A Supplementary File for "An Analysis of Control Parameters of MOEA/D Under Two Different Optimization Scenarios"

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Abstract

This is a supplementary file for "An Analysis of Control Parameters of MOEA/D Under Two Different Optimization Scenarios".

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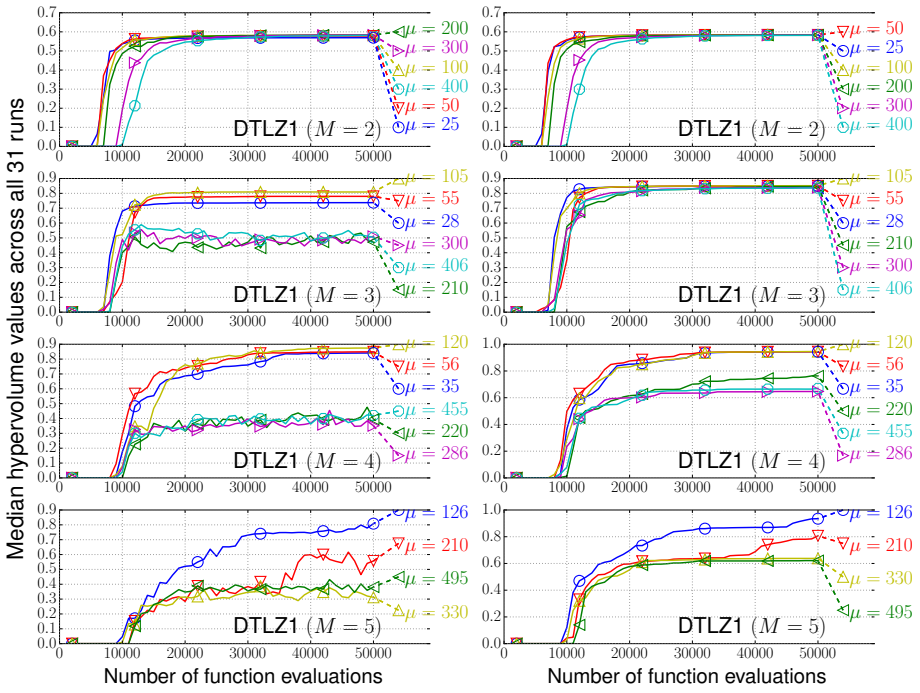


Figure S.1: Performance of MOEA/D with various μ settings on the DTLZ1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

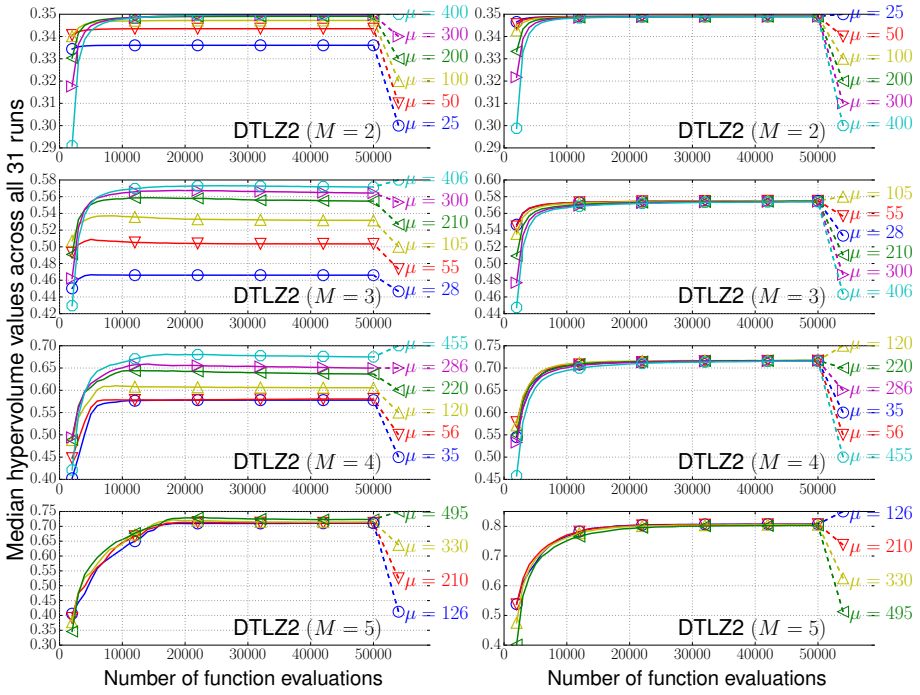


Figure S.2: Performance of MOEA/D with various μ settings on the DTLZ2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

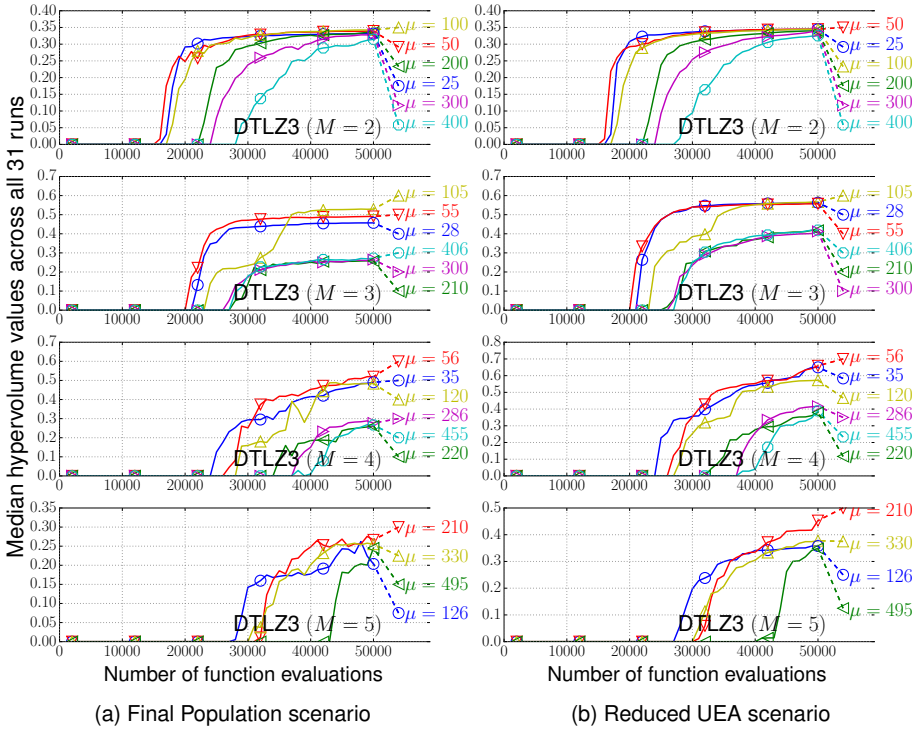
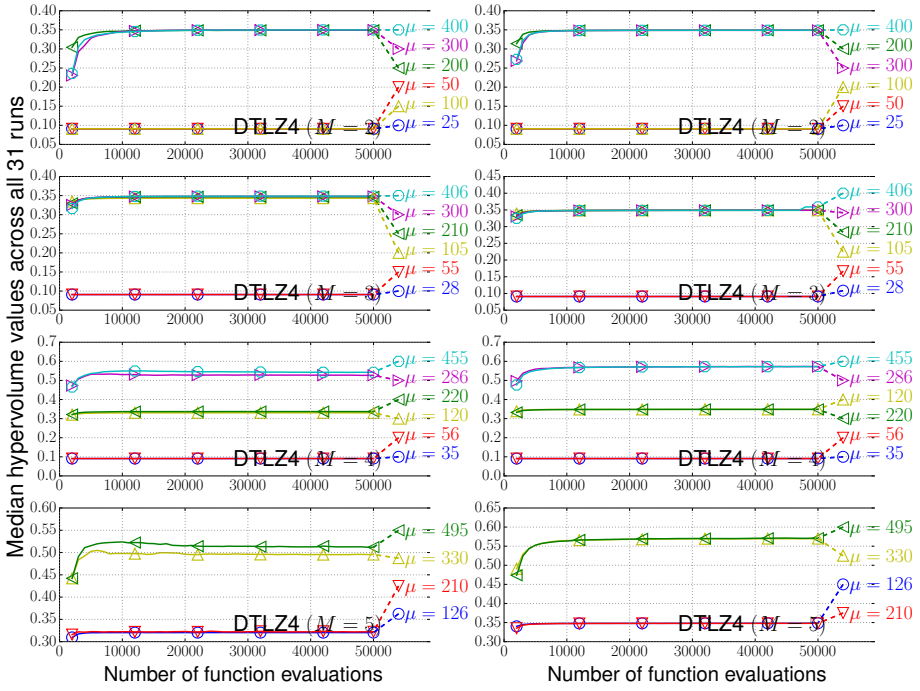


Figure S.3: Performance of MOEA/D with various μ settings on the DTLZ3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.4: Performance of MOEA/D with various μ settings on the DTLZ4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

