

# The energy consumption propensities of Generations Y and Z, who will lead the future

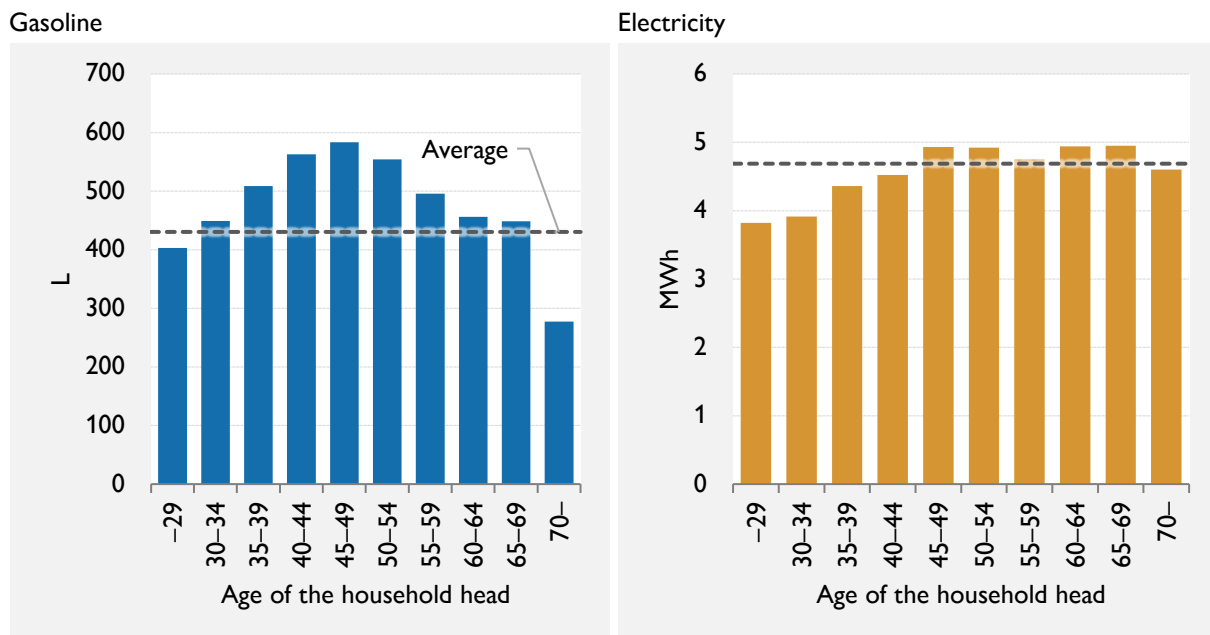
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Generation Y (Millennials) and the subsequent Generation Z are considered to have a high level of concern regarding environmental and social issues. For example, households where the household head is aged 29

or under purchase less energy than many other groups (Figure 1). This appears to reflect the heightened awareness of climate change issues among these generations, as manifested in lower energy purchases (consumption).

Figure 1 | Household energy purchases [2024]



Note: Households with two or more persons

Source: Calculated from the Cabinet Office's "Family Income and Expenditure Survey"

On the other hand, it is widely acknowledged that energy consumption among younger generations tends to be lower, not just today. This is influenced by factors such as household size (number of members), income, the number of appliances and vehicles owned, and time spent at home. Therefore, when considering why Generations Y and Z currently consume less energy than older generations, it is necessary to distinguish

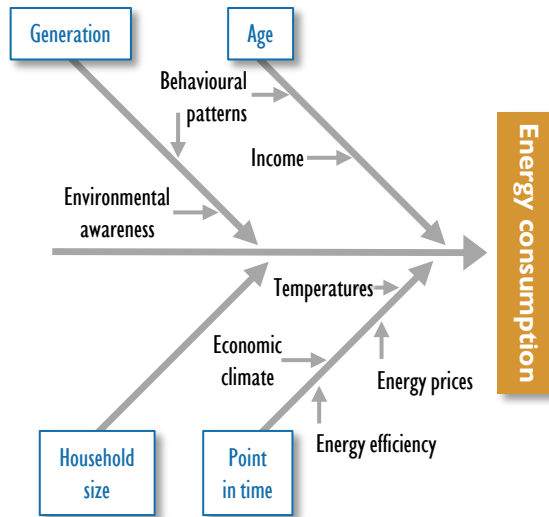
whether this is due to their present youth or to propensities specific to their generation (cohort).

