Comparison of Social Media Presence of Various Armies

ABSTRACT

We analyze and carry out systematic comparison of social media presence of seven major national armies and perform in-depth analysis for their verified Twitter handles. In the past decade, social media has played crucial role globally in various armed conflicts and civil protests. Even various terror organizations have used social media as a fertile ground for propaganda and recruitment. Use and analysis of social media has become an inevitable part of strategy planning for all armies worldwide. Most of the prior works have examined social media use for domains such as entertainment, politics, and health. However, there exists no direct work that compares and analyses social media presence of armies. We measure popularity of social media content generated from verified accounts of seven major armies and we also find out factors that are responsible for popularity of these posts. Army social accounts receive more response on Twitter as compared to Facebook and Youtube. Therefore, we performed detailed analysis of verified Twitter handles of these armies. We observe that intuitive hash-tags, multimedia content, weekend postings and user mentions are some of the factors that improve popularity of tweets of army Twitter handles. Within the followers of these verified Army accounts, we fraction out users that fall in the recruit-able age group. Atleast 20% of the followers fall under this category. Our study can further be extended by doing sentiment analysis of response from people's tweets and their correlation with various real time events in society.

CCS CONCEPTS

•**Information systems →Social networks;**

1 INTRODUCTION

In the past decade, social media has played crucial role globally in various armed conflicts and civil protests. In operation Cast Lead, Israeli Army used Twitter to enhance coordination of effort against Hezbollah militants in Palestine and to do deception moves against Syrian Army [12]. In Egypt, social media was successfully used by protesters to communicate opposition to Egyptian government in 2011 [4]. Joint Task Force at Haiti used social media for coordination of relief operations in the aftermath of the earthquake in 2010 [18]. Terror organizations have also used social media as a fertile ground for propaganda and recruitment including the ISIS which has used it

as a tool for ideological radicalization of youth [3]. Use and analysis of social media has become an inevitable part of strategy planning for all armies worldwide. It is also being used by the Armies to increase interaction with the people and highlight their positive achievements.

We analyze and carry out systematic comparison of social media presence of seven major national armies including India, USA, Pakistan, Australia, Russia, France and Britain. We chose these armies based on size of their defence budget, global influence, and active presence on social media. We do comparison of their content, followership and popularity on social networking platforms like Facebook, Twitter and Youtube, by normalizing each country's internet penetrated population and number of years of their account age. We also find out factors that are responsible for popularity of these posts. Our analysis shows that people are interested in listening to their armies but there is a big scope of improvement as compared to the attention which celebrities receive on their social media handles. Army social accounts receive more response on Twitter as compared to Facebook and Youtube. Therefore, we performed detailed analysis of verified Twitter handles of these armies. We observe that intuitive hash-tags, multimedia content, weekend postings and user mentions are some of the factors that improve popularity of tweets of army Twitter handles.

Armies worldwide are facing manpower shortage due to various reasons like high risk to life and frequent deployments in isolated places. The manpower shortage varies between 6% to 30% in the seven armies being compared in this work. Social media can be used as one of the tools to reach out to the youth of the country and motivate them to join the Army to minimize this problem. Within the followers of these verified Army accounts, we fraction out users that fall in the recruit-able age group. Atleast 20% of the followers fall under this category. The analysis shows the need for the armies to have a dedicated recruitment handle on Twitter.

Our study can further be extended by doing sentiment analysis of response from people's posts and their correlation with various real time events in society. It is observed that events on social media change sentiments of people which can shape the public opinion. Thus it is important to study sentiment analysis of posts on social media and correlate them with significant events in the society.

2 PREVIOUS WORK

RD Waters et all's work compared social media content of 275 non profit organizations to examine how social networking sites are being used to advance their mission and program [16] . Work by BA Huberman compared tweets on movies to forecast their box office performance and revenue generation. Richardson studied the role of social media presence in online courses and its relationship to students learning performance [2]. S Hays also used twitter's content analysis to study its impact on tourism companies [7]. Neiger compared health industry performance on social media to identify associated potential key performance indicators [13]. Kim et all's work compared luxury fashion brands on social media using

interaction and top trends to forecast future purchasing behaviour of customers [9].