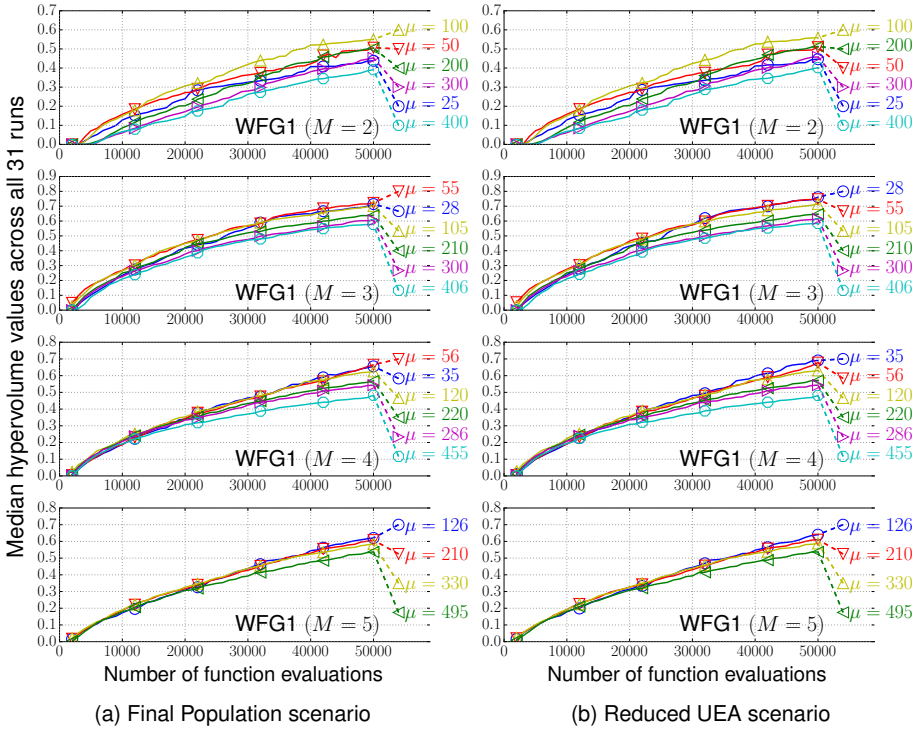
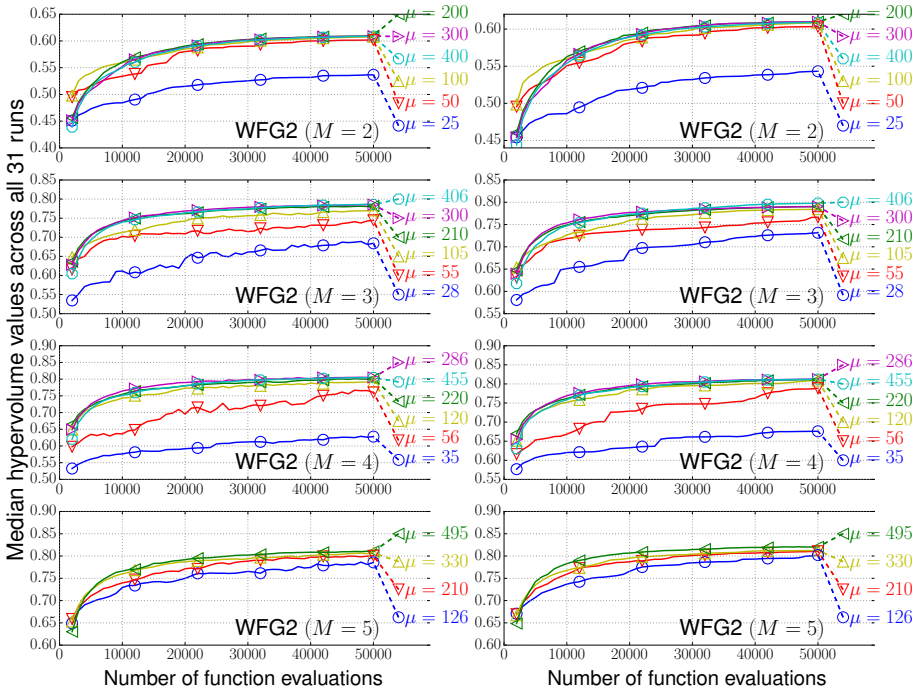
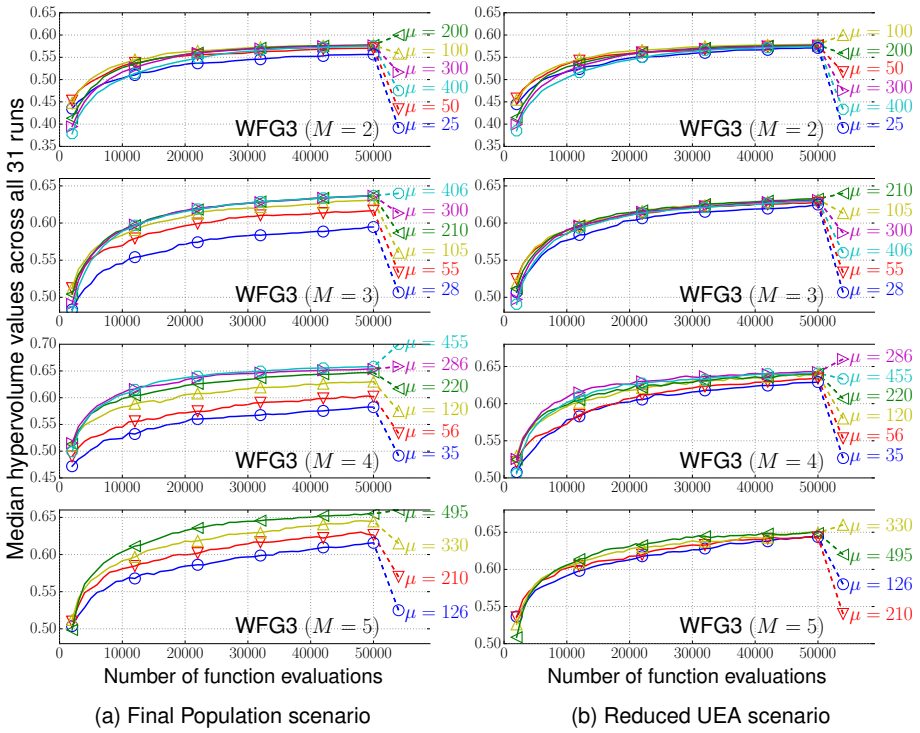


Figure S.5: Performance of MOEA/D with various μ settings on the WFG1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.6: Performance of MOEA/D with various μ settings on the WFG2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.7: Performance of MOEA/D with various μ settings on the WFG3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

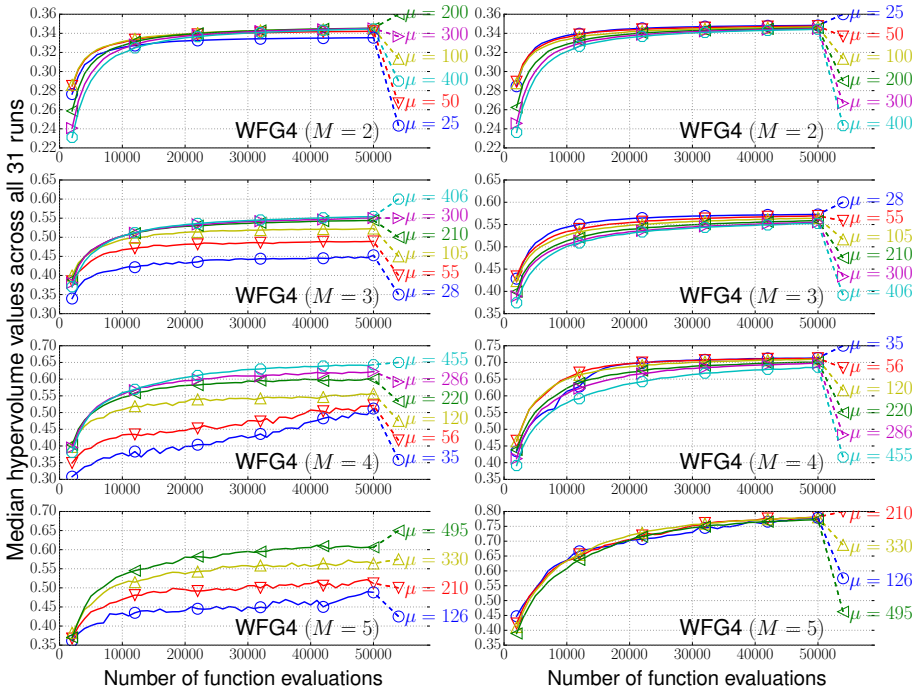
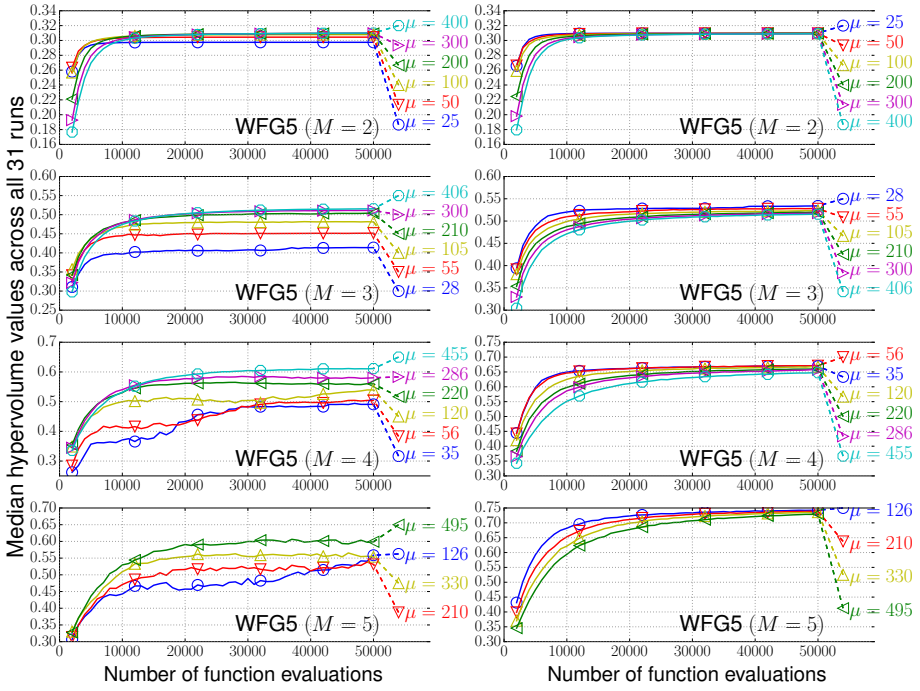


Figure S.8: Performance of MOEA/D with various μ settings on the WFG4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.9: Performance of MOEA/D with various μ settings on the WFG5 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

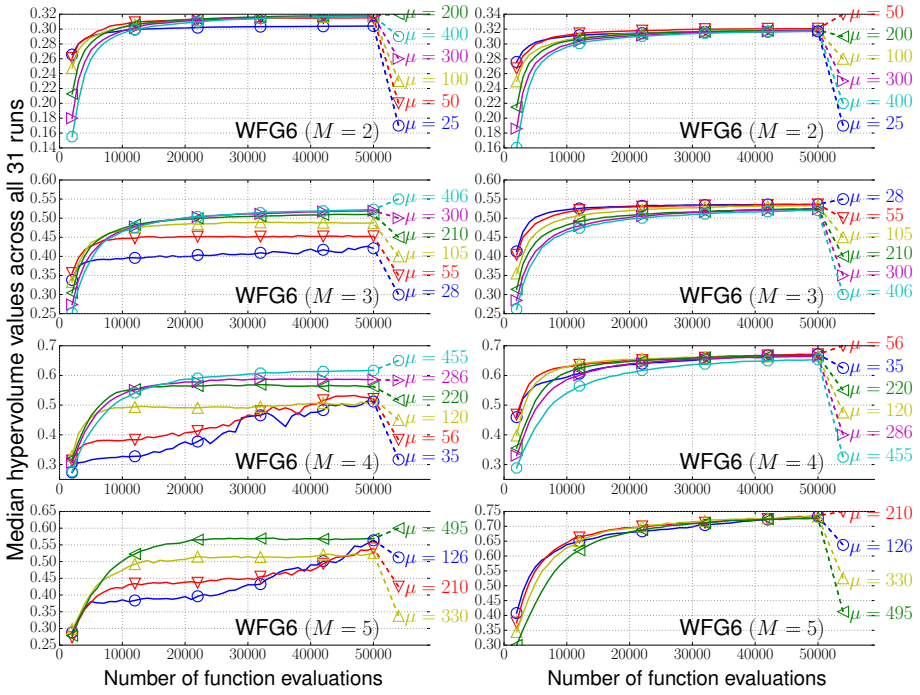


Figure S.10: Performance of MOEA/D with various μ settings on the WFG6 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

