

CHAPTER THREE

Promoting the Quick Count

A quick count can be a technical success yet a public relations failure. All of the hard work is for naught if key audiences—civic leaders, political parties, electoral authorities, the international community and others—do not view the organization or the results as credible. When influential groups doubt either the motives of the organizers or the validity of the data, the quick count's contribution to the election-day process is marginal to negative. For this reason, building credibility must be a priority for every group planning a quick count.

This chapter is about promoting the quick count during the pre-election period so that it is technically successful and recognized as credible.¹ It discusses how to build support among key audiences, addresses the most commonly raised concerns about quick counts and offers best practices for publicizing the project.

Most organizations form a media team to garner support for the quick count project and establish the organization as an independent voice for civil society—an organization above the partisan fray, working for a fair process rather than for a particular result.² The election commission, of course, is at the center of this process. Figure 3-1 illustrates the relationships managed by quick count promoters, beginning with the election commission and working outward toward the general public as the project progresses.

RELATIONS WITH ELECTORAL AUTHORITIES

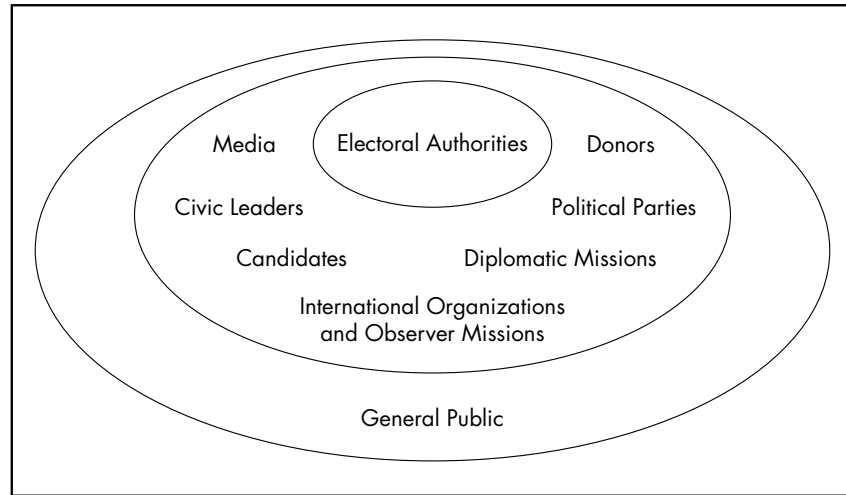
Election commissions often view the presence of election observers with suspicion; many are particularly resistant to independent vote counts. It is in the interest of quick count organizers, however, to forge a cooperative relationship with electoral authorities. Electoral authorities can provide access to important information, such as the complete list of polling stations (needed

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¹ While this chapter discusses how to build credibility while planning and organizing a quick count, Chapter Eight, *The "End Game,"* offers techniques for consolidating credibility and using quick count data during the period immediately surrounding election day.

² Two or more organizations may work jointly or form a coalition to conduct a quick count, but the need for the quick count project to establish its credibility remains the same.

FIGURE 3-1:
RELATIONSHIPS MANAGED BY THE
MEDIA TEAM



to draw a statistical sample of polling stations) or models of official voting and counting materials (helpful to design quick count observer forms). The election commission also has the power to decide who does and does not get access to polling stations and counting centers.

Quick count organizers should establish an open channel of communication with electoral authorities early in the planning process.

Quick count organizers should establish an open channel of communication with electoral authorities early in the planning process. It is helpful for leaders to assure authorities that election monitoring activities are complementary to those of the election commission. Quick count leaders can reinforce this position by demonstrating transparency, sharing quick count plans and methodology—the only details that should not be shared are those that deal with the precise sample size and the locations of the sample points.

It is helpful to ascertain and directly address the specific concerns of an election commission at the outset. For example, officials may express concern that quick count organizers will undermine the election commission’s authority by publicly releasing results. These concerns are not totally unfounded, but they can be managed. There is nothing lost, and much to be gained, for example, if organizers publicly express their willingness to support the efforts of the election commission and acknowledge that the election commission has sole authority to release official results.³

Credentials

Electoral law in many countries recognizes the right of citizens to observe elections, which is part of the right to participate in governmental and political affairs. This right, in many instances, is based on constitutional provisions and international obligations and can be recognized by pronouncements or regulations of electoral authorities even if the law is silent on the matter. Often,

³ See Chapter Eight, *The “End Game,”* for a discussion of approaches to releasing quick count results.

election commissions also promulgate observer rights and responsibilities in a set of standards or a code of conduct.⁴

It is common for election observers to be required to present proof of legal authorization (accreditation) as they enter polling stations. Some election commissions approach this task by granting a letter of authorization to observer groups that meet established criteria. The groups, in turn, distribute the letter to their volunteers. In some countries, however, civic organizations work in conjunction with electoral authorities to produce individual observer badges, or credentials.

The time and effort needed to guarantee observer access to the polling and counting stations is *always* underestimated. Civic groups must begin the application process very early. The case of the Dominican Republic illustrates just how difficult the process can be, particularly for a group conducting its first quick count:

In 1996, the civic group Citizen Participation (PC) faced a hostile election commission. The commission saw PC as a threat and resisted giving them observer credentials to enter the polling stations on election day. In fact, PC had to turn to the international community for help in persuading the election commission to release credentials. When the commission finally did grant permission for the group to observe the process, it argued that it was too busy to prepare credentials for the whole group. Then, twenty-four hours before the polls opened, the commission announced that it would require the inclusion of a signed photograph for each observer's credential. This created a major last-minute problem in PC's production and distribution of credentials.

It is instructive to note just how much circumstances changed in the Dominican Republic once the civic organization, PC, had gained experience and credibility among electoral authorities. By the 1998 elections, the relationship had improved significantly. Recently, the election commission asked PC for its assistance in training polling station officials. This type of progressively improved relationship is common between civic groups that observe elections and election authorities around the world.

Absent official authorization, access to observe the election process is uneven at best. Groups should avoid attempting to conduct quick counts by acquiring the information second-hand, such as through political party representatives. This approach can compromise the quick count because the groups cannot attest to the quality of the voting and counting processes, nor can the group prevent collusion among parties. Alternatively, groups can station observers outside polling stations to rapidly report on a number of qualitative aspects of election-day developments. For example, such observers can measure voter

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⁴ Appendices 3A - 3D contain an election law, an election regulation and two codes of conduct regarding domestic election observers; and Appendix 4 is a compilation of excerpts from human rights instruments that apply to citizens' rights to monitor elections.

