RAINFLOWER RESEARCH PAPER PROPOSAL

# The Price of a Jar: What Households Near One Market Pay for Drinking Water

*Water for Sale: Price and Distance Near One Local Market's Drinking-Water Shops*

> Among households living within a 10-minute walk of [a named local market], how much do they pay per litre for their main drinking water source, and how does this price vary by source type and by distance from the market?

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|---|---|---|
| **1–4 students**<br>TEAM | **~90**<br>HOURS EACH | **13**<br>WEEKS |
| **5,000 raindrops ($10)**<br>REWARD PER STUDENT | **BDT 6,000**<br>EXPENSE BUDGET | **1,800–3,000 words**<br>PAPER LENGTH |

This proposal has students survey and interview households within a 10-minute walk of one named local market to find out how much they pay per litre for drinking water and how price relates to distance from the market and source type. The team runs a 40-response household survey, 6-8 role-based interviews, and geo-tagged photography of shops, tube wells and carts, then analyzes price-per-litre patterns by distance band. The project produces a locally useful paper on water affordability and access near a single market.

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## 01 Summary

Near most markets (বাজার) in Bangladesh, households buy drinking water in many ways: a jar water shop, a vendor's handcart, a tube well, a WASA tap, or water boiled at home. Prices and habits differ from house to house, even on the same lane. This project studies one named market and the households within a 10-minute walk of it. The team will run a short survey asking what people drink, how much they pay, how far they are from the market, and why they chose that source. They will interview jar water sellers, tube-well owners, WASA customers, and other role-holders, and they will photograph shops, price boards, containers and delivery carts. At the end, the student will be able to say, with real numbers from their own market: who pays the most per litre for drinking water near this market, and what explains the difference.

## 02 Why this matters

Walk past almost any market in a Bangladeshi town and you will see at least one jar water shop, a tube well, maybe a small WASA line, and a handcart delivering plastic jars. Families living near that market do not all pay the same price for the water they drink. A household two minutes from the market might fetch free tube-well water in a bucket. A household ten minutes away, behind a row of shops with no tube well,

might pay a vendor every other day. Some families filter or boil their own water and pay almost nothing in cash but spend time and gas. Others trust jar water because the bottle is sealed, and pay a price that eats into a tight weekly budget.

This is not a story found in a national report. It is a story found on one lane, one market, one afternoon. Students who do this project will be able to answer a question their own neighbours ask out loud: "Why do I pay more for water than the house next door?" The answer usually involves distance, trust, convenience and habit, not just income. By measuring it carefully near one market, the student produces something a local shopkeeper, a union parishad member, or even a concerned parent could actually use.

## 03 Background

- Many urban and semi-urban households in Bangladesh buy drinking water from jar water shops or vendors in addition to, or instead of, tube wells and piped water — general descriptions exist in WASH (water, sanitation and hygiene) sector reports [verify].
- Jar water (usually 19-20 litre bottles) is sold both as branded "purified" water and as unbranded, locally filled water; quality and price can vary a great deal between sellers — industry or consumer-protection reports [verify].
- Tube wells (নলকূপ) remain a major free or low-cost source of drinking water in many neighbourhoods, but not every household lives close enough to one to use it conveniently — DPHE (Department of Public Health Engineering) field reports [verify].
- Distance to a water source is known in WASH literature to affect how much water a household collects and how often, and who in the household does the fetching — WHO/UNICEF JMP (Joint Monitoring Programme) background notes [verify].
- Household water costs can be a notable share of a low-income family's weekly spending, though the exact share depends heavily on the local market and source mix — BBS (Bangladesh Bureau of Statistics) household expenditure survey reports [verify].
- Trust in water quality (clear versus cloudy, taste, smell, brand reputation) often shapes which source a family chooses, sometimes more than price alone — public health and consumer behaviour studies [verify].
- Water vendors and small shop owners often set prices informally, based on distance delivered, container size, or competition from nearby shops, rather than a single fixed city rate — local market studies are rare; this is exactly the kind of fieldwork this project can contribute [verify].
- Seasonal changes (for example, more demand in hot months, or supply problems after heavy rain) can shift prices temporarily; students should note the season of data collection rather than assume prices are constant all year — general WASH seasonal reports [verify].

