# Supplementary Materials

Low Income (LIE)

High Income (HIE)

Upper−Middle Income (UMIE)

Middle Income (MIE)

Low−Middle Income (LMIE)

0 20 40 60

Share of Studies across Income Groups in %

Figure 7: Proportion of country classification by income group

Leguminous (Crops7)

Sugar (Crops8)

Fruit/Nuts (Crops3)

Beverage/Species (Crops6)

Root/Tuber (Crops5)

Oil Seed (Crops4)

Non−Food (Crops9)

Vegetables/Melons (Crops2)

Cereals (Crops1)

0

20

40

60

Share of Studies across Crops in %

Figure 8: Proportion of crop types

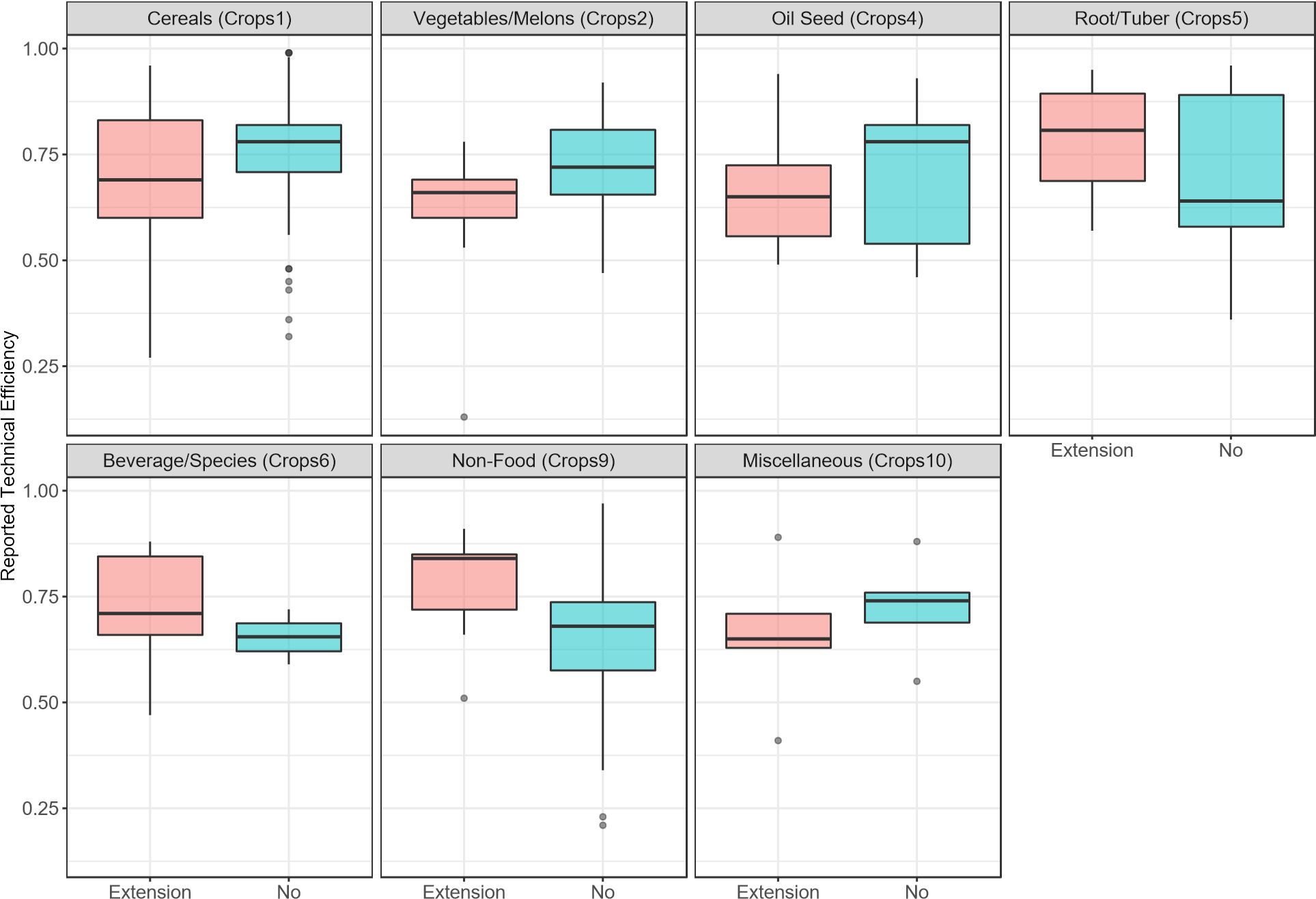


Figure 9: Agricultural extension and technical efficiency by crop type

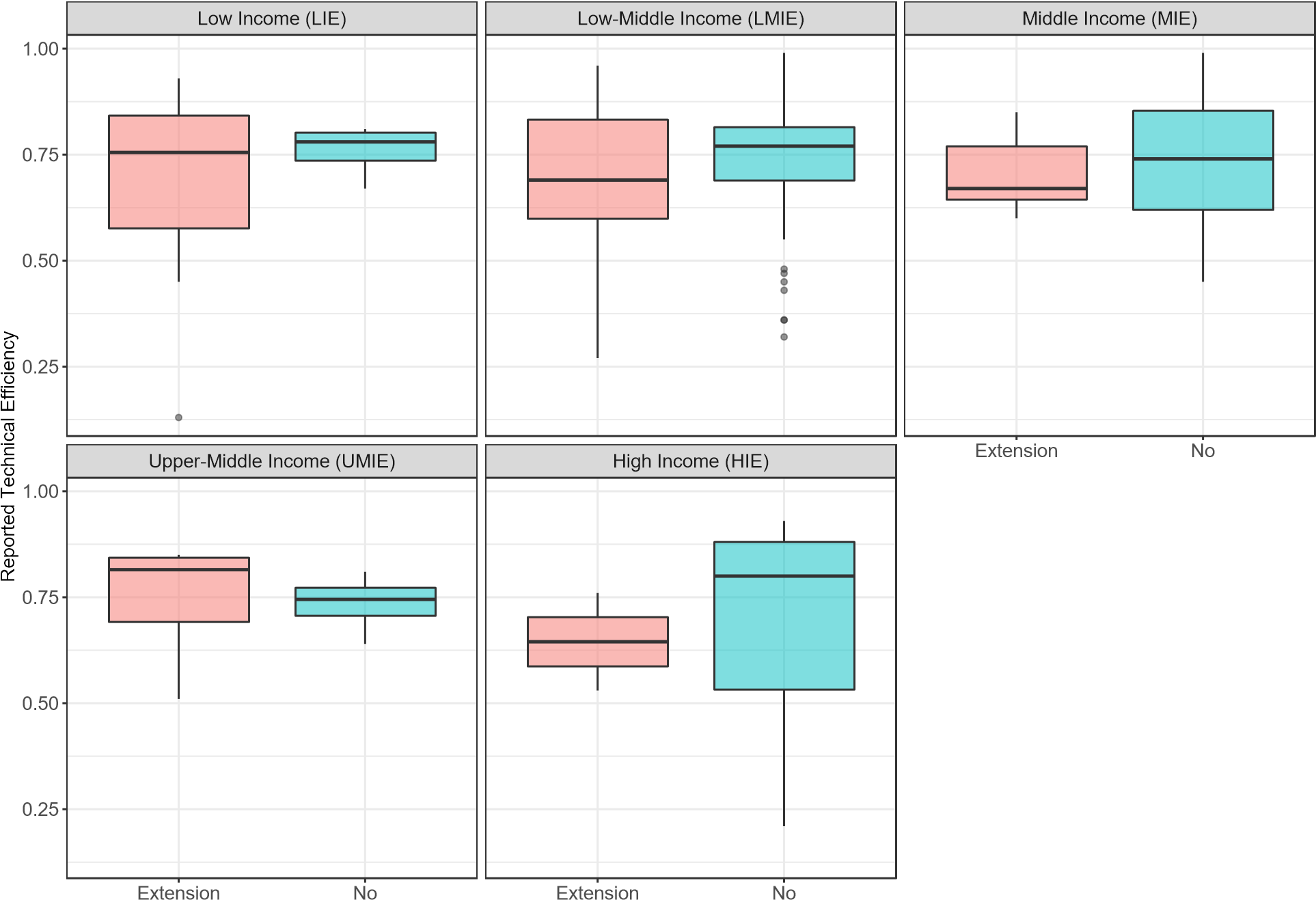


Figure 10: Agricultural extension and technical efficiency by income group



Figure 11: Agricultural extension and technical efficiency by crop types and income group

1990 2000 2010 2020

0.4

0.6

0.8

Reported Technical Efficiency

Low Income (LIE~~)~~ Low-Middle Income (LMIE~~)~~ Middle Income (MIE~~)~~ Upper-Middle Income (UMIE~~)~~ High Income (HIE)