The objective should be to obtain a law containing the broadest possible language granting access to all aspects of the process.

turnout against official reports, which in some instances is a critical indicator of whether or not official results are credible.

A significant challenge to a quick count may arise when election observation is not contemplated in current law and authorities believe it to be illegal. In this case, quick count sponsors may lobby for a revision in the law, a new regulation, a special decree or other document guaranteeing the right to observe. The objective should be to obtain a law containing the broadest possible language granting access to all aspects of the process. Many groups have offered authorities help in drafting a new law or regulation and have provided model laws and regulations from other countries where observers enjoy broad freedom to operate.

While lobbying for the rights of election observers and soliciting observer credentials, quick count organizers should keep in mind the perspective of electoral authorities. Understanding electoral officials and empathizing about their challenges can facilitate solutions that meet the needs of all concerned.

EXTERNAL RELATIONS

The executive director should dedicate significant time to the relationship with the election commission, but she or he must also work with board members to build bridges to other key groups. These groups include:

- candidates and political parties;
- civic leaders, particularly those who work on similar programs;
- members of the local and international media;
- quick count donors;
- key international election observer and diplomatic missions.

The usual strategy is for quick count organizers to carefully assign representatives to set up formal meetings with these groups and to build alliances that will support the group in difficult times. There are several additional techniques for keeping audiences informed and supportive. They include:

- sponsoring roundtable discussions, debates or conferences;
- disseminating written letters or reports;
- offering training events, such as a workshop on local elections for international donors or quick count methodology for journalists;
- holding tours of the quick count facilities during simulations; and
- creating independent advisory boards with key audiences, such as political parties or NGOs, and holding periodic meetings to inform and receive feedback.

Each meeting or event should have a specific objective. For example, quick count leaders may seek financial support or help in persuading electoral authorities to release credentials. In general, representatives should always demonstrate the organization's capacity, independence and commitment to transparency. They should model transparency by presenting, in a general way, their progress

in technical and organizational matters. They may also share training materials, such as observer checklists, and ask for feedback when appropriate.

By providing information to key groups in the pre-election period, quick count organizers demonstrate confidence in the methodology. The messages are powerful: “We have nothing to hide.” “We know what we are doing.” “We are happy to discuss any of the details about methodology with you and your experts.” Of course, organizers cannot discuss the precise sample size or the location of the sample points to prevent outside interference in the quick count.

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Answering the Skeptics

The context and circumstances surrounding each quick count is different. It is impossible to anticipate and prepare for all of the questions that will be asked of quick count organizers. But some concerns are repeatedly raised in almost every country. Below is a list of the most frequently asked questions and suggested responses to alleviate concerns:

Is a quick count legal?

- Point out provisions in the election law for nonpartisan organizations or citizens to observe elections. If no provisions exist, share copies from other countries and note constitutional provisions and international obligations that recognize the right of citizens to participate in governmental and public affairs and the right to democratic elections—from which election observation derives.
- Relate accounts of successful quick counts that have taken place in the region or other parts of the world.
- Mention that several international human rights instruments recognize the universal right of people to participate in their government by monitoring elections. (See Appendix 4)

Is your group credible; i.e. can you do this?

- Provide information on the quick count leaders and sponsors as well as the qualifications of your staff.
- Explain basic quick count goals and methodology.
- Make training materials and quick count checklists public to highlight their professional quality, legal accuracy and objective design.

Is your group neutral? How can anyone be sure that you do not have a partisan political agenda?

- Demonstrate that leadership and staff are not currently partisan activists.
- In cases where some group members have a reputation for partisanship, take care to show that the membership, taken as a whole, is politically balanced.
- Explain your commitment to recruiting volunteers not currently involved in partisan politics or actively supporting any candidate.

How do we know your volunteers, even those you have not yet recruited, will be neutral?

- Share a copy of a “neutrality pledge” signed by all quick count participants.
- Share the training manuals and highlight the fact that volunteers are uniformly trained regarding the role and responsibility of an observer.
- Share the quick count checklists. Explain that you are collecting objective data that is not subject to interpretation.
- Invite concerned individuals to observe training programs and the simulation.

If we have invited international observers, why do we need local observers?

- Point out that, in many places, it is a matter of national pride for domestic election observers to exist alongside international election monitors.
- Discuss how election observation and quick counts are a tool to build public participation in elections.
- Discuss the practical advantages of domestic organizations observing – they are present for the entire pre-election, election-day and post-election periods and they have better scope and coverage to implement a quick count.
- Argue that local citizens have the right to participate in their government and organize to hold officials accountable.
- Ask the international community to state the view that it would be a positive development if electoral authorities welcome and support a domestic organization planning a quick count.

How can we prevent unnecessary confusion in polling stations or counting centers with too many observers?

- Point out provisions in the current law for local officials to maintain order inside the polling stations and counting centers.
- Ask for feedback and make revisions to your volunteer training materials to reflect their concerns.
- As a last resort, offer to discuss the drafting of additional legal guidelines, such as a code of conduct for quick count observers.

How can we trust your results when you got them from a few hundred or thousand polling stations?

- Utilize this manual to explain the effectiveness of random sampling.
- Offer to schedule a formal or informal briefing with a statistician or quick count adviser.
- Remind them that a few hundred polling stations actually represent hundreds of thousands of voters!
- Provide concrete examples of the accuracy of quick count results in other countries.

Can we be sure that you will not manipulate the data at the central level, to arrive at a desired result?

- Invite concerned individuals to a quick count simulation to witness the communications and data processing systems (if security systems allow).
- Offer to place an advanced copy of your sample with a trusted individual, such as a religious official or international observer.
- Offer to make public three or more samples, one of which you will be using on election day.

THE MEDIA CAMPAIGN

Organizations that are new, little-known, or have other credibility issues should prioritize a media campaign. A media campaign raises awareness about the quick count, attracts volunteers to work on the project and answers any public criticism leveled at the group.

Education is an important component of a group's work with the media. Members of the media rarely know what a quick count is, yet they are uniquely placed to promote, or undermine, confidence in the methodology. Quick count organizers often find it useful to hold seminars about quick count methodology for journalists, publishers, editors and owners of media outlets.