## 04 Research question and hypothesis

**Primary question:** Among households living within a 10-minute walk of [a named local market], how much do they pay per litre for their main drinking water source, and how does this price vary by source type and by distance from the market?

**Secondary questions:**

1. What reasons do households near this market give for choosing their main drinking water source (price, distance, taste, trust, convenience)?
2. How does the price charged by jar water shops and vendors near this market vary with container size and with how far they deliver?

**Hypothesis:** Households farther from the market, with fewer nearby free sources (such as a shared tube well), rely more on purchased jar water or vendor delivery and pay a higher price per litre than households close to the market who can use a free or low-cost source nearby.

**What a null result would look like:** If price per litre turns out to be roughly similar across distance bands and source types near this market, that is also an interesting and useful finding — it would suggest that something other than distance (for example, habit, trust or a fixed local price norm) mainly decides what people pay. The student should report whichever pattern the data actually show, not force a result to match the hypothesis.

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## 05 Who should do this

**Team size:** 1 to 4 students works well. A team of 2-3 is ideal because the project needs a household survey, several interviews, and careful price-and-distance photography, which is a lot for one person to do safely and well in 13 weeks.

**Regional fit:**

- **Dhaka:** Markets often have several competing jar water shops and a mix of WASA and vendor supply; distance effects may be about convenience and traffic more than lack of free sources.
- **Chittagong:** Markets near hill or port areas may show tube wells at the edges versus WASA and jar water closer to the centre.
- **Noakhali:** In some markets, coastal salinity makes tube-well water unusable for drinking, so jar water and vendor delivery may dominate even very close to the market — a strong contrast worth documenting.
- **Sylhet:** Iron in tube-well water near some markets may push households toward jar water despite having a "free" source nearby; this is a useful nuance to capture in the "why" questions.

**Role split for a team of 3-4:**

- **Survey lead:** builds and manages the AKTI Survey, tracks response numbers, checks for duplicate or rushed answers.
- **Interview lead:** arranges and records the video interviews, manages consent forms.
- **Photo and map lead:** takes geo-tagged photos, sketches a simple map of the market and the 10-minute-walk area, marks distances.
- **Data lead:** keeps the field diary, enters prices and distances into a spreadsheet, builds charts in the analysis stage.

**One student alone:** A single student can do this by working in short weekly sessions — for example, two hours surveying households on one lane, one hour on an interview, 30 minutes on photos — spread across the 13 weeks rather than trying to do it all in one visit. The scope stays the same; only the pace slows down.

## 06 Evidence plan

| Evidence type | What it shows for this question | How much is enough | Why it fits |
|---|---|---|---|
| AKTI Survey (households) | Price paid per container, source type, distance from market, reasons for choice, across many households | At least 40 completed household responses | Gives a countable pattern: price and distance across a real sample, not just a few opinions |
| Video interviews | How prices are actually set, how they have changed, and how sellers and buyers see fairness, trust and distance | 6 to 8 interviews, 3-8 minutes each, across different roles | Explains the "why" behind the survey numbers, from people who set or negotiate prices |
| Geo-tagged photos | Where jar water shops, tube wells, WASA points and vendor carts actually sit relative to the market and to each other | At least 20 photos covering shops, carts, containers, and the walking area | Shows the real geography behind "distance from market" so readers can see, not just read, the layout |
| Field diary | Dates, times, weather, who was surveyed or interviewed, and any problems in the field | One entry per field day, at least 10 entries | Keeps an honest, dated record the team can check later and mention when discussing season effects |

## 07 Survey design

Build this survey in AKTI Survey (survey.aktiful.com). Do not collect names, phone numbers or exact addresses — ask only for lane or block area in general terms.