Lovejoy compared 100 largest companies in US on social media [10]. Their work revealed importance of dialogue and community building practices to positively engage with stake holders. Hanna et all's work examined what are the performance indicators of using social media effectively [6]. They also highlight best practices on social media in engaging positively with users. Kristen studied twitter data of 73 non profit organizations to find efficient means of using tweet frequency, hyperlinks, hastags, retweets and multimedia files to maximize stakeholder involvement [11]. The study also showed that 64% of these organizations use social media only as one-way communication channel and demonstrate less engagement with the users.

Social media has also been intensively used in armed conflicts and civil uprisings globally. In Africa, there are instances when local people report information on social media such as roadblocks and ambushes to United Nations peace keeping forces. Thus, helping the Army to decide its troops deployment against local militant groups [5]. In Egypt, social media was used by protesters to communicate opposition to Egyptian government in 2011 [4]. Joint Task Force in 2010 at Haiti used social media for coordination of relief operations in the aftermath of the earthquake [18]. In India, as per the home department, government of Jammu and Kashmir, order on 26 Apr 2017, social media sites like Twitter, Facebook, Youtube and Whatsapp were banned in the state blaming them to be one of the main reasons for spread of rumours and unrest in the state [8].

Defence Advanced Research Projects Agency (DARPA), the US based agency has spent over 42 Million Dollars per year from 2011 for research on social media [17] in strategic communication (SMISC) for the department of defence (DoD) of USA in collaboration with IBM and universities like Georgia Tech, Indiana, South California and Utah state. They include various studies like finding Influence bots on Twitter [14], the red balloon challenge where they found geographic locations [15] of origin of tweets, measuring influence on twitter [1], community behaviour and retweet prediction.

3 OUR WORK

3.1 Dataset

Python library TweePy was used to fetch the data in JSON (Java Script Object Notation) format from Twitter API. Twitter handles used for our work were adgpi (Indian Army), usarmy (US Army), britisharmy (British Army), ispr_official (Pakistan Army), australianarmy (Australian Army), armeedeterre (French Army) and mod_russia (Russian Army). Limiting the scope of our work to attributes that are publicly accessible via the APIs, every user's file was stored separately with features provided by Twitter. This Dataset in JSON format was converted into ARFF (Attribute-Relation File Format) for our experiments and analysis.

3.2 Systematic Comparison of Social Media Presence of the Armies

A comparison on social media of seven major armies of the world including India, USA, Pakistan, Australia, Russia, France and Britain was carried out by comparing various parameters like content,

followership, and popularity over the most popular social media sites Facebook, Twitter and YouTube using publicly available data on these sites respectively.

3.2.1 Comparison of Content. Since different armies have taken up social media at different times, comparison between all countries was normalized by taking average values on per year basis. Comparison of content posted on social media was done taking average number of tweets per year on Twitter, average number of videos on YouTube and average number of posts per year on Facebook. In *figure 1* it is observed that Army social accounts receive more response on Twitter as compared to Facebook and Youtube.

Army	Average Tweets per Year	Average Videos per Year on Youtube	Average posts per Year on Facebook
India	1320	34	948
US	2850	79	996
Pakistan	450	20	1092
Australia	640	69	672
Russia	5650	61	960
France	980	73	804
British	710	54	852

Figure 1: Comparison of Content Normalized on per Year Basis

3.2.2 Comparison of Followers. Since every country has different population and moreover different internet penetration, we normalized the comparison considering only the percentage of Internet penetrated population. *Figure 2* shows that US Army has highest followers on Twitter and Youtube, while as Pakistan Army has very high number of followers on Facebook.

Army	Followers on Twitter (Percentage)	Subscribers on YouTube (Percentage)	Fans on Facebook (Percentage)
India	0.34	0.01	2.29
US	0.41	0.14	1.59
Pakistan	0.61	0.02	20.61
Australia	0.13	0.03	1.66
Russia	0.11	0.01	0.08
France	0.12	0.05	1.11
British	0.28	0.08	2.66

Figure 2: Comparison of Followers Normalized by Internet Penetrated Population

3.2.3 Comparison of Popularity. Parameters considered for popularity comparison were number of Retweets on Twitter, number of Views on Youtube and number of Likes on Facebook. This comparison was also normalized by taking average values on per year basis. *Figure 3* shows that US, France and Pakistan Armies have maximum popularity over Twitter, Youtube and Facebook respectively.