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FIGURE 3-2:
PROMOTIONAL STICKER FOR CESID,
FEDERAL REPUBLIC OF YUGOSLAVIA

"1+1=2" INDICATES VERIFICATION
OF VOTE TABULATIONS



KEYS TO SUCCESS

Below are several best practices for implementing a media campaign:

- *Develop consistent messages.* A message is what an organization wants the public to know about it as it approaches the quick count. Messages reflect the values or beliefs behind the quick count and inspire listeners. Each time a leader of the organization speaks, the basic message should be repeated and reinforced by several issues or detailed information. The public affairs team should be sure the same message is contained in all documents, reports and other materials that could potentially become public.
- *Establish standard procedures.* It is important to set up guidelines and policies that specify who is authorized to represent the organization and speak with the media. This helps to avoid sending conflicting messages or releasing premature reports.
- *Stay "on message."* All spokespersons should know the message and how to deliver it consistently. All press coverage should be monitored to determine whether the message is reported, and the board and spokespersons should receive regular reports on this topic.
- *Use a variety of publicity techniques.* These can include events and activities as diverse as holding press conferences, writing newspaper articles, creating paid television commercials, recording motivational songs and holding public recruitment events and pep rallies.

Most groups need to creatively exploit opportunities for free or low-cost publicity.

Publicity Techniques

The publicity mechanisms used by quick count groups primarily depend on the amount of time and money available. Groups with image problems and little time available to correct the problem, or those facing a serious crisis (such as an attack in the media or the inability to obtain access to polling stations) may opt to use paid advertising. Paid advertising through the mass media, including TV, radio and newspapers, allows a group to control the content and reach a large number of people quickly. However, it can be expensive, and in some countries access may be limited.

Most groups do not have the resources to rely primarily on paid media exposure and need to creatively exploit opportunities for free or low-cost publicity. Some of the following methods are used to get media coverage:

- *press releases*—one-page notices that publicize an organizational opinion or an event of interest to viewers, readers or listeners;
- *high-profile events*—such as training programs, visits from international experts, meetings with well-known personalities;
- *press conferences*—tied to significant dates or activities and timed well, considering journalists' deadlines, competing news events, etc.;
- *articles and letters to the editor submitted to the print media*; and
- *public service announcements (PSAs)*—most often produced for radio.

**REMINDER**

A media team promotes the quick count to build the credibility of both the project and the organization, to obtain practical and political support and to achieve quick count goals, such as deterring fraud and building confidence in the electoral process. These goals are achieved by:

1. *Forging a productive relationship with the election commission*—The executive director and board members, in particular, must recognize that election officials have the power to share key information, such as a list of polling stations, and to grant observers permission to enter polling stations. National election observer organizations in many countries have worked closely with electoral authorities to improve observer access and transparency.
2. *Building support from key audiences through an “external relations” program*—The media team, particularly members of the board, should keep media, potential and current donors, civic leaders and political parties informed about the quick count project. Each of these audiences has potential to be supportive, either by sharing information or providing direct financial, human or in-kind resources.
3. *Launching a media campaign to establish an organization’s credibility*—The media campaign must convince the public that the organization has the capacity to conduct a quick count and the commitment to a fair process over a particular result.

CHAPTER FOUR

Building the Volunteer Network

Quick counts cannot happen without well-organized and trained volunteer networks. Most of the hundreds or thousands of people that form these networks live and work outside the capital city and are not readily visible to the organization's leadership, international donors and the press. Their often heroic efforts go virtually unnoticed. A case in point:

Rhina Medal, 56, is a volunteer quick count observer in Diriamba, Nicaragua. At a training program sponsored by Ethics and Transparency, she was assigned the most remote polling station in her municipality. Her friends tried to convince her to take a different assignment. She refused, and, on election day, she rode two hours on a bus, one hour in a pickup truck and two hours up a mountain on horseback to the polling station. On election night, despite the fact that the counting process was not completed until 2:00 am, she rode on horseback down the hill and took the pickup truck to the nearest phone to make her report. When asked why she insisted on taking this most difficult assignment, she simply said, "for love of country."

Effective volunteer networks tap the energy of citizens like Rhina Medal. This chapter describes how to design quick count forms and training materials, build a national network and train and support volunteers. The information is designed to help groups trying to recruit and train large numbers of observers in a fixed and relatively short timeframe.

Chapter Two described a volunteer coordination team. Within that team, the volunteer coordinator is responsible for recruiting and maintaining communications with the volunteer network, and for taking the lead on designing observer forms. The lead trainer designs and oversees a national volunteer training program. The lead trainer, in collaboration with other staff, creates observer forms and instructional manuals, and then designs and oversees a national volunteer training program. The logistics specialist supports the coordinator and the trainer.

Recruiters should try to establish an observer network that reflects society.

Leaders can facilitate the work of the volunteer coordination team in three ways. First, they should provide sufficient resources. This piece of the budget should be carefully designed to allow maximum flexibility and mobility for coordinators and trainers. Moreover, it should be possible for coordinators and trainers to start their work at least six months before the election. Second, they should strive to draw the random sample of polling stations early. If the sample can be drawn before recruiting and training begins in earnest, the team can target efforts to recruit observers in the precise locations needed.¹ Third, recruiters should try to establish an observer network that reflects society. To accomplish this, they should emphasize gender balance and seek representation from a variety of ethnic, linguistic, religious, age and other groups. This taps large numbers of people, facilitates national coverage and helps to establish widespread credibility for the quick count. Moreover, polling stations or voting lines in some countries are segregated by gender, which requires at least 50 percent women observers.

If the statistical sample of polling stations for use in the quick count cannot be drawn early, the statistician should provide an estimate of the number of volunteers needed in each local area so that recruiting and training can proceed. It is best to overestimate the numbers needed. In most countries, volunteers who, in the end, are not needed for the quick count observe in non-sample polling stations and report findings for analysis beyond quick count findings.



KEYS TO SUCCESS

Building an Effective Quick Count Volunteer Network:

1. *sufficient early resources*—provide flexibility and mobility;
2. *drawing the sample early*—allows geographical focus and streamlines expenditures; and
3. *recruiting among all sectors of society*—facilitates broad coverage and promotes credibility.

The accuracy of the quick count directly depends on the quality of the materials developed to train volunteers and collect data.