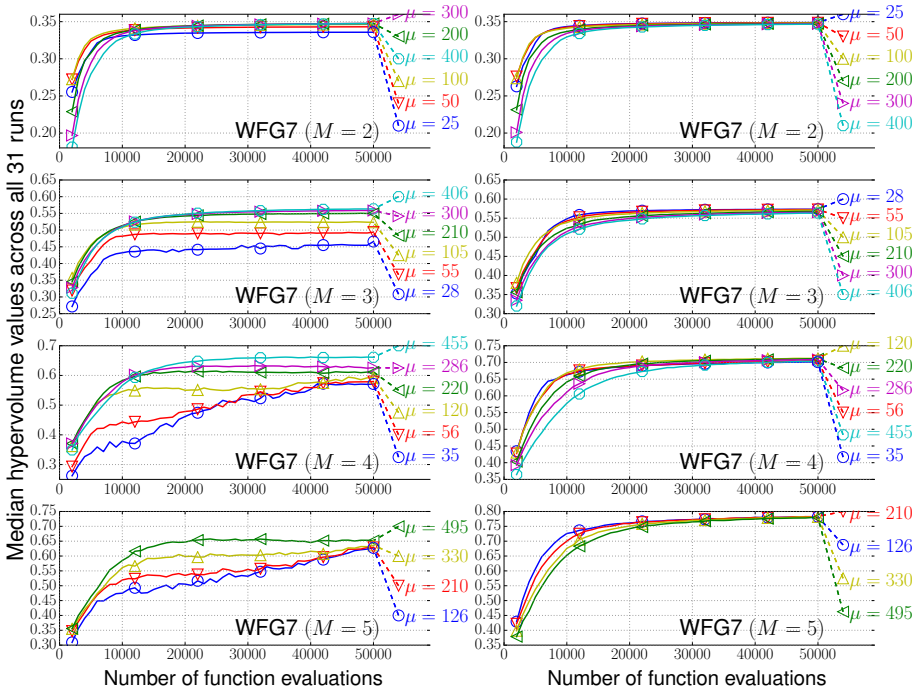
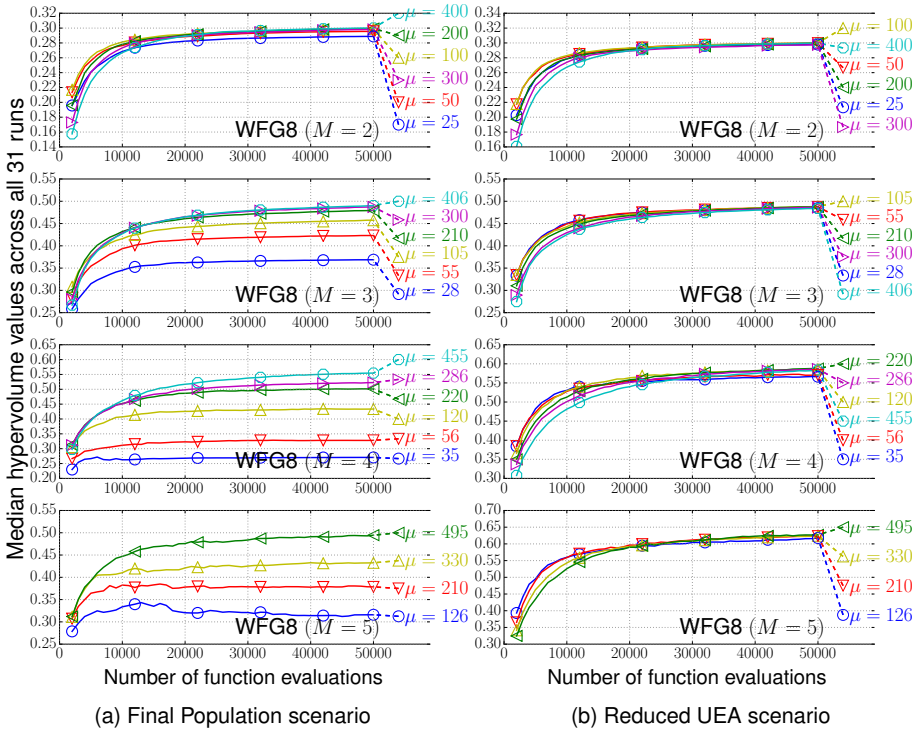
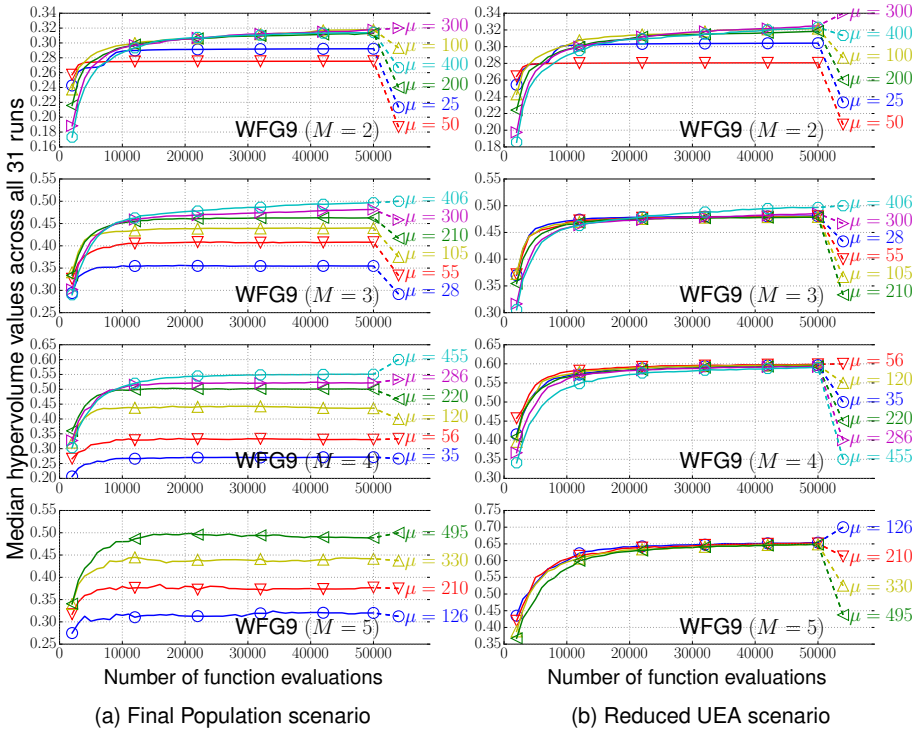


Figure S.11: Performance of MOEA/D with various μ settings on the WFG7 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.12: Performance of MOEA/D with various μ settings on the WFG8 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.13: Performance of MOEA/D with various μ settings on the WFG9 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

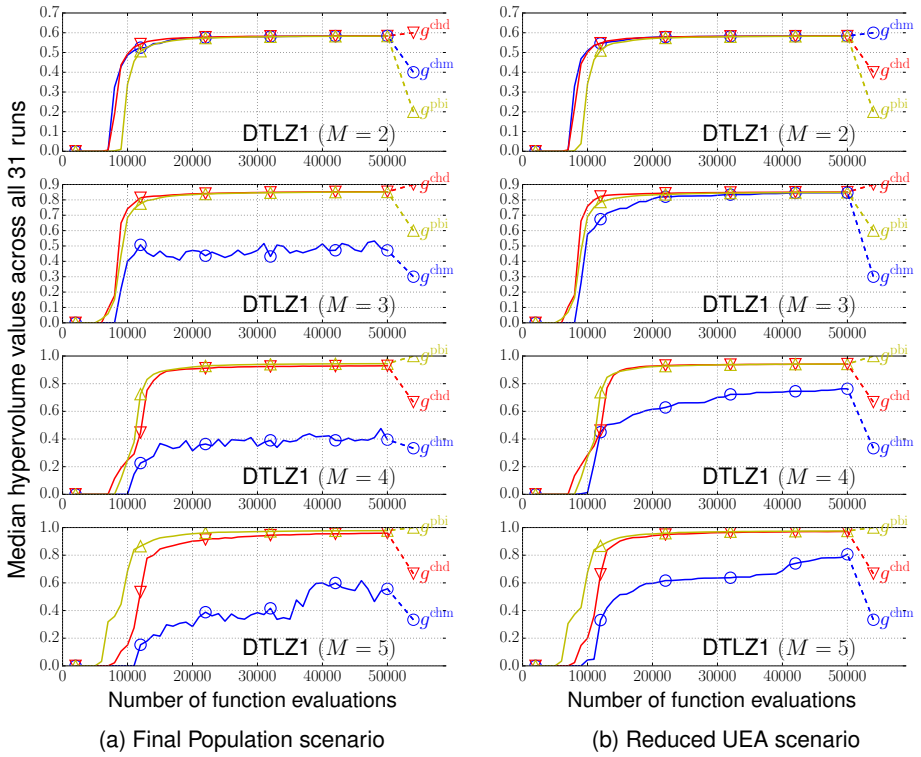
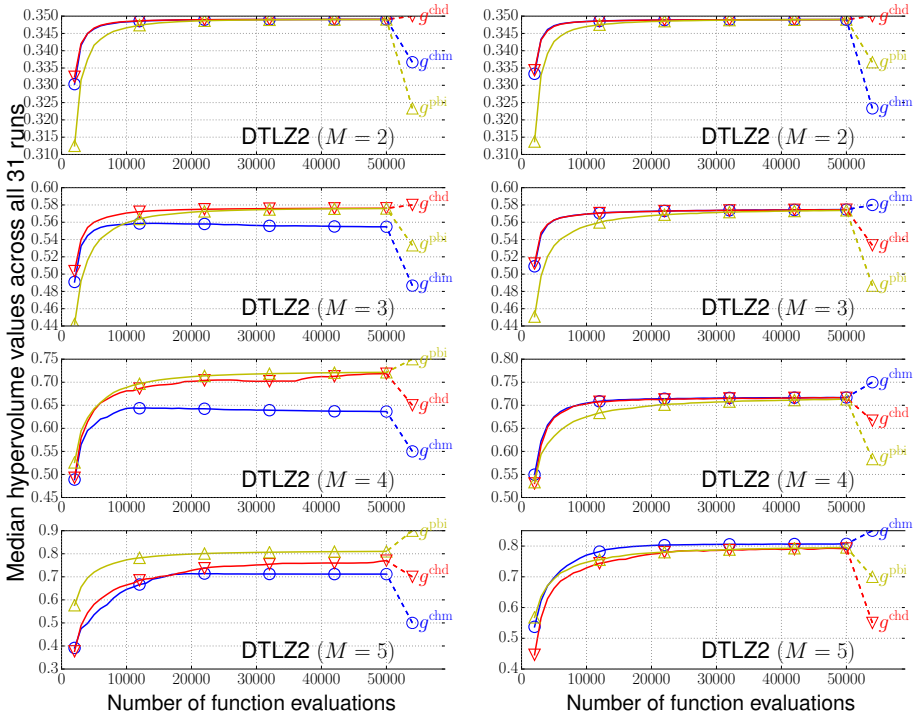


