

<b>Overview</b>	
<p>Population ecology aims to understand why there are so many kinds of organizations and how organizational populations form, become different, and remain different over time (Baum, 1997). Population ecology focuses on the demographic (e.g., age, size), ecological (e.g., niche-width theory, population density), and environmental (e.g., social, economic, political, and technological) processes posited to influence the survival of organizations in a field.</p>	
<b>Example Application to Implementation Science</b>	
<p>Hovmand, P. S., &amp; Gillespie, D. F. (2010). Implementation of evidence-based practice and organizational performance. <i>The journal of behavioral health services &amp; research</i>, 37(1), 79-94.</p> <p>Vest, J. R., &amp; Menachemi, N. (2019). A population ecology perspective on the functioning and future of health information organizations. <i>Health care management review</i>, 44(4), 344-355.</p>	
<b>Construct</b>	<b>Definition</b>
Competition	A process by which “(1) demand for resources exceeds supply; (2) competitors become more similar as standard conditions of competition produce a uniform response; (3) selection eliminates the weakest competitors; and (4) deposed competitors differentiate either territorially or functionally, yielding a more complex division of labor” (Hannan & Freeman, 2002)
Niche/niche width	(The size of) An area in a constraint space in which a population can survive and reproduce itself
Institutional linkages	Relationships created between organization(s) for a cause
Spatial variation	Different values of organizational characteristics across locations
Technology cycles	A sequence of processes that involve technology (i.e., the means, activities, and knowledge to transform materials and inputs into outputs; e.g., human resources)
Selection pressure	External agents that affect an organization’s ability to survive in a given environment
Isomorphism	A similarity of processes or structure among organizations
Community interdependence	The extent to which interactions among co-acting sets of organizational/community populations depend on each other
Stability	The extent to which conditions change over time
Population density	The number of organizations in a population (i.e., group of organizations that is distinguishable from other groups)
Internal arrangements	Actions and factors within an organization (e.g., internal politics)
Resource acquisition	The process by which new organization(s) acquire resources
Prior failures	Previous deterioration(s) in an organization’s adaptation to its small niche and the associated reduction of resources within the organization
Inertia	Organizational resistance to change
Structure	An organization’s goals, authority, strategy, core technology
Specialization	The restricted niche breadth/area of a given organization
Age	The length of an organization’s life history
Size	The capacity to carry interactions among resources, constraints and demand
Excess capacity (or slack resources)	Production at a lower scale of output than it has been designed for
<b>Propositions</b>	

1. Organizations can use slack resources to promote performance reliability.
2. Competition makes organizations more similar as standard conditions of competition bring forth a uniform response.
3. Competition eliminates the weakest organizations.
4. To compete, relatively weak organizations differentiate themselves territorially or functionally.
5. Niche environments encourage organizations to adapt and become successful in the absence of factors that may make survival more difficult (e.g., large niche width).
6. Technology cycles become problematic for organizations as technology becomes obsolete and new technology becomes more expensive.
7. In response to selection pressure, organizations make decisions that affect the trajectory of their future.
8. Organizations adapt their structure to best take advantage of salient features of resource environment, resulting in isomorphism.
9. Institutional linkages within an environment depends on environmental structure.
10. Stability contributes to organizational survival in the absence of other factors that may disrupt organizational homeostasis.
11. As population density increases, competition between organizations increases; and vice versa.
12. Internal arrangements can affect the stability of an organization.
13. Resource acquisition can help make an organization more competitive, more stable, and greater survival over time.
14. Unsuccessful niche adaptations reduce resources.
15. As degree of specialization increases, organizations adapt to be more successful in their niche environments. This could lead to failures outside of the niche environment or if the environment changes.
16. As size increases, organizations have greater capacity to interact with environmental stimuli such as supply, demand, and manage resources and organizational constraints.
17. Depending on niche-width, excessive specialization (through intervention adoption) may put an organization at risk if they are perceived as not sufficiently generalist (i.e., relevant to stakeholders such as patients, providers, professional orgs, etc.).

### Relevance to Implementation Science

1. Organizations are focused on survival, making intervention **adoption** and **implementation** only valuable to the extent that they help fit within the niche.
2. Structural inertia limits organizations' **adoption** and **implementation** of EBPs.
3. **Adopting** EBPs may influence organizational fit with environment; deciding to use an intervention may have implications for fit and competitiveness.
4. **Implementing** EBPs may influence organizational fit with environment; using an intervention may have implications for fit.
5. **Adopting** an intervention may help an organization to specialize and thus fit into a niche.
6. 'Linking' **implementation strategies** (e.g., community-academic partnership) can moderate risk associated with intervention **adoption and implementation**.
7. Organizational characteristics like size or age may moderate risk of EBP **adoption and implementation** (e.g., bigger, older organizations may incur less risk).
8. Organizations may be able to **adapt** to facilitate EBP **implementation**.
9. Organizations that can **adapt** may be more likely to **sustain** EBP use.

### Criticisms and/or Bounds on the Theory

Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American journal of sociology*, 82(5), 929-964.

Pinto, J. A. M. (2005). The population ecology paradigm: Review and critique. *Journal of Business & Economics Research (JBER)*, 3(10).

Young, R. C. (1988). Is population ecology a useful paradigm for the study of organizations? *American journal of sociology*, 94(1), 1-24.

**References**

Clegg, R., Hardy, C., & Nord, R. (1997). Handbook of organisation studies. *Journal of the Operational Research Society*, 48(9), 962-962.

Dixit, Sunil K; Sambasivan Murali. An Integrated Multitheoretical Perspective of Public Healthcare Services Delivery Organizations Public Organization Review; Dordrecht Vol. 20, Iss. 2, (Jun 2020): 319-335.

Salimath, Manjula S; Jones, Raymond, III Population ecology theory: implications for sustainability. *Management Decision*; London Vol. 49, Iss. 6, (2011): 874-910

Wilbon, A. D. (2015). Technology Strategy and organizational learning: Applying population ecology to understanding the influence on firm survival. *Academy of Strategic Management Journal*, 14(2), 221.