DESIGNING MATERIALS

It is critical to design clear, concise observer forms and training materials. The accuracy of the quick count directly depends on the quality of the materials developed to train volunteers and collect data. These materials ensure uniformity in training and the reliability of information collected.

It is important for the volunteer coordination team to focus on materials design as early as possible, certainly as soon as the law (or regulations) governing the voting and counting processes are available. The most important pieces of materials that the team will create are observer forms and manuals.

¹ See Chapter Five, *Statistical Principles and Quick Counts*, for more information on this process.

1. *Observer Forms*—Most groups develop separate forms for quick count observers and volunteers stationed at non-quick count polling stations. Quick count observers usually report information via telephone; volunteers at other sites use a separate relay system.
2. *The Observer Manual*—This manual contains relevant information on the election process and explains, step-by-step, the job of an election observer. (As noted below, manuals for training trainers, regional coordinators and other groups are also needed.)

Forms

The volunteer coordinator usually designs the forms. It is crucial that she or he does this in close collaboration with the trainer, the executive director, someone from the technical team that focuses on data analysis and one or more specialists in electoral law. The process begins with a vision of election day, an analysis of problems that historically have occurred and a list of issues that are of most concern to candidates and other key groups. This list is narrowed down to crucial issues to create forms that capture data about key questions concerning the quality of the process but that are not cumbersome. Questions are formulated to reflect the real order of events, and to contain the wording and terminology contained in election law and used by electoral authorities.² Observer answers to the questions reveal both the strengths and/or irregularities that may occur in election-day processes.

One form is designed to collect information on the opening of polling stations and initiation of voting procedures. A second form is designed to collect general information on voting and counting procedures. The second form also records the results of the count. In many countries a third, and perhaps longer, form is developed for non-quick count observers. Data from this form is compiled and analyzed for inclusion in detailed post-election reports. The more detailed reports can be crucial if electoral controversies develop.

The volunteer coordination team must ask the executive director and the board of directors to review these forms thoroughly; these actors must understand exactly what information they will receive on election day. In some countries, organization leaders have not paid attention to the observer forms until just prior to, or on, election day, only to discover that a question they think is crucial has not been asked. At such a late date, it is impossible to gather systematic information on the crucial issue. In these cases, leaders typically end up calling local committee members for their impressions and putting together less powerful and less credible anecdotal information. Insufficient attention and inadequate planning have significant costs that could usually have been avoided.

Field testing the forms is critical to ensure that volunteers understand the questions as designed.

² See Chapter Six, *The Qualitative Component of the Quick Count*, for a step-by-step guide to designing forms.

The forms must also be field tested with local volunteers. Field testing the forms is often viewed as a luxury and skipped due to time considerations, but it is critical to ensure that volunteers understand the questions as designed. Moreover, coordinators and other local volunteers often possess a wealth of experience inside polling stations. In addition to having voted, it is common for many to have served as polling station officials; they can provide valuable input about the wording of questions contained on forms.

The Impact of Observers Forms—The Case of Belarus 2001

In the 2001 presidential elections in Belarus, quick count observers were able to collect electoral results but often were not able to see whether ballots were actually marked for the person for whom officials credited the votes. There was great concern that officials manipulated the count by crediting votes to the incumbent president even though ballots were cast for the opposition. The quick count and broader observation did not have a question on the form covering this problem. As a result, the leadership decided not to release the numeric projections, because they did not have sufficient confidence that the numbers reported by quick count observers reflected real votes. The lack of qualitative data on this issue, however, left the decision open to criticism.

Manuals

The observer manual is a condensed version of all the information volunteers receive during their training program. The volunteer takes the manual home and is encouraged to review the information before election day. A pocket-sized version of the manual can be produced to allow observers to carry it on election day for easy reference.

A well-designed manual is an important asset; it assures that consistent instructions and messages are being delivered at all levels, in all geographical areas. This is particularly important when organizations use a cascade training approach—headquarters staff train regional leaders; regional leaders train municipal leaders, and municipal leaders train quick count observers. The observer manual promotes consistency when time constraints may prevent national leaders from supervising all training programs.

Contents of a typical observer manual include:

- a description of the organization—including mission, goals and contact information;
- a brief explanation of quick counts;
- excerpts of relevant election law;
- a reiteration of the observer code of conduct—including emphasis on impartiality and accuracy in reporting findings;
- step-by-step instructions on the election-day duties of an observer;
- things to remember/bring on election day; and
- telephone numbers and other contact information in case problems develop during the observation.

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The volunteer coordinator and trainer should also develop special manuals for groups of volunteers other than quick count observers. These special manuals are usually created for:

- trainers (assuming the lead trainer will form a team that can cover the country)
- regional and municipal coordinators;
- telephone operators/data processors in the central data collection center;
- telephone operators inside a network of private homes or offices in the capital city;
- bikers, motorcyclists or drivers responsible for collecting forms from the network of private homes or offices in the capital city; and
- telephone operators in regional offices.

Like the observer manual, these manuals describe the organization, define quick counts, review relevant election law and reiterate a code of conduct. They also include step-by-step descriptions of each group's duties. Any manuals designed to train trainers also should include information on teaching tools such as using experiential learning techniques, as well as using flipcharts, visual aids, videos, etc. It is best to keep these training devices simple. It is often inappropriate, if not impossible, to use technological innovation such as a Power Point presentation in the rural areas of many countries.

RECRUITING

Recruiting is usually best divided into three major phases. First, committees are formed outside the capital city to better manage the massive amount of work entailed in building a volunteer network. Second, local volunteers are recruited to be quick count observers and to fill a variety of support roles required prior to and on election day. Third, the volunteer coordination team identifies groups of volunteers to support the national office during the run-up to elections and to fill key jobs on election day. Figure 4-1 illustrates a typical volunteer network structure:

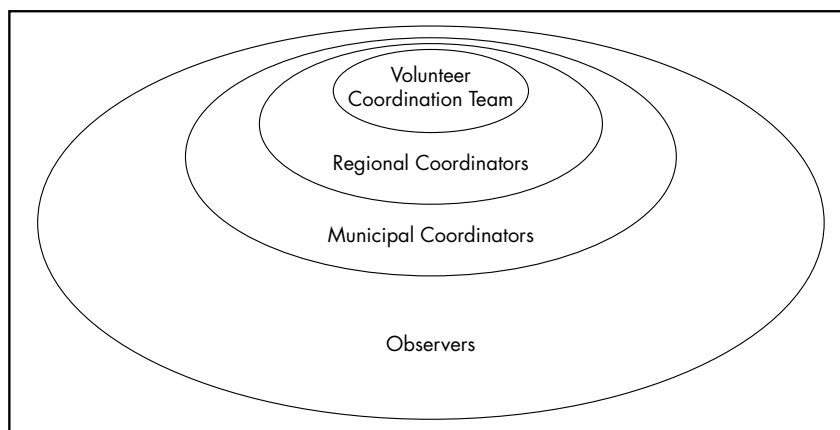


FIGURE 4-1:
VOLUNTEER NETWORK STRUCTURE

Create an effective multi-level organization; however, too many layers in the organization complicates communications and makes it difficult to ensure consistency and quality in volunteer training.

