

Human Enough to Be Kind

A Study Measuring Human Preferences for Robotic Acts of Kindness

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ABSTRACT

This study develops one of the first instruments to assess human preferences for concrete acts of kindness performed by social robots. In Phase 1 ($N = 101$; ~1,000 responses), participants completed digital forced-choice surveys in which they compared 65 robot-to-human kindness scenarios drawn from four categories—Emotional Support, Practical Help, Social Awareness, and Family & Child Support—or ranked actions within a single category. Phase 2 ($N = 918$; ~9,086 responses; U.S.-only) replicated all scenarios and added four extensions: (a) a human-to-human comparison condition for every action, (b) Likert ratings (1–7) of perceived kindness alongside preferences, (c) random assignment to one of four between-subject survey versions (Robot→Human Preference; Robot→Human Likert; Human→Human Preference; Human→Human Likert), and (d) gender demographics. Across phases, results show that choices are not statistically random; clear patterns emerge at both the category and scenario levels. Phase 2 reveals robust actor effects (robots vs. humans), category-level differences, and systematic convergences and divergences between perceived kindness and choice. Together, these findings refine how kindness is evaluated when enacted by robots versus humans and surface design targets for emotionally intelligent, user-centered robots.

Keywords: Human-robot interaction, kindness, prosocial behavior, robot design, user preferences

industrial and commercial roles, tens of millions are expected to become a fixture in everyday household life as technology matures and costs decline.

As this transformation unfolds, designing robots that can enact kindness will not only foster positive emotional connections but also ensure that these technologies support human well-being and societal cohesion. The way robots act toward humans—especially in moments requiring social awareness, empathy, and practical support—will play a critical role in shaping acceptance, trust, and the quality of human–robot relationships.

While much existing work focuses on robot capabilities [4,5], there is growing research on the actions people prefer from robots in everyday contexts. Kiesler and Forlizzi, along with DiSalvo and Gemperle [6], investigated how the physical design of robot heads influences perceived humanness. They showed that the presence and arrangement of features such as eyes, mouths, and eyelids account for a substantial proportion of how human-like a robot appears. Their findings underscore the importance of visual and morphological design in creating robots that people perceive as credible social partners and highlight the delicate balance between making robots appear human enough to support social interaction without crossing into discomfort or the uncanny valley.

Beyond physical appearance, Malle and Thapa Magar [2] explored the mental capacities people desire in robots, finding consistent preferences for agency-related skills such as logical reasoning and moral deliberation, paired with ambivalence toward emotional capabilities. Building on this work, Nääs, Thellman, and Ziemke [12] demonstrated that preferences for cognitive and emotional capabilities vary by role. For example, while participants generally valued high-agency capabilities—like planning and understanding goals—they expressed stronger desire for experience-related abilities (e.g., feeling happiness) in social companionship robots than in household cleaning robots. Qualitative analyses

1. INTRODUCTION

We are on the brink of a world where humanoid robots will be all around us—integrated into homes, workplaces, and public spaces. According to a recent report by Morgan Stanley Research, the number of humanoid robots is projected to reach nearly 1 billion globally by 2050, with rapid acceleration in adoption expected during the late 2030s and 2040s [1]. While most of these robots will initially be deployed in

further revealed that although many people preferred robots to function objectively and logically, some still wanted robots to recognize and respond to human emotions without actually experiencing them. These nuanced attitudes suggest that robot capabilities should be tailored to application domain and user expectation.

Haring et al. [7] further emphasized alignment: a robot's visual appearance strongly shapes people's initial perceptions and expectations about its behavior. Their comparison of an android, a humanoid, and a non-biomimetic robot showed that mismatches between how a robot looks and how it acts can trigger negative reactions and rejection. Effective design requires careful alignment of appearance, abilities, and intended use to enable intuitive interaction. In parallel, Wallach and Allen [8] argue that as robots assume more responsibility, they must be programmed with moral decision-making abilities for our safety.

Despite these advances, most research has focused on high-level capacity preferences [2,11] or isolated design features [6], rather than systematically

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cataloging specific, concrete prosocial acts robots can perform in everyday life. Our central questions are: **What types of “kind” acts do people prefer from robots—and when does actor identity (robot vs. human) change that preference? And does the perceived kindness rating (Likert) predict the probability that an action is preferred?** In **Phase 1**, we operationalized preference as a forced choice between two robot actions and documented patterned choices across categories and scenarios. **Phase 2** extends the instrument in three ways: it adds a **human-to-human** comparison for every scenario, collects Likert ratings of perceived kindness alongside preferences, and introduces random assignment and gender demographics within a U.S.-only sample to minimize cultural variance. This extension allows us to ask not just *what* people prefer, but *when* actor identity matters, *how* perceived kindness aligns with choice, and *where* category-level differences emerge.

2. METHOD

2.1 Participants

Phase 1. 101 crowd workers completed the study (self-reported gender: 50% female, 50% male; age not collected). One additional respondent exited early (99 % completion).

Phase 2. 918 participants were recruited from the United States only to control for cultural variation (self-reported gender: 50% female, 50% male). Age was collected only for participants completing the Likert-scale versions of the survey; no other demographics were collected. All procedures and content matched Phase 1 except where described below.