1. What is the name of the market nearest to your home? (Short text)
2. How long does it usually take you to walk from your home to this market? (Single choice: Less than 5 minutes / 5 to 10 minutes / More than 10 minutes)
3. Which area or lane is your home closest to? (Short text — general area name only, no house number)
4. How many people live in your household? (Number)
5. What is your main source of drinking water? (Single choice: Jar water bought from a shop or vendor / Tube well — own / Tube well — shared with neighbours / WASA tap connection at home / Pond sand filter / Boiled or filtered tap water / Other, please specify)
6. If you buy drinking water (jar or vendor), how much do you usually pay for one container? (Number — enter amount in Taka)
7. What size is that container, as far as you know? (Single choice: Small bottle or jug, about 1-5 litres / Medium container, about 10 litres / Large jar, about 19-20 litres / Not sure)

8. How often do you buy drinking water? (Single choice: Every day / 2-3 times a week / Once a week / Less than once a week / I do not buy drinking water)
9. If you use a tube well, is it free to use or do you pay anything (for repairs, electricity, or a fee)? (Single choice: Free / We pay a small fee or share repair costs / I do not use a tube well)
10. Who in your household usually collects or buys the drinking water? (Single choice: Mother or adult woman / Father or adult man / Daughter or son under 18 / Hired help / Vendor delivers to our home / Other)
11. In the last 12 months, has the price or availability of your drinking water changed? (Single choice: Price went up / Price went down / Stayed the same / Became harder to get / Became easier to get / Not sure)
12. Why do you use this source rather than another one available near you? (Multiple choice: Cheaper / Closer to home / Better taste or clearer / I trust it more / Delivered to my home / It is the only one nearby / Other, please specify)
13. On a scale of 1 to 5, how fair do you think the price you pay for drinking water is? (Scale 1-5, 1 = very unfair, 5 = very fair)
14. Would you switch to a different drinking water source if it were cheaper but a little farther away? (Single choice: Yes / No / Not sure)
15. Roughly how much does your household spend on drinking water in a typical week, including jar water, vendor water or tube-well fees? (Number — enter amount in Taka, 0 if none)
16. Do you treat your drinking water at home in any way (boiling, filtering, adding tablets)? (Single choice: Yes, boiling / Yes, filtering / Yes, tablets or drops / No treatment / Other)
17. On days when it rains heavily, does getting your usual drinking water become harder? (Single choice: Yes, much harder / A little harder / No difference / Not sure)
18. Which month and year are you answering this survey? (Short text, for example "October 2026")
19. Is there anything else about the cost or availability of your drinking water you want to share? (Short text, optional)

**Target respondent:** One adult (18 or older) per household living within a 10-minute walk of the chosen market, preferably the person who usually manages household water (often the mother or another adult).

**Response target:** At least 40 completed responses, aiming for a mix of distances (close, medium, far from the market) and source types.

**How to recruit:** Walk the lanes and blocks around the market in daylight, in pairs if possible. Approach households at the gate or in front of the home, explain the study briefly, and offer to read the survey aloud on a phone if someone prefers not to type. Visit different lanes on different days and times so the sample is not only people who happen to be outside at one hour.

**Pilot plan:** Test the survey with 3-5 people first (neighbours, relatives, or early volunteers who will not be counted in the final 40). Watch for: questions people misunderstand (for example, confusing container size), questions that take too long, and any question that makes someone uncomfortable. Fix unclear wording, shorten anything that causes hesitation, and confirm that the Taka number fields accept the answers people actually want to give (for example, "no fixed amount" cases) before starting full data collection.

## 08 Sampling and limits

**Who to recruit:** Walk a defined area around the market — for example, all lanes within an estimated 10-minute walk in each direction from the market gate. Within that area, use a simple systematic method: survey every third household on each lane, alternating sides of the street, until the target number is reached. Try to cover at least four different lanes or blocks so the sample is not all from one street.

**What this sample can claim:** The results describe households near this one market, during the weeks the team collected data. They can show a real pattern — for example, "households more than 10 minutes from the market who buy jar water pay more per litre on average than those closer who use a shared tube well" — for this market only.

**What it cannot claim:** The results cannot be generalised to all markets in the city, region or country. They cannot prove that distance causes the price difference, only that the two appear together in this sample; other factors (income, trust, habit) may also matter.

**Obvious bias and how to reduce it:** Households with someone home during the day (often women, elders or school-age children) are easier to survey than households where everyone works outside. This could over-represent certain source choices (for example, home-based treatment). Reduce this by visiting at a few different times of day (morning, late afternoon, early evening) across the data collection weeks, and by recording the time of each response in the field diary so the team can check for patterns later.

