart-phone and also 51% of adults and 65% of teens say they have used their Smart-phone while socializing with others. 23% of adults and 34% of teens have used their Smart-phone during mealtimes. 22% of adult and 47% of teens admitted using or answering their Smart-phone while in the bathroom, these results shows that mobile usage is increased in our daily life [13], Another study has found mobile usage among a university student 99% of them interact in social networks, search map 90%, email 93% and website visiting was 94% [1]. Such great results of mobile usage made its path clear toward Mobile Marketing and advertisement. The businesses penetration toward mobile marketing has increased day by day. A study has showed that 2014 the global spending on mobile advertising will reach 18,000 million dollars, and while for 2017 the market will reach almost 42 billion dollars [5], which shows that smart phone has a big role in recent era for business promotion and e-advertisement. A study conducted to examine the factors that positively contribute to the adoption level of mobile marketing

among Malaysian SMALL MEDIUM ENTERPRISES (SMES), The result found that there is a positive relationship between branding strategy and technical knowledge towards the adoption level of mobile marketing [1,10]. Studies have found smart phone user's willingness toward mobile marketing and the results indicate that consumers' shopping style, brand trust, and value are key motivations for engaging in mobile marketing through their smart-phones [11]. Location based services provider's applications has good response toward businesses as the brand promotion take place among people living in a specific region, application for smart-phone devices which detects where the mobile device is located. Such applications provide users with useful information, depending on their geographical position [12]. The usage of smart-phone applications such as WhatsApp and Facebook has contributed enormously to especially online business; the outcome indicates that the smart-phone application has given the positive impact to online business which can help to develop business success [9]. Some studies had shown that smart phone application has also better response on political campaign promotion [6]. The Trump campaign relied heavily on Facebook's digital marketing system to identify specific voters who were not supporters of Trump in the first place, and to target them with psychographic messaging designed to discourage them from voting [3]. Most of the studies have found some good services provided by application and social media marketing without providing any information regarding good channel for promoting brand, it is left to customer to research for good channel for localizing the targeting services. According to a report internet user in Pakistan is recorded to 44,608,065 with the Internet Penetration rate of 22.2 % [8]. Which means Pakistan is a good marketplace for businesses to promote their band among Pakistani populations.

3 METHODOLOGY

As the main objective of the study is to investigate and analyze the online presence of Pakistani population in order to optimize the selection of appropriate advertisement channel along with the time slots for the advertisement, the following methodology has been adopted.

i) An Android application was designed with the core functionality of online mobile usage monitoring. It acted as a real time data collection instrument, which runs on both older and newer versions of the Android operating system. The information that are collected includes name, age, email and names of applications installed on a mobile device. Similarly, usage times for applications are recorded when an app is opened or closed. The data for only those application are recorded which uses internet connection so data will be recorded only for online activities. The app is installed on volunteer participant's mobile device. The participants have to download the application on their devices to complete the survey and the app sends the collected data to our server.

ii) A questionnaire survey was also conducted to analyze user's attitude toward online mobile usage. The survey provided an insight into the user behavior as well as a subjective measure of the user's preferences. The

Questionnaire was distributed among those participants who were willing to provide their usage via our developed mobile App.

4 DATA ANALYSIS AND RESULTS

4.1 Questionnaire Results

Fig. 1 shows the respondent's average internet usage in hours per days, 54.5% said they use internet more than 4 hours a day, 19.8% said they use internet 2-3 hours per day, 13.9% said they use internet 1-2 hours a day and 4% said they use internet less than 1 hour a day.
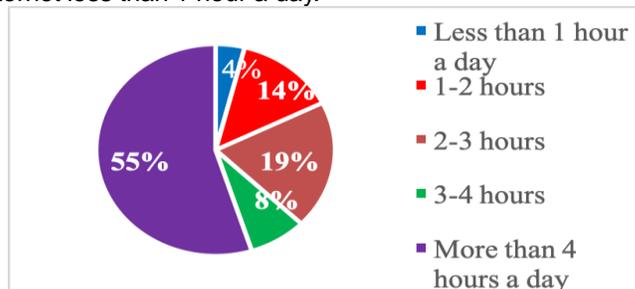