2.2 Design and Procedure

Both phases used the same 65 scenarios spanning four kindness categories: Emotional Support, Practical Help, Social Awareness, and Family & Child Support. Each trial displayed two concise scenario texts with an illustrative image; respondents clicked the action they preferred. A “Not sure” option permitted abstention.

Phase 1 surveys. Participants were randomly assigned to one of two 10-question, forced-choice surveys:

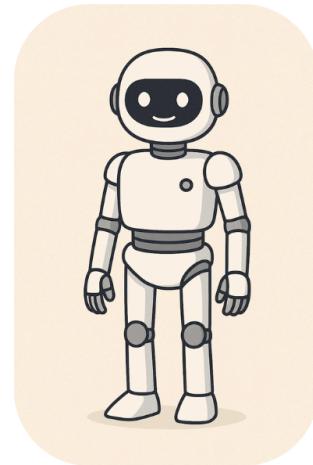
1. **Category-Comparison:** each item paired scenarios from two different categories.
2. **Within-Category Ranking:** each item paired two scenarios drawn from the *same* category, allowing fine-grained ranking of actions within that domain.

Phase 2 surveys. Participants were randomly assigned (between subjects) to **exactly one** of four versions:

1. **Robot→Human Preference** (forced choice over robot actions)
2. **Robot→Human Likert** (1–7 perceived-kindness ratings for robot actions)
3. **Human→Human Preference** (forced choice over human actions)

4. **Human→Human Likert** (1–7 perceived-kindness ratings for human actions)

This design balances exposure, avoids carryover, and enables direct tests of actor effects and preference-kindness alignment.



Robot Tested in Scenarios

2.3 Measures

- **Preference (forced choice).** For each scenario, **Choice %** is the proportion of times it was selected when paired (primary analyses exclude “Not sure”; robustness checks treat them as non-choices).
- **Perceived kindness (Likert).** Mean kindness rating per scenario on a 1–7 scale.
- **Category aggregates.** Scenario-level metrics aggregated by **Category × Actor**.
- **Demographics.** Gender (Phase 2 only).

2.4 Data-Quality Safeguards

Safeguard	Outcome
Randomized scenario order & left/right position	✓
Equalized pairing frequency	✓
Minimum dwell time ≥ 2 s	Mean = 11s (SD = 4.2 s)
Duplicate IP / bot screen check	None detected

3. RESULTS

Robot → Human Categorical Preferences

Kindness Category	Appeared (n)	Chosen (n)	Choice %	Pref. Score (/10)
1) Practical Help	1016	623	61.3%	6.1
2) Social Awareness	634	294	46.4%	4.6
3) Emotional Support	1211	555	45.8%	4.6
4) Family & Child Support	963	407	42.3%	4.3

Category effects (Robot→Human). Selection rates differed by category, $\chi^2(3, N = 3,824) = 85.77$, $p < .001$, Cramér's V = .15. Practical Help was chosen 61.3% of the time (623/1,016), clearly above a 50% chance level (binomial $p < .001$). Emotional Support (45.8%, 555/1,211) and Family & Child Support (42.3%, 407/963) were below 50% ($ps \leq .01$), and Social Awareness (46.4%, 294/634) was close to 50% ($p = .07$). Post-hoc pairwise tests (Holm-corrected) showed Practical Help was selected more often than Emotional Support, Social Awareness, and Family & Child Support (all $ps < .001$).

Human → Human Categorical Preferences

Kindness Category	Appeared (n)	Chosen (n)	Choice %	Pref. Score (/10)
1) Social Awareness	505	297	58.8%	5.9
2) Emotional Support	832	469	56.4%	5.6
3) Family & Child Support	665	281	42.3%	4.2
4) Practical Help	680	257	37.8%	3.8

Category effects (Human→Human). Selection rates differed by category, $\chi^2(3, N = 2,682) = 83.69$, $p < .001$, Cramér's V = .18. Social Awareness was chosen 58.8% of the time (297/505) and Emotional Support 56.4% (469/832), both above a 50% chance level ($ps < .001$). Family & Child Support 42.3% (281/665) and Practical Help 37.8% (257/680) were below 50% ($ps < .001$). Post-hoc pairwise tests (Holm-corrected) showed Social Awareness and Emotional Support were selected more often than Practical Help and Family & Child Support (all $ps < .001$); differences between Social Awareness and Emotional Support, and between Practical Help and Family & Child Support, were not reliable.

3.2 Category-Level Patterns and Actor Effects

- In **Robot→Human Preference**, Practical Help leads (e.g., *carry groceries, rake leaves, take out trash*).
- In **Human→Human Preference**, Emotional Support and Social Awareness rise, with Family & Child Support comparatively balanced.

Representative robot-strong scenarios (high Preference):

- *Helps elderly person carry groceries* — 83.6% (N = 67)
- *Rakes leaves for neighbor who can't* — 83.0% (N = 100)
- *Takes out full trash without being asked* — 82.4% (N = 108)
- *Helps someone who is lost by giving directions* — 81.1% (N = 106)
- *Helps elderly woman load item into car* — 81.7% (N = 71)

Representative human-strong scenarios (high Preference):

- *Stays to help a sick friend* — 82.1% (N = 78)
- *Offers hand to help an elderly person* — 82.4% (N = 68)
- *Helps elderly neighbor carry groceries* — 81.9% (N = 72)
- *Holds umbrella in rain* — 76.3% (N = 97)
- *Comforts someone in distress* — 74.1% (N = 112)

These patterns align with the intuition that instrumental, low-ambiguity assistance is readily accepted from robots, whereas affect-heavy or socially interpretive moments are more human-preferred.