Figure S.14: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the DTLZ1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.15: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the DTLZ2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

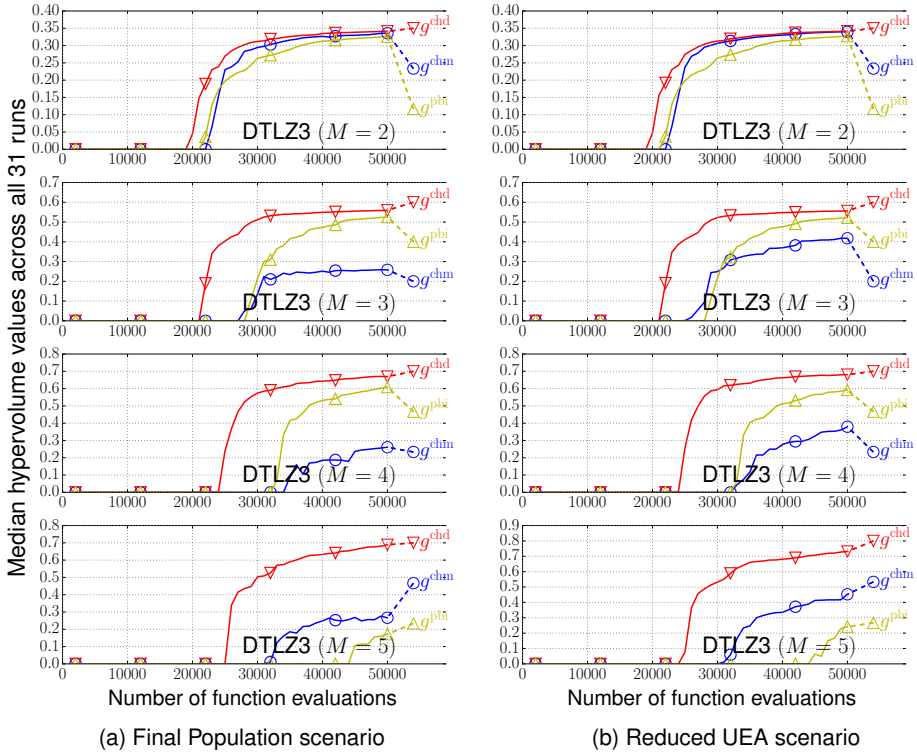
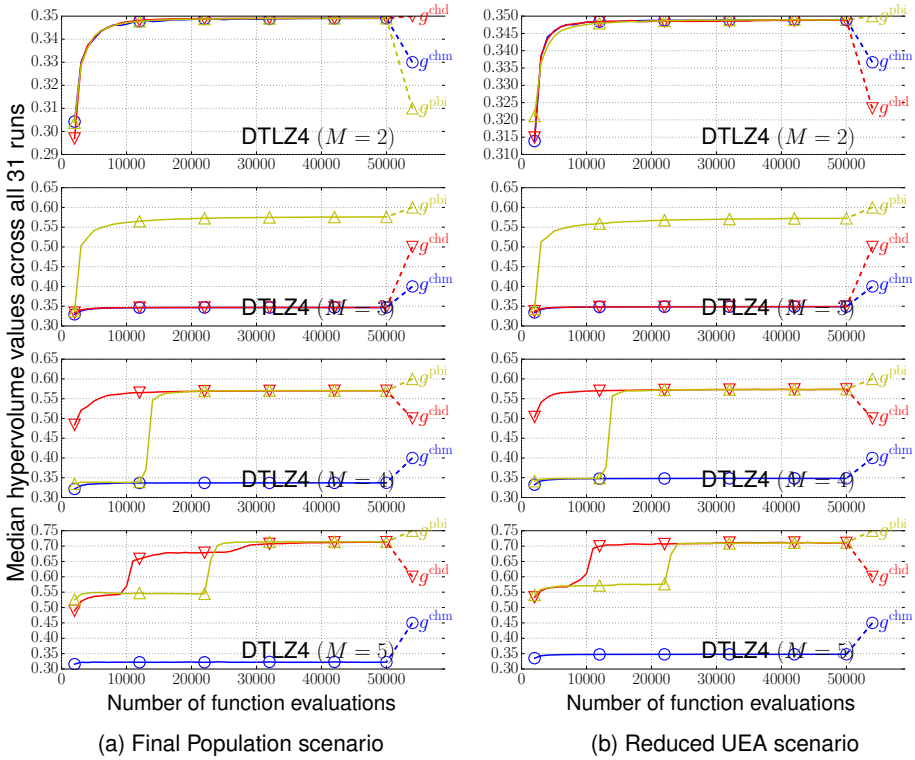


Figure S.16: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the DTLZ3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.17: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the DTLZ4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