Army	No of Retweets per Year (In Thousands)	No of views per Year on Youtube (In Thousands)	No of Likes per Year on Facebook (In Thousands)
India	195	313	1021
US	274	324	423
Pakistan	84	30	1082
Australia	70	622	45
Russia	203	21	293
France	73	1236	74
British	185	2464	191

Figure 3: Comparison of Popularity Normalized on per Year Basis

3.3 Maximum Retweet Day

Seven major Armies tweets were analyzed Day-wise. It was observed for majority of the armies that maximum Retweet count was generated on weekends. In *Figure 4* it is observed that maximum retweet count is being generated on fridays, saturdays and sundays. Day-wise analysis of number of tweets showed that armies are posting less content on weekends. Therefore, armies need to increase their weekend posts to generate more retweets and popularity.
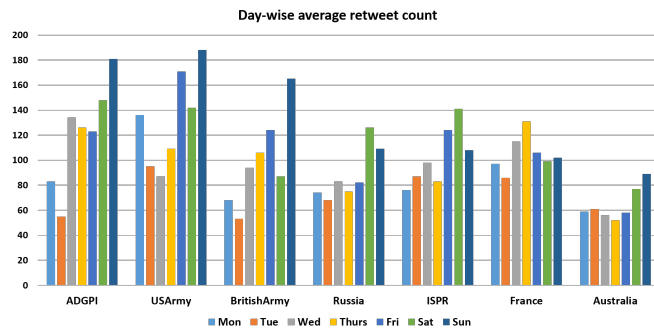

Figure 4: Day-Wise Analysis

3.4 Content of Top Tweets

Posts of all armies from twitter were segregated as per their content and average retweet count was calculated. It was observed in *Figure 5* that posts with video or multimedia content generated maximum retweets and popularity. The content-wise analysis of all posts of these armies showed that percentage of tweets with text are highest and the armies need to increase their multimedia content posts to gain more popularity.

3.5 Top Hashtags and User Mentions

Hashtags are used in twitter to categorize tweets into various topics and user mentions are used to tag other users in a conversation. Top hashtags and top user mentions from each army were analyzed. It was observed that the top retweet posts had an intuitive Hashtag.
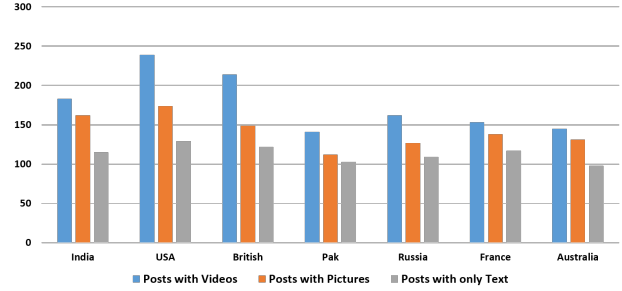

Figure 5: Content of Top Tweets

It was also seen from *Figure 7* that the British, US and French armies were interacting with their country's recruitment handles and also with their other Defence forces like Air force, Navy and Para military accounts. This portrays unity and bonhomie amongst all security forces of a nation.
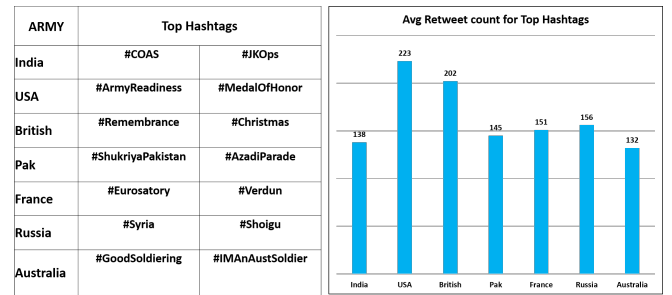