3.3 Perceived Kindness vs. Preference

Perceived kindness generally tracks preference but not perfectly, revealing design-relevant divergences.

Convergences (high Likert, high Preference).

- **Robot:** *Rakes leaves for neighbor who can't* (Likert ≈ 6.22; Pref = 83.0%); *Helps fix flat tire* (Likert ≈ 6.27; Pref = 73.2 %).
- **Human:** *Comforts someone in distress* (Likert ≈ 6.58; Pref = 74.1%); *Holds umbrella* (Likert ≈ 6.62; Pref = 76.3%).

Divergences (high Likert, lower Preference).

- **Robot:** *Quietly sits and holds hand of a sad person* (Likert ≈ 6.00; Pref = 37.1%); *Leaves motivational note* (Likert ≈ 5.88; Pref = 34.4%).

These are acts people recognize as kind yet hesitate to prefer from a robot—especially where touch, intimacy, or implicit social reading is required.

Divergences (higher Preference, moderate Likert).

- **Robot:** *Takes out trash* (Pref = 82.4%; Likert ≈ 5.21); *Finds lost keys* (Pref = 66.4%; Likert ≈ 5.95).
Here, utility appears to outweigh warmth ratings.

3.4 Within-Category Highlights

- **Practical Help (Robot-leaning).** Strong preferences for carrying/lifting, finding objects, outdoor chores; mixed for micro-tidying (e.g., *straighten couch cushions* 51.1%).
- **Emotional Support (Human-leaning).** Touch/soothing actions rate highly kind for humans (e.g., *comfort in distress* Likert \approx 6.58) while robots are rated kind but less preferred (*hold hand* Likert \approx 6.00; Pref = 37.1%).
- **Social Awareness.** Directional help and inclusive gestures favor humans; simple signaling (e.g., *hold elevator door* Robot Likert \approx 5.64; Human Pref = 63.2%) is more actor-neutral.
- **Family & Child Support.** Mixed: **safety-adjacent** tasks (*fasten bike helmet, math help*) are broadly accepted; **intimacy-coded** grooming (*braiding hair*) favors humans.

3.5 Gender Exploratory Analyses

Gender (Likert ratings only). Mean kindness ratings clustered tightly across genders (\approx 5.4–5.8 on a 1–7 scale). For robot scenarios, males rated actions slightly higher than females (5.56 vs. 5.38). For human scenarios, females were slightly higher than males (5.63 vs. 5.55), and the non-binary group showed the highest mean (5.80) but likely with a small N; “prefer not to say” had no usable data. These differences are modest and should be interpreted descriptively rather than as inferentially significant.

Age (Likert ratings only). For robot scenarios, younger adults (18–24 = 5.66; 25–34 = 5.69) rated actions slightly kinder than midlife respondents (45–54 = 5.13), with a rebound among 55+ (5.55). For human scenarios, means were relatively flat from 18–44 (5.58–5.64), dipped at 45–54 (5.37), and peaked in 55+ (5.75). Again, effects are small ($\leq \sim 0.6$ Likert points) and reported as descriptive patterns.

Note: Demographics were collected only in the Phase-2 Likert modules; we did not analyze demographic differences for forced-choice preference.

For a confirmatory analysis, future work should model Likert \sim Actor \times (Gender + Age) with random effects for scenario and participant, and report effect sizes with multiple-comparison control.

3.6 Cross-Phase Comparison

Phase 2 replicates the central Phase-1 result: preferences are structured, not random. With greater power, Phase 2 clarifies that robots are strongest in Practical Help, whereas humans are favored in Emotional Support and Social Awareness. Phase 2 also introduces the preference–kindness alignment tests: some actions rated kind for robots are not preferred from robots (touch/intimacy), while some moderately rated actions are strongly preferred (high-utility tasks). These patterns were not measurable in Phase 1.

4. DISCUSSION

Across two phases, participants gravitate toward instrumental assistance from robots—actions with clear goals, low ambiguity, and obvious utility (carrying, fetching, clearing, finding). By contrast, affective or interpretive moments (comforting touch, inclusion decisions, subtle etiquette) remain human-preferred, even when the same actions are rated “kind” in the abstract. This actor asymmetry suggests that the hurdle for robots is not *recognizing* kindness but performing it in contexts saturated with social nuance.

Design implications.

1. Lean into high-utility helps. Retrieval, carrying, outdoor chores, object-finding, and simple environmental adjustments are reliable wins.
2. Consent-first social touch. When touch or intimacy is implicated, default to offer/consent patterns (“Would you like me to...?”) or handoff to a human caregiver.
3. Make kindness legible. Pair ambiguous acts with brief explanatory cues (“I noticed your hands were full, so I held the door”).
4. Actor-aware policies. Treat some actions as robot-primary, others human-primary, and some shared with consent gating and

context checks.

Preference vs. perception. Where people rate an act as kind but do not prefer it from a robot (e.g., hand-holding, motivational notes), the barrier appears relational, not moral. Users are not rejecting kindness per se; they are calibrating *who* should deliver it.

Generalizability and limits. Phase 2's U.S.-only sampling improves internal coherence at the cost of cross-cultural reach; future phases should vary culture explicitly. Gender analyses are preliminary and warrant larger, balanced samples. Finally, stated preferences may diverge from behavior; in-situ HRI studies are needed to test whether these patterns translate to action and long-term engagement.

