Paulley et al. (2006) identify four key relationships between income and public transport usage:

1. An increase in income will, depending upon the level of income, lead to an increase in car ownership and so car availability, or to an increase in public transport use.
2. An increase in car ownership/availability will, other things being equal, lead to a reduction in the demand for public transport modes.
3. The sign and magnitude of demand elasticities for public transport with respect to car availability and income will vary depending upon the income levels.
4. Income growth can be expected to increase average trip length.

Holmgren (2013) found that income´s direct influence on public transport demand and income´s indirect influence through car ownership work in opposite directions, so that the total income effect is close to zero.

In the USA, poorer people live closer to city centres because of their dependency of cheap public transportation, while richer people can afford to travel by car to their work (Glaeser et al., 2008). Van Goeverden et al. (2006) states that also in the Netherlands low income people may not be able to afford alternative transport and thus are dependent on public transportation.

MuConsult (1992) shows that train use in the Netherlands does increase with income, controlling for other variables such as car ownership, residential location and educational level. Buehler and Pucher (2012) express that the lowest income percentile group travels the most with public transport, while the second, third and fourth income group have almost identical travel percentages.

During COVID, working from home was a privilege of higher income jobs (Tirachini & Cats, 2020). Tirachini and Cats (2020) continue by stating that the amount of trips on public transportation fell by between 30% and 40% for people in the lowest income households, while the decrease in public transportation use was greater than 70% for the highest income households in their survey. Almlöf et al. (2021) also found that the higher the income, the higher the drop in public transport usage during the pandemic.

**References**

Almlöf, E., Rubensson, I., Cebecauer, M., & Jenelius, E. (2021). Who continued travelling by public transport during COVID-19? Socioeconomic factors explaining travel behaviour in Stockholm 2020 based on smart card data. *European Transport Research Review*, *13*(1). https://doi.org/10.1186/s12544-021-00488-0

Buehler, R., & Pucher, J. (2012). Demand for public transport in Germany and the USA: An analysis of rider characteristics. *Transport Reviews*, *32*(5), 541–567. https://doi.org/10.1080/01441647.2012.707695

Glaeser, E. L., Kahn, M. E., & Rappaport, J. (2008). Why do the poor live in cities? The role of public transportation. *Journal of Urban Economics*, *63*(1), 1–24. https://doi.org/10.1016/j.jue.2006.12.004

Holmgren, J. (2013). An analysis of the determinants of local public transport demand focusing the effects of income changes. *European Transport Research Review*, *5*(2), 101–107. https://doi.org/10.1007/s12544-013-0094-0

Koehl, A. (2020). Urban transport and COVID-19: challenges and prospects in low- and middle-income countries. *Cities & Health*, *5*(sup1), S185–S190. https://doi.org/10.1080/23748834.2020.1791410

MuConsult. (1992). *Inkomen en treingebruik naar motief [Income and Train Use by Trip Purpose] ,*. Amersfoort : MuConsult.

Paulley, N., Balcombe, R. J., Mackett, R., Titheridge, H., Preston, J., Wardman, M., Shires, J., & White, P. (2006). The demand for public transport: The effects of fares, quality of service, income and car ownership. *Transport Policy*, *13*(4), 295–306. https://doi.org/10.1016/j.tranpol.2005.12.004

Shadmi, E., Chen, Y., Dourado, I., Faran-Perach, I., Furler, J., Halmai, P., Hanvoravongchai, P., Obando, C., Petrosyan, V., Rao, K. D., Ruano, A. L., Shi, L., De Souza, L. E., Spitzer-Shohat, S., Sturgiss, E., Suphanchaimat, R., Uribe, M. V., & Willems, S. (2020). Health equity and COVID-19: global perspectives. *International Journal for Equity in Health*, *19*(1). https://doi.org/10.1186/s12939-020-01218-z

Tirachini, A., & Cats, O. (2020). COVID-19 and public transportation: current assessment, prospects, and research needs. *Journal of Public Transportation*, *22*(1). https://doi.org/10.5038/2375-0901.22.1.1

Van Goeverden, C., Rietveld, P., Koelemeijer, J., & Peeters, P. (2006). Subsidies in public transport. *European Transport*, *32*(32), 5–25. https://www.openstarts.units.it/bitstream/10077/5892/1/vanGoeverden\_et\_al\_ET32.pdf