Figure 12: Technical efficiency between income groups across time

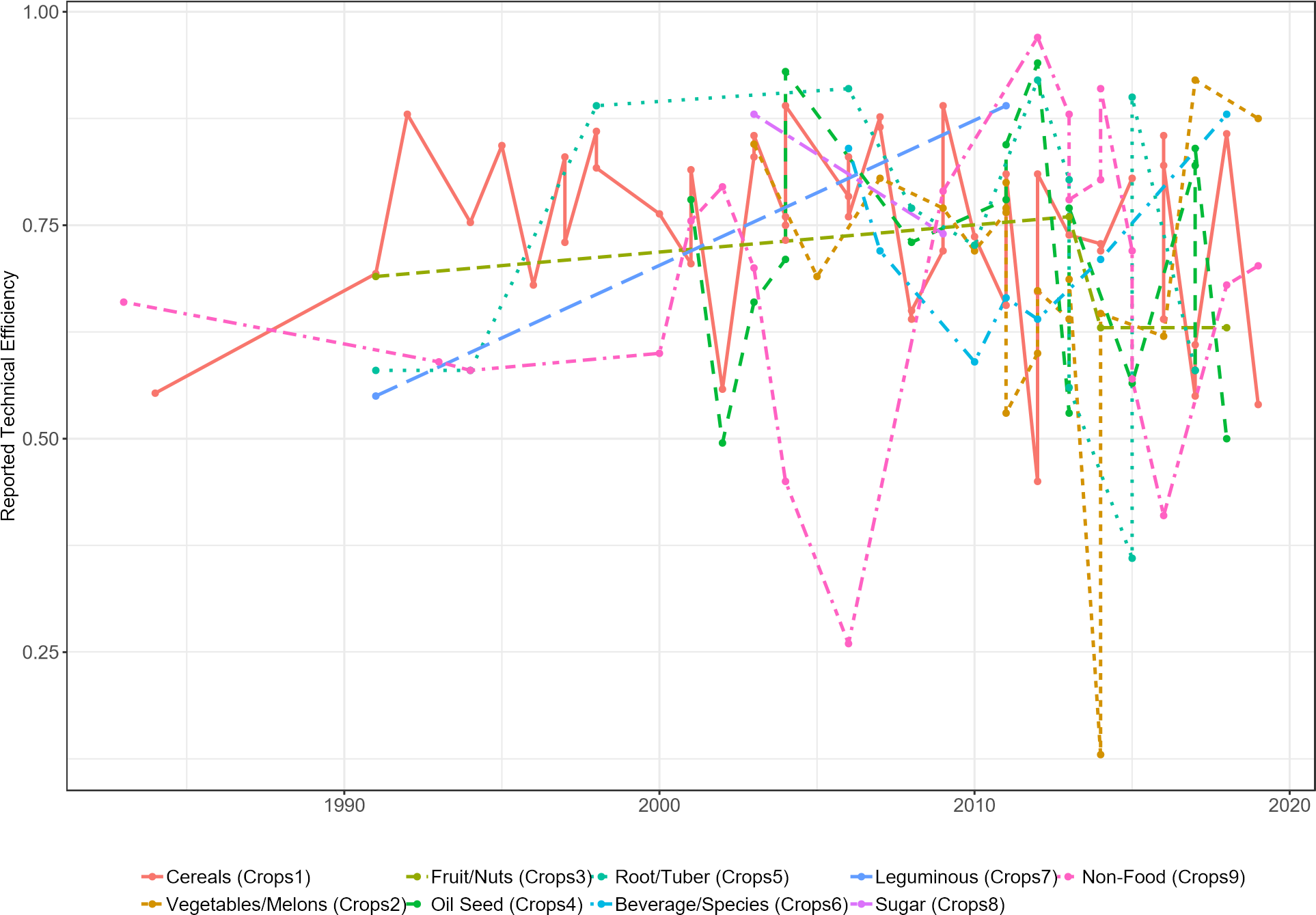


Figure 13: Technical efficiency between