Fig. 1. Average internet usage in hours per day

Fig. 2 shows results for respondents mostly like to do online, 64.4% do social networking, 47.5% do instant messengers, 46.5% do web browsing, 30.7% watch news ,15.8% do file sharing, 13.9% gaming, 10.9% listen music, 21.8% video sharing, 7.9% watch internet TV, 8.9% do shopping, 8.9% do blogs and 8.9% use chat rooms.
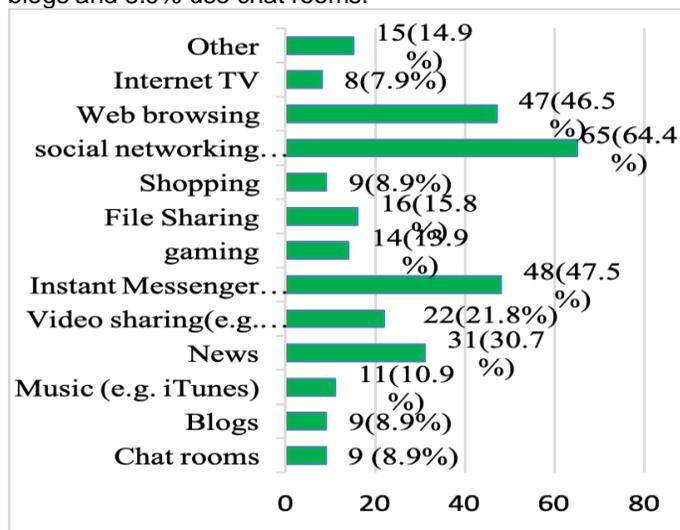

Fig. 2. Respondents likes to do Online

Fig. 3 shows type of Social Media followed on a regular basis, Facebook 94.1%, WhatsApp 79.2%, YouTube 69.3%, Messenger 63.4%, Twitter 28.7%, Skype 34.7%, LinkedIn 27.7%, IMO 18.8%, Instagram 24.8%, Tiktok 8.9%, Snapchat 2%, viber 2%.
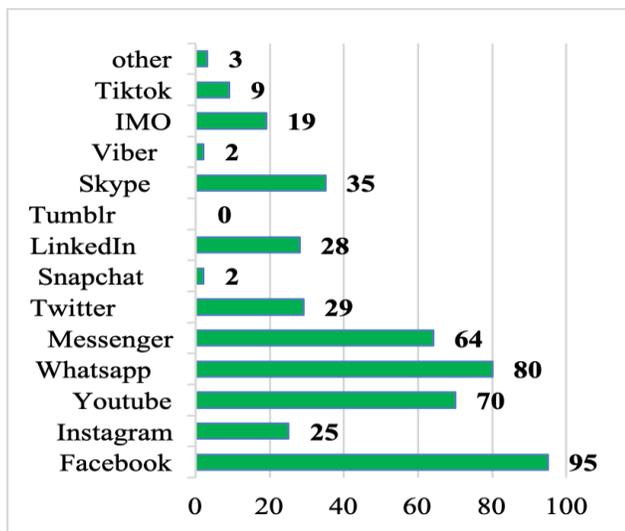
Fig. 3. *Types of social media followed on regular basis*

Fig. 4 shows time spent on social media sites daily by the respondents.

Facebook: total 96 participants responded they use fb. 16 said they use "less than 30 minutes", 29 said they use "31-60 minutes", 23 said they use "61-90 minutes", 10 used "91-120 minutes", and 18 said they use "more than 120 minutes".

Instagram: total 38 participants responded. 15 said they use "less than 30 minutes", 5 said they use "31-60 minutes", 6 said they use "61-90 minutes", 2 said they use "91-120 minutes" and 2 said they use "more than 120 minutes".

YouTube: total 72 participants responded for YouTube, 15 said they use "less than 30 minutes", 18 said they use "31-60 minutes", 20 said they use "61-90 minutes", 7 said they use "91-120 minutes", 12 said they use "more than 120 minutes".

IMO: total 31 participants responded for imo, 21 said they use "less than 30 minutes", 5 said they use "31-60 minutes", 4 said they use "61-90 minutes", 1 said he use "91-120 minutes".

WhatsApp: Total 77 participants responded, 21 said they use "less than 30 minutes", 17 said they use "31-60 minutes", 21 said they use "61-90 minutes", 4 said they use "91-120 minutes", 14 said they use "more than 120 minutes".

Messenger: total 70 participants responded, 34 said they use Messenger "less than 30 minutes", 14 said they use "31-60 minutes", 12 said they use "61-90 minutes", 3 said they use "91-120 minutes", 7 said they use "more than 120".