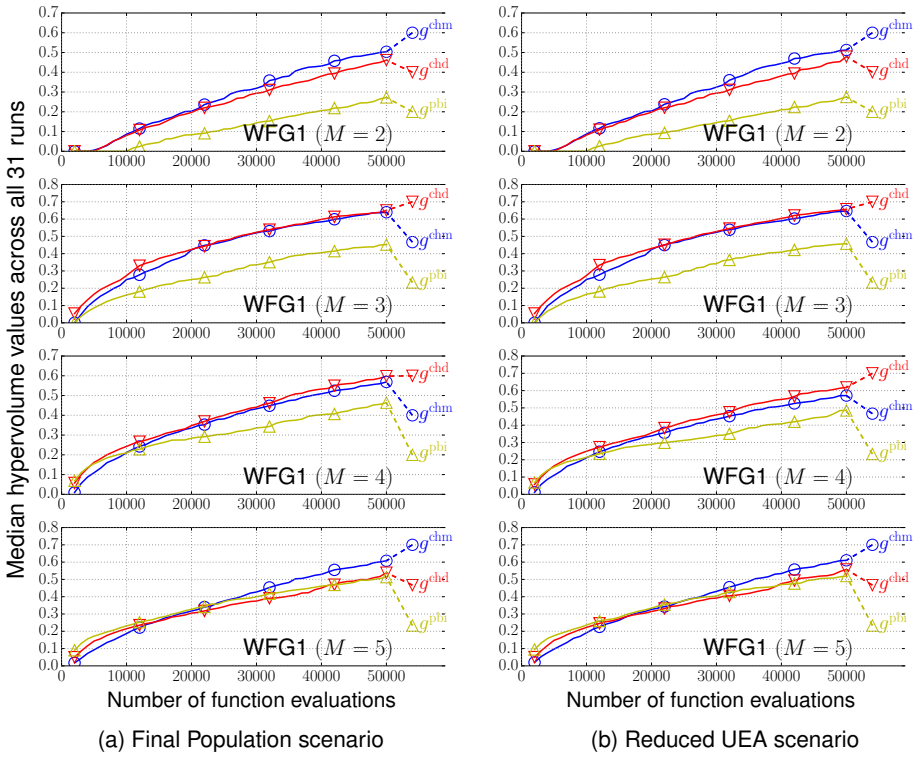


Figure S.18: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

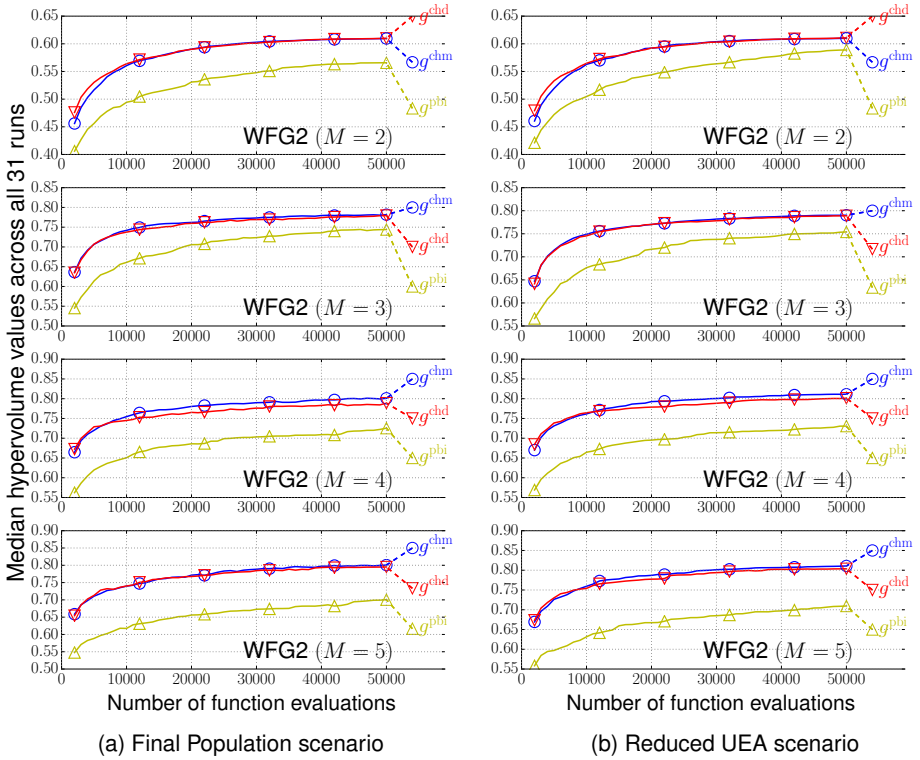


Figure S.19: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

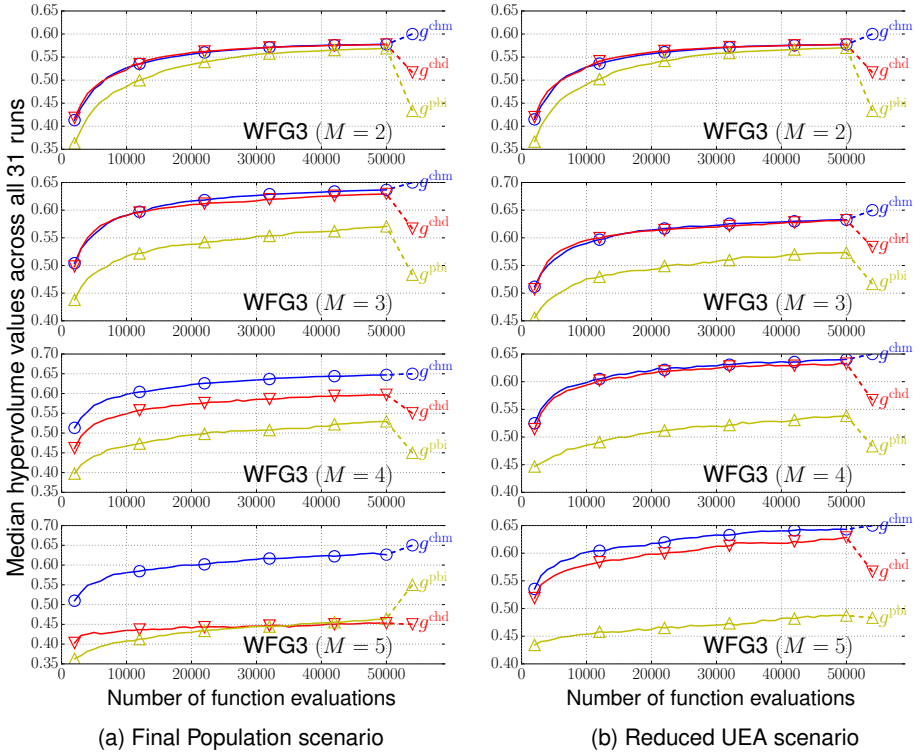
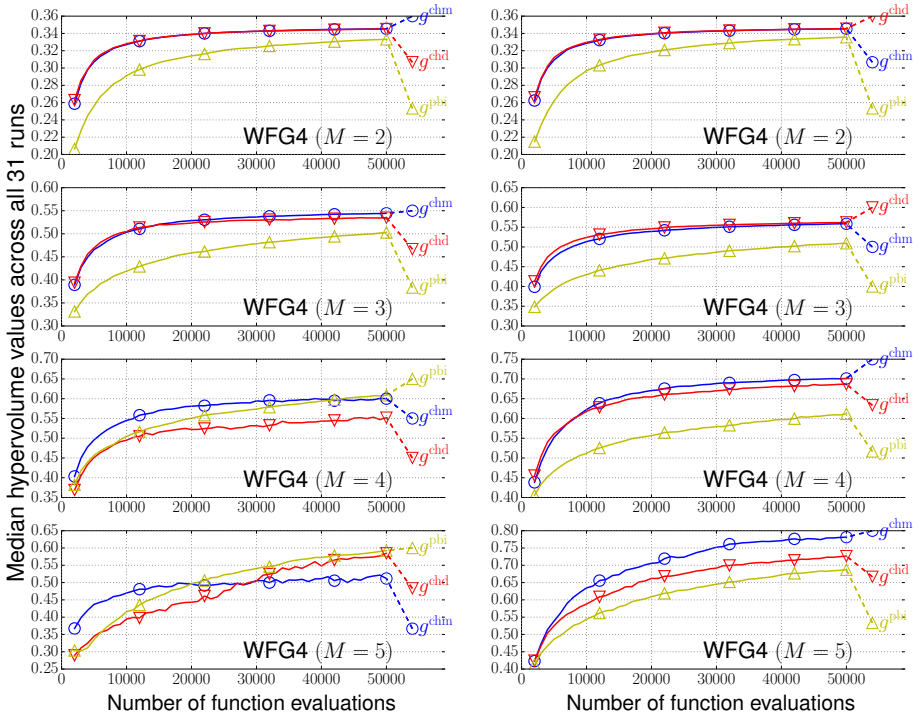


Figure S.20: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.21: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

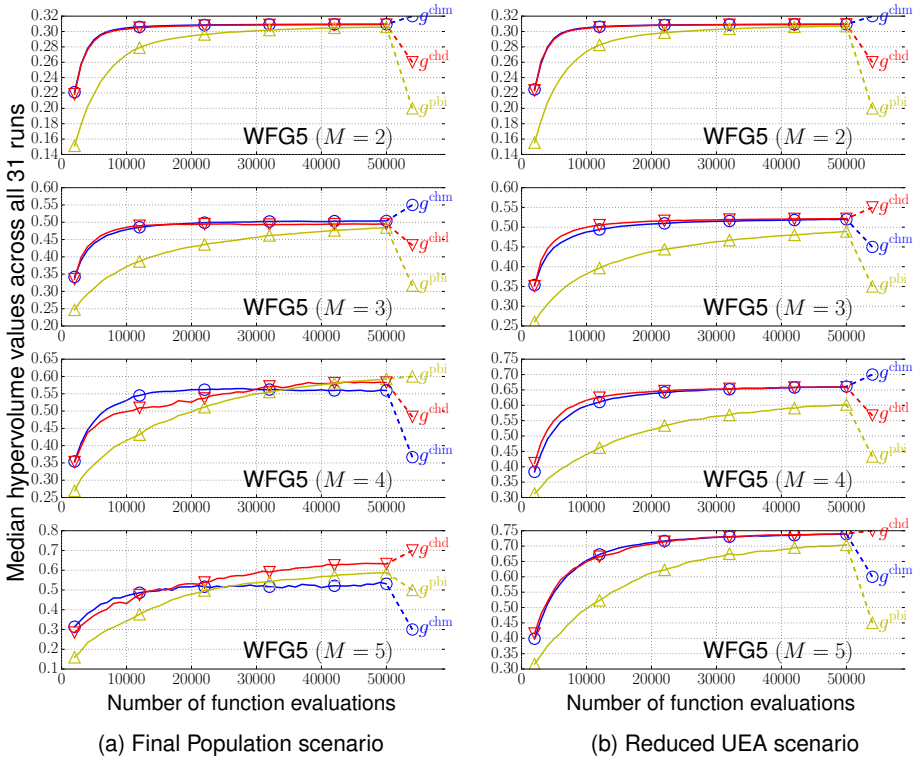


Figure S.22: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG5 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

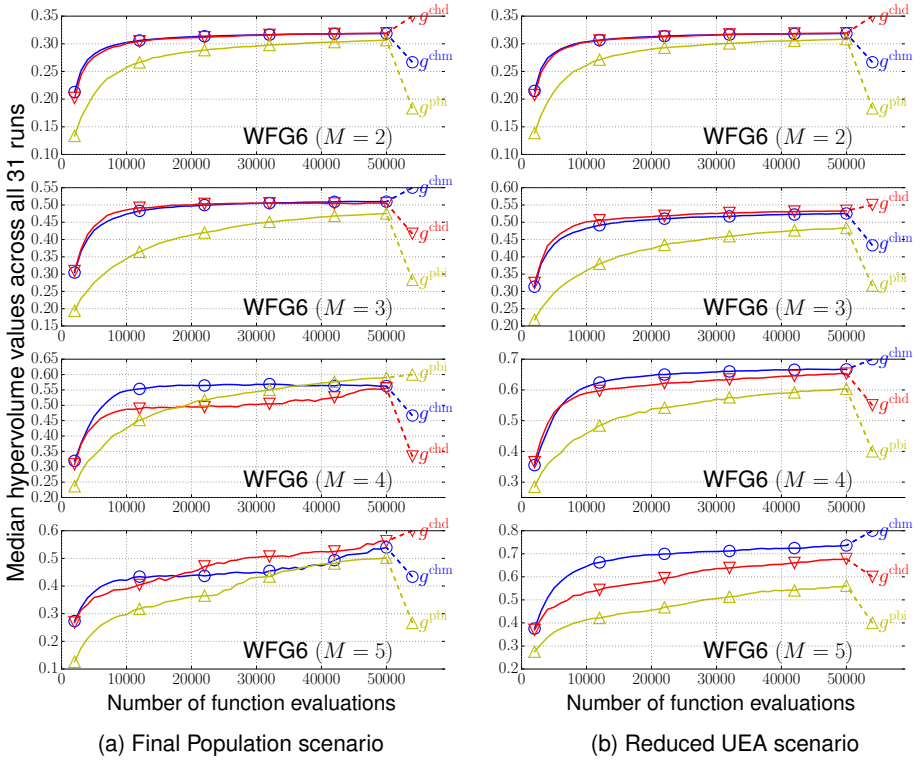
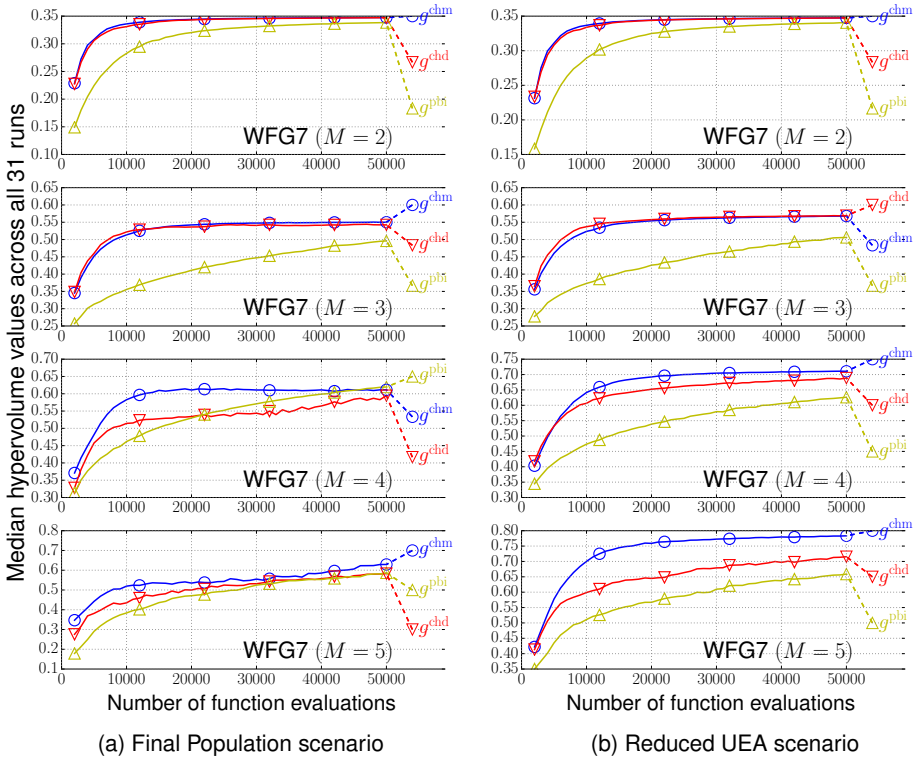


Figure S.23: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG6 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.24: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG7 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

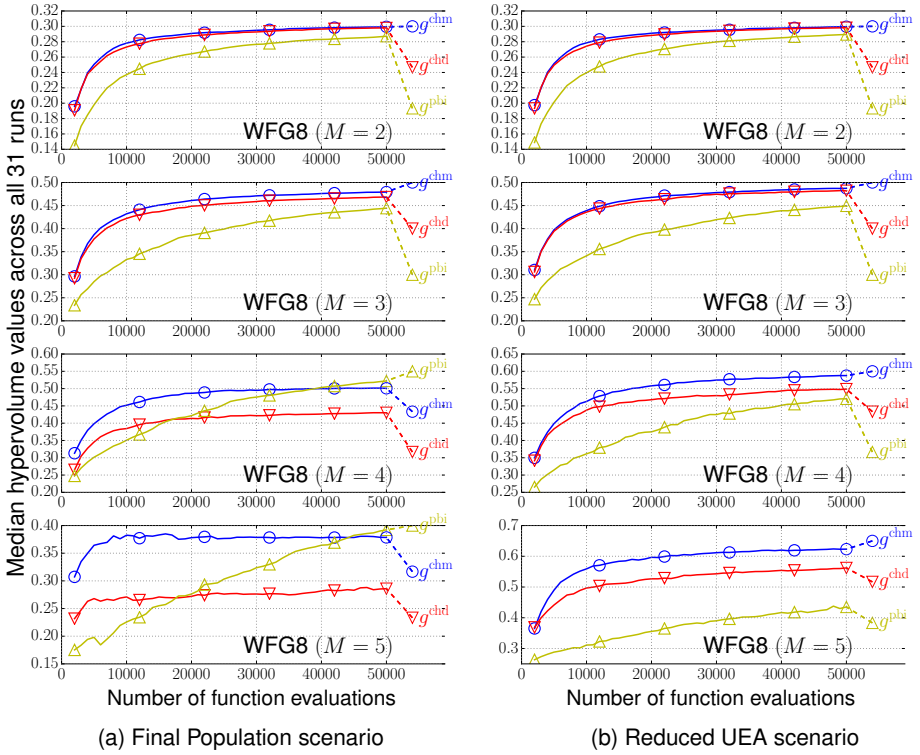


Figure S.25: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG8 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

