



Analysis of Facebook contents of Police Department of Pakistan in the context of Good Governance

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Abstract:- In the age of globally connected world, media platform and public networks are vital source of enormous data. This data can be very important to gain knowledge from it, which could be advantageous for decision making and future predictions. Facebook is a well-known public network website with millions of active users and millions of posts per day. Government officials of various departments use this as a platform to update people regarding their initiatives. In this paper, the public network data of the police departments of the four provinces of Pakistan is analyzed through data mining, and the services provided by the selected departments are highlighted. The result of this research highlights the major contribution of the police department of Pakistan in terms of good governance. Along with, the common issues which are faced at the various provinces of Pakistan are also highlighted. The findings are verified using valid sources. The results reflect that for studied four provinces of Pakistan, the keywords arrest, accuse and investigation of kidnappers, arm dealers, drug dealers, murderers, robberies and other street crimes are prominent. However, the prominent findings of each province are discussed in results.

Keywords: Facebook, Content Analysis, Data Mining, Good Governance, Police Department, Pakistan

1. INTRODUCTION

Governance is the mechanism of making decisions and policies by which decisions are implemented (ESCAP, 2006). The overall goal of the good governance is that the government organizations must be clear on their responsibilities and must ensure that the citizens receive the quality services from the organization.

Government of Pakistan is responsible to provide the basic infrastructure to its people. Although, government is not a single entity, rather, it constitutes of the number of departments working under its directions. These departments are responsible for allocation, distribution and stabilization of the basic infrastructural needs of the people (Myerson, 2014). Police department is one such example, which works to control the law in order situations of Pakistan.

Pakistan is a strong developing country facing lots of challenges (Awan, 2018; Shah, 2018). It is important to study that at what level the challenges of good governance are met at government and department levels and what are the expectations of the people related to those challenges. People of Pakistan belonging to various age groups, social status, professions use public networks and media platforms at large scale (AlphaPro, 2018).

This study is aimed to analyze Facebook content of the police departments of the various provinces of Pakistan in order to highlight social issues faced and tackled by the

police departments in terms of good governance. In this regard, the data of police departments of the four provinces of Pakistan is collected, data mining is performed, and highlighted information is presented. This highlighted information represents the main focus of the police departments in action. The validation of highlighted information is also performed through reliable newspapers and articles.

(Table 1) provides list official Facebook pages of the police departments of four provinces of Pakistan.

Table 1. Selected Facebook pages of police departments of Pakistan for this study

Province	Facebook page	Link
Sindh	Sindh Police	@sindhpolicedmc
Punjab	Punjab Police Pakistan	@PunjabPolicePakistanOfficial
Balochistan	Balochistan Police	@BalochistanPoliceOfficial
Khyber Pakhtunkhwa (KPK)	Khyber Pkhtunkhwa Police	@pakhtunkhwapolice

Numerous studies presented below used online public networks for analysis of good governance, the prediction of

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elections, evaluation of services provided by the individual departments through online media contents.

Diakopoulos and Shamma (2010) used opinion mining techniques to extract the public opinion on the debate videos regarding America's first presidential contest 2008. As a result of this study various controversial topics were detected.

(Tumasjan *et al.* 2010) adopted sentiment analysis techniques to determine the usage of Twitter in political debates. This study further used mapping procedure to connect the real-life sentiment of people with Twitter opinions regarding political parties and candidates in context of 2009 Germany elections. The outcome of their study is interpreted as the more positive the tweets towards a party, are the more likely they vote for that party in election.

(Livne, *et al.* 2011) implemented the graph mining and language modeling techniques to analyze the use of Twitter by candidates during midterm election 2010 in US. With this study, a mechanism is built that used the text analysis techniques and hash tags used by candidates of various political parties. Further, the impact of language used by candidates on the election is also analyzed. This study made the correct prediction of the election results only with the help of public network analysis using Twitter.

(Reddick *et al.*, 2017) used text analysis to take better insight of the public network content of the public service organizations. This study was mainly focusing on the learning the public services of the local government. For, this, a framework was developed that facilitates in analysis of the public online media content. Authors claimed that the framework gives better insight in learning the public services to the government organizations.

(Darwish, 2017) adopted online public network analysis techniques to analyze the effectiveness of the use of online media by the government of UAE. In this regard, a framework for the effective use of online media is proposed. The aspects which were focused in the framework includes publicity, marketing, reach, transparency, participation and engagement.

Through literature review discussed above, it is realized that online media data can be utilized to gain knowledge, when analyzed. Through the analysis of the data, the role of the police department can be observed towards good governance. This data can result in better decision making and future predictions.

2. MATERIALS AND METHODS

The main focus of this study is to assess good governance through one of the crucial government entities, i.e. police department of Pakistan using Facebook content

generated by police officials. In order to carry out the study a complete roadmap is devised.