Twitter: Total 31 participants responded, 14 said they use Twitter "less than 30 minutes", 9 said they use "31-60 minutes",5 said they use "61-90 minutes", 2 said they use "91-120 minutes", 1 said he use "more than 120 minutes".

TikTok: Total 8 participants responded,1 said he use TikTok "less than 30 minutes", 2 said they use "31-60 minutes", 4 said they use "61-90 minutes", 1 said he use "91-120 minutes".

Snapchat: Total 7 participants responded, 4 said they use Snapchat "less than 30 minutes", 2 said they use "31-60 minutes", 1 said he use "91-120 minutes".

LinkedIn: Total 30 participants responded, 18 said they use LinkedIn "less than 30 minutes", 6 said they use "31-60 minutes" , 4 said they use "61-90 minutes", 1 said he use "91-120 minutes", 1 said he use "more than 120 minutes".

Tumblr: Total 8 participants responded, 5 said they use Tumblr "less than 30 minutes", 1 said he use "31-60 minutes", 1 said he use "61-90 minutes", 1 said he use "91-120 minutes".

Skype: Total 40 participants responded, 15 said they use Skype "less than 30 minutes", 6 said they use "31-60 minutes", 7 said they use "61-90 minutes", 6 said they use "91-120 minutes", 6 said they use "more than 120 minutes".

Viber: Total 10 participants responded, out of them, 6 said they use Viber "less than 30 minutes", 2 said they use "31-60 minutes", 2 said they use "61-90 minutes".
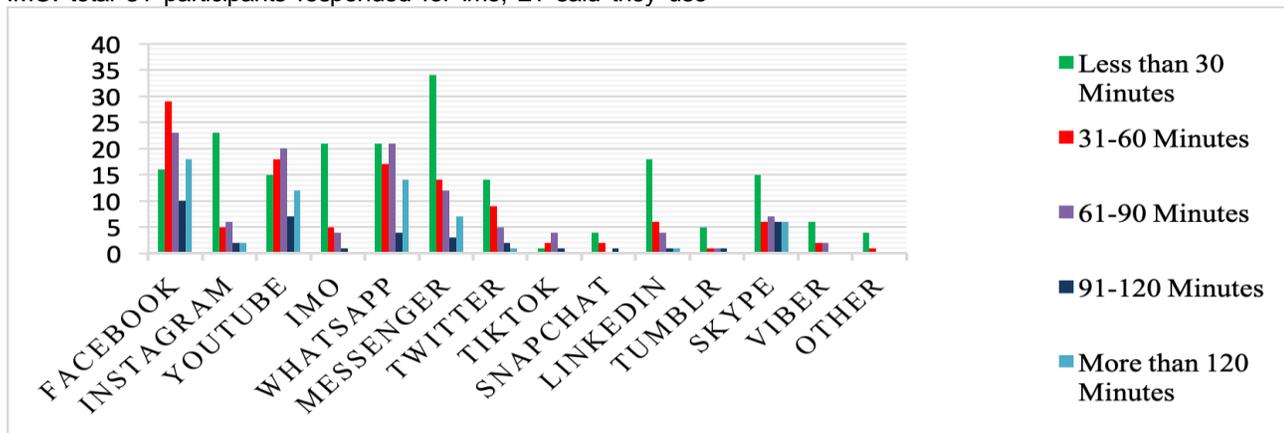

Fig. 4. *Average internet usage in hours per day*

Chart-5 shows the timing for most of social media interactions. 52.5% responded their social media interaction in Night time (9pm -12pm). 42.6% responded at evening hours (6pm- 9pm), 34.7% responded mostly during night time, 29.7% during office hours(9am-6pm), and 24.8% mostly during day time.
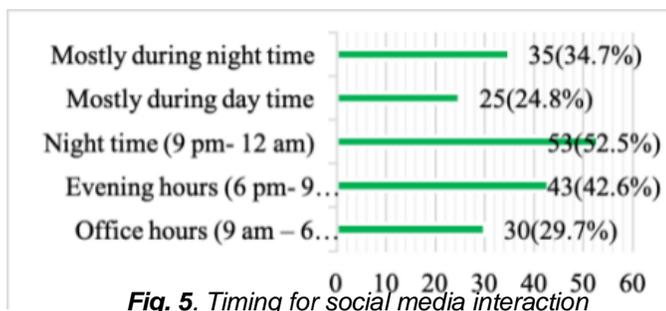

