

Agricultural Technology Impacts on Quality of Life of the Rural Household

Women Managing the Farm “Together Again”
Manhattan, KS February 9-11, 2022

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Generational Characteristics

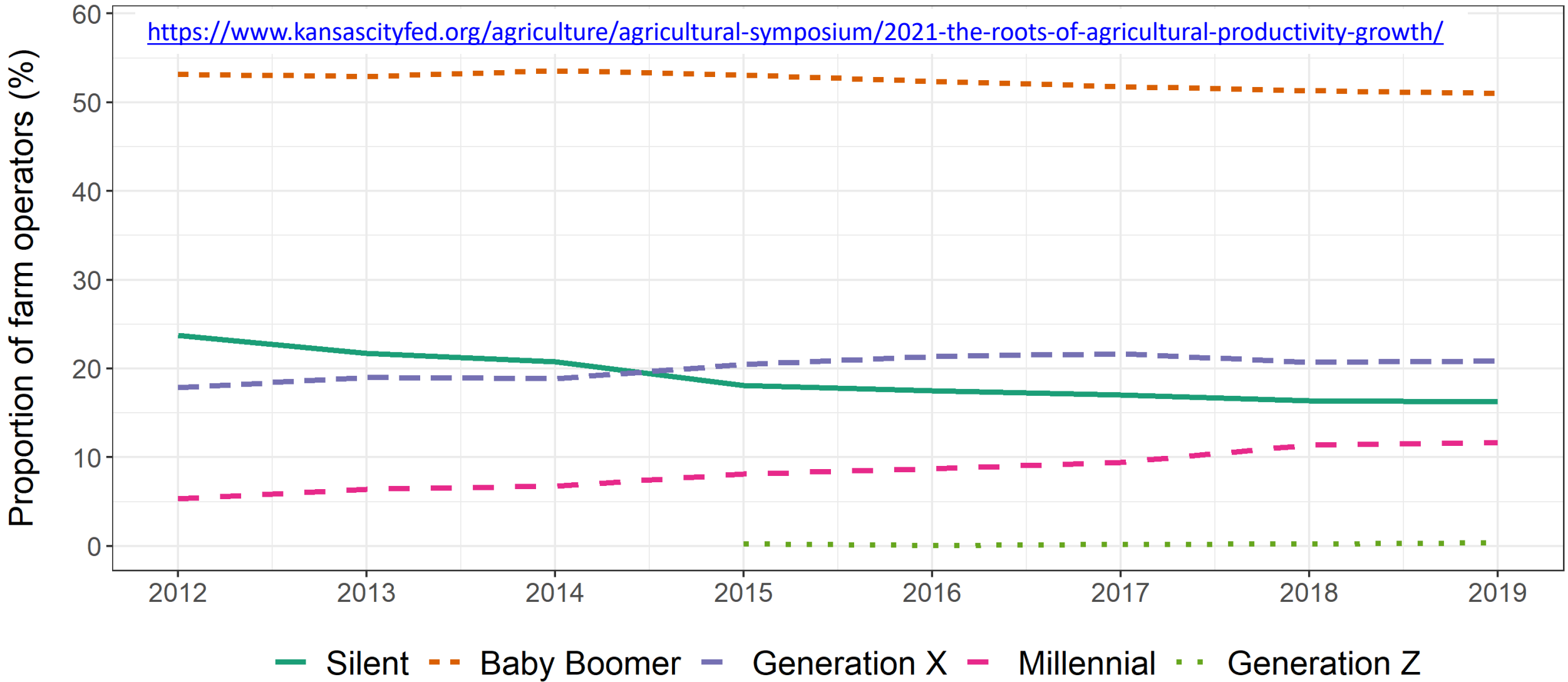
	Silent Generation	Baby Boomers	Generation X	Generation Y aka Millennials	Generation Z
Year of Birth	Born before 1945	1946 to 1964	1965-1980	1981 to 1996	1997-2012
Work	Delay gratification; jobs are for life	Strong Professional Identity; Careers by employers	Less interested in promotion; Portable careers	Disconnect effort and reward; Work “with” not “for”	Risk elimination; Career multitaskers
Aspirations	Home Ownership	Job Security	Work/Life Balance	Freedom and Flexibility	Security and Stability
Technology	Largely disengaged; Hope to out-live it	Early IT adopters, Master it	Digital Immigrants; Enjoy it	Digital Natives; Employ it	Technologic; Can’t live without it
	Snail Mail	Facebook	Email/Twitter	Instagram	Snapchat/GroupMe
Attitude towards authority	Honor and Respect them	Challenge them and Replace them	Ignore them	Leaders must respect you	I am the leader