Regional and Municipal Committees

The most efficient way to recruit thousands of volunteers in a short period of time is to delegate much of the work to regional and/or municipal committees. Therefore, the first phase of a national volunteer coordinator's work is to travel around the country to organize these committees.³

The number and location of committees depends on the size, geographical characteristics and administrative/political divisions of each country. National organizers must create an effective multi-level organization to ensure that no one is overburdened by work. However, too many layers in the organization complicates communications and makes it difficult to ensure consistency and quality in volunteer training. The most common model is to have no more than two layers of committees outside the national office, one in the largest administrative division such as the province, department, state or region. The second one is either at the municipal or electoral district level.⁴

Each committee typically consists of a coordinator, a trainer and a logistics specialist at minimum. These roles usually mirror the internal organization of the national office, and consequently each member can communicate with a national counterpart. Regional coordinators build a relationship with the national volunteer coordinator, regional trainers consult with the head national trainer, and so on. That said, the size, composition and division of responsibilities within regions and municipalities should also be responsive to the geographical and political peculiarities of the area being covered.

National staff periodically bring regional leaders together in a central location. Regional leaders benefit from training as a group in three ways. First, they develop an organizational identity important to their motivation. Second, the national staff is assured that all instructions and messages are uniformly delivered across the country. Third, regional and national leaders learn from an open discussion of concerns and joint exploration of solutions to problems.

Local Volunteers

The bulk of volunteers are recruited at the most local level to cover polling stations in their neighborhoods.⁵ This way, many individuals at recruiting meetings know each other and can weed out individuals with clearly partisan reputations. In order to get people to attend initial meetings, local recruiters use three basic techniques:

- (a) affiliating with existing networks (e.g. religious laity groups, human rights networks, women's networks and student networks);

³ See Appendix 5 for a sample recruiting letter addressed to coordinators used by Civic Eye in Slovakia.

⁴ See Appendix 6 for a diagram of regional offices in Serbia.

⁵ This practice originally was instituted as a way of guaranteeing that observers would be able to vote. In many countries, citizens are assigned to vote in specific polling stations near their legal residence, and it is important to not disenfranchise observers.

- (b) establishing contacts with highly regarded institutions such as universities, communication media, teacher unions, labor unions, agricultural groups; and
- (c) requesting endorsements from highly respected citizens, who help in the recruitment effort.

Once a person decides to volunteer, she or he becomes a natural recruiter of family members, friends, neighbors and co-workers. Approached in this way, the network often grows rapidly.

National and regional leaders should attend as many of these meetings as possible; special guests can increase turnout, and leaders can use the opportunity to check on the progress of local recruiters and on the quality of volunteers being brought into the organization.

National leaders must guide local recruiters regarding the number of volunteers they need to recruit. The sample size will be the driving factor determining local target numbers. However, some groups that have an objective to involve as many people as possible in the electoral process may mount an open-ended recruiting campaign and plan to involve new volunteers in other projects. Time and financial constraints, of course, may limit the possibility of an entirely open-ended campaign.

Volunteers needed at the municipal levels include:

- observers to be inside polling stations (often in two-person teams to ensure accountability, share work and reduce potential intimidation);
- runners to collect forms and report information if observers are not permitted to leave and re-enter polling stations;
- office support staff;
- substitutes for observers who are fatigued, sick or absent;
- mobile observers to check outside polling stations and in the surrounding areas for vote-buying, intimidation, blocking entrance or movement of prospective voters, etc., to add to the qualitative analysis of the process;
- observers to cover and report on activities in regional and municipal election offices; and
- telephone operators, as necessary.

Volunteers for Central Operations

Once recruiting for quick count observers is well underway, the volunteer coordinator turns to centrally-based operations. National staff, such as the executive director, logistics specialists, trainers, media specialist and the accountant can all benefit from volunteer support. Demand for support in national headquarters increases as elections near. Potential jobs for volunteers include:

- welcoming visitors and answering telephones;
- assembling packets of materials going out to the field;

Once a person decides to volunteer, she or he becomes a natural recruiter of family members, friends, neighbors and co-workers.

The sample size will be the driving factor determining local target numbers.

- assembling and distributing press packets;
- assisting the accountant with record-keeping; and
- providing back-up for busy drivers.

Perhaps the most important and time-consuming work is identifying people to fill various roles in the data collection process.⁶ For recruiting purposes, the primary roles to be filled around election day include:

- answering telephones and processing reports in the central data collection center;
- staffing a backup network of data collection centers in the capital city;⁷ and
- collecting forms from the backup data collection centers in the capital city, usually on motorcycles or in cars.

This work is done in coordination with the technical team. The number of people needed depends on the type of system designed, the quantity of data collected and the speed with which the data are to be processed. In general, the more sophisticated the system, the larger the number of volunteers needed to staff election-day operations.

Convincing and Screening Recruits

Recruiters at national and local levels must address a wide variety of audiences in their efforts to locate motivated volunteers. Regardless of whether the audience comprises civic or religious leaders, professional organizations, social clubs or combinations of these and members of the general public, recruiters should master a short, meaningful and substantive presentation. The presentation should include:

- a succinct message about why this effort is important to the country at this time;
- an overview of the group's election-related activities (if applicable);
- why the group is undertaking a quick count;
- an explanation of the importance of competence and independence in quick count operations;
- a brief plan;
- who is needed for what duties; and
- an enthusiastic invitation to join.