type of crops across time

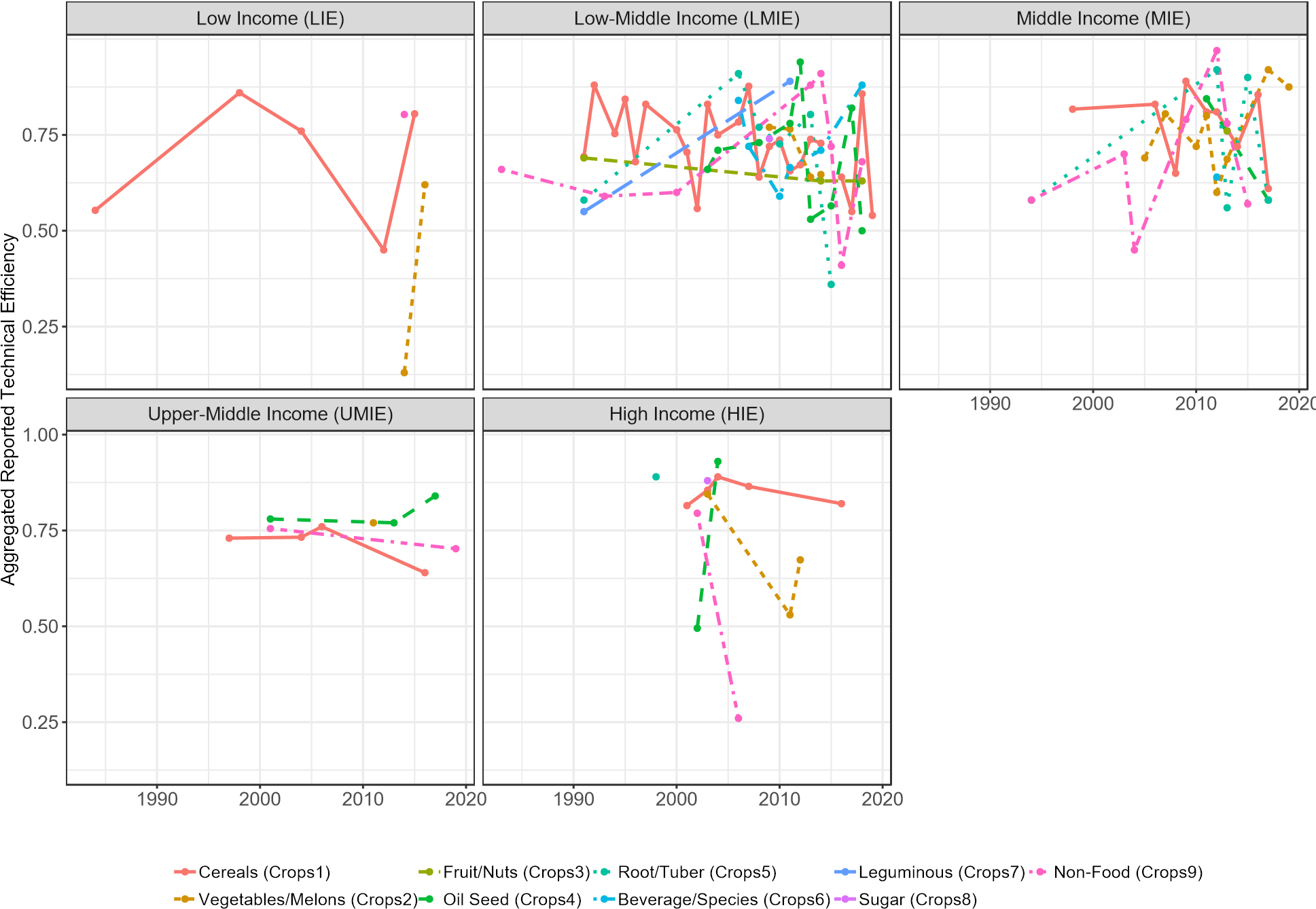


Figure 14: Technical efficiency between type of crops and income groups across time