2021 Agricultural Symposium: The Roots of Agricultural Productivity Growth

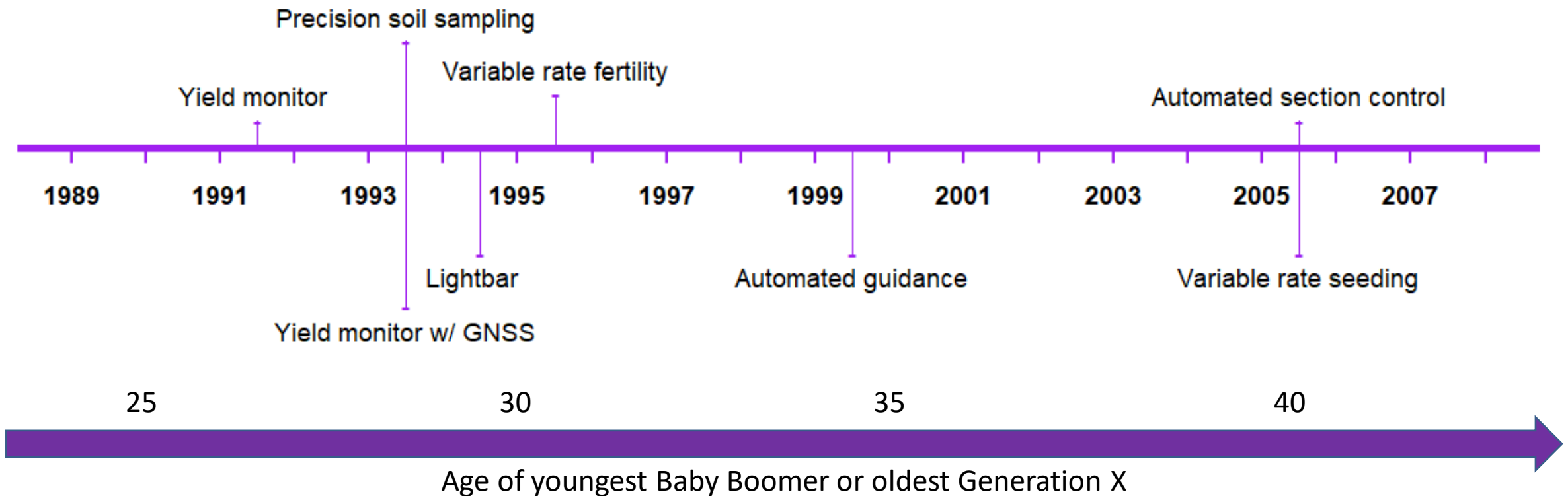
Interacting with the Next Wave of Farm Operators: Digital Agriculture and Potential Financial Implications

By Terry W. Griffin, LaVona S. Traywick, and Elizabeth A. Yeager

<https://www.kansascityfed.org/agriculture/agricultural-symposium/2021-the-roots-of-agricultural-productivity-growth/>



Date of commercial availability



Technology	Pertinent field operation time	Quality-of-life (QoL) score (benefit)	Human capital (HC) score (cost)	Rationale
Automated guidance	Pre-season Growing season Harvest	9	2	HC: requires minimal training (switching on/off, error checking) QoL: reduces fatigue, allows additional activities
Automated section control	Growing season	6	1	HC: requires less training than without the tech QoL: reduces fatigue, reduce operator responsibilities
Imagery	Growing season	2	9	HC: requires advanced skill sets and knowledge to make sure of data, QoL: none
Precision soil sampling	Pre-season	1	7	HC: requires advanced skill sets and knowledge to make use of data QoL: none
Variable-rate application	Pre-season Growing season	2	9	HC: substantial knowledge requirements including risk QoL: none
Yield monitor	Harvest	1	8	HC: requires advanced skill sets and knowledge (training) to make use of data QoL: none

1 = low benefit/cost, 10 = high benefit/cost

Yield monitors on multiple generation farms

For large acreage farms (≥ 2 combines)

- decision makers not on harvester for every acre
 - no first-hand knowledge of productivity, casual observations

For multiple operator farms (regardless of generation)

- Not all operators (decisionmakers) on combine for every acre harvested

Yield monitor and other sensor data proxies for first-hand observation

- Plus, technology lends itself to spread fixed costs across more acreage
- But exceptions to the rule exists...

Summing up digital ag tech across generations

Ag tech is NOT for every grower on every field

- Where, when, what, and **who!**
- Sometimes waiting is optimal decision

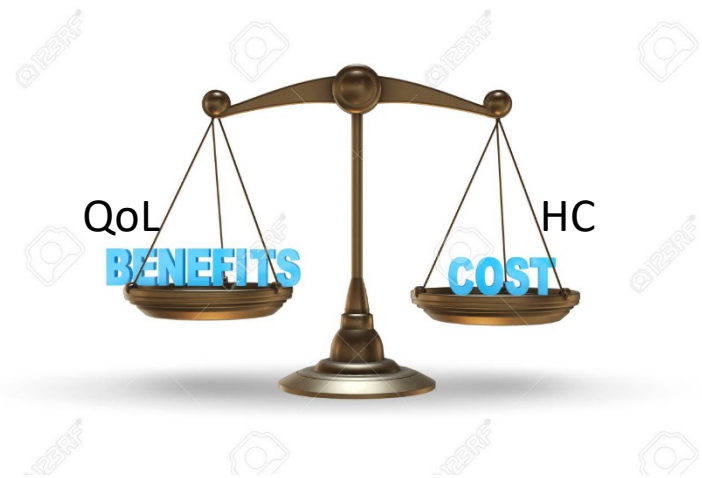
Generation Z may operate farms differently than Baby Boomers