## 09 Interview guide

Interview people in these roles, 6-8 interviews total:

1. Jar water shop owner near the market
2. Water vendor who delivers jars or containers by cart or van
3. Tube-well owner or the household that maintains a shared tube well nearby
4. A mother or other adult who manages household drinking water for her family
5. An elder who remembers how water was bought or fetched near this market years ago
6. A tea-stall or small shop owner near the market who also buys drinking water for the stall
7. A union parishad member or local community leader, if available [verify willingness to be interviewed]
8. A DPHE, WASA or NGO field worker who covers this area, if available [verify willingness to be interviewed]

**Interview questions (8-12):**

1. Can you describe, in your own words, how drinking water is bought or collected near this market?
2. (To sellers/vendors) How do you decide the price for a jar or container of water?
3. (To sellers/vendors) Does the price change depending on how far you deliver, or on the size of the container?
4. (To households) How much do you usually pay, and has that amount changed in the last year or two?
5. (To households) Why do you use this particular source instead of another one nearby?

6. (To tube-well owner) Who uses this tube well, and is there any cost or rule for sharing it?
7. (To elder) How did people near this market get their drinking water when you were young, compared to now?
8. Have you ever had a disagreement or problem related to the price or supply of drinking water here?
9. What do you think would make drinking water more affordable or easier to get near this market?
10. Is there anything about the price of water here that people often misunderstand?

**Consent script (read aloud before recording):**

English: "Hello, my name is [student name] and I am doing a water research project with Rainflower Youth Research. I would like to ask you some questions about drinking water near this market. First, I would like to ask: are you willing to take part in this interview? [wait for answer] Second, are you willing for me to record this on video? [wait for answer] Third, if we use this project in our paper or report, are you willing for your answer to be shared publicly, described only by your role, with no name, phone number or address shown? [wait for answer] If you are under 18, we will also need a parent or guardian's agreement before we continue. Thank you, you can stop at any time or ask us not to use your answer."

Bangla: "আসসালামু আলাইকুম, আমার নাম [ছাত্র/ছাত্রীর নাম] এবং আমি রেইনফ্লাওয়ার ইয়ুথ রিসার্চের একটি পানি বিষয়ক গবেষণা প্রকল্পে কাজ করছি। আমি এই বাজারের কাছে খাবার পানি নিয়ে আপনাকে কিছু প্রশ্ন জিজ্ঞাসা করতে চাই। প্রথমে জানতে চাই: আপনি কি এই সাক্ষাৎকারে অংশ নিতে রাজি আছেন? [উত্তরের জন্য অপেক্ষা করুন] দ্বিতীয়ত, আমি কি এটি ভিডিওতে রেকর্ড করতে পারি? [উত্তরের জন্য অপেক্ষা করুন] তৃতীয়ত, যদি আমরা এটি আমাদের প্রবন্ধ বা প্রতিবেদনে ব্যবহার করি, তাহলে আপনার উত্তর কি জনসমক্ষে শেয়ার করার অনুমতি দেবেন, শুধু আপনার ভূমিকা উল্লেখ করে, নাম, ফোন নম্বর বা ঠিকানা ছাড়াই? [উত্তরের জন্য অপেক্ষা করুন] যদি আপনার বয়স ১৮ বছরের কম হয়, তাহলে আমাদের আগে একজন অভিভাবকের অনুমতি প্রয়োজন হবে। ধন্যবাদ, আপনি যেকোনো সময় থামতে পারেন বা আমাদের আপনার উত্তর ব্যবহার না করতে বলতে পারেন।"

**Recording tips:** Record in a quiet spot near the market, away from loud traffic or vendor calls. Hold the phone horizontally (landscape). Keep the interview between 3 and 8 minutes. At the very start, say the date and the person's role out loud (for example, "October 9, 2026, interview with a jar water shop owner"). If someone prefers not to show their face, record their hands, the shop, or the water containers instead while they speak.

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## 10 Photo and observation plan

Turn on location tagging before starting: on most phones, go to Settings > Camera (or Privacy) > Location, and turn Location/GPS on for the camera app.

1. The market entrance or main signboard, to anchor the study area. Shows the starting point for all distance measurements.
2. A jar water shop storefront, including any visible price list or signboard. Shows advertised prices, if any.
3. Close-up of a price list or hand-written price board, if one exists (no faces needed). Shows exact prices in the seller's own words.
4. A water vendor's handcart or delivery van near the market. Shows how water travels from shop to home.