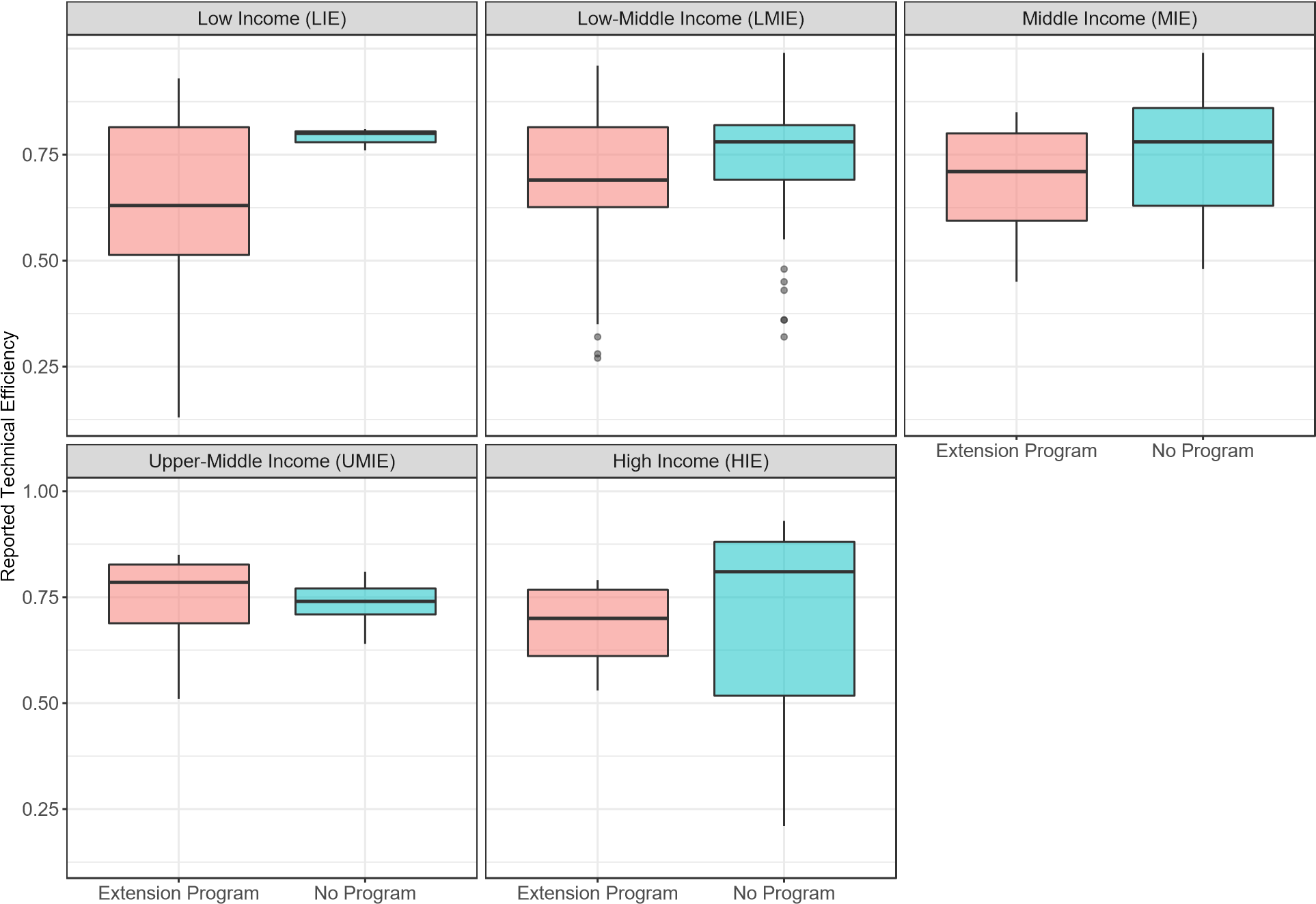


Figure 15: Technical efficiency between income groups, aggregated



Figure 16: Technical efficiency between crop types, aggregated

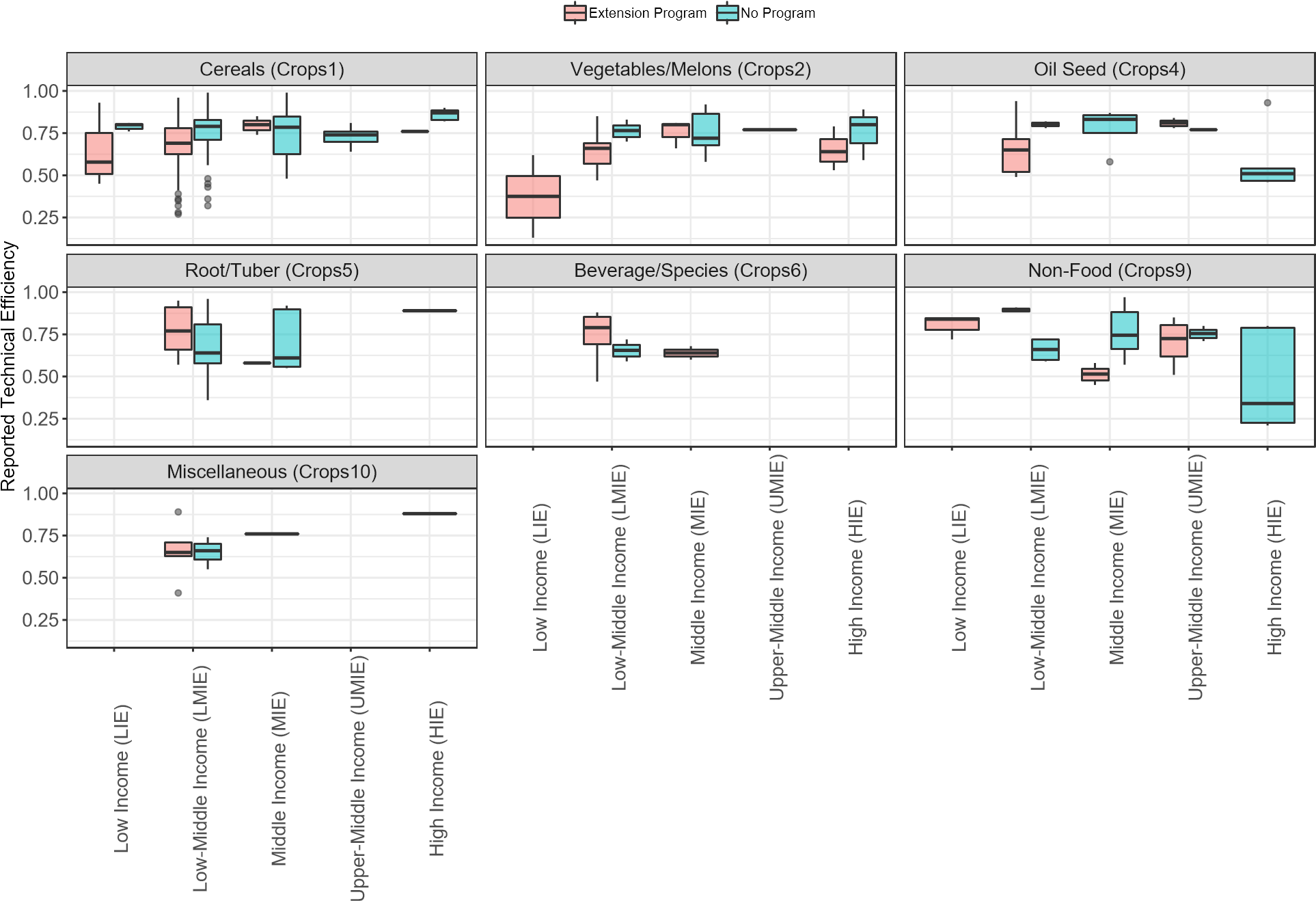


Figure 17: Technical efficiency between crop types within income groups, aggregated

Table 3: Propensity of implementing extension programs using complete case analysis

|  |  |  |  |
| --- | --- | --- | --- |
|  | Extension services | | |
|  | Model (1) | Model (2) | Model (3) |
| Constant | 0.325\*\*\*  (0.034) | 0.480\*\*\*  (0.033) | -0.289\*  (0.173) |
| Low income economy |  | 0.186  (0.130) | 0.728  (0.652) |
