Editorial

A Short Statistical Analysis of JMISCI Readers Based on Google Analytics Data

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Dear Readers,

Happy New Year and welcome to 2016! It has been a privilege to serve you as the Editor-in-Chief for Journal of Military and Information Science (JMISCI) for three years. Serving as the Editor-in-Chief is not only an honor but also a responsibility to keep JMISCI up-to-date with the latest changes in the field of military and information science. It is my great pleasure to report that JMISCI has continued to do well in 2015.

We are about to start a new year, besides we celebrate the 10th issue of JMISCI. It is my privilige to inform you that Some widely used academic indexes as Directory of Open Access Journals (2015), Arastirmax (2015) and Scientific Indexing Services (2015) have started to index our journal. Besides, we have submitted to engineering index (EI-Compendex) and Proquest databases for indexing. JMISCI supported two international conference in 2015; ICMSS (International Conference on Military and Security Studies) and ICOVACS (International Conference on Value Chain Sustainability conference).

As JMISCI official supporting journal of ICOVACS 2015, , a special issue is included in this print. ICOVACS took place at Marmara University, Goztepe Campus, in March, 2015. This year's conference theme was "Performance Measurement in Operations Management", that discuss and examine the performance measurement in order to develop sustainable value chains.

Statistical Analysis of JMISCI Readers

Scientific journals offer wide and recent collection of current research in the related field of interest. It is known that a journal's content can impact the development of new technology, educating or daily life. They usually have peer review systems ensuring that articles have to provide some essentials for acceptance. At this point readers of a journal is crucial and provide valuable data for an evaluation. From this fact, I desired to survey a short study about JMISCI readers.

I applied two main data obtained from Google analytics (Google, 2015) for a short statistical study. These are sessions and page views of JMISCI. Data of 48 weeks are included.

Table 1. Data overview for 48 weeks (Based Google analytics, 2015)

Sessions (weekly)				Page views (weekly)			
23	89	269	67	24	377	658	129
20	128	317	93	20	736	667	351
15	316	301	50	34	760	339	187
83	234	287	75	473	208	386	347
145	120	142	127	611	477	426	484
118	274	142	103	365	372	141	293
108	224	235	241	527	298	239	774
367	252	58	282	1279	841	344	594
237	447	82	153	1049	700	267	331
192	448	76	137	593	412	194	601
94	249	68	86	647	437	257	314
119	110	79	132	361	596	244	256

Note: Data given in circle effects normality test. See Fig.1

Descriptive statistics about "sessions" and "page views" data is calculated in Minitab (2014) and is given below(Table.2). We can conclude that readers open 167 session and visit 438 page in a week approximately.

Table 2. Descriptive statistics

Variable	N	Mean	SEMean	StDev	Minimum	Maximum
Sessions	48	167.0	15.5	107.7	15.0	448.0
Pageviews	48	437.9	36.9	255.6	20.0	1279.0

Another valuable issue about data statistics is to encounter probability of data (Montgomery et al, 2009; Spanos, 1999). Researchers use probability plots in order to determine whether a particular distribution fits given data or to compare different sample distributions. I applied Minitab "probability plot" to estimate the cumulative distribution function (cdf) and associated confidence intervals. Although the plotted points does not follow a straight line in some points exactly, we can conclude that data is normally distributed as seen in Fig.1. The reason is data of week 1-3 and week 9-10. Data is not similar in that week's (too smaller or too bigger) in comparison to others.
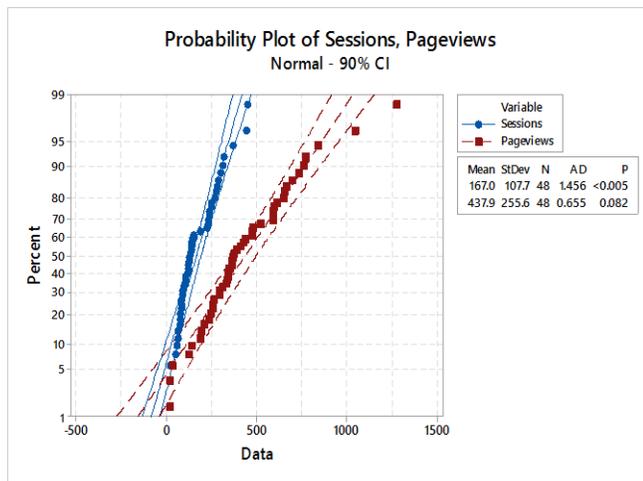

Fig.1. Probability plot of JMISCI data for (based on 48 weeks).