5. A tube well near the market, with surroundings visible. Shows a free or low-cost alternative source and its condition.
6. A household's water storage containers (jars, buckets, drums) at the doorway, with permission. Shows how families store what they buy or collect.
7. A simple hand-drawn or phone-photographed map showing the market and the approximate 10-minute-walk boundary, with marks for shops, tube wells and surveyed lanes. Shows the geography behind the "distance" variable.
8. A general street view of a lane close to the market (within 5 minutes' walk). Shows the "near" comparison group's setting.
9. A general street view of a lane farther from the market (closer to 10 minutes' walk). Shows the "far" comparison group's setting.
10. A jar or container being filled, carried or delivered (with consent, no clear face if preferred). Shows the physical act of obtaining water.
11. Any WASA pipe, meter or tap visible near the market or on a surveyed lane. Shows the piped-water option where it exists.
12. The field diary page for that day, photographed as a record (optional but useful for the evidence package).

**Photo log:** For every photo, write in the notebook: photo number, date, time, place type (for example, "jar water shop," "household doorway," "tube well"), and one line on what it shows.

**Rules:** Do not photograph people's faces without asking first; if in doubt, photograph hands, containers or surroundings instead. Do not photograph children without a parent's clear permission. Do not go inside anyone's home; take doorway or courtyard photos only, with the household's agreement.

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## 11 Optional measurements

These are OPTIONAL. The study works fully without them, using survey prices and interview explanations as the main evidence.

- **OPTIONAL — Container volume check:** Measure the approximate volume of a sample jar or container with a tape measure, to double-check that "19-20 litre jar" claims are roughly consistent across shops. Helps make price-per-litre calculations more accurate.
- **OPTIONAL — Timing a purchase or fetch:** Time how long it takes (in minutes) for a household member to buy or fetch one container of water, from leaving home to returning. Adds a time-cost dimension alongside the cash price.
- **OPTIONAL — Counting jars sold:** With a shop owner's permission, count how many jars they sell in a one-hour period on a market day. Gives a rough sense of demand, not a precise sales figure.
- **OPTIONAL — TDS meter or test strips:** If available, a Total Dissolved Solids (TDS) meter can give a number describing how much dissolved material is in a water sample; test strips can show pH or similar measures. These only describe water on that day; they never prove water is safe or unsafe to drink, and students should say so clearly if they use them. Do not taste or drink any sampled water.

## 12 Timeline

| Stage | Weeks | What the student does for this topic | Submitted at end of stage |
|---|---|---|---|
| 1. Choose and plan | 1-2 | Pick the market, define the 10-minute-walk area, sketch a rough map, list nearby water sources seen on a first walk-through | One-page plan with chosen market, boundary description and draft research question |
| 2. Permission, checklist, pilot | 2-3 | Prepare consent scripts, get parental agreement forms ready, build the AKTI Survey, pilot it with 3-5 people, adjust wording | Coordinator checklist (method, safety, honesty) passed; piloted survey link |
| 3. First sample and advisor review | 3-4 | Collect the first 8-10 survey responses and 1-2 interviews; note any problems | Short sample summary and advisor review |
| 4. Full data collection | 5-8 | Reach 40+ survey responses across several lanes; complete 6-8 interviews; take 20+ geo-tagged photos; keep field diary updated | Completed survey dataset, interview recordings, photo set, diary |
| 5. Analyse | 9-10 | Calculate price per litre for each source; compare by distance band and source type; draw charts; code interview themes | Draft tables and charts with short written notes |
| 6. Write | 11-12 | Write the full paper following the outline in Section 17 | Full draft paper |
| 7. Final review and submit | 13 | Coordinator checklist review, revise, compile evidence package | Final paper plus evidence package submitted to Rainflower |

## 13 Analysis plan

**What to count:**

- Number of households by main drinking water source (from Q5)
- Price per litre for each household that buys water: price paid (Q6) divided by estimated container volume (Q7, converted to litres)
- Number of households by distance band (Q2: under 5 min / 5-10 min / over 10 min)
- Frequency of reasons given for source choice (Q12)
- Average weekly spending on drinking water (Q15) by source type and distance band

