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Formal Relationships 0

**Formal Relationships:
Introduction and Orientation**

Joshua R. Goldstein

James W. Vaupel

This is the first article in the newly-established Special Collection
“Formal Relationships”. Guest Editors are Joshua R. Goldstein and
James W. Vaupel.

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Formal Relationships: Introduction and Orientation

Joshua R. Goldstein¹

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In addition to Research Articles, Reflexions, Descriptive Findings, Research Material, and Reviews, *Demographic Research* will publish short reports on mathematical relationships in formal demography. These reports will be published as part of a new, ongoing Special Collection, called Formal Relationships, that will be edited by the two of us, the current and founding Publishers of the journal. Note that these reports should pertain to mathematical formulas that can be proven and that concern relationships among demographic measures. The reports should not focus on statistical findings about empirical regularities and the results should not depend on behavioral assumptions.

Submissions to Formal Relationships should be sent to *Demographic Research* according to the usual procedures. These submissions will be forwarded to the two of us and we will review them. They will also be posted so that members of the journal's Scientific Review Board can review them. If we need additional help, we will ask others to assist us as referees. If, given the reviews, the two of us agree that it is appropriate to publish a submission in the Formal Relationships department of the journal, we will then send the item to the Editor of the journal, currently Nico Keilman, who will make the final decision.

If and when enough Formal Relationships have been published in *Demographic Research*, we will compile them into a book to be published by Springer Verlag as part of the series of *Demographic Research Monographs*.

Authors submitting to Formal Relationships do not have to be the discoverers of the mathematical formulas in their submission. Indeed, most of the Formal Relationships we publish will be especially beautiful equations that are known to many demographers or striking expressions that deserve more attention. Our goal is to compile demographic relationships that are, as Michel Guillot put it, "sheer poetry". We aspire to collect the pearls of formal demography, the champagne, the quintessence.

Submissions to Formal Relationships should be original manuscripts that have not been previously published and they should be written in a cogent, lucid manner that conveys the elegance of a mathematical equation and its proof as well as indicating why

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the relationship is interesting and important for formal demography.

Articles published in *Formal Relationships* will generally be concise, sometimes only one page long, rarely more than three. Articles will not cover a topic, such as “life expectancy” or “decomposition”, but will focus on a specific relationship that might fit under such a rubric when the collection is compiled and published as a book.

Articles will typically consist of the following sections:

1. The key relationship.
2. Proof of the relationship.
3. Optionally, some other relationships that are closely linked to and can be readily derived from the key relationship.
4. History of the discovery of the relationship and related relationships, with appropriate citations.
5. A brief sketch of a possible application or perhaps two or three.

To improve readability and to enhance communication, we will try to edit *Formal Relationships* so that notation is as consistent as feasible and follows general practice in formal demography. We will strive for compact, elegant notation that is clear and unambiguous. Proofs and exposition should be lucid, readable and not excessively technical. We aspire to publish a series of *Formal Relationships* that are concise and clear — and that make a reader smile with joy about the beauty of pure demography.

We encourage readers of *Formal Relationships* to make corrections and suggestions, especially regarding the history of the discovery of a relationship. Particularly useful or interesting remarks will be appended to the text of *Formal Relationships*, with credit given to the person making the contribution.