Time Series Analysis for JMISCI Readers Data

I guess, our readers interested in statistics are familiar with the topic of time series. Shortly, "a time series is a sequence of data points, typically measured at uniform time intervals"(Brockwell, 2013). Many researchers use time series in different fields ranging from sociology to engineering, and several methods

of analyzing time series appear as an important part of Statistics (Jacobs and Carmichael, 2002; Owen, 2001). I applied time series analysis in order to extract meaningful characteristics of the data and forecast future JMISCI readers behavior. Basic time series plot of sessions and page view according to week 1 to week 48 is given Fig. 2.
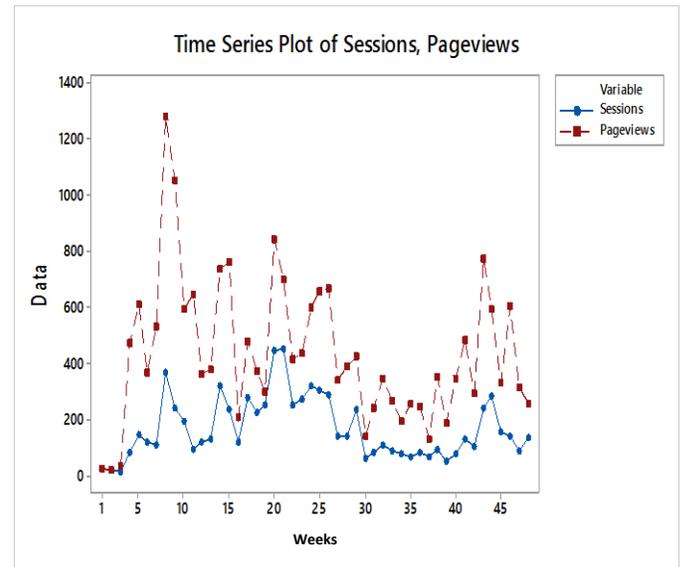

Fig.2. Time series for sessions and page views.

Readers opened 1279 and 1049 session in weeks 9 and 10. This data is strange in comparison to other weeks. I think the reason could be ICMSS participants and members.

Another issue is forecasting the readers trend. Basic question is "how many readers may open session and display JMISCI pages in future? In a one week or one month? I used "Winter' Method" provided by Minitab to find an answer for next 12 weeks. Green points describe the time series plot with 95% prediction interval bands (Fig.2 and Fig.3) . In this process, I assume that the time series is represented by the model;

$$y_t = (b_1 + b_2 t)S_t + e_t$$

Where; b_1 is the base signal, b_2 is a linear trend component, S_t is a multiplicative seasonal factor, e_t is the random error component (Kalekar, 2004). When we define length of the season as L periods, the length of the season will be
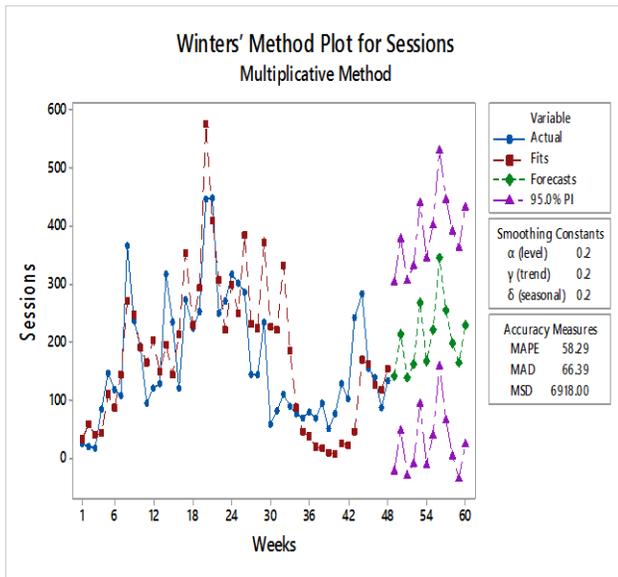
$$\sum_{1<t<L} S_t = L$$
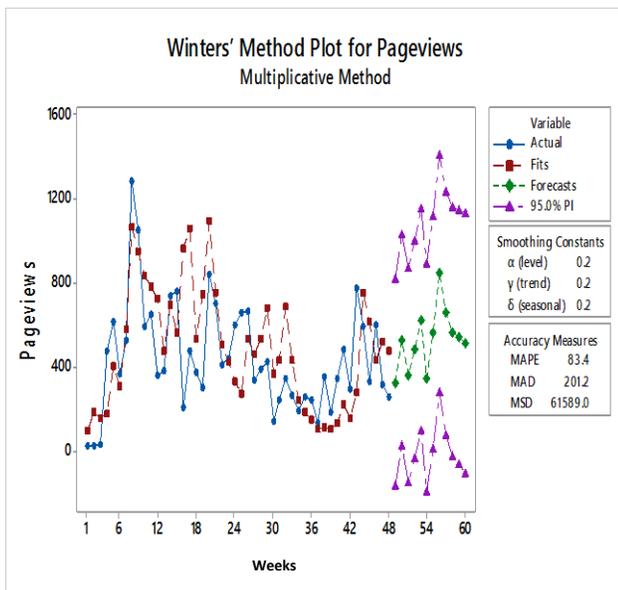