Fig. 5. *Timing for social media interaction*

4.2 Mobile Application Data Results
Data is summarized using graphs and tables, Time slots are represented with, Slot-A shows "06:00 AM To 11:59 AM", Slot-B shows "12:00 PM To 06:00 PM", Slot-C shows "06:00 PM To 11:59 PM" and Slot-D shows "00:00 AM To 06:00 AM". Fig. 6 shows the total mobile usage for online activities in hours, Maximum Mobile usage is observed in Slot-C, the second most mobile usage is observed in Slot-A, and Minimum usage is observed in Slot-D. In Slot-C the mostly used apps are Facebook with "1064:52:26" hours usage, YouTube with "841:35:23" hours, and WhatsApp with "216:29:31" hours. In Slot-A mostly used app is Facebook with "601:28:49" hours, second most used app is YouTube with "257:57:51" hours, WhatsApp with "103:48:28" hours usage, Messenger "85:25:04" hours usage. In Slot-B mostly used apps are Facebook with "283:15:03" hours usage and YouTube with "152:43:34" hours, WhatsApp with "106:48:40" hours, Messenger with "30:47:12" hours. Minimum mobile usage is observed in Slot-D, the mostly used app is YouTube with "186:58:46" hours, Facebook with "140:36:40" hours, and "WhatsApp" 59:12:26 hours, Messenger "8:13:17" hours, Snapchat "11:42:50" hours, IMO "5:30:28" hours, Instagram "10:45:07" hours.
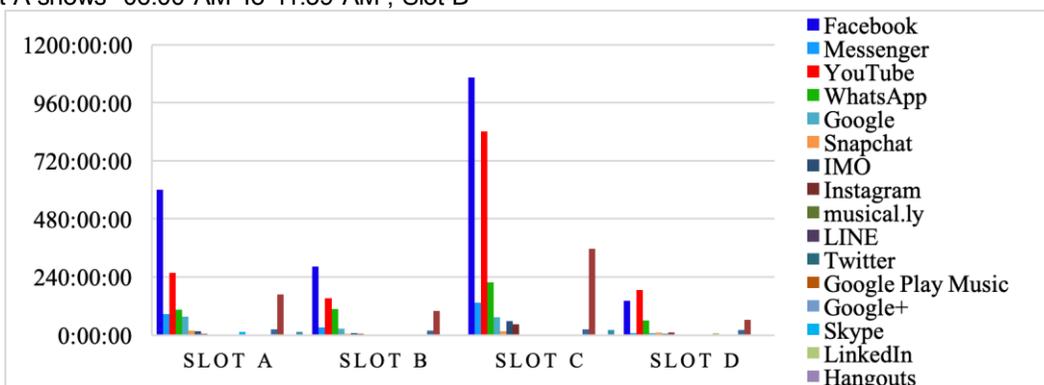

Fig. 6. *Total mobile app usage*

Fig. 7 show average usage by users in different time slots. Average is found by dividing total usage of every app over the active user in a time slots. Slot-C showed maximum average usage and active users, YouTube has higher average usage "14:01:35" hours, Facebook has average usage "13:08:48" hours, WhatsApp has "3:16:49" hour, instagram "4:27:39" hours, and IMO "3:14:05" hours, and messenger "2:11:29" hours. Second mostly interacted time slot is Slot-A, where Facebook has maximum average usage "8:07:41" hours, YouTube with "5:43:57" hours, WhatsApp has "1:57:31" hours average usage, messenger has "1:40:29" average usage, IMO "1:13:58" hours average usage, Skype "1:23:52" hours average usage LINE is "1:32:24" hours. Slot-B average usage in hours for Facebook "3:32:26" hours, YouTube "2:43:38", WhatsApp "1:38:36", messenger "0:30:17" hours. Slot-D average usage for YouTube is "4:40:28" hours, Facebook "2:07:50", WhatsApp "1:28:49", messenger "0:13:20", IMO "1:11:41", LINE "3:25:28", and LinkedIn "7:53:26".
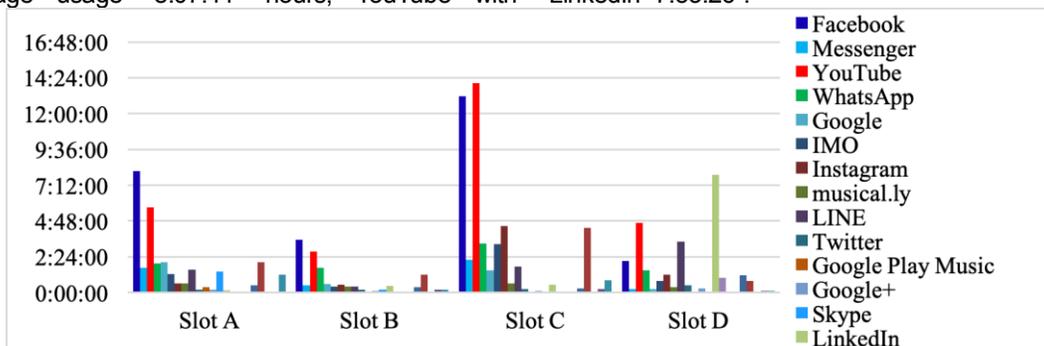

