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ScienceDirect

Procedia Computer Science 31 (2014) 389 – 397

Procedia Computer Science

Information Technology and Quantitative Management (ITQM2014)

Quantitative Analysis of Reference Help Desk Utilization Trend

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Abstract

This paper analyzes some useful information for the student worker arrangement of the C.C. & Mabel L. Criss Library at University of Nebraska at Omaha. The information we discover will contribute much to the resource optimization of the library and possible to other libraries. This paper used the Reference Effort Assessment Data (READ Scale) to collect data, used the Oracle database to store and extract the data, and used the EVIEWS software to analyze the data. In particular, this data set is a time series, so we used the stationary process to decide we could use ARMA (p, q) or curve fitting to build the model, studies of this nature can be very cost effective and can generate insights into the mining of the Criss Library's Database.

Keywords: Quantitative analysis; ARMA model; Time series; Curve fitting; Library reference service utilization

1. Introduction

In 1938, the C.C. & Mabel L. Criss Library at University of Nebraska at Omaha was moved to its 60th and Dodge location. At this time, the librarian gained more help at the reference desk. Before computers came about, the majority of reference questions warranted the knowledge of the librarian. The librarian was trained on using the vast array of reference materials that could be used to answer most of the students' questions. The majority of questions asked at the reference desk were able to be answered by the librarian or her use of these reference materials. More difficult questions included analyses of different journals and books or business and marketing demographic. There was also no way to actually browse for books; students would just have to either ask the librarian or look them up by "pages" in the card catalog (Hillyer, 2010).

Along with the introduction and availability of computers, came more advanced and technical questions to the reference desk. Eventually, there began a shift in time it took to answer students' questions. It used to take

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doi:10.1016/j.procs.2014.05.282

anywhere from 15 to 30 minutes to seek out the information and answer a student's question; however, that time soon decreased to only a few minutes on average. Furthermore, the staffing model also decreased. Double-staffing was decreased, the reference desk librarian's hours decreased, and the library associate's hours increased (Hillyer, 2010).

It wasn't until 2002, when Bella Karr Gerlich of Dominican University started the Reference Effort Assessment Data (READ Scale) project to test a new reference data collection technique that captures amount, time, type, and degree of difficulty for reference questions. The scale ranges from 1 - 6. A "1" on the scale indicated that the question asked was very easy and took little time to answer; whereas, a "6" on the scale indicated that the question was very difficult and took anywhere from 30-60 minutes to answer. The READ Scale data can be used to record the statistical numbers at the reference desk. In return, these statistics can help the library with both strategic planning and the assessment of their reference services

The data was obtained from DR. C.C. & MABEL L. Criss Library at University of Nebraska at Omaha to determine work schedules for work-studies and librarians based on different demographics. The purpose of reference utilization project is to analyze UNO students' flow rate at Criss Library and report major variables that impact on work schedules from reference database. This project has selected 5000 records from 5295 instances and 13 demographic variables of Criss Library 2011-2012 reference database. The 13 demographic variables are separated by three dimensions - when students came to ask questions (Year, Month, Day, Day of the week), how difficult the questions were (Scale Value), and how did librarians receive questions from students (Away from library, Chat, Email, Phone Directional, Phone Reference, Walk-up directional, Walk-up Reference). The quantitative data analysis based on the UNO students' flow rates on each day (Monday to Sunday)and each week through a semester (Fall 2011) and the open time at Criss Library

The READ Scale has been used at the Criss Library since May 2009. The scale is used at the reference desk, the circulation desk, and by each reference library and library associate who interacts with students of faculty. What had, at one time, been casually observed at the reference desk can now be shown qualitatively and be used for statistical analysis.By using the READ Scale, it is possiblefor libraries to alter staffing patterns tobest serve the users and librarians.

This paper introduces the integral process of quantitative analysis, which describes the steps of checking stationary, curve fitting, and information extract totally checking.

2. Method and Analysis

2.1. Data preparing

Data collecting is the first step of this whole process. We used Reference Effort Assessment Data (READ Scale) as the method to collect data. The 13 demographic variables are separated by three dimensions: when students came to ask questions (Year, Month, Day, and Day of the Week), how difficult the questions were (Scale Value), and how librarians receive questions from students (Away from Library, Chat, Email, Phone Directional, Phone Reference, Walk-up Directional, and Walk-up Reference). This data set has a range from July 2011 to May 2012, which means it includes two semesters: Fall 2011and Spring2012.