Fig3. Forecasting graphic for sessions.

Fig3. Forecasting graphic for page views.

I want to make a short explanation about Winters' Method at this point. It polishes given data by Holt-Winters exponential smoothing and provides short to medium-range forecasting (Gelper and Croux, 2010). Researchers may apply this procedure when both trend and seasonality are present. The method computes dynamic estimates from point of view level, trend, and seasonal (Table 3). Minitab results

provide three measures in order to determine the accuracy of the fitted values: MAPE, MAD, and MSD.

Table 3. Winters' Method forecasting results for Pageviews

Data Pageviews		
Length 48		
Smoothing Constants		
α (level) 0.2		
γ (trend) 0.2		
δ (seasonal) 0.2		
Accuracy Measures		
MAPE 83.4		
MAD 201.2		
MSD 61589.0		
Forecasts		
Period Forecast	Lower	Upper
49 324.930	-168.055	817.92
50 527.629	26.920	1028.34
51 357.843	-151.478	867.16
52 480.295	-38.481	999.07
53 622.107	93.076	1151.14
54 346.523	-193.515	886.56
55 561.464	9.710	1113.22
56 844.561	280.427	1408.69
57 655.014	77.879	1232.15
58 565.338	-25.379	1156.06
59 538.615	-66.224	1143.46
60 513.263	-106.204	1132.73

I tried to explain definitions of MAPE, MAD and MSD which appears in Table 2 below. Mean Absolute Percentage Error (MAPE), measures the accuracy of fitted time series values. Because this number is a percentage, it can be easier to understand than the other statistics. Mean Absolute Deviation (MAD), expresses accuracy in the same units as the data, which helps conceptualize the amount of error. Mean Squared Deviation (MSD) is always computed using the same denominator, n, regardless of the model (Minitab, 2014). We can forecast that readers may open 325 pages in week 49 and 844 pages in week 56 according to Table 2.

2015 is a successful year for JMISCI when we examine Google reports (See Appendix) and feedbacks from authors/readers. I would like to thank Col. Kadir Canpolat (Army War College), Prof.Dr.Cengiz Kahraman (ITU), Prof.Dr. Şeref Sağıroğlu (Gazi University), Prof.Dr. Orhan Torkul (Sakarya University), Assoc Prof.Dr. Hakan Tozan (Navy Academy), Assoc.Prof. Dr. Özkan Bali (Military

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International Conference on Military and Security Studies, ICMSS 2016

Turkish Army War College (TAWC) is pleased to invite colleagues from other war colleges as well as researchers in military, security, information and international affairs to the annual "International Conference on Military and Security Studies". The conference will take place March 14-16, 2016 in Istanbul, Turkey.

We wish you a happy and successful year. We look forward to having you with us in 2016.

Sincerely,

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Editor-in-Chief
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APPENDIX

Worldwide access to JMISCI. Graphics given below, provides descriptive information about sessions, users, pageviews of JMISCI for 48 weeks.