5. FUTURE WORK

The results suggest that kindness preferences can inform product performance metrics across the user lifecycle. For adoption, emphasize high-value tasks such as grocery assistance or trash removal to reduce friction and signal immediate utility. For daily engagement, frequent micro-interactions (e.g., reminders, environmental adjustments) can anchor consistent use. For retention, recurring, predictable helps build trust and habit. Warm, supportive gestures (e.g., reacting to good news) may improve sentiment when framed with clear intent. Finally, clustering around eldercare, household logistics, and emotional support indicates viable paths for capability expansion. Future work should incorporate cross-cultural samples, richer demographics, and field deployments that measure behavior in context, not just stated preference.

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Tables & Figures

Appendix A. Full Scenario Catalog (Phase 2)

A1. Robot Scenario Preferences (65 items)
Columns: Rank, Scenario Description, Appeared (n), Chosen (n), Choice %
Description: Full robot→human forced-choice results for all scenarios, ordered by Choice % (ties broken by Appeared (n)).

A2. Robot Scenario Kindness Ratings (65 items)
Columns: Rank, Scenario Description, Avg Likert, N
Description: Full robot scenario Likert means (1–7) with per-item Ns, ordered by Avg Likert.

A3. Human Scenario Preferences (65 items)
Columns: Rank, Scenario Description, Appeared (n), Chosen (n), Choice %
Description: Full human→human forced-choice results for all scenarios, ordered by Choice % (ties broken by Appeared (n)).

A4. Human Scenario Kindness Ratings (65 items) ← renamed from “Robot Scenario Kindness Ratings”
Columns: Rank, Scenario Description, Avg Likert, N
Description: Full human scenario Likert means (1–7) with per-item Ns, ordered by Avg Likert.

Appendix B. Supplemental Figures

B1. Robot Scenario Cards — ordered by Preference %
Thumbnail cards for robot scenarios, displayed from highest to lowest Choice %.

B2. Robot Scenario Cards — ordered by Kindness (Avg Likert)
Thumbnail cards for robot scenarios, displayed from highest to lowest Avg Likert.

B3. Human Scenario Cards — ordered by Preference %
Thumbnail cards for human scenarios, displayed from highest to lowest Choice %.

B4. Human Scenario Cards — ordered by Kindness (Avg Likert)
Thumbnail cards for human scenarios, displayed from highest to lowest Avg Likert.

B5. Gender Likert Differences (Robot vs. Human)
Two small bar charts (Robot; Human) showing mean Likert by gender. (*Replace “Vs.” placeholders with these charts.*)

B6. Age Likert Differences (Robot vs. Human)
Two small bar charts (Robot; Human) showing mean Likert by age group. (*Replace “Vs.” placeholders with these charts.*)

Appendix C. Survey Flows

C1. Phase-1 Survey Flow
Diagram of the Phase-1 pipeline and data-quality safeguards.

C2. Phase-2 Survey Flow
Diagram of the Phase-2 pipeline (four-version random assignment; U.S.-only sampling; Likert demographics).

Appendix A.

A1. Robot Scenario Preferences

Rank	Scenario Description	Appeared	Chosen	Choice %
1	Robot helps elderly person carry groceries	67	56	83.60%
2	Robot rakes leaves for neighbor who can't	100	83	83.00%
3	Robot takes out full trash without being asked	108	89	82.40%
4	Robot helps elderly woman load item into her car	71	58	81.70%
5	Robot helps someone who is lost by giving directions	106	86	81.10%
6	Robot helps person carry grocery bags	190	142	74.70%
7	Robot reminds person to take meds and confirms it's done	134	100	74.60%
8	Robot helps human fix flat tire with tools or instructions	56	41	73.20%
9	Robot offers hand to help elderly woman	171	122	71.30%
10	Robot reminds human to take their medication	147	101	68.70%
11	Robot helps pick up litter in neighborhood	110	75	68.20%
12	Robot carries umbrella over person in rain	194	131	67.50%
13	Robot finds lost keys while human is searching	137	91	66.40%
14	Robot prepares a bowl of cereal for a child in the morning	82	54	65.90%
15	Robot puts bike helmet on child before ride	74	48	64.90%
16	Robot patiently explains tough math problem to a child	108	70	64.80%
17	Robot places juice on nightstand for sick person	100	64	64.00%
18	Robot brushes snow off car	142	87	61.30%
19	Robot puts away toys after playtime	121	74	61.20%
20	Robot offers bandage to girl with small injury	99	58	58.60%
21	Robot replaces a burned-out lightbulb	60	35	58.30%
22	Robot organizes closet	125	72	57.60%
23	Robot wipes up spilled drink on counter	75	42	56.00%
24	Robot pours drinks for a group at celebration	83	46	55.40%
25	Robot offers warm towel to wet person coming in from rain	106	58	54.70%
26	Robot offers phone charger when battery is low	182	97	53.30%
27	Robot gives scarf to someone going out in cold	136	71	52.20%
28	Robot gives guests their coats as they leave party	100	52	52.00%
29	Robot holds elevator door for person rushing in	86	44	51.20%
30	Robot straightens couch cushions in living room	92	47	51.10%
31	Robot offers tissue to someone who is sick	250	127	50.80%
32	Robot waters flowers	157	78	49.70%