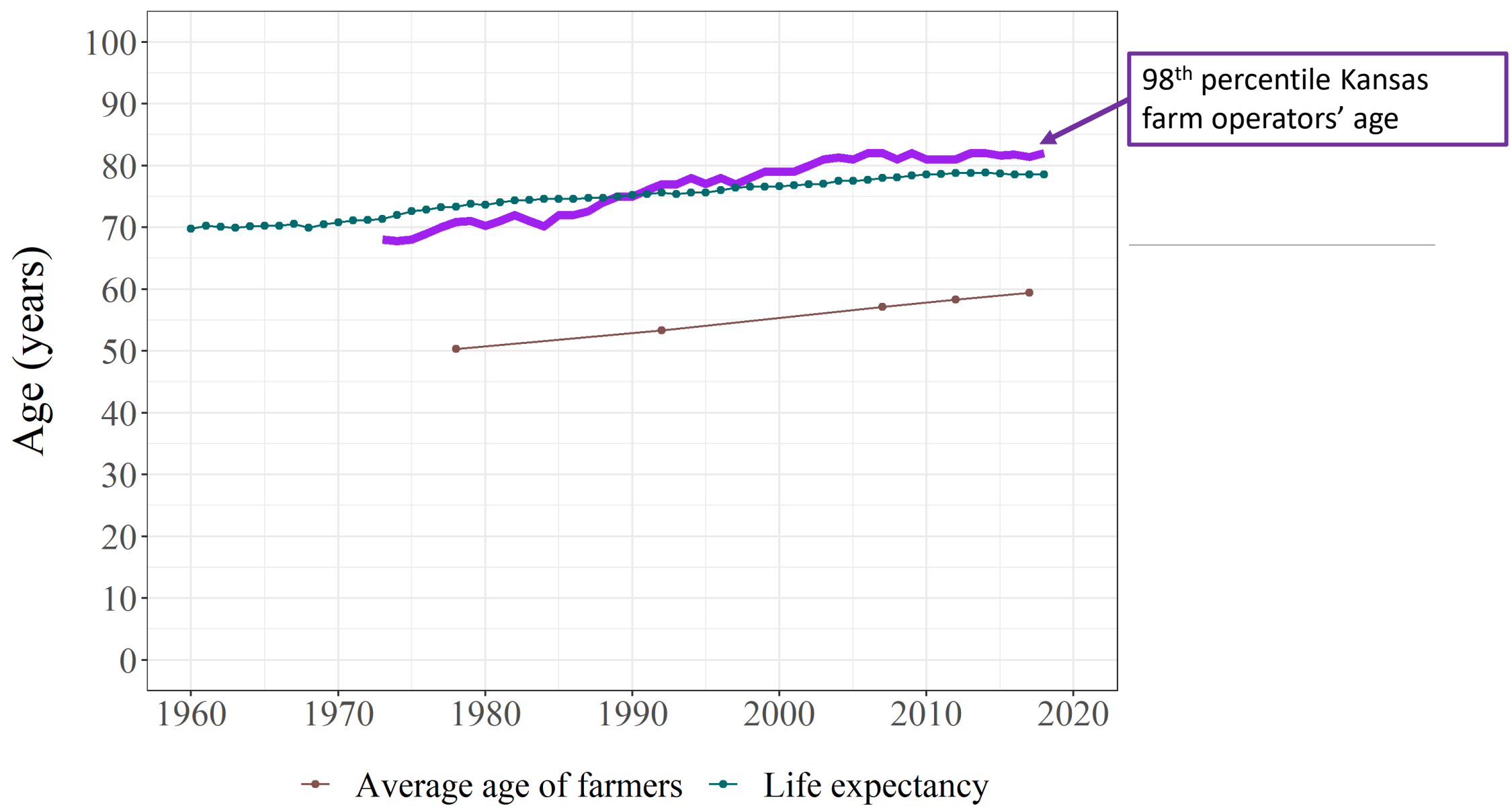
- Products in beta version not likely to be accepted

Developing ag tech for next generation

- Quality-of-life focused ag tech
- Automation of intensive human capital tasks

Generational skipping





Our study in the news

Melgares, Pat 2021. Researchers team up to look at benefits of ag technologies on quality-of-life. K-State Research and Extension News. Kansas State University. Oct. 6, 2021.

<https://www.ksre.k-state.edu/news/stories/2021/10/ag-economics-precision-ag-technology-benefits.html>

KSRE Ag Today Podcast:

<https://agtodayksu.libsyn.com/1032how-precision-technology-affects-quality-of-lifefeedgrain-stalk-rots>

Forthcoming paper (fingers crossed)

Griffin, T.W., Traywick, L.S., Nilsson, T., González de Cosío B., A.
Understanding quality-of-life and required human capital of digital
agriculture in North America: commonly omitted aspects of economic
benefit-cost analyses revisited. Under peer review at *CSIRO Crop
and Pasture Science*