The recruiting message and broader presentation points should be disseminated through the media as much as possible. This will raise awareness of the project, and project recognition is helpful to national, regional and local recruiters. It also will help enhance the group's credibility with the election commission, the public, political players and other key audiences.

The recruiting message and broader presentation points should be disseminated through the media as much as possible.

⁶ See Chapter Seven, *Collecting and Analyzing Quick Count Data*, for more information.

⁷ See Chapter Seven, *Collecting and Analyzing Quick Count Data*, for a description of these backup data collection centers.

At each recruiting event, leaders provide a more detailed explanation of what a quick count is and why it is important given the national political context. They explain the overall timeline for organizing in preparation for elections. Finally, they review specific requirements for the jobs that need to be filled. Possible requirements and desirable traits include:

- credibility as an impartial agent and commitment to political neutrality throughout the process;
- ability to donate time;
- skills such as reading, writing, driving and using equipment such as telephones, faxes, computers;
- physical requirements such as good vision and hearing, the ability to walk long distances or stand on their feet all day; and
- expertise (for special projects) in areas such as the law, journalism, computer programming, database management, teaching and accounting.

Even at this early stage, it is a good idea to present a code of conduct that describes the rights and responsibilities governing observers. The code of conduct is based on the organization's mission and goals, requirements contained in national electoral law and regulations, and international standards.⁸



FREQUENTLY ASKED QUESTIONS

Is it essential to establish a database of all volunteers?

A recent innovation of quick count groups is to centralize biographical information on the volunteers. It facilitates a number of tasks for the volunteer coordination team:

- the production of volunteer identification cards;
- the maintenance of an overall picture of important milestones, such as how many volunteers have been recruited, completed training, or received observer credentials;
- the production of demographic breakdowns of volunteers by gender, age group, language or ethnic group or geographic area;
- the rapid generation of instructions, requests, or diplomas to groups within the volunteer network, or to the whole network; and
- printouts of contact information for the supervisors of observers who do not make timely election-day reports, allowing speedy recovery of missing data.

The database also can record interests of volunteers in various post-election activities, which is significant for the group's efforts beyond elections.

Of course, it is very important to consider security and confidentiality issues around these databases and to take necessary precautions. However, experience has shown that the advantages in most cases far outweigh possible problems.

⁸ See Appendices 3 and 4 for more information on provisions that guarantee citizens the right to observe elections. See Appendices 3DE for sample codes of conduct from Sierra Leone and Bangladesh.

In the pledge, volunteers agree to the terms set forth in the code of conduct.

At the end of each recruiting meeting, leaders extend an invitation to interested participants to fill out an application to join the organization. The application contains essential biographical and contact information, to be included in a central database. A pledge of impartiality should accompany the application. In the pledge, volunteers agree to the terms set forth in the code of conduct, attest to not being an activist or candidate for any political party and promise to refrain from participating in partisan activities through the election. It is advisable to maintain the pledge forms in a secure place to be able to demonstrate that all observers made the pledge, should questions be raised about any of them. Many recruiters end the meeting with a group reading and signing of the pledge.⁹

TRAINING

Volunteer training is generally delivered in three phases, reflecting the recruiting priorities described above. First, regional and municipal committee members are trained. Second, workshops are held for the actual observers, those who will work inside polling stations and phone in reports. Closer to the election, trainers work with computer specialists to train all of those who will work on data collection.

Training Regional and Municipal Committees

The first quick count training programs delivered are for regional committees. The design of these programs is complex because committee members are expected to do a wide variety of jobs, ranging from recruiting and training volunteers to forging good relations with local election officials. Some national trainers elect to gather committee members once for several days, while others offer a series of workshops to cover everything. Topics include:

- what a quick count is;
- why a quick count is important;
- how a quick count is implemented;
- electoral law and regulation, particularly sections directly pertaining to the voting and counting processes, and rights and responsibilities of election observers;
- the duties of regional committees;
- the duties of municipal committees;
- the duties of a quick count observers;
- how to set up regional and municipal offices;
- a timeline of activities up to the elections; and
- how the national office will support regional leaders (e.g., whether there will be financial remuneration or compensation for expenses).

Once regional leaders are trained, they are asked to establish and train municipal committees within their areas. The agenda is very similar to the one

⁹ See Appendices 7A-C for sample neutrality pledges from the Ukraine, Guyana and Kazakhstan.

described above. Whenever possible, representatives from headquarters should assist regional leaders as they train municipal leaders.

Training Local Volunteers

Once all regional and municipal committees are trained, the organization focuses on volunteers who will be inside polling stations on election day. Time and resources are the principal factors that dictate the strategy used to reach thousands of people quickly. There are three basic options:

- *A pyramid, or cascade, system*—lead trainer(s) prepare regional leaders to train municipal leaders who, in turn, train quick count observers. This approach is quick, decentralized and economical.
- *Mobile teams*—teams are formed and prepared at the central level, individual teams divide and cover sections of the country until training has taken place everywhere. This system may better preserve uniformity and quality. It is also economical but requires more time.
- *National training day*—enough trainers are prepared and deployed to cover the entire country in one day. For example, a team is sent to train observers in each electoral constituency. This method is fast, and serves as a high-profile national event. However, it requires intensive preparation.

Most organizations implement some combination of the above options. Whatever the techniques employed, the priority must be placed on uniformity. In general, decentralization should be kept to a minimum in quick counts, because it is vital to minimize mistakes in content and unevenness in quality. Good quality forms and training manuals promote consistency, but it is still a good idea to have a delegate from headquarters present at as many training programs as possible.

Some organizations preparing for quick counts establish parallel training operations for large urban areas, such as capital cities. It is important to ensure that adequate staff time and resources are dedicated to these cities, since they will contain a high concentration of polling stations and, therefore, sample points. In Nicaragua in 2001, for example, roughly one-third of the sample points were located in the capital city of Managua. The civic group *Ethics and Transparency* assigned a full-time paid coordinator to recruit and train Managua observers, and the result was nearly 100 percent election day coverage.

Training Volunteers for Central Operations

The volunteer coordination team must also train volunteers to help in the national office. All headquarters volunteers, whether assisting the executive director, trainers, logistics officers, information specialists or accountants, should also be trained and accredited as observers. This provides them with an intimate understanding of the work being conducted and the responsibilities of those they are assisting. It also prepares them to substitute for observers in the capital city, if needed.

Decentralization should be kept to a minimum in quick counts, because it is vital to minimize mistakes in content and unevenness in quality.