33	Robot notices empty bottle and refills it	113	54	47.80%
34	Robot leaps to catch balloon for girl	110	52	47.30%
35	Robot puts cold pack on child's scraped knee	89	42	47.20%
36	Robot reminds host to ask dietary needs and label food	83	38	45.80%
37	Robot opens window when room gets stuffy during gathering	149	67	45.00%
38	Robot reads a picture book to a child at bedtime	134	57	42.50%
39	Robot opens trash can for human	134	56	41.80%
40	Robot turns off lights for person in bed	186	77	41.40%
41	Robot sharpens pencil for girl about to do art	83	34	41.00%
42	Robot comforts human in time of distress	187	76	40.60%
43	Robot offers glasses to person struggling to read	164	66	40.20%
44	Robot moves chair to make space for person with boxes	80	32	40.00%
45	Robot pulls down shades to block sunlight	217	86	39.60%
46	Robot quietly sits and holds hand of sad person	167	62	37.10%
47	Robot braids child's hair in the morning	106	39	36.80%
48	Robot reacts happily to user sharing good news	142	52	36.60%
49	Robot offers napkin to child with spill on shirt	102	36	35.30%
50	Robot hands a plush toy to comfort someone	98	34	34.70%
51	Robot leaves motivational note for person	195	67	34.40%
52	Robot says "you're welcome" after human thanks it	73	25	34.20%
53	Robot tosses ball with human	119	40	33.60%
54	Robot brushes lint off suit	119	39	32.80%
55	Robot helps tie a tie	176	57	32.40%
56	Robot draws smiley face on foggy window for someone	130	38	29.20%
57	Robot invites someone to join a group	109	30	27.50%
58	Robot high fives kid after basketball shot	100	27	27.00%
59	Robot offers napkin to someone at a table	90	21	23.30%
60	Robot zips up a student's backpack	79	18	22.80%
61	Robot leaves anonymous compliment note for someone to find	144	31	21.50%
62	Robot gives paper airplane to bored kid	96	20	20.80%
63	Robot smiles or waves to stranger across the street	77	16	20.80%
64	Robot puts child's drawing on fridge while kid watches	70	13	18.60%
65	Robot leaves nice note on car windshield	98	12	12.20%

A2. Robot Scenario Kindness Ratings

Rank	Scenario Description	Avg Likert	N
1	Robot helps pick up litter in neighborhood	6.43	14
2	Robot helps human fix flat tire with tools or instructions	6.27	22
3	Robot rakes leaves for neighbor who can't	6.22	27
4	Robot carries umbrella over person in rain	6.14	28
5	Robot quietly sits and holds hand of sad person	6.00	24
6	Robot puts cold pack on child's scraped knee	6.00	23
7	Robot invites someone to join a group	5.98	48
8	Robot puts bike helmet on child before ride	5.96	28
9	Robot finds lost keys while human is searching	5.95	19
10	Robot comforts human in time of distress	5.93	29
11	Robot leaves motivational note for person	5.92	26
12	Robot offers warm towel to wet person coming in from rain	5.92	24
13	Robot patiently explains tough math problem to a child	5.91	35
14	Robot places juice on nightstand for sick person	5.89	28
15	Robot offers hand to help elderly woman	5.88	24
16	Robot helps elderly person carry groceries	5.88	17
17	Robot gives scarf to someone going out in cold	5.79	34
18	Robot helps person carry grocery bags	5.76	25
19	Robot helps elderly woman load item into her car	5.76	21
20	Robot offers napkin to child with spill on shirt	5.74	23
21	Robot helps someone who is lost by giving directions	5.73	41
22	Robot offers tissue to someone who is sick	5.68	34
23	Robot turns off lights for person in bed	5.67	18
24	Robot holds elevator door for person rushing in	5.64	47
25	Robot hands a plush toy to comfort someone	5.61	33
26	Robot offers bandage to girl with small injury	5.58	19
27	Robot moves chair to make space for person with boxes	5.56	16
28	Robot high fives kid after basketball shot	5.55	29
29	Robot prepares a bowl of cereal for a child in the morning	5.52	23
30	Robot leaves anonymous compliment note for someone to find	5.51	37
31	Robot sharpens pencil for girl about to do art	5.50	20
32	Robot helps tie a tie	5.45	22
33	Robot brushes snow off car	5.44	16

34	Robot reminds human to take their medication	5.42	26
35	Robot gives paper airplane to bored kid	5.42	24
36	Robot reacts happily to user sharing good news	5.39	38
37	Robot reminds person to take meds and confirms it's done	5.37	19
38	Robot reads a picture book to a child at bedtime	5.36	22
39	Robot draws smiley face on foggy window for someone	5.33	30
40	Robot braids child's hair in the morning	5.32	22
41	Robot opens trash can for human	5.32	22
42	Robot notices empty bottle and refills it	5.31	13
43	Robot puts child's drawing on fridge while kid watches	5.30	20
44	Robot offers phone charger when battery is low	5.28	29
45	Robot offers napkin to someone at a table	5.24	21
46	Robot wipes up spilled drink on counter	5.21	24
47	Robot takes out full trash without being asked	5.21	14
48	Robot smiles or waves to stranger across the street	5.20	46
49	Robot leaps to catch balloon for girl	5.19	21
50	Robot gives guests their coats as they leave party	5.18	33
51	Robot opens window when room gets stuffy during gathering	5.14	21
52	Robot tosses ball with human	5.13	15
53	Robot pours drinks for a group at celebration	5.10	52
54	Robot leaves nice note on car windshield	5.09	35
55	Robot puts away toys after playtime	5.05	22
56	Robot pulls down shades to block sunlight	5.05	20
57	Robot replaces a burned-out lightbulb	5.04	24
58	Robot offers glasses to person struggling to read	5.04	23
59	Robot waters flowers	4.96	24
60	Robot straightens couch cushions in living room	4.79	19
61	Robot brushes lint off suit	4.67	42
62	Robot says "you're welcome" after human thanks it	4.67	18
63	Robot organizes closet	4.63	24
64	Robot reminds host to ask dietary needs and label food	4.56	34
65	Robot zips up a student's backpack	4.44	18

