DixonTest.CriticalValues: A Computer Code to Calculate Critical Values for the Dixon Statistical Data Treatment Approach

1. **Files with their description in the "code" folder**.

File Name	Description
Readme.PDF	This file
CriticalValues.vb	Code of the class, **Criticalvalues**.
frmDemo.vb	Code of the demonstration program, **DixonDemo**
DixonTestDemo.msi	Installer the demonstration program, **DixonDemo**
DixonTest.dll	Compiled library which contains the class **Criticalvalues**.
DixonTest.tlb	The library to make reference on **DixonTest.dll** in Excel.
DixonValues.xlsm	The Excel file explains the calculation of Dixon critical values tables and the figures of the article.

2. **Creating a class for the Dixon critical values**:
3. Open a new class project in Visual Studio in Visual Basic with name, DixonTest and include a class with name, CriticalValues. Then copy the code of CriticalVales.vb in this class. Actually, the Visual Studio creates many files which are not included. Similarly, this compiled library project is contained in the file, "DixonTest.dll". So, if one does not want to create the code for the project, one can install the library "DixonTest.dll" as explained later in the section, using the library DixonTest.dll.

4. **Demonstration program, DixonDemo**
   The code is given in the file frmDemo.vb. One has to create a Windows Application Project in Visual Studio and develop a form with name "frmDemo" as shown in Figure 1 of the manuscript. Then copy the code of the file frmDemo.vb. Similarly, there is a need to add reference to the library, "DixonTest.dll".

   The demonstration program, DixonDemo can be installed with executing the installer "DixonTestDemo.msi" and following the instructions. During the installation of DixonDemo, the installation of Microsoft .NET Framework and registration of the library DixonTest.dll are carried out automatically. The default directory is "DixonTest". The library was compiled on the framework version "v4.0.030319".

5. **Using the library, DixonTest.dll**
   If one does not want to install the above demonstration program, one has to download and install the version "v4.0.030319" or higher of Framework from Microsoft web page and register the library. Then change the folder which contains

the libraries in the command window and issue the following command to register the library, DixonTest.dll

```
C:\Windows\Microsoft.NET\Framework\v4.0.30319\regasm.exe
DixonTest.dll
```

Similarly, the command to unregister the library, DixonTest.dll is

```
C:\Windows\Microsoft.NET\Framework\v4.0.30319\regasm.exe /u
DixonTest.dll
```

The path of "regasm.exe'" may be different in your computer. So, search for regasm.exe to find its path in your computer.

6. **Using the library, DixonTest.dll in Excel**
The Excel file "DixonValues.xlsm" explains the creation of Dixon critical values tables and figures 2 to 4 of the manuscript. One has to copy and the files, "DixonTest.dll" and "DixonTest.tlb" in a folder. Add reference to "DixonTest.tlb" as explained in the manuscript. This file contains four worksheets, Fig2_2Plt, Fig2_3Data, and Fig4Critical. One can change the data given in the shaded cells in light blue.