Some organizations preparing for quick counts establish parallel training operations for large urban areas, such as capital cities.

Quick counts are unique projects that call for special training methods. They are time and politically sensitive. They both motivate and teach.

Three specialized groups of volunteers are responsible for data collection and should receive separate training. As described above, they:

- answer telephones and process reports in the central data collection center;
- answer telephones and process reports in backup data collection centers; and
- use motorcycles or cars to collect forms from the network of private homes or offices in the capital city.

The volunteer coordination team must work closely with the technical team on these training programs; they should be co-designed and delivered by the head trainer and the computer specialist. These jobs require mutual knowledge of the volunteer network and the data collection and analysis system.

Training Techniques

A thorough discussion of adult education methodology is beyond the scope of this handbook and likely unnecessary, because groups should have at least one seasoned trainer on staff. The head trainer should have significant experience designing materials and training programs for adults, and particular expertise working with volunteers. Nonetheless, quick counts are unique projects that call for special training methods. They are time and politically sensitive. Trainers must both motivate volunteers and teach them to do specific jobs. Described below are a few techniques and activities that have proven effective:

- **Start with the big picture:** Inspire volunteers by explaining why a quick count is considered crucial given the actual political context. Then go into the organization's overall plan. Educate participants on relevant pieces of the electoral process, and end with training on specific jobs.
- **Provide the historical and political context:** Explain the history of quick counts and how they have been used successfully in the region and around the world. It is useful to involve international guests at training sessions, such as advisors or donors, or prominent local figures who have been involved in quick counts in other countries. This is particularly helpful when training national staff and regional committee leaders.
- **Convey the reason behind the plan:** While detailing the organization's plans, explain why certain decisions were made. For example, observers are often asked to make the same report in three different phone calls. Trainers should explain that, in Paraguay and Peru, the electricity was shut off in the central data collection center on election day and, thus, the calls to backup telephones in private homes were essential. Volunteers are more likely to complete tasks if they understand their importance.

- Refer to the manuals: Well-designed manuals systematize training programs. Be sure all instructions and messages are uniform to avoid confusion about roles or jobs. Encourage volunteers to study them outside the training program.
- Use experiential techniques: Since many quick count observers will only have one formal training session, set up training to take them through the experience of observing. Have volunteers simulate the voting and counting process. Use role plays or dramas to illustrate problems that may occur. Perhaps most importantly, use debates, friendly quizzes or game show formats to test whether participants have really learned their jobs well.^{10, 11}
- Always save time for small planning sessions: Dedicate time for trainers to meet one-on-one with committees or individual participants to set up realistic work plans and to resolve issues particular to a local area. Use sessions to take care of important details, such as how to reach a remote polling station or to resolve sensitive issues such as finances.
- Talk about quick count “politics”: Quick count sponsors and organizers often face opposition from political parties and/or electoral authorities. Participants should be told that this is normal and to be expected. They should be encouraged to discuss their concerns and brainstorm responses should accusations be leveled at the group in public or in the press. Remember to teach and reinforce the organization’s message on these points, so that the local response is consistent with the national message.
- Include a discussion on security measures: Depending on whether there is a history of violence and the likelihood elections will be hotly contested, security could become important. The sample is kept secret, and observers often do not know which polling station they will cover until very close to the election. Observers may be assigned codes for identifying themselves when reporting. In some cases where safety is a concern, local committees have had to send observers in expanded teams and provide vehicles. This kind of issue should also be addressed during the planning meeting suggested above.

Many groups publicize training activities to demonstrate to electoral authorities, political parties and the public that they are well organized and growing. Well-designed training programs highlight a group’s commitment to professionalism, fairness and independence. In addition, disseminating training materials and observer checklists bolsters the deterrent function of a quick count.

Set up training to take observers through the experience of observing.

Many groups publicize training activities to demonstrate to electoral authorities, political parties and the public that they are well organized and growing.

¹⁰ See NDI’s *Pocket Guide to Training*, (1998); J. Pretty and I. Guijt, *A Trainer’s Guide for Participatory Learning and Action*, (1999) pp. 1- 12, 1999; J. Eitington, *The Winning Trainer*, (1996) pp. 174- 179, 1996.

¹¹ See Appendix 8 for an example of an experiential training exercise developed for quick counts.

The volunteer coordination team should continuously assess volunteer satisfaction, particularly in the busy regional and municipal committees.

Motivating Volunteers

Motivating volunteers is a frequently glossed-over but fundamental part of the volunteer coordination team's job. Showing appreciation for volunteers' dedication is not just the right thing to do, it is essential to the success of the effort. Many are entrusted with crucial information and asked to fill indispensable roles. Those who are dissatisfied are less likely to do a thorough job.

An effective recruiting message motivates volunteers from the start. In fact, experience across the world demonstrates that, once volunteers understand how a quick count works and why it is important, they express appreciation at being given an opportunity to do something concrete to promote or strengthen democracy in their countries. Their enthusiasm as they read and sign impartiality pledges is palpable, and their motivation is inspiring.

During the run-up to elections, the volunteer coordination team should continuously assess volunteer satisfaction, particularly in the busy regional and municipal committees. The national coordinator should periodically contact them, either by visiting or making phone calls. Any problems or misunderstandings should be addressed and resolved before they become larger obstacles to the quick count's success. A side-benefit to these conversations is realized when regional and municipal coordinators provide volunteers with substantive information on pre-election activities or the political environment.



KEYS TO SUCCESS

The following additional activities have helped motivate volunteers in many countries:

- sending thank-you letters from the board of directors or other prominent figures;
- providing t-shirts, hats or other clothing identifying the volunteer as a member of the organization;
- giving gifts such as backpacks or bags to volunteers who take on leadership roles;
- issuing certificates to volunteers at important milestones, such as for meeting a recruiting target, successfully completing a simulation exercise and at the end of the project;
- featuring volunteers at press events or in promotional videos;
- inviting regional volunteers to attend meetings with donors, electoral officials or international election observer missions;
- organizing celebrations to mark a successful quick count operation and meetings to debrief volunteers and discuss lessons learned.