A3. Human Scenario Preferences

Rank	Scenario Description	Appeared	Chosen	Choice %
1	Person offers hand to help an elderly person	68	56	82.40%
2	Person stays to help a sick friend	78	64	82.10%
3	Person helps elderly neighbour carry groceries	72	59	81.90%
4	Person helps locate lost keys	123	94	76.40%
5	Person holds umbrella over someone in the rain	97	74	76.30%
6	Person offers an ice pack for an injury	96	73	76.00%
7	Person comforts someone in distress	112	83	74.10%
8	Person takes out trash without being asked	68	50	73.50%
9	Person invites someone to join the group	55	38	69.10%
10	Person catches a balloon for a child	61	40	65.60%
11	Person hands jacket to a friend feeling cold	95	62	65.30%
12	Person picks up trash off roadside	77	50	64.90%
13	Person helps child with math homework	62	40	64.50%
14	Person holds elevator door open	117	74	63.20%
15	Person holds hands to provide comfort	137	86	62.80%
16	Person clears snow off a car	64	40	62.50%
17	Person offers towel to someone soaked by rain	97	60	61.90%
18	Person gives directions to someone who is lost	73	43	58.90%
19	Person cleans up a spill	158	92	58.20%
20	Person offers a scarf to keep someone warm	92	50	54.30%
21	Person rakes leaves in the yard	70	38	54.30%
22	Person pulls down shades to reduce glare	46	25	54.30%
23	Person celebrates a friend's good news	117	62	53.00%
24	Person opens car door for another person	164	86	52.40%
25	Person picks up trash off the road	56	29	51.80%
26	Person helps someone with reading glasses	62	32	51.60%
27	Person helps child fasten bike helmet	70	36	51.40%
28	Person reads a bedtime story	78	40	51.30%
29	Person offers napkin to clean stain on shirt	69	34	49.30%
30	Person reminds a friend to take medication	122	60	49.20%
31	Person applies band-aid to a child's scraped knee	57	28	49.10%
32	Person waters flowers	58	28	48.30%

33	Person says "you're welcome" after being thanked	66	31	47.00%
34	Person offers a phone charging cord	143	67	46.90%
35	Person pours drinks for a group	62	29	46.80%
36	Person folds a paper airplane with a child	75	35	46.70%
37	Person plays catch with a ball	50	23	46.00%
38	Person replaces a burnt-out light bulb	69	31	44.90%
39	Person turns off light for someone already in bed	112	49	43.80%
40	Person hangs child's artwork on the fridge	81	35	43.20%
41	Person helps tie a tie	56	24	42.90%
42	Person offers tissue to someone who is sick	96	41	42.70%
43	Person helps sort and organise a closet	143	60	42.00%
44	Person gives a teddy bear for comfort	74	31	41.90%
45	Person moves a chair out of the way	162	66	40.70%
46	Person checks food allergies and labels dishes	57	23	40.40%
47	Person zips a child's coat	55	22	40.00%
48	Person cleans up toys	60	23	38.30%
49	Person waves to a stranger across the street	71	26	36.60%
50	Person refills someone's water bottle	132	47	35.60%
51	Person celebrates team win with high-five	68	23	33.80%
52	Person leaves kind note on car windshield	147	49	33.30%
53	Person leaves a motivational note	114	38	33.30%
54	Person sharpens pencil for classmate	61	20	32.80%
55	Person hands groceries to someone	114	37	32.50%
56	Person hides a compliment note in a drawer for someone to find	133	42	31.60%
57	Person offers napkin during meal	52	16	30.80%
58	Person holds trash can open for a friend	115	35	30.40%
59	Person opens window for fresh air	66	19	28.80%
60	Person braids a child's hair	72	19	26.40%
61	Person zips a child's backpack	56	14	25.00%
62	Person draws a smiley face on a foggy window to cheer someone up	78	19	24.40%
63	Person prepares cereal breakfast	54	13	24.10%
64	Person straightens couch cushions	133	27	20.30%
65	Person brushes lint off a suit	12	2	18.20%