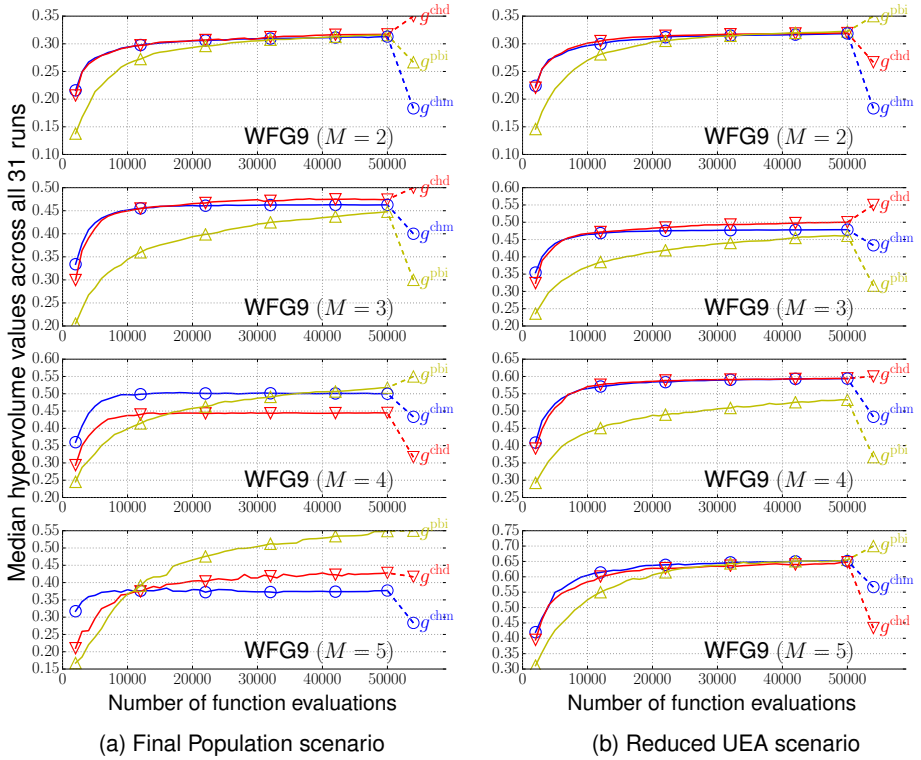


Figure S.26: Performance of MOEA/D with the three scalarizing functions (g^{chm}, g^{chd}, and g^{pbi} with $\theta = 5$) on the WFG9 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

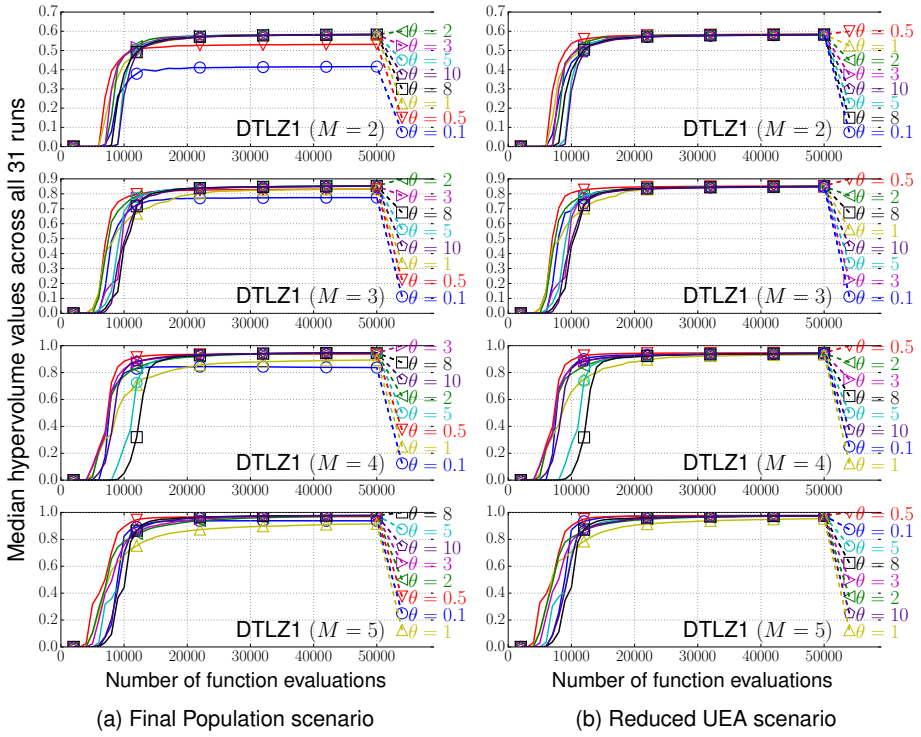
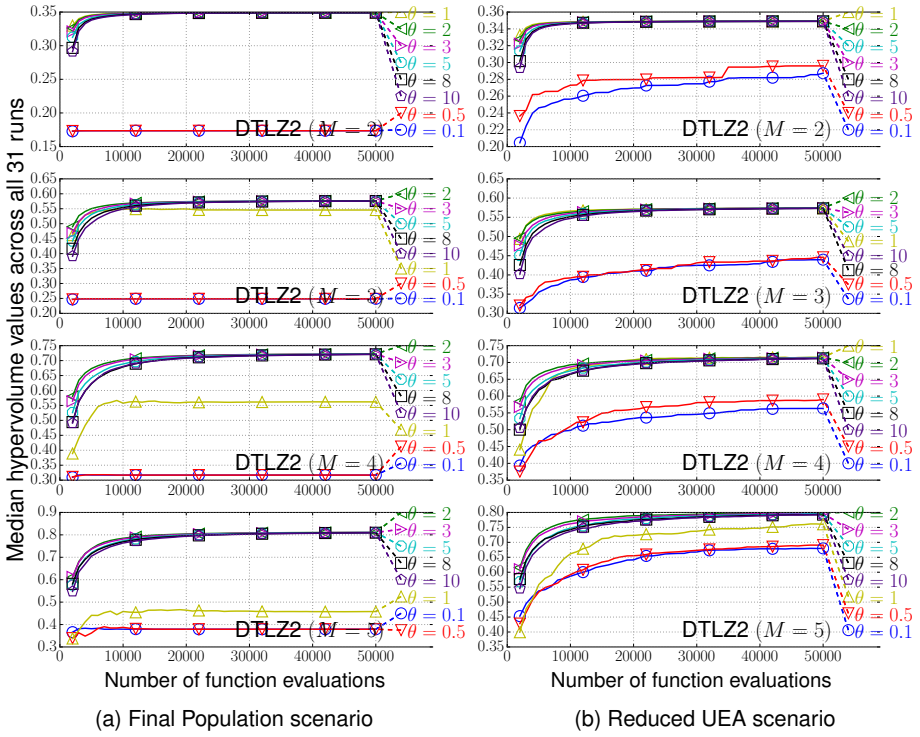
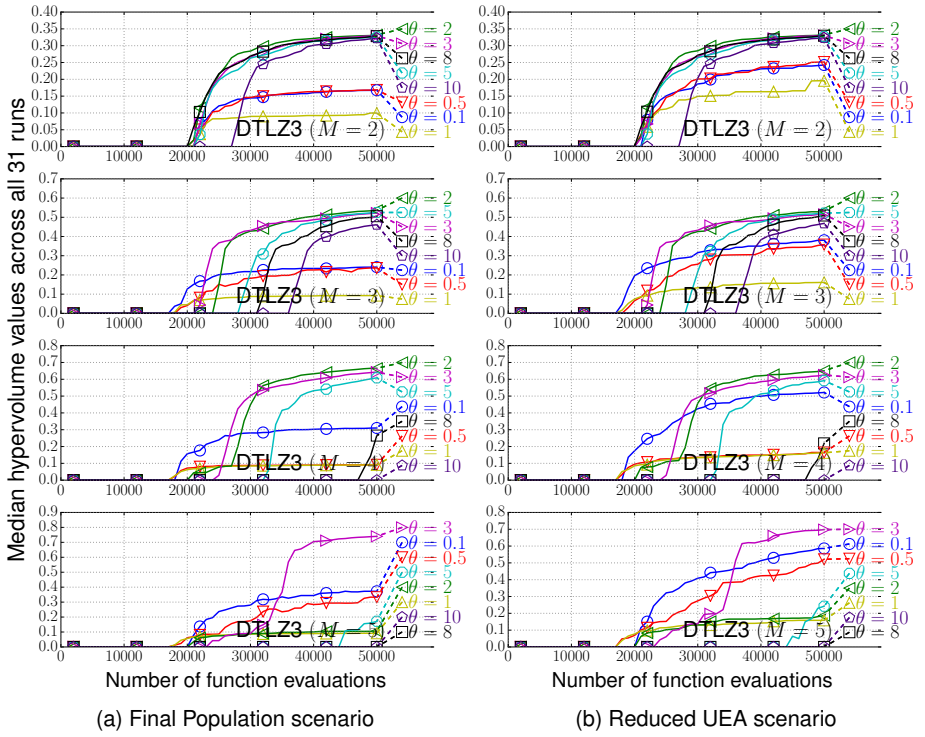


Figure S.27: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the DTLZ1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.28: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the DTLZ2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario (b) Reduced UEA scenario

Figure S.29: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the DTLZ3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

