Figure 4.8. ANALYSIS STAGE: Other Graphical Methods 3

UNIVERSITY OF WATERLOO DISTINGUISHED TEACHER AWARDS, 1976-1990

ARTS (*16 awards*)
[~230 faculty members]

Davies	History	1976
Forsyth	Classical St.	1977
Griffin	Psychology	1977
Koutsoyiannis	Economics	1978
Campbell	Philosophy	1980
Martin	English	1980
Letson	English	1981
McDaniel	Sociology	1981
Suits	Philosophy	1982
Heier	Ger. & Sla.	1983
Ledbetter	English	1983
Westhues	Sociology	1985
Downey	Political Sc.	1988
Forster	French	1989
Sabaryn	French	1990
Green	Fine Arts	1990

SCIENCE (*12 awards*)
[~148 faculty members]

Pathria	Physics	1977
Viswanatha	Chemistry	1979
Smith	Biology	1980
Downer	Biology	1982
Tchir	Chemistry	1984
Williams	Optometry	1984
Greenhouse	Earth Sc.	1986
Irish	Chemistry	1987
Anderson	Physics	1988
Spafford	Optometry	1988
Dixon	Biology	1989
Bols	Biology	1990

ENGINEERING (*9 awards*)
[~170 faculty members]

Leipholz	Civil	1976
Lowe	General	1978
Farquhar	Civil	1982
Raithby	Mechanical	1983
Huseyin	Sys. Design	1985
Jernigan	Sys. Design	1986
Reilly	Chemical	1986
van Heeswijk	Electrical	1989
Hutchinson	Civil	1990

ENV. STUDIES (*5 awards*)
[~69 faculty members]

Gardiner	Geography	1979
Haldenby	Architecture	1981
Krueger	Geography	1985
Lerner	E. & R. St.	1987
McBoyle	Geography	1989

HKLS (*3 awards*)
[~51 faculty members]

Officer	Dance	1979
Allard	Kinesiology	1983
Mills	Health St.	1987

MATHEMATICS (*3 awards*)
[~149 faculty members]

Wainwright	Applied	1976
Graham	C.S.	1978
Fryer	C&O	1984

By Department:
- 4 awards: Biology.
- 3 awards: English; Chemistry; Civil Engineering; Geography.
- 2 awards: French, Philosophy, Sociology; Optometry, Physics; Systems Design Engineering.
- 1 award: Classical Studies, Economics, Fine Arts, Germanic & Slavic Languages, History, Political Science, Psychology; Earth Sciences; Chemical Engineering, Electrical Engineering, General Engineering, Mechanical Engineering; Architecture, Environmental & Resource Studies; Dance, Health Studies, Kinesiology; Applied Mathematics, Computer Science, Combinatorics & Optimization.

Approximate average award rates (%) by Faculty:

Science	*8.1*	(12/148)
Environmental Studies	*7.2*	(5/69)
Arts	*7.0*	(16/230)
HKLS	*5.9*	(3/51)
Engineering	*5.3*	(9/170)
Mathematics	*2.0*	(3/149)

NOTES:
1. The proportion of awards to *females* is around twenty percent (10/48), about twice the sex ratio (~10%) among faculty members.
2. Fifty-six percent (27/48) of awards have been made in twenty-six percent (11/~43) of the University's departments.
3. The 48 awards have been made to faculty members in around three-quarters (31/~43) of the University's departments.

INFORMATION SOURCES ON DTA's: *University of Waterloo COURIER*, July, 1988, p.16; *University of Waterloo GAZETTE*, March 22, 1989, p. 3 and March 28, 1990, p. 3.

(*continued overleaf*)

Background: The University of Waterloo Distinguished Teacher Awards have been given annually since 1976. Originally, three awards were made each year (although there were *four* in 1983) but, starting in 1989, a fourth Award in a separate category (for teachers who are not regular faculty) was instituted. An announcement of the 1990 Awards in the University *Gazette* (March 28, page 3) included the following statement:

> The criteria used to select UW's top teachers are described by Senate as follows: "The Distinguished Teacher Award is given in recognition of a continued record of excellence in teaching at the University of Waterloo. It is open to all those who teach students at the University of Waterloo and is not limited just to those holding faculty appointments. The Selection Committee will look for intellectual vigour and communication skills in the interpretation and presentation of subject matter. The teacher's human quality, the concern for and sensitivity to the needs of students, is an obvious indication that the nominee has a favourable and lasting influence on students. Evidence of successful innovation in teaching would also support a nomination, but it is also clear that excellence in teaching does not necessarily require innovation".
>
> The selection committee consists of three undergraduate students, two graduate students, one alumnus, four members of faculty (including the teaching resource person) and the provost as chairman. They met twice to consider the nominations received from across campus.
>
> This year 21 eligible nominations were considered. The committee reported that many of them were strong nominations supported by outstanding records of teaching and service to students.

1 Using, where appropriate, the background information given above, what Answer(s) can you give from the data overleaf on page 4.29 to the following Questions?

- *Is the selecting process for distinguished teachers at the University of Waterloo biased* against *instructors in the Faculty of Mathematics?*
- *Are instructors in the Faculty of Mathematics generally poor teachers?*
- *Is it appreciably easier to obtain a Distinguished Teacher Award in some University departments than in others?*

In each case, indicate explicitly how the data lead to your Answer and its limitations (using our six categories of overall error) or explain why the data do *not* provide an Answer.

2 Suggest an explanation for the higher proportion of Awards to females than to males (see Note 1 overleaf on page 4.29).

3 Briefly explain which values are more useful in comparing Awards among Faculties: the *number* of Awards in each Faculty or the Award *rates*.

- The numbers of faculty members in each Faculty, used in the calculation of the Award rates, refer to 1988. Discuss briefly whether this year provides an appropriate basis for the rate calculation.

4 The comments given at the right appeared in the 'Letters' section of the University of Waterloo *Gazette* on April 10, 1991, a week or so after the announcement of the Distinguished Teacher Awards for 1991; three of the four 1991 awards (to W. H. Cherry, R.G.R. Lawrence and I.J. McGee) went to Mathematics and one (A.V. Morgan) to the Department of Earth Sciences in the Faculty of Science. On the basis of this information and the data given overleaf on page 4.29, write a reply to the letter at the right from Professor Sahas, addressing the *statistical* issue(s) he raises.

1995-04-20

Why no 'top teachers' in faculty of arts?

It is always with joy and pride that I read the names of the "top teachers" and non-teachers at Waterloo. I am sure that the DTA Committee is at pains to be impartial in arriving at the three or four names every year among "many very strong nominations".

One may only wonder whether the largest faculty in this technological University has been doing such a bad job. Or is it that the Faculty of Arts is lately raising some uncomfortable questions for the University administration? Or is it that someone from above is trying to send a signal to the "irrelevant" Social Scientists and Humanists below? Or is it that a lack of communication and understanding, together with a crisis of identity, is reaching alarming proportions in this University? Or, heaven forbid, is it all of the above? Just wondering.

Daniel Sahas
Religious Studies