A4. Human Scenario Kindness Ratings

Rank	Scenario Description	Avg Likert	N
1	Person offers hand to help an elderly person	6.65	31
2	Person stays to help a sick friend	6.65	37
3	Person holds umbrella over someone in the rain	6.62	39
4	Person applies band-aid to a child's scraped knee	6.59	22
5	Person comforts someone in distress	6.58	26
6	Person picks up trash off the road	6.43	21
7	Person helps elderly neighbour carry groceries	6.40	40
8	Person offers a scarf to keep someone warm	6.31	42
9	Person gives a teddy bear for comfort	6.24	21
10	Person offers towel to someone soaked by rain	6.23	31
11	Person celebrates a friend's good news	6.16	37
12	Person gives directions to someone who is lost	6.11	36
13	Person picks up trash off roadside	6.06	34
14	Person hands jacket to a friend feeling cold	6.05	19
15	Person offers an ice pack for an injury	5.94	32
16	Person hides a compliment note in a drawer for someone to find	5.94	34
17	Person holds hands to provide comfort	5.93	30
18	Person offers napkin to clean stain on shirt	5.92	12
19	Person invites someone to join the group	5.89	35
20	Person catches a balloon for a child	5.88	24
21	Person leaves a motivational note	5.86	37
22	Person helps locate lost keys	5.86	14
23	Person pulls down shades to reduce glare	5.85	13
24	Person helps child fasten bike helmet	5.85	20
25	Person helps tie a tie	5.81	16
26	Person cleans up a spill	5.80	25
27	Person helps child with math homework	5.68	22
28	Person sharpens pencil for classmate	5.68	19
29	Person reminds a friend to take medication	5.63	43
30	Person reads a bedtime story	5.60	25
31	Person offers tissue to someone who is sick	5.58	45
32	Person moves a chair out of the way	5.55	22
33	Person takes out trash without being asked	5.52	25
34	Person offers a phone charging cord	5.50	18

35	Person braids a child's hair	5.48	21
36	Person refills someone's water bottle	5.48	21
37	Person helps someone with reading glasses	5.47	15
38	Person holds trash can open for a friend	5.43	14
39	Person checks food allergies and labels dishes	5.38	39
40	Person zips a child's coat	5.37	27
41	Person offers napkin during meal	5.35	20
42	Person leaves kind note on car windshield	5.33	30
43	Person holds elevator door open	5.32	22
44	Person helps sort and organise a closet	5.31	13
45	Person clears snow off a car	5.24	21
46	Person draws a smiley face on a foggy window to cheer someone up	5.22	37
47	Person opens car door for another person	5.16	19
48	Person hangs child's artwork on the fridge	5.13	31
49	Person pours drinks for a group	5.07	14
50	Person hands groceries to someone	4.94	18
51	Person celebrates team win with high-five	4.94	31
52	Person brushes lint off a suit	4.92	12
53	Person says "you're welcome" after being thanked	4.86	44
54	Person replaces a burnt-out light bulb	4.85	13
55	Person zips a child's backpack	4.83	23
56	Person waters flowers	4.83	12
57	Person prepares cereal breakfast	4.82	22
58	Person folds a paper airplane with a child	4.81	26
59	Person waves to a stranger across the street	4.78	41
60	Person rakes leaves in the yard	4.72	18
61	Person plays catch with a ball	4.67	30
62	Person cleans up toys	4.56	18
63	Person turns off light for someone already in bed	4.53	17
64	Person straightens couch cushions	4.09	23
65	Person opens window for fresh air	4.00	21

Appendix B.

B1. Robot Scenario Cards — ordered by ranked Preference %



B2. Robot Scenario Cards — ordered by ranked Kindness



B3. Human Scenario Cards — ordered by ranked Preference

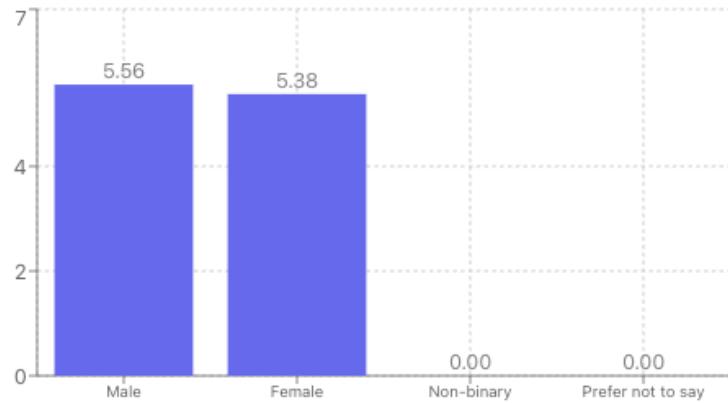


B4. Human Scenario Cards — ordered by ranked Kindness

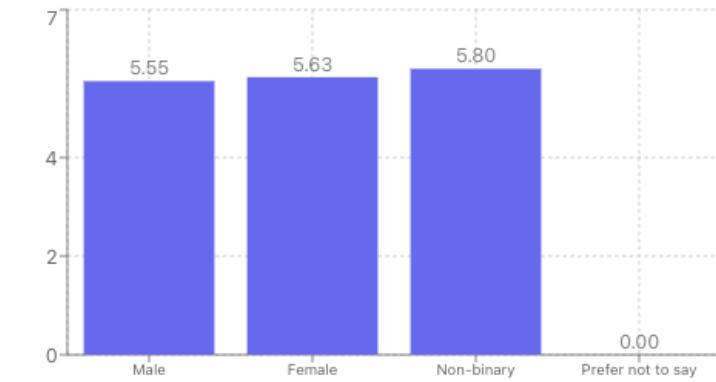


B5. Gender Likert Differences

Average Likert by Gender (Robot)