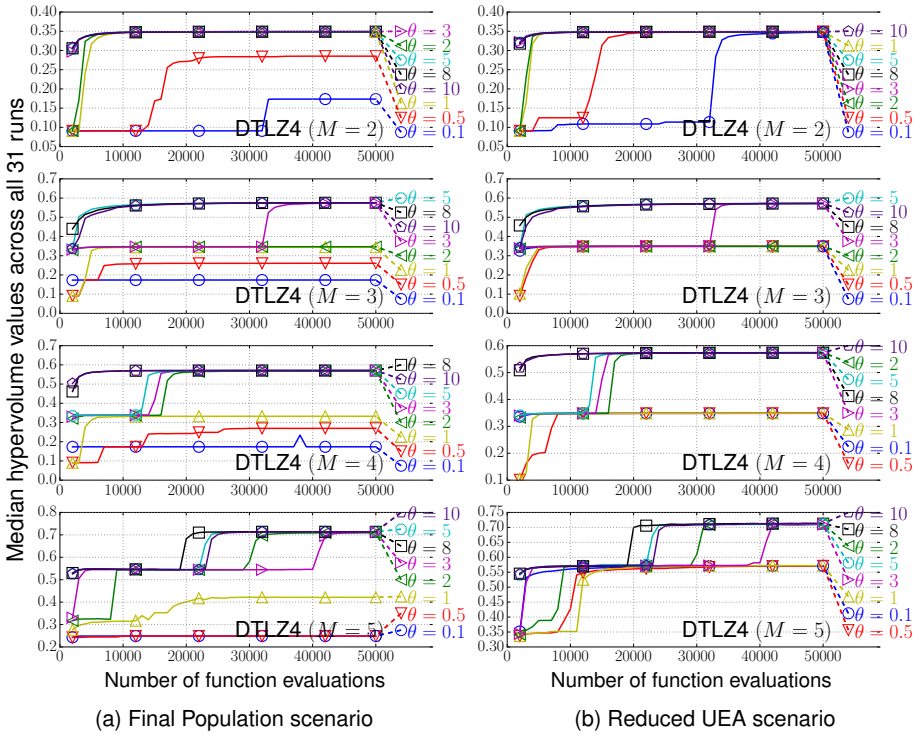


Figure S.30: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the DTLZ4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

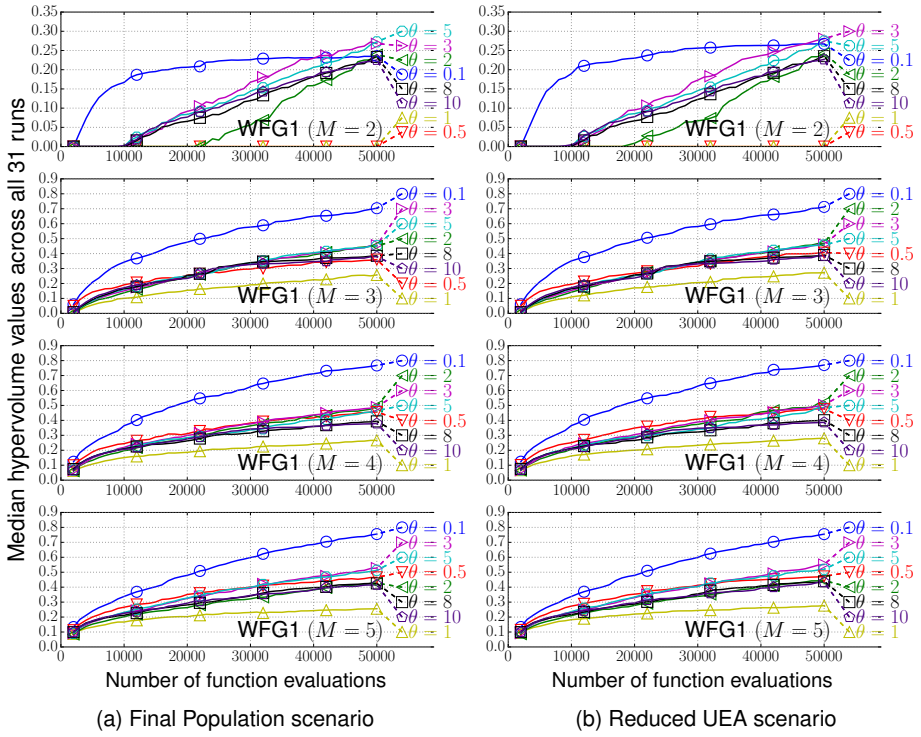


Figure S.31: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG1 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

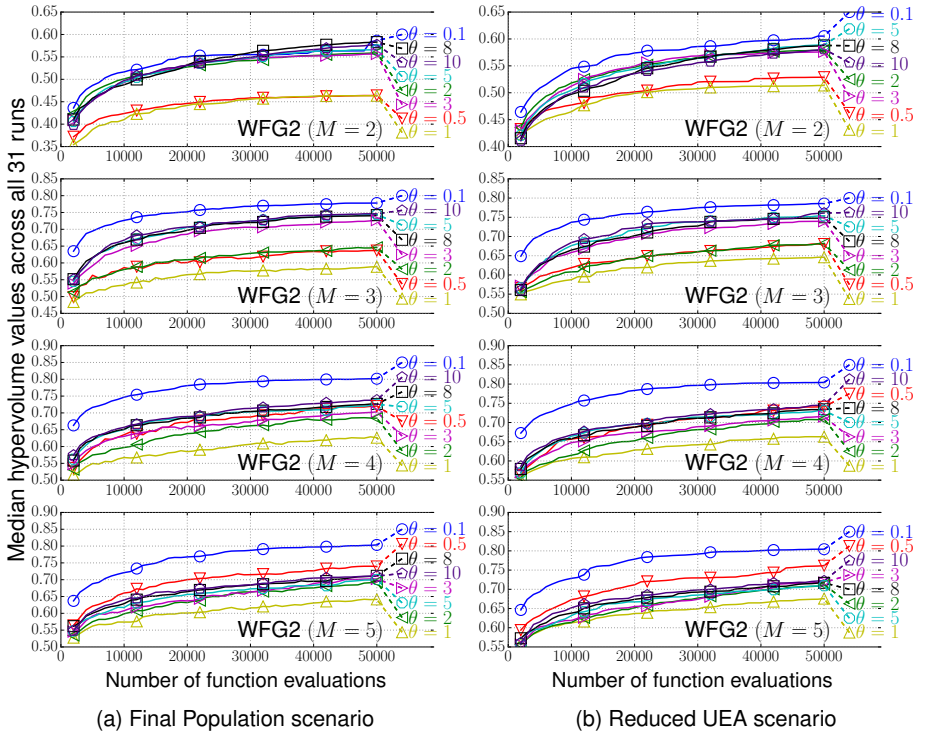


Figure S.32: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG2 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

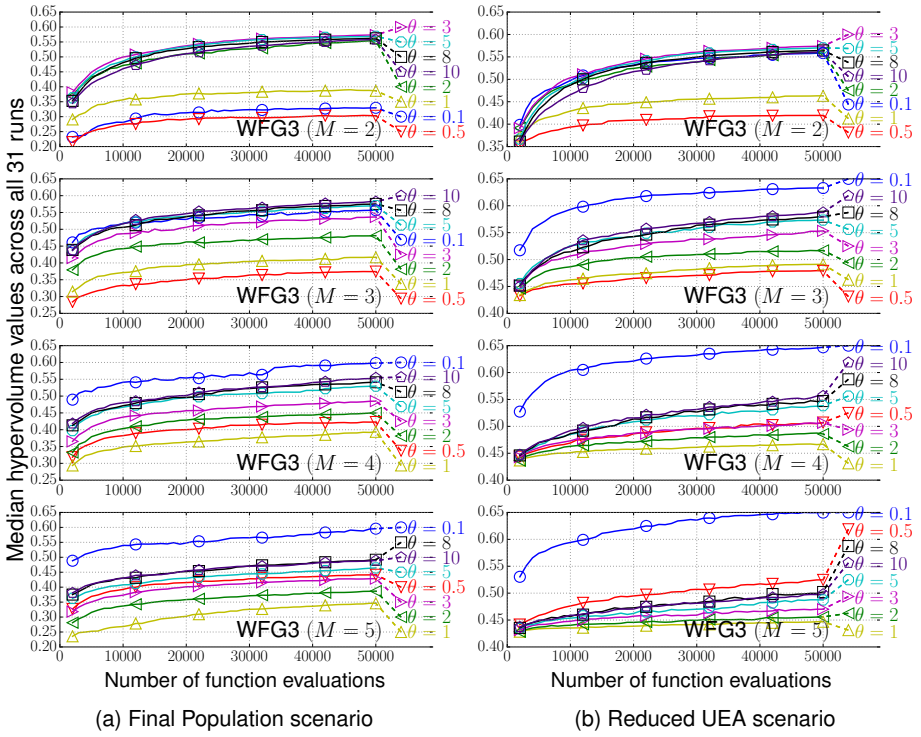


Figure S.33: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG3 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

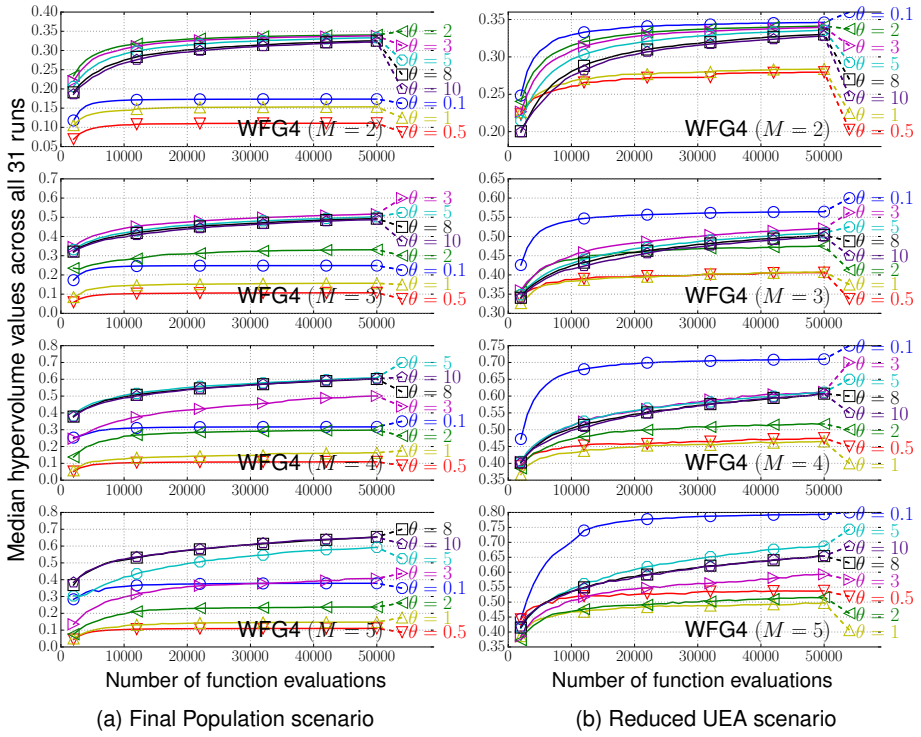


Figure S.34: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG4 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

