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**Is the Physical Activity of Immigrants Influenced by Moving to America? An Empirical Analysis Using
Metabolic Equivalence Time Use Data**

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Motivation

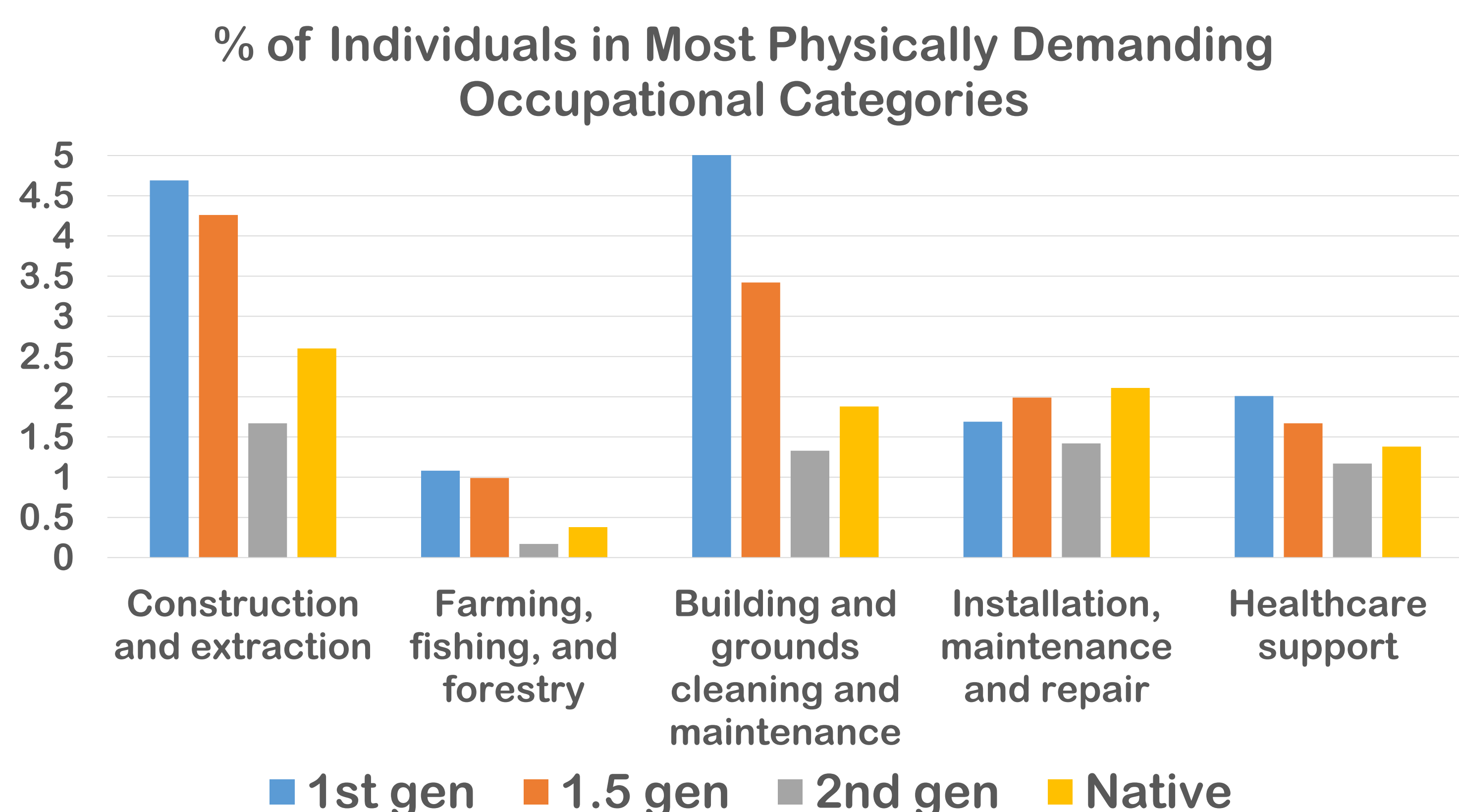
- Newly arrived immigrants to the US often face lower wages, more physically demanding jobs than Americans with comparable education (Zavodny 2015)
- Immigrants' acculturation is linked to weakened "health behaviors" and increased BMI (Kimbro 2009, Iversen, Ma, and Meyer 2013)
- Most literature attributes poor immigrant health to food consumption rather than physical activity

