

**Table 4. Summarized results of all activities for all smart homes. The results include the mean value of the dataset (mean), maximum value of the dataset (max), the 99th percentile (99th%), the selected upper threshold ( $u_{upper}$ ), percentage of data that remains after removing the outliers (%remain), number of outliers (#outliers), top-fitted distribution ( $top_1$ ), the SSE of the top-fitted distribution ( $SSE_1$ ), the SSE of the fitted Pareto distribution ( $SSE_p$ ), the p value of the t-test between the top-fitted distribution and the Pareto distribution (p value), and the estimated shape parameter ( $\alpha$ ).**

	Work	Wash Dishes	Personal Hygiene	Relax	Cook	Eat
<i>mean</i>	5.8	12.7	3.6	4.8	3.5	18.3
<i>max</i>	$7.0 \times 10^3$	$7.0 \times 10^3$	$1.5 \times 10^4$	$6.1 \times 10^3$	$6.1 \times 10^3$	$6.2 \times 10^3$
<i>99th%</i>	61.3	107.8	13.1	41.6	23.9	236.8
<i>u<sub>upper</sub></i>	100	125	18	31	30	45
<i>%remain</i>	99.5	99.3	88.3	98.8	99.5	92.3
<i># outliers</i>	734	456	2730	2193	1250	3315
<i>top<sub>1</sub></i>	burr	fatiguelife	fatiguelife	invgauss	levy	fatiguelife
<i>SSE<sub>1</sub></i>	$1.5 \times 10^{-2}$	$4.0 \times 10^{-3}$	$1.0 \times 10^{-1}$	$1.2 \times 10^{-2}$	$4.1 \times 10^{-2}$	$4.0 \times 10^{-3}$
<i>SSE<sub>p</sub></i>	$5.4 \times 10^{-2}$	$3.0 \times 10^{-2}$	$3.5 \times 10^{-1}$	$1.6 \times 10^{-1}$	$3.7 \times 10^{-1}$	$3.4 \times 10^{-2}$
<i>p value</i>	0.990	0.996	0.987	0.981	0.953	0.999
<i><math>\alpha</math></i>	1.02	0.76	2.17	1.18	1.29	0.86

**Table 5. Summarized results of all activities in Subgroup H. Rows are defined as in Table 4.**

	Work	Wash Dishes	Personal Hygiene	Relax	Cook	Eat
<i>mean</i>	12.2	14.9	3.4	1.2	5.5	22.6
<i>max</i>	$7.9 \times 10^3$	$6.1 \times 10^3$	$1.1 \times 10^4$	$7.0 \times 10^6$	$6.1 \times 10^3$	$6.2 \times 10^3$
<i>99th%</i>	148.4	107.9	19.1	148.4	30.4	262.3
<i>u<sub>upper</sub></i>	60	65	15	60	52	70
<i>%remain</i>	97.6	97.2	98.9	99.7	99.6	94.5
<i># outliers</i>	271	273	688	97	113	374
<i>top<sub>1</sub></i>	johnsonsb	nct	johnsonsb	johnsonsu	johnsonsu	fatiguelife
<i>SSE<sub>1</sub></i>	$2.0 \times 10^{-3}$	$2.6 \times 10^{-3}$	$4.6 \times 10^{-2}$	$6.6 \times 10^{-3}$	$1.4 \times 10^{-2}$	$9.5 \times 10^{-4}$
<i>SSE<sub>p</sub></i>	$4.6 \times 10^{-3}$	$5.0 \times 10^{-3}$	$7.3 \times 10^{-2}$	$1.1 \times 10^{-1}$	$7.2 \times 10^{-2}$	$2.4 \times 10^{-3}$
<i>p value</i>	0.976	0.863	0.931	0.977	0.989	0.977
<i><math>\alpha</math></i>	1.57	0.74	1.11	1.11	1.09	0.71

**Table 6. Summarized results of all activities in Subgroup NH. Rows are defined as in Table 4.**

	Work	Wash Dishes	Personal Hygiene	Relax	Cook	Eat
<i>mean</i>	5.6	16.2	4.3	4.3	4.8	28.6
<i>max</i>	$1.5 \times 10^3$	$3.0 \times 10^3$	$1.2 \times 10^4$	$1.2 \times 10^4$	$3.0 \times 10^3$	$3.2 \times 10^3$
<i>99th%</i>	74.2	117.4	13.4	13.4	24.7	381
<i>u<sub>upper</sub></i>	30	75	15	27	30	55
<i>%remain</i>	98.1	97.6	97.4	96.9	99.5	89.4
<i># outliers</i>	493	216	1542	632	161	536
<i>top<sub>1</sub></i>	burr	genextreme	weibull_min	mielke	johnsonsb	nct
<i>SSE<sub>1</sub></i>	$1.3 \times 10^{-2}$	$2.2 \times 10^{-3}$	$4.1 \times 10^{-2}$	$4.1 \times 10^{-3}$	$9.6 \times 10^{-3}$	$1.7 \times 10^{-3}$
<i>SSE<sub>p</sub></i>	$1.4 \times 10^{-1}$	$3.1 \times 10^{-3}$	$8.2 \times 10^{-2}$	$7.7 \times 10^{-2}$	$5.5 \times 10^{-2}$	$3.1 \times 10^{-3}$
<i>p value</i>	0.985	0.905	0.912	0.950	0.957	0.839
<i><math>\alpha</math></i>	1.18	0.66	1.26	0.92	1.14	0.78

**Table 7. Summarized results of upper thresholds for six ADLs in the complete dataset, Subgroup H, and Subgroup NH.**

	Work	Wash Dishes	Personal Hygiene	Relax	Cook	Eat
entire dataset	100	125	18	31	30	45
Subgroup H	60	65	15	60	52	70
Subgroup NH	30	75	15	27	30	55

**Table 8. Summarized results of the shape parameters for eight ADLs of the Pareto distribution in the complete dataset, Subgroup H, and Subgroup NH.**

	Work	Wash Dishes	Personal Hygiene	Relax	Cook	Eat
<i>entire dataset</i>	1.02	0.76	2.17	1.18	1.29	0.86
<i>Subgroup H</i>	1.57	0.74	1.11	1.11	1.09	0.71
<i>Subgroup NH</i>	1.18	0.66	1.26	0.92	1.14	0.78