FIGURE 4-2:
CERTIFICATE ACKNOWLEDGING
VOLUNTEER ELECTION OBSERVER

LOGISTICS

A successful volunteer coordination team will identify, recruit, train and deploy hundreds or thousands of volunteers. The logistics required to support and supply this cadre with needed materials and resources are considerable and daunting. Unfortunately, the costs and time needed to complete these tasks are often underestimated. It is not unusual for quick count sponsors to be forced to scale back their estimates (and their sample sizes) when the enormity and complexity of these tasks become apparent.

The work of a logistics officer is generally divided into two areas: 1) making travel arrangements for staff and volunteers; and 2) procuring and distributing materials and supplies. During the recruiting and training phases of the quick count project, there is a great deal of work to be done arranging travel for staff, including transportation, meals and lodging. As the election draws near, however, the logistics officer can be overwhelmed with the task of supplying the network with its various material needs, including:

- basic office supplies and equipment;
- training materials;
- money or reimbursement to cover national, regional and local organizing and training costs;
- election day per diem;
- election day forms, checklists;
- communications equipment such as telephones, radios, facsimiles; and
- data processing equipment such as computers and printers.

While the volunteer coordinator will often be the primary contact person for regional and local leaders and volunteers, she or he must count on the logistics officer to take care of local and logistical support.

In order to function well, the logistics officer has to coordinate her or his activities with the other members of the staff, such as the executive director, volunteer coordinator and accountant, to build systems and put in place policies for delivering and receiving materials. A few recommendations for the logistics officer are listed below.

- Seek advice from the network; understand that each region will have unique logistical quirks. Request information on best methods for distributing information or materials. Keep this information in a database.
- Have back-up systems for every region. Know about ground transportation if flights are cancelled. Know where a radio communications network exists in the event that telephone lines are down.
- Pick a primitive over a modern method. As a rule, basic systems pose less risk of breakdown. Plan to use the most basic transportation and communications systems possible and move to more sophisticated systems only when the basic systems are too slow.
- Time the process. Perhaps most importantly, estimate when the “last message” can be sent to reach the entire volunteer network. If this process takes five days, there is little point in worrying about a change in instructions three days before the election!

Dedicating Sufficient Time and Staff

Building and supporting a volunteer network is, by far, the most time consuming aspect of quick count preparations. It is important to stress that this work continues after election day. In many countries, the counting process continues for days, even weeks. Observers are often asked to investigate complaints or watch the resolution of challenges at local or regional election offices. Additionally, the national office should be prepared to receive calls from the field, as committee leaders and observers have questions and expect to be kept abreast of post-election developments. Finally, it takes a significant period of time to collect all forms. All of this should be considered and factored into planning for the post-election period.



REMINDER

The largest job within a quick count is to build and train a network of volunteer observers. The basic components of this job are:

1. designing observer forms and instructional manuals;
2. recruiting volunteers in every region of the country;
3. training volunteers on the electoral process and their duties; and
4. managing the logistics required to recruit and train, as well as to support the network.

CHAPTER FIVE

Statistical Principles and Quick Counts

The quick count methodology applies statistical principles to a very practical problem—verifying an electoral outcome.¹ This chapter outlines those statistical principles and describes how they work together. The briefest way to present this information is to use the language of mathematics, and to a certain extent that language is unavoidable. The goal of this chapter, however, is to present the basic concepts in a non-technical way so that the logic behind quick count methodology is accessible to a general audience.

The first part of this chapter presents the foundations of quick count methodology. It begins by considering the robustness of quick count data and such core concepts as sample and population. The chapter then turns to an explanation of statistical principles, such as the law of large numbers and the central limit theorem. The second, more technical half of the chapter presents the process for constructing a sample. It outlines measures of central tendency and dispersion, and then discusses standard strategies for calculating and drawing samples. It also takes up practical questions, such as correction factors, that are designed to manage the unique problems that arise in the application of statistical principles to quick count situations.

BASIC STATISTICAL PRINCIPLES

Statistical principles drive the methodology for collecting and analyzing quick count data. This methodology is grounded in broadly accepted scientific principles. Like the law of gravity, these statistical principles are not just a matter

Statistical principles drive the methodology for collecting and analyzing quick count data.

¹ This chapter focuses on the statistical principles involved in drawing a random sample of polling stations, from which data is collected and analyzed to project or verify election results. Quick count methodology, however, has evolved, and the same statistical principles now drive the qualitative observation of an election. Chapter Six, *The Qualitative Component of the Quick Count*, describes how information on the voting and counting processes can be collected from the same observers and the same polling stations used to retrieve data on the vote count. These findings can be reliably generalized to the quality of the voting and counting processes throughout the country.

Quick count methodology allows a group to demonstrate why election-day processes can be considered fair, or the extent to which they have been unfair.

It is important to take quite deliberate steps to ensure that the data collected meet certain standards. One is that the quick count data themselves have to be “robust.”

of opinion or open to partisan interpretation; they are demonstrable and universally accepted. It is precisely because these principles are scientifically based that quick count organizers can make authoritative claims about election outcomes. It is one thing to claim that an election has been fair or unfair. Quick count methodology allows a group to demonstrate why election-day processes can be considered fair, or the extent to which they have been unfair.

Reliability and Validity

Statements made about election-day processes are only as strong as the data upon which they are based. Consequently, it is important to take quite deliberate steps to ensure that the data collected meet certain standards. One is that the quick count data themselves have to be “robust.” That is, the data have to be both reliable and valid.

Data are considered reliable when independent observers watching the same event (the vote count) and using the same measuring instrument (the observer form) evaluate that event in exactly the same way. A simple example illustrates the point:

Three different people (A, B and C) repeatedly measure the height of a fourth person (Z) on the same day. The measure of that person’s height would be considered reliable if all three observers (A, B and C) using the same measuring instrument (a standard tape measure) produced exactly the same results in their measure of Z’s height.

The very same principle applies to quick count data collection; it is essential that both indicators and measurements are reliable. The information produced by observers should not change because of poor indicators, inadequate measurement instruments (an elastic measuring tape) or poor procedures—nor should the results vary depending upon who is doing the measuring. Reliable results will vary only when there are genuine changes in the phenomenon that is being measured. Reliable data, then, are data that can be independently verified.

Quick count data should also be valid. Validity concerns how well any indicator used actually fits the intended concept that is being measured. A measure is considered valid if the indicator used for measurement corresponds exactly, and entirely, to the scope and content of the object that is being measured. The previous example can be extended to illustrate the point:

Three additional observers (D, E and F) are asked to report