Objectives

- To determine if work, leisure, and house physical activity differs between immigrants and natives
- To determine if increased time spent in the US changes level and distribution of physical activity among work, leisure, and house activities

Data

- American Time Use Survey (ATUS) Metabolic Equivalence (MET) Data from 2003 to 2014
- Individual classification: 1st generation (immigrated as an adult), 1.5 generation (immigrated as a child), 2nd generation (child of at least one immigrant), and native



Models

$$(1) MET_i = \alpha + \beta 1st\ gen + \gamma 1.5\ gen + \delta 2nd\ gen + \epsilon X + \epsilon$$

Variables of interest: 3 immigrant generation categories

$$(2) MET_i = \alpha + \beta year + \epsilon X + \epsilon$$

Variable of interest: Years since immigration

MET measured as total value and % share
 $i =$ Work, Leisure, House, and Total MET

Results

Table 1. Comparison across Generations

	Work MET	House MET	Leisure MET	Total MET
1 st Gen	.059**	-.786***	-.159	-.885***
1.5 Gen	-.047	-.039	-.344***	-.430***
2 nd Gen	-.043**	.366***	-.082	.241

Table 2. Comparison across Generations: % of Total MET

	% Work MET	% House MET	% Leisure MET
1 st Gen	1.078***	-.731*	-.347
1.5 Gen	.034	1.157***	-1.462***
2 nd Gen	-.479**	1.511***	-1.032***

Table 3. Years Since Immigration

	Work MET	House MET	Leisure MET	Total MET
Years in US	-.005***	.003***	-.005	.024***

Table 4. Years Since Immigration: % of Total MET

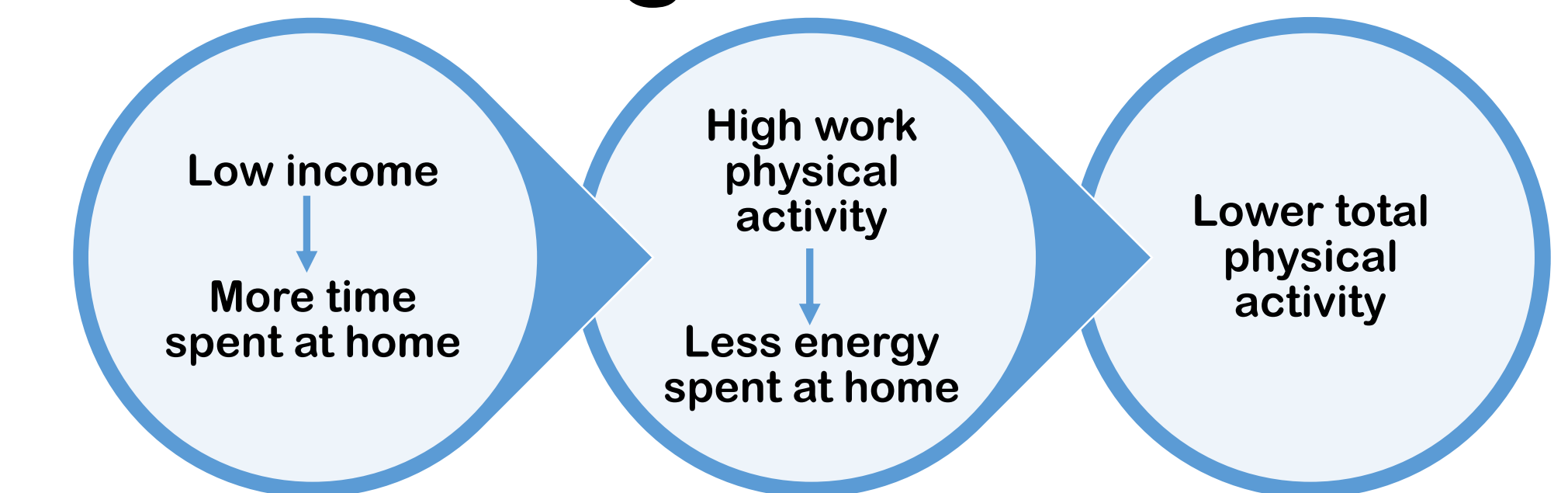
	% Work MET	% House MET	% Leisure MET
Years in US	-.050***	.098***	-.048***