| Middle income economy |  | -0.403\*\*\*  (0.063) | -2.685\*\*\*  (0.528) |
| Upper middle income economy |  | -0.304\*\*\*  (0.081) | -1.558\*\*\*  (0.498) |
| High income economy |  | -0.403\*\*\*  (0.091) | -2.765\*\*\*  (0.793) |
| Vegetables and Melons | -0.068  (0.086) |  | 0.395  (0.511) |
| Oil seed | 0.104  (0.108) |  | 1.281\*\*  (0.575) |
| Tuber/root | 0.009  (0.116) |  | 0.272  (0.581) |
| Beverage and species | 0.475\*\*\*  (0.152) |  | 2.519\*\*\*  (0.956) |
| Non-food | -0.014  (0.093) |  | 0.675  (0.529) |
| Miscellaneous | -0.039  (0.181) |  | -0.183  (0.908) |
| Observations | 314 | 314 | 314 |
| Log Likelihood | −205.441 | −182.057 | −163.336 |
| Akaike Inf. Crit. | 424.881 | 374.115 | 348.672 |

*Note:* ∗p*<*0.1; ∗∗p*<*0.05; ∗∗∗p*<*0.01

Table 4: Exclusion and inclusion criteria

|  |  |  |  |
| --- | --- | --- | --- |
| Exclusion step  Reasons | The first exclusion   1. not in English 2. not original article 3. not studying food crops | The second exclusion   1. common definition on TE 2. incomplete data reported 3. duplication check | Final inclusion   1. english 2. crop study 3. original article |
|  | 4. no empirical analysis |  | 4. common definition on TE |
|  | 5. not about TE |  | 5. complete data reported |
| Corresponding PRISMA step | Screening | Eligibility |  |