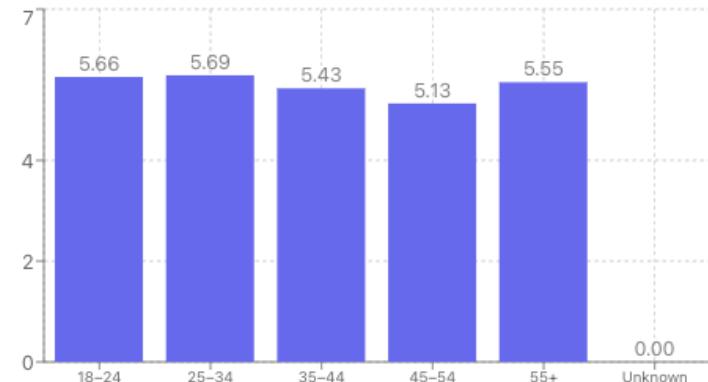
Average Likert by Gender (Human)



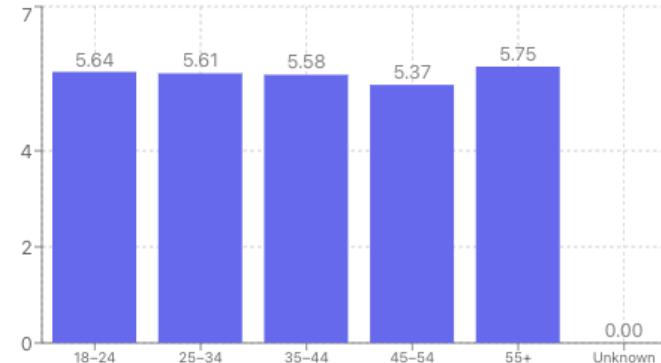
vs.

B6. Age Likert Differences

Average Likert by Age Group (Robot)



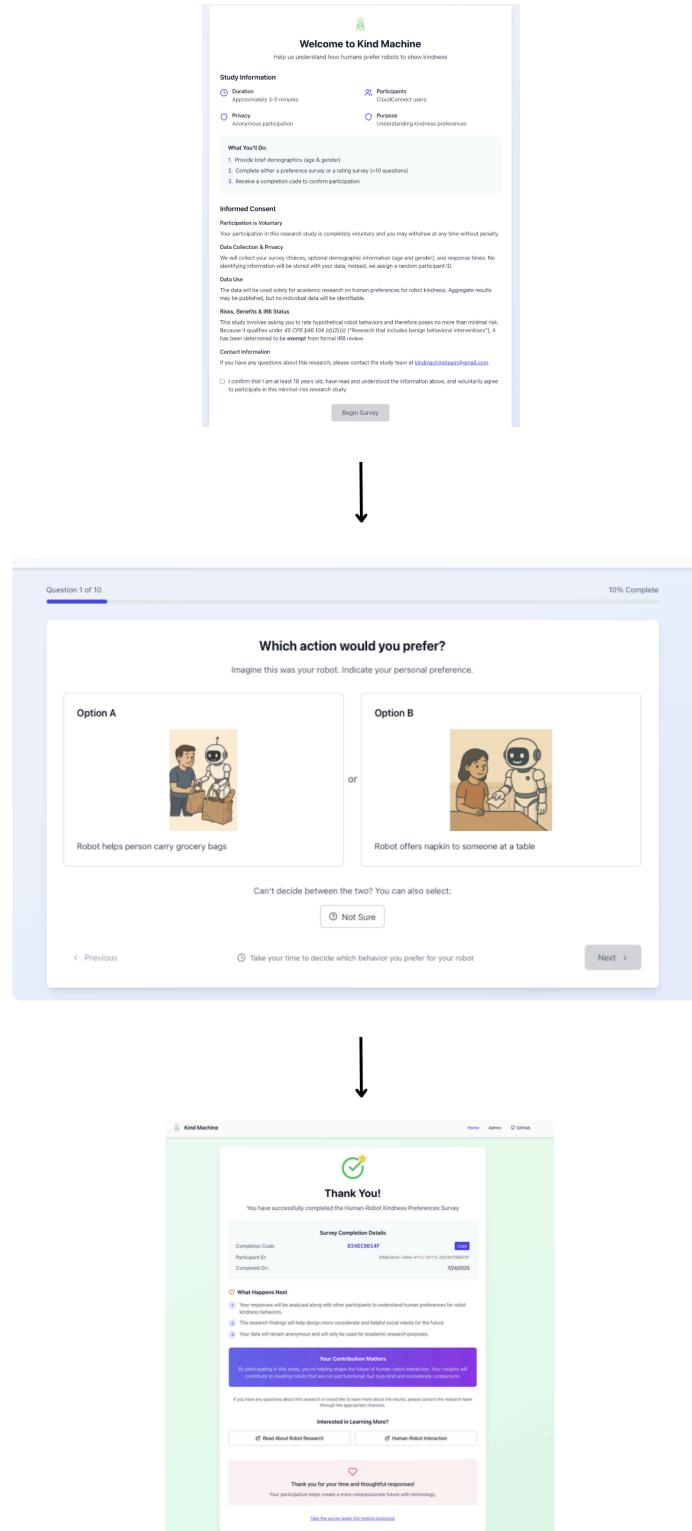
Average Likert by Age Group (Human)



vs.

Appendix C.

C1. Phase-1 Survey Flow



C2. Phase-2 Survey Flow