Fig. 7. *Average mobile application usage*

7 DISCUSSION AND FINDINGS
The purpose of this study is to investigate online presence or internet usage patterns of the Pakistani population in order to ensure suitable internet channels for advertisement. We had total 101 participants for the study From Survey results we got mostly used apps: Facebook, WhatsApp, YouTube, and Messenger. From mobile app data, maximum application usage for online

activities are recorded for Facebook, the second most application usage is recorded for YouTube, then WhatsApp, and then Messenger. Mostly interacted time slot from survey as well as from mobile app data is the Time Slot-C (06:00 PM to 00:00 AM), the second one is the Time Slot-A (06:00 AM to 12:00 PM). following is the comparison of the best time Slot-C in Pakistan with the rest of the world time zones, to suggest the world the best time slot in their local time, so they may target Pakistani population to promote their brands.

i)Afghanistan ii)Iran the best time slot(5:30 PM to 11:30PM).

i)Albania, ii) Algeria, iii) Andorra, iv)Angola, v)Austria, vi) Belgium, vii)Benin, viii)Bosnia Herzegovina, ix) Cameroon, x)Central African Republic, xi)Chad, xii)Congo, xiii)Congo Dem. Rep, xiv)Croatia, xv)Czech Republic, xvi)Denmark, xvii)Equatorial Guinea, xviii)France, xix)Gabon, xx)Germany, xxi)Gibraltar, xxii)Hungary, xxiii)Italy, xxiv)Kosovo, xxv)Liechtenstein, xxvi)Luxembourg, xxvii)North Macedonia, xxviii)Malta, xxix)Montenegro, xxx)Netherlands, xxxi)Nigeria, xxxii)Niger, xxxiii)Norway, xxxiv)Poland, xxxv)San Marino, xxxvi)Serbia, xxxvii)Slovakia, xxxviii)Slovenia, xxxix)Spain, xxxx)Sweden, xxxxi)Switzerland, xxxxii)Tunisia, xxxxiii)Vatican City State, xxxxiv)Monaco the best time slot (2:00PM to 08:00PM).

i)American Samoa, ii)Niue, the best time slot(2:00AM to 8:00AM).

i) Anguilla, ii) Antigua And Barbuda, iii)Aruba iv)Bahamas,v) Barbados, vi)Bolivia, vii)British Virgin Islands, viii)Canada, ix)Cuba, x)Curacao, xi)Dominica, xii)Dominican Republic, xiii)Grenada, xiv)Guadeloupe, xv)Guyana, xvi)Martinique, xvii)Montserrat, xviii)Puerto Rico, xix)Saint Kitts And Nevis, xx)Saint Lucia, xxi)Saint Vincent Grenadines, xxii)Trinidad And Tobago, xxiii)USA, xxiv)Venezuela, the best time slot(9:00AM to 3:00PM).

i) Argentina, ii)Bermuda, iii)Brazil, iv)Chile, v)Falkland Islands, vi)French Guiana, vii)Greenland, viii)Paraguay, ix)Suriname, x)Uruguay, the best time slot(10:00AM to 04:00PM).

i)Armenia, ii)Azerbaijan, iii)Georgia, iv)Mauritius, v)Oman vi)Reunion (French) vii)Seychelles, viii)UAE, the best time slot(5:00PM to 11:00PM).