**Comparisons to make:**

- Price per litre: jar/vendor water versus tube-well fee-based water versus "free" tube well (should be near zero)
- Price per litre by distance band (near / medium / far from market)
- Fairness rating (Q13) by source type
- Reasons for choice (Q12), compared between near and far households

**Charts to draw:**

- Bar chart: average price per litre by main source type
- Bar chart: average price per litre by distance band
- Stacked bar chart: reasons for source choice, compared between near and far households
- Simple map or diagram: locations of shops, tube wells and surveyed lanes relative to the market (can be hand-drawn and photographed)

**Worked example (example, not a result):**

Suppose the team collects 40 responses. Example, not a result:

| Distance band | Average price per litre (BDT) | Most common source |
|---|---|---|
| Under 5 minutes | 0.80 | Shared tube well |
| 5-10 minutes | 1.50 | Mix of tube well and jar water |
| Over 10 minutes | 2.40 | Jar water / vendor delivery |

If real data looked like this, the student could write: "In this sample, households more than 10 minutes from the market paid roughly three times as much per litre as households within 5 minutes, and relied mainly on purchased jar water rather than a tube well." Real numbers may show a different pattern, including no clear difference — report what is actually found.

## 14 Ethics and safety

**Three permissions, asked separately:** for every survey respondent and interviewee, ask (1) will you take part, (2) may this be recorded (for interviews), and (3) may this be shared publicly, described by role only. Record the answers to all three, even if the answer to any is "no" — a "no" to sharing publicly simply means that response stays in the private evidence package only.

**Parental agreement:** Anyone under 18 who is surveyed or interviewed needs a parent or guardian's agreement first. Carry a simple paper or phone-based consent form for this; do not survey or interview a minor without it, even if they seem willing.

**Physical safety for this study:** Visit the market and surrounding lanes in daylight only. Go in pairs where possible. Stay in public areas — market lanes, shop fronts, doorways with permission — and do not enter anyone's home, a factory, or any water facility (pump house, WASA station) without explicit permission from the person in charge. Avoid uneven ground near tube wells or open drains when photographing. Tell a family member or guardian where the team is going and when they expect to return, every field day.

**Data privacy:** No full names, phone numbers or home addresses appear anywhere in the paper. Survey responses stay anonymous (only general lane/block area, not house numbers). Interviewees are described only by role (for example, "a jar water shop owner near the market"). Raw survey data, interview recordings and the photo log stay in the private evidence package shared only with the coach, coordinator, advisor and Rainflower; only anonymised summaries, quotes (with permission) and selected photos (with consent) appear in the public paper.

**Data retention:** Keep raw data (survey export, recordings, photo files, diary) until the project is graded and the final paper is accepted; after that, follow Rainflower's guidance on how long to keep or when to delete raw files.

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## 15 Expected outcomes and limitations

This project should help answer, with real local evidence:

- Does price per litre near this market actually rise with distance, as the hypothesis suggests, or is the pattern weaker or absent?
- Which source type is most common close to the market, and does that change farther away?
- Do households and sellers agree on why prices differ, or do they give different explanations?
- A null result (little difference in price by distance) would still be useful: it would suggest that trust, habit or a fixed local price norm matters more than distance alone near this market.

**Limitations (stated in advance):**

1. The sample covers only households within a 10-minute walk of one named market, during the weeks of data collection; results do not describe the whole city or country.
2. Self-reported prices and container sizes may not be perfectly accurate; households may round numbers or estimate container volume loosely.
3. The sample may over-represent households where someone is home during the day, which could skew which sources appear most common.
4. Prices can shift with season, local events, or even negotiation on a given day; the team will record exact dates and discuss how the season of data collection may have affected prices and water availability.

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## 16 Paper outline

- **Abstract** (150-200 words): the market studied, the method, and the main pattern found in price and distance.
- **Introduction**: why water price near one market matters locally; the research question; brief background with [verify] sources.
- **Methods**: the market and boundary chosen, survey design and sample size, interview roles and count, photo and diary approach, dates of data collection.
- **Results**: tables and charts from Section 14; report numbers plainly, with no interpretation yet (for example, "32 of 40 households' main source was jar water or vendor delivery").
- **Discussion**: what the price-distance pattern (or lack of one) might mean, drawing on interview explanations; compare near versus far, source versus source.
- **Limitations**: the four points from Section 16, adapted to what actually happened in the field.
- **Conclusion**: a short, honest answer to the research question, with one sentence on who locally might find this useful (a union parishad member, a shop owner, a concerned parent).