Theoretical Framework

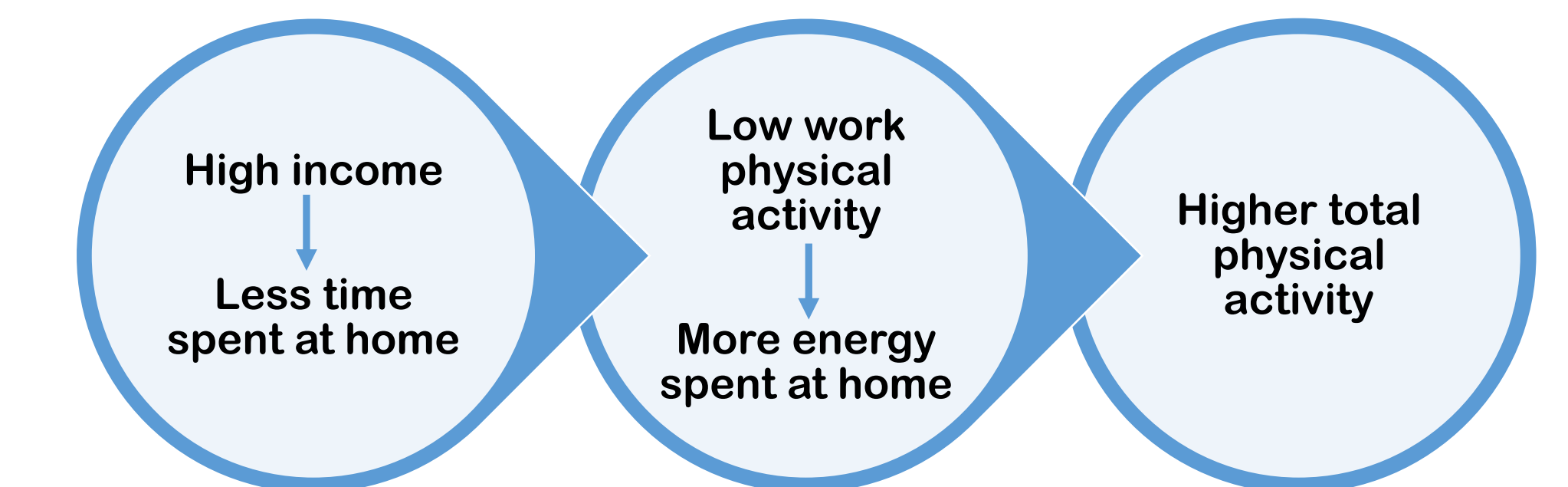
$$U(x, Leisure, Health)$$

- Gain utility from: consumption, leisure time, energy spent away from work (health capital)
- Restricted by: total time, total energy, income

First generation immigrants



Natives



Discussion and Conclusion

- First generation immigrants expend more energy and a larger percentage of energy on work activities and less on home activities than natives, resulting in lower total energy expenditure
- Increased time spent in the US causes immigrants to trade energy expended on work activities for energy expended on house activities, resulting in higher total energy expenditure over time
- From an energy expenditure perspective, acculturation of immigrants leads to more healthy physical activity (energy expended on leisure and home activities) and increased total physical activity

References

- Zavodny, M. (2015). Do Immigrants Work in Worse Jobs Than U.S. Natives? Evidence from . *Industrial Relations* 54(2): 276-93.
- Kimbro, Rachel Tolbert. "Acculturation in Context: Gender, Age at Migration, Neighborhood Ethnicity, and Health Behaviors." *Social Science Quarterly* 90, (Special Issue 2009): 1145-1166
- Iversen, T., Ma, C. A., & Meyer, H. E. (2013). Immigrants' acculturation and changes in Body Mass Index. *Economics And Human Biology*, 11(1), 1-7.