Here, we assume that the energy consumption of households (with two or more members) headed by individuals in a given age group is determined by: 1/ the generation of the household head (year of birth), 2/ the age group of the household head at the time, 3/ the number of household members, and 4/ the point in time (Figure 2)<sup>1</sup>. Note that the

<sup>1</sup> Specifically, the energy consumption  $E_{A,T}$  of households with a head in age group  $A$  at time  $T$  is assumed to be  $\ln E_{A,T} = \beta + \sum_c \chi_c \text{Dum}C_c + \sum_a \alpha_a \text{Dum}A_a + \nu \ln N_{A,T} + \sum_t \tau_t \text{Dum}T_t$ . Here,  $\text{Dum}C_c$  denotes a dummy variable representing the household head's generation ( $c = C$  for 1,  $c \neq C$  for 0),  $\text{Dum}A_a$  denotes a dummy variable for the household head's age group,  $N_{A,T}$  denotes household size, and  $\text{Dum}T_t$  denotes a dummy variable for the point in

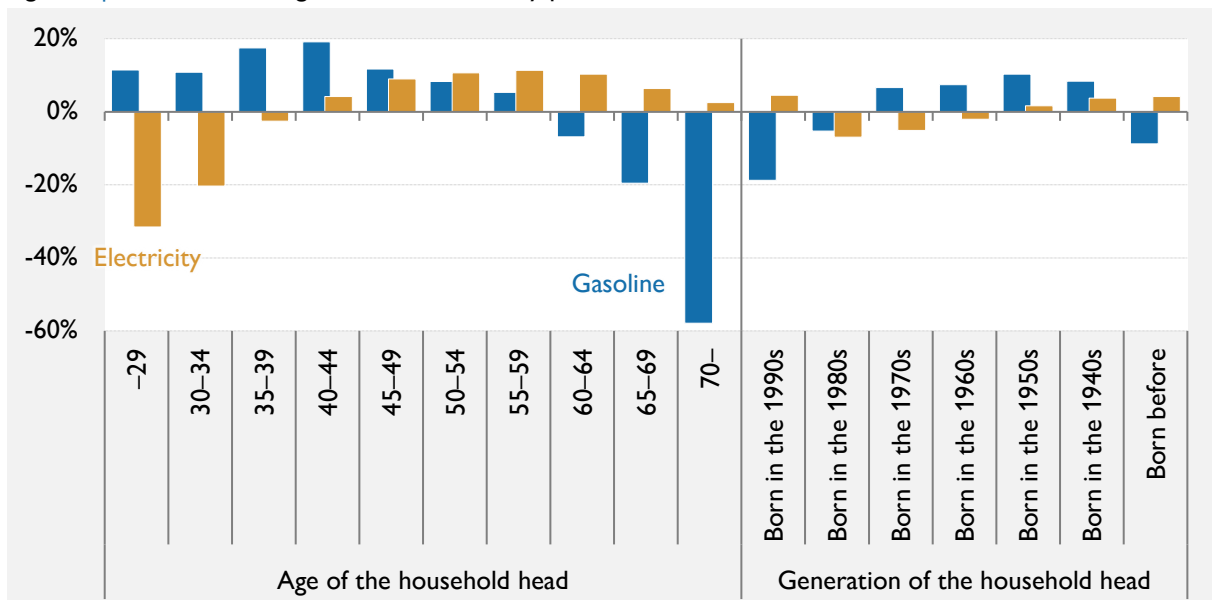
manner in which factors 1/ 2/ and 3/ influence energy consumption remains consistent regardless of the point in time.

Figure 2 | Factors influencing household energy consumption



According to the results of the regression analysis, youth is a factor driving up gasoline consumption (Figure 3). This stems from a lifestyle and behaviour pattern involving frequent car use.

Figure 3 | Contribution to gasoline and electricity purchases



Notes: Difference from the average. The generation of the household head refers to, for example, those born in the 1980s being those born between 1981 and 1990.

Conversely, the generations born after the 1980s, particularly those born in the 1990s, exhibit a tendency to restrain consumption. In other words, the current low consumption levels among younger households reflect not their youth, but the distinctive propensity of these generations, also observed in their 'car avoidance'. Should their propensity remain unchanged, the generational turnover over time will significantly reduce Japan's gasoline consumption. Furthermore, the consumption restraint tendency among the generation born in the 1990s is more pronounced than among those born in the 1980s. If such a trend emerges across subsequent generations, consumption decline will accelerate further with generational turnover.

Electricity, however, differs structurally from gasoline. Youth—particularly being aged 29 or under and 30 to 34—is a significant factor suppressing consumption. On the other hand, the generation born in the 1990s lacks the consumption restraint exhibited by the preceding generations. Moreover, their propensity for high consumption is the most pronounced among all generations.

time. The analysis utilised data from 2005, 2010, 2015, 2020 and 2024. Naturally, the number of observations for those born in the 1990s is small, and the results should be interpreted with a certain degree of caution.

Generations Y and Z are often described as being highly sensitive to social issues. However, at least concerning electricity, the major energy source for households, their awareness may not be matched by corresponding action. Further evidence exists: the percentage of respondents who answered that ‘it is desirable that the situation be resolved without causing too much trouble, so I will wait and see for a while’ to pollution, a local environmental problem, has increased across all age groups over the past 15 to 20 years, but most markedly among younger generations (NHK “Japanese public opinion survey”). The expectation placed upon the generations, who will be responsible for the future, to be ‘environmentally conscious’ may well be overstated.

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