The process of the study starts with the formalization of problem followed by the literature review. The focus of the study is to analyze the Facebook contents of the police department. The major part of the Facebook content is in the form of text, therefore text mining techniques are used in the study (Aggarwal and Zhai, 2012). Text mining is divided in three major steps, which include, data extraction, natural language processing and data mining. Next step of the study is the selection of Facebook sources for contents collection, followed by the extraction of data from selected sources. The extracted data may be in enormous amount as well as irrelevant, therefore filtration of data is needed. This is followed by cleaning of data, which cleaning involves removal of un-recognized characters, hyperlinks, multimedia links and emojis, applying NLP techniques. Finally, data mining is applied for discovery and interpretation of facts. The facts discovered are interpreted for understanding and the presentation of results. Validation and mapping of the results in terms of good governance is performed. The NLP techniques, data mining and mapping of results is explicitly discussed in are presented in the subsequent sub-sections.

3. RESULTS

Data analysis process starts with content source selection, the official Facebook pages of the police department of the provinces of Pakistan are selected as the data source. In the extraction of data, the focus was placed on extracting adequate number of posts per page. The filtration of data is performed, and irrelevant posts are manually observed and discarded. This was followed by cleaning of data, applying NLP techniques, and discovery and interpretation of facts. Validation and mapping of results in accordance with good governance is performed. Finally, results are presented in terms of good governance.

The sub-sections respectively discuss in detail, the analysis of data and interpretation of facts of the official Facebook pages of the police departments of four provinces of Pakistan i.e. Sindh, Punjab, Baluchistan, and KPK.

Official Facebook page of Sindh police

The (Fig.2) shows the word cloud of official Facebook page of Sindh police. The highest projecting keywords include accused, arrested, officers, ssp, traffic, case, complaints, uniforms and measures.

The correlations were observed for the highest occurring keywords including arrested, accused, complaints, case, traffic and measures which are presented in (Table 2).

As observed from Table 2, the posts related to arrest and accuse and investigation of kidnappers, murderers, arms dealers, drug dealers, gangs, exporters, killers and mobile

2019f), murderers (Khalid, 2019; Asghar, 2019; Report, 2019c; Mushtaq, 2019; Report, 2019d), robberies (Report, 2019e; Baig, 2019; Correspondent, 2019b; Ali, 2019a) and other street crimes are prominent (Ali, 2019b; Reporter, 2019g).

In separate observation of the findings of each province few distinct verdicts are observed which are discussed here. For Sindh province, excluding arrest and accuse of similar crimes discussed above, mobile snatching cases are more prominent (INP, 2019). Similarly, the highlights related to sewage water breaks are also prominent in Sindh as compared with other provinces (Reporter, 2019h; Khan, 2019). The terms “bad performance” and “bribe” were also observed in traffic control in Sindh. When observed through digital media over this issue, the police department is suspending the suspected officers on being involved in bribery cases (Reporter, 2019i; Ali, 2019c). Similarly, the awareness workshop also held to reduce this practice (Muhammad, 2019).

The Punjab police is more focused on women and child safety as compared to other provinces (Ansari, 2018; “Women help”, 2019). It can be implied that more children are disappeared, and more women are harassed in Punjab as compared to any other province (Reporter, 2019j). Additionally, the focus of training programs for police is high in Punjab police in comparison with others (Correspondent, 2019c).

In the page of Baluchistan police, the actions against land mafia are separately highlighted. The police of this province is also affected with terrorists and airstrikes (Writer, 2019; Reporter, 2019k). As a negative finding the keywords damaged, government and corruption are prominent in comparison with any other province. These corruptions are verified from online news source (Shahid, 2018). The public is complaining, which is also stressed in the results. However, the Baluchistan police consider the public complaints as their highest priority (Correspondent, 2019d).

The noticeable finding for KPK police mainly includes the armed person’s attacks over police which results in deaths of multiple police officers. Four suicide attacks were faced by KPK in year 2018 (Xinhua, 2019b).

5. CONCLUSION

This exploratory study of online public content is intended to perform for the purpose of evaluation of good governance. As police departments of any country bears an important role towards good governance, therefore in this study we intend to analyses relevant information. The study is carried out on official Facebook pages of police department, in order to discover interesting facts from the online content regarding good governance. The text analysis based good governance evaluation model presented and the text-mining methodology is used, which is carried out using three steps including data extraction, NLP and data mining.

This analysis will help government and citizens of Pakistan, as focus and actions of police departments are clearly highlighted, interpreted and summarized in this study. The results are presented and discussed in terms of good governance. It can be concluded from the study that Facebook text can help the analysts to evaluate good governance to some extent using text analysis method. This study will help government and the people of Pakistan to better understand at what extent the good governance is achieved for the services provided by the police department of Pakistan.

This study has few limitations. Initially, the analysis is performed through multiple sources and in a big timeframe, which may lead to some interpretations being missed or incorrectly interpreted. We tried our best to validate the major findings to overcome this limitation. Further, this method of Facebook analysis only pinpoints major issues as there may be a possibility that the other issues which were posted in Facebook are not noticeable due to low correlation. It may also be noted, the results and interpretation are performed on what was available on selected Facebook sources. However, the validation and mapping results show that whatever interpretations are made also coincide with the news reports.

This publication is a part of a research in continuation that identifies the good governance in Pakistan using Facebook contents. In this regard, there are various services departments that requires evaluation such as government’s official Facebook pages, news groups pages, education and other department’s pages. Similarly, the local city groups pages, expressions of people given by the decisions made by government will also be evaluated. Finally, the common issues faced by the people of Pakistan will be highlighted as well.

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