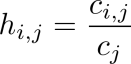
Q1:

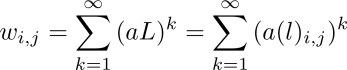
(a)

(i) The entry is  Given a source time window T1 and a previous target time window T2, When there is some article published in i during T1 that cites an article published in j during T2, there is an edge from journal i to journal j. The edge is weighted with the number ci,j of such citations from i to j.

(ii)

|  |  |  |  |
| --- | --- | --- | --- |
| Iteration | 0 | 1 | 2 |
| IF(A) | 0.25 | wpsoffice | wpsoffice |
| IF(B) | 0.25 | wpsoffice | /var/folders/b4/x2xk1prd6vx5x16b2_kxp5nr0000gn/T/com.kingsoft.wpsoffice.mac/wpsoffice.h74601wpsoffice |
| IF(C) | 0.25 | wpsoffice | /var/folders/b4/x2xk1prd6vx5x16b2_kxp5nr0000gn/T/com.kingsoft.wpsoffice.mac/wpsoffice.n74601wpsoffice |
| IF(D) | 0.25 | /var/folders/b4/x2xk1prd6vx5x16b2_kxp5nr0000gn/T/com.kingsoft.wpsoffice.mac/wpsoffice.T74601wpsoffice | wpsoffice |

(b)

(i) The entry is , which is the weighted number of arbitrary paths from *i* to *j*.

L is (blank cell is 0):

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F | G | H | I | L | M |
| A |  |  |  |  |  |  |  |  |  |  |  |
| B |  |  |  |  |  |  |  |  |  |  |  |
| C |  |  |  |  |  |  |  |  |  |  |  |
| D |  |  | 0.04 |  |  |  |  |  |  |  |  |
| E | 0.04 | 0.04 | 0.04 |  |  |  |  |  |  |  |  |
| F |  |  | 0.04 | 0.04 |  |  |  |  |  |  |  |
| G |  | 0.04 | 0.04 | 0.04 |  | 0.04 |  |  |  |  |  |
| H |  | 0.04 | 0.04 | 0.04 |  | 0.04 |  |  |  |  |  |
| I |  | 0.04 | 0.04 | 0.04 |  | 0.04 |  |  |  |  |  |
| L |  | 0.04 |  | 0.04 |  | 0.04 |  |  |  |  |  |
| M |  | 0.04 |  | 0.04 |  | 0.04 |  |  |  |  |  |

(c)

The econometrics link matrix is more similar to that of Pinski and Narin’s model. qi,j is similar to ci,j in Pinski and Narin’s model, they means produce/publish by i and use/cite by j. ci and qi also have similar meaning, which is total number of reference/quantity. Two model both have hi,j = ci,j / cj ,which in econometrics link matrix is ai,j.

Q2:

Please check Q2.ipynb