- **AI-use statement**: exactly how AI was used (for example, grammar checking, formatting tables) and confirmation that AI did not write results, conclusions or invent data.
- **Ethics statement**: confirmation that three permissions were obtained, parental agreement was used for minors, and no identifying details appear in the paper.
- **References**: list of source types consulted, each marked [verify] if not personally checked in full.

**Figures and tables to include:** map or diagram of the market and surveyed area; table of sample size by distance band and source type; bar chart of price per litre by source type; bar chart of price per litre by distance band; table or chart of reasons for source choice.

**Word range:** 1,800 to 3,000 words for the main paper (excluding references and the AI-use/ethics statements).

## 17 Budget

| Item | Reason | Cost (BDT) |
|---|---|---|
| Local travel (bus/rickshaw) to market and surrounding lanes, 10 field days | Reaching the market area repeatedly over several weeks | 2,000 |
| Mobile data top-up | Running AKTI Survey in the field, uploading photos and video | 800 |
| Printing consent forms and parental agreement forms | Paper copies for households without easy phone access | 400 |
| Notebook and pens | Field diary and photo log | 250 |
| Phone charging / power bank rental (if needed) | Long field days recording video and photos | 300 |
| Small thank-you items for interviewees (for example, a few taka of tea or snacks) | Local courtesy for time given, especially to vendors and shop owners | 500 |
| OPTIONAL: TDS meter or test strips, if used | Only if the team chooses to add the optional measurement in Section 12 | 1,200 |
| Contingency (unexpected small costs) | Covers minor surprises | 550 |
| **Total (without optional kit)** | | **4,800** |
| **Total (with optional kit)** | | **6,000** |

**Estimated hours:** about 90 hours of work for the whole team across all 13 weeks. Breakdown: planning and permissions (10 hours), piloting and first sample (10 hours), full data collection — survey, interviews, photos (40 hours), analysis (15 hours), writing (12 hours), final review (3 hours).

## 18 Before-you-start checklist

- [ ] Chosen market named and its 10-minute-walk boundary roughly sketched
- [ ] Draft AKTI Survey built and piloted with 3-5 people
- [ ] Consent scripts printed or saved on phone, in both English and Bangla
- [ ] Parental agreement forms ready for anyone under 18
- [ ] List of 6-8 interview roles identified, with at least first contacts made
- [ ] Phone location tagging turned on and tested with a sample photo
- [ ] Field diary notebook ready, first entry started
- [ ] Family or guardian told of the field work plan and schedule
- [ ] Coordinator checklist reviewed and passed before first full field visit
- [ ] Budget items confirmed and any advance funds collected
- [ ] Team roles assigned (survey, interview, photo/map, data), if working in a team

## 19 Glossary

- **WASH:** Water, Sanitation and Hygiene — a general term for this field of study.
- **Tube well (নলকূপ):** A hand-pump or similar well that draws water from underground.
- **Jar water:** Drinking water sold in large plastic containers, usually 19-20 litres, by shops or vendors.
- **WASA:** Water Supply and Sewerage Authority, the government body supplying piped water in some cities.
- **DPHE:** Department of Public Health Engineering, a government body involved in rural and some urban water supply.
- **Pond sand filter:** A simple filter system that cleans pond water by passing it through layers of sand.
- **Price per litre:** The amount paid for water divided by the number of litres received, used to compare different container sizes fairly.
- **Distance band:** A grouping of households by how far they live from the market (for example, under 5 minutes, 5-10 minutes, over 10 minutes walk).
- **AKTI Survey:** The free online survey tool (survey.aktiful.com) used to collect and manage responses.
- **Geo-tagged photo:** A photo that automatically records the location (GPS coordinates) where it was taken.
- **Field diary:** A dated notebook record of what the researcher did, saw and found each day in the field.
- **TDS meter:** A small device that measures Total Dissolved Solids in water, giving a number that describes water, not proof of safety.
- **Consent:** A person's clear agreement to take part, be recorded, or have their answer shared, given separately for each.
- **Union parishad:** The lowest level of local government in rural Bangladesh.