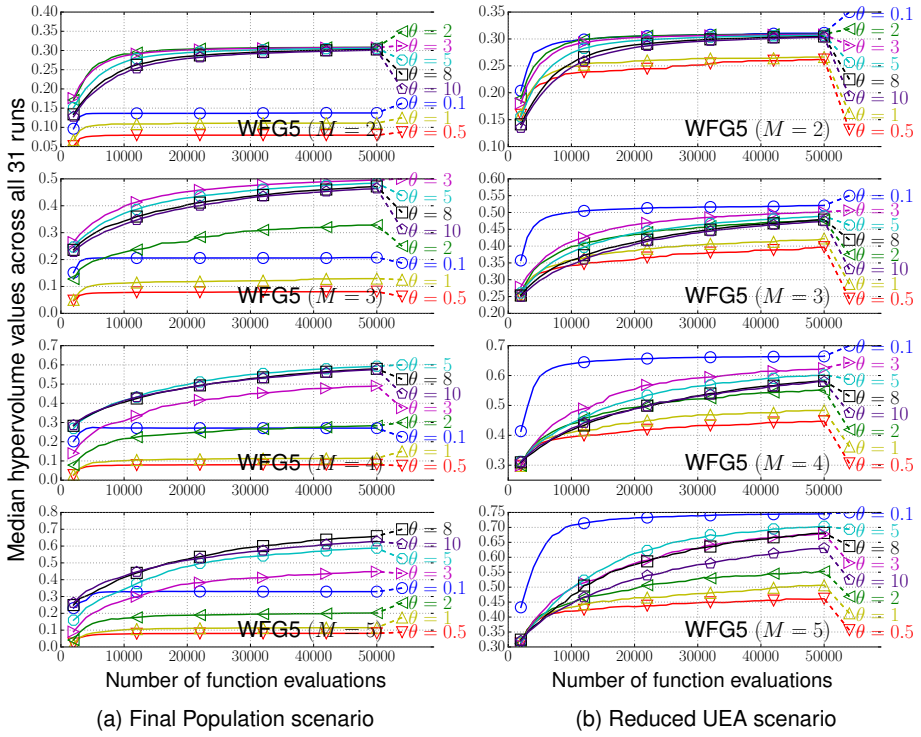
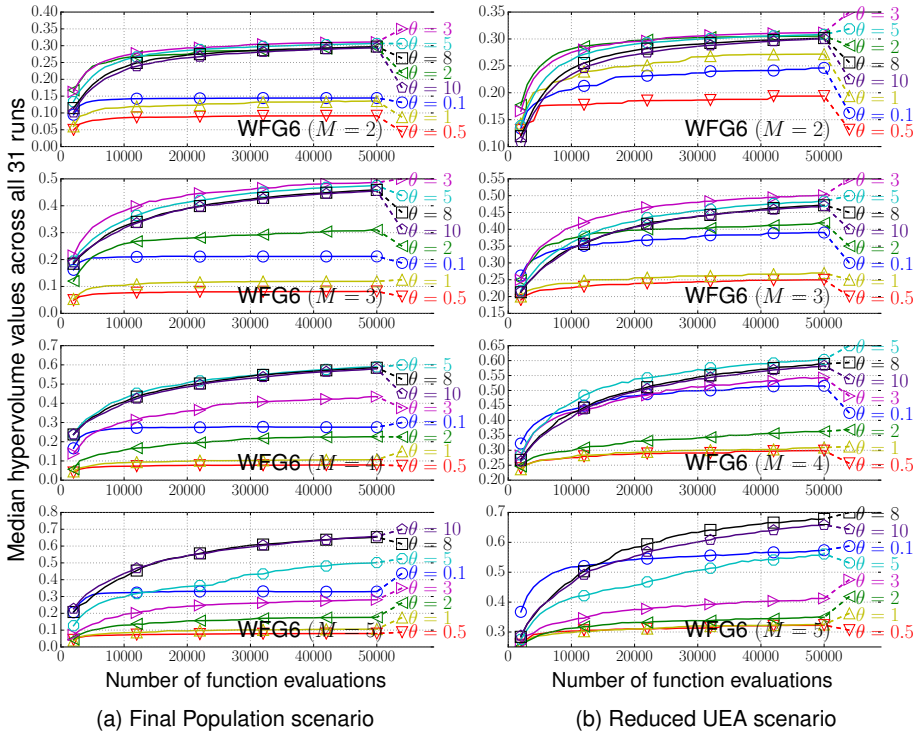


Figure S.35: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG5 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.



(a) Final Population scenario

(b) Reduced UEA scenario

Figure S.36: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG6 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

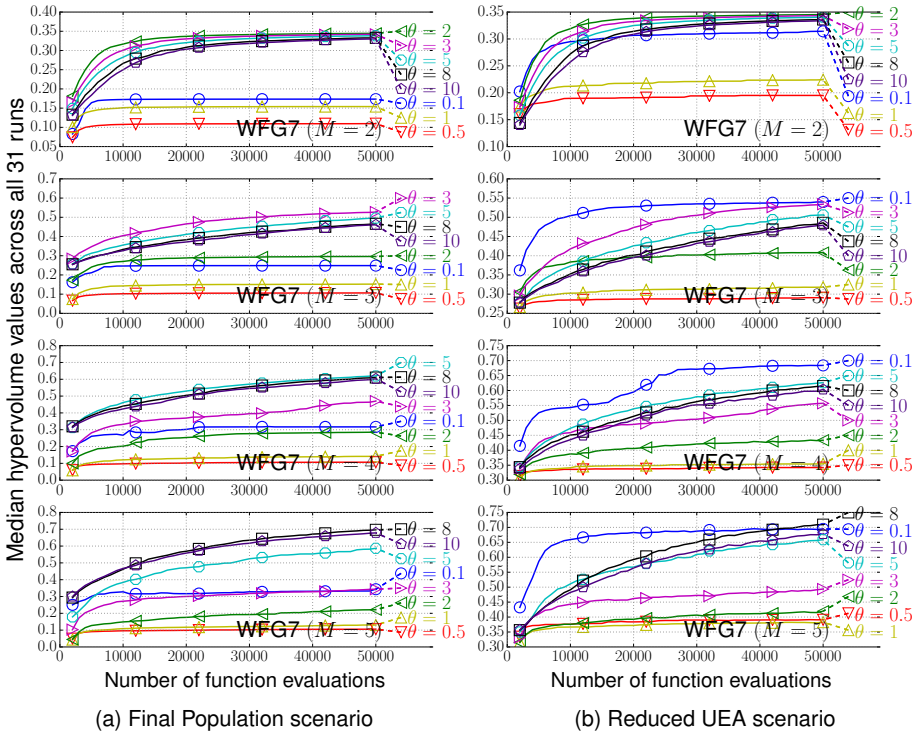


Figure S.37: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG7 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

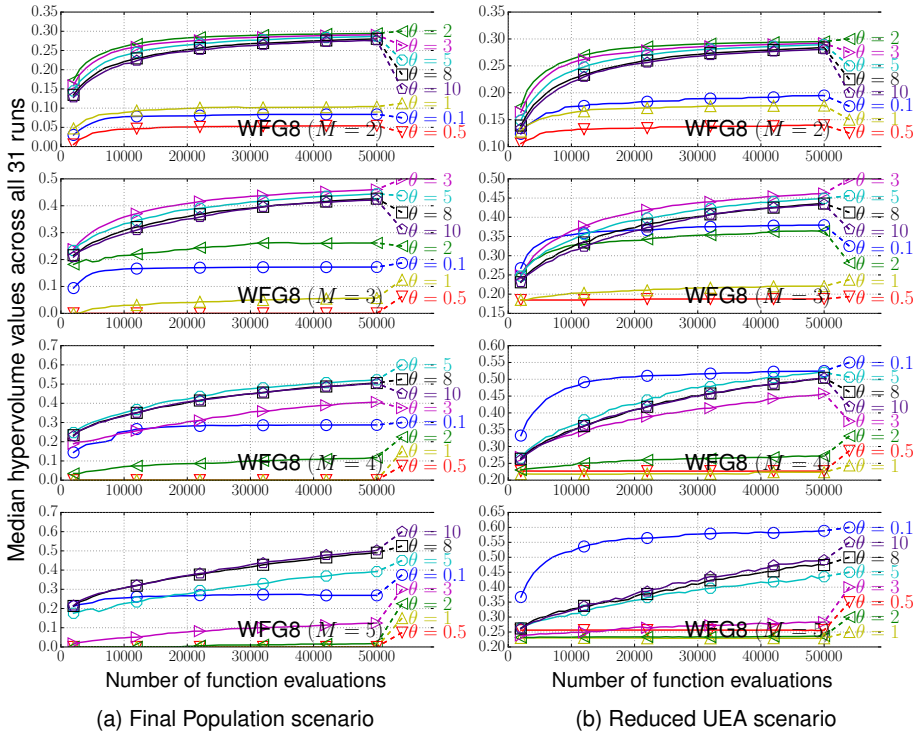


Figure S.38: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG8 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.

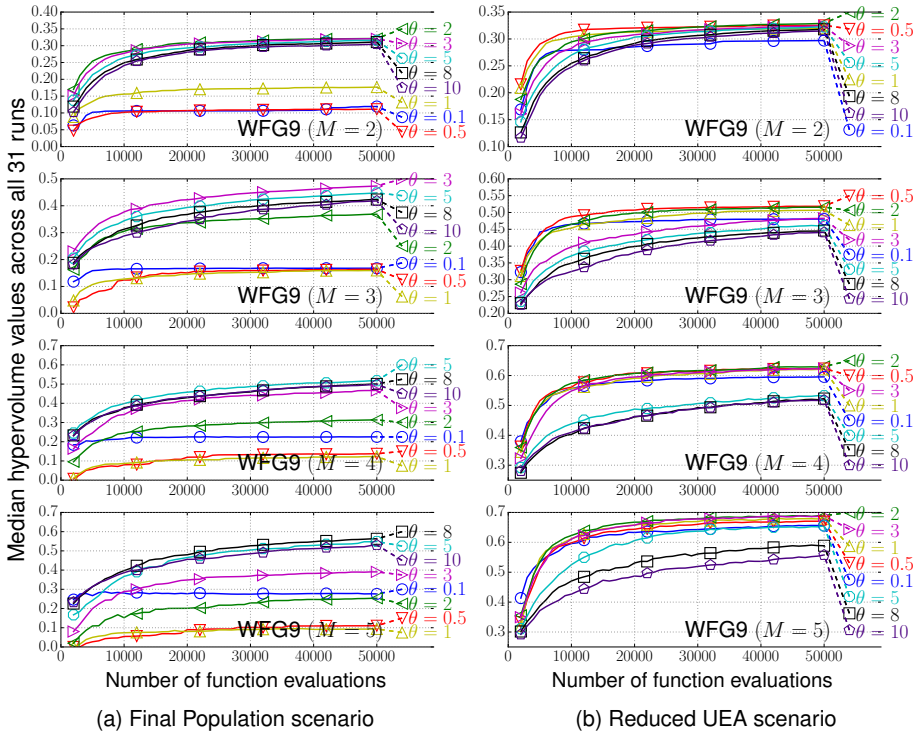


Figure S.39: Performance of MOEA/D using the PBI function g^{pbi} with various θ values on the WFG9 problem with $M \in \{2, 3, 4, 5\}$. The horizontal and vertical axes represent the number of function evaluations and the HV values, respectively.