ARMY	Top Hashtags	
India	#COAS	#JKOps
USA	#ArmyReadiness	#MedalOfHonor
British	#Remembrance	#Christmas
Pak	#ShukriyaPakistan	#AzadiParade
France	#Eurosatory	#Verdun
Russia	#Syria	#Shoigu
Australia	#GoodSoldiering	#IMAnAustSoldier

Figure 6: Top Hashtags

ARMY	User Mentions		
India	@SpokespersonMoD	@Easterncomd_IA	@NorthernComd_IA
USA	@USNationalGuard	@USARecPAO	@DeptofDefense
British	@MercianRegiment	@ArmyJobs	@NATO
Pak	@AsimBajwaISPR		
Russia	@mod_russia	@Radio_mayak	@EmbassyofRussia
France	@LandForce	@RecrutemenTerre	@Defense_gouv
Australia	@Australian_Navy	@Aus_AirForce	@AWMemorial

Figure 7: Top User Mentions

3.6 Interactive Measure

Social media is a platform for interaction and communication. To resolve misconceptions or to redress grievances, it is very important to allow the users to establish a direct contact on social media

handles and keep the audience engaged in a two way dialogue. Armed forces around the globe, especially the US army and the British army, have taken up this issue seriously and are being interactive over their social media handles. This can be observed from the increasing number of user mentions and number of replies on their Twitter handles. *Figure 8* compares interactivity of the armies on twitter by measuring their percentage of user mentions and percentage of replies.
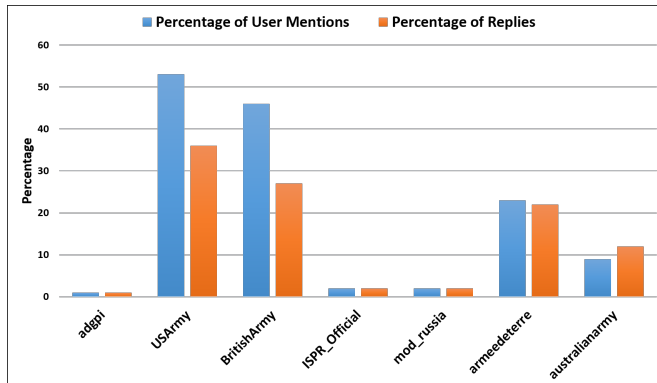

Figure 8: Comparison of Armies Interactive Measure on Twitter

3.7 Age Estimation for Recruitment

Armies worldwide are facing manpower shortage due to various reasons like high risk to life and frequent deployments in isolated places. The manpower shortage varies between 6% to 30% in the seven armies being compared in this work. For recruitment purpose, it is important to target correct age group people. But most of the accounts on Twitter do not give clear age of the user. Hence, a personal feature of Twitter data, i.e. Profile picture of followers on Twitter was extracted. Age prediction was done using Microsoft cognitive services which gave an age value for every input picture. Within the followers of these verified Army accounts, we fractioned out users that fall in the recruit-able age group. In *Figure 9* it was observed that atleast 20% of the followers fall under this category. The analysis also shows the need for the armies to have a dedicated recruitment handle on Twitter, as the armies with such recruitment handles have lesser manpower shortage problem.

4 FUTURE SCOPE

Our study can further be extended by doing sentiment analysis of response from people's posts and their correlation with various real time events in society. It is observed that events on social media change sentiments of people which can shape the public opinion. Thus it is important to study sentiment analysis of posts on social media and correlate them with significant events in the society. The same can be modelled to make a prediction tool which can be used by the military commanders to be proactive in operations.
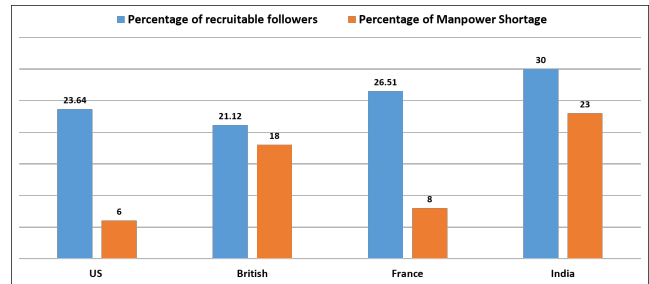
Figure 9: Correlation of Percentage of Recruitable Followers and Manpower Shortage

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