i)Australia, ii)Micronesia iii)New Caledonia iv)Solomon Islands v)Vanuatu, the best time slot(00:00AM to 06:00AM).

i)Bahrain, ii)Belarus iii)Comoros iv)Djibouti v)Eritrea vi)Ethiopia vii)Gaza Strip viii)Iraq ix)Israel x)Jordan xi)Kenya xii)Kuwait xiii)Madagascar xiv)Mayotte xv)Qatar xvi)Russia xvii)Saudi Arabia xviii)Somalia xix)South Sudan xx)Syria xxi)Tanzania xxii)Turkey xxiii)Uganda xxiv)West Bank xxv)Yemen, the best time slot (4:00PM to 10:00PM).

i) Bangladesh ii)Bhutan iii)Kazakhstan iv)Kyrgyzstan, the best time slot (7:00PM to 01:00AM).

i)Belize ii)Costa Rica iii)El-Salvador iv)Guatemala v)Honduras vi)Mexico vii)Nicaragua, the best time slot(7:00AM to 1:00PM).

i)Botswana ii)Bulgaria iii)Burundi iv)Cyprus v)Egypt vi)Estonia vii)Finland viii)Greece ix)Latvia x)Lebanon xi)Lesotho xii)Libya xiii)Lithuania xiv)Malawi xv)Moldova xvi)Mozambique xvii)Namibia xviii)Romania xix)Rwanda xx)South Africa xxi)Sudan xxii)ESwatini xxiii)Ukraine xxiv)Zambia xxv)Zimbabwe, the best time slot(3:00PM to 9:00PM).

i) Brunei ii)China iii)Hong Kong iv)Malaysia v)Mongolia vi)Philippines vii)Singapore viii)Taiwan, the best time slot(09:00PM to 03:00AM).

i)Burkina Faso ii)Cote DIvoire iii)Faroe Islands iv)Gambia v)Ghana vi)Guinea vii)Guinea Bissau viii)Iceland ix)Ireland x)Isle Of Man xi)Liberia xii)Mali xiii)Mauritania xiv)Morocco xv)Sao Tome And Principe xvi)Senegal xvii)Sierra Leone xviii)Togo xix)UK xx)Western Sahara xxi)Portugal, the best time

slot(01:00PM to 07:00PM).

i)Cambodia ii)Indonesia iii)Laos iv)Thailand v)Vietnam, the best time slot(8:00PM to 2:00AM).

i)Cape Verde, the best time slot is (12:00PM to 6:00PM).

i)Cayman Islands ii)Colombia iii)Ecuador iv)Haiti v)Jamaica vi)Panama vii)Peru, the best time slot(08:00AM to 02:00PM).

i)Cook Islands ii)French Polynesia, the best time slot (03:00AM to 09:00AM).

i)Fiji ii)Nauru iii)Norfolk Island iv)Tuvalu v)Kiribati vi)Marshall Islands, the best time slot(1:00AM to 7:00AM).

i)French Southern Territories ii)Maldives iii)Tajikistan iv)Turkmenistan v)Uzbekistan, the best time slot(6:00PM to 12:00PM).

i)India ii)Sri Lanka the best time slot(6:30PM to 00:30AM).

i)Japan ii)North Korea iii)Palau iv)South Korea v)Timor Leste, the best time slot(10:00PM to 4:00AM).

i)New Zealand ii)Tonga, the best time slot(2:00AM to 08:00AM).

i)Myanmar, the best time slot(7:30PM to 01:30AM).

i)Nepal, the best time slot(6:45PM to 00:45AM).

i)Papua New Guinea, the best time slot (11:00PM to 5:00AM).

i)Pitcairn Islands, the best time slot(5:00AM to 11:00AM).

i) Samoa ii)Tokelau, the best time slot(3:00AM to 9:00Am).

4 CONCLUSION

In order to select an appropriate advertisement channel along with an appropriate time slot for the advertisement is crucial to the success of the advertisement campaign. Both these factors can help maximize the exposure of the product to the target audience. we can summarize from discussion and findings that the best time slot for product owners for advertisement of their products to the masses in Pakistan is "06:00 PM to 00:00 AM" and appropriate internet/social media channels are ranked by their usage are,

1. Facebook
2. YouTube
3. WhatsApp
4. Messenger

It is highly recommended for the service providers to fine tune their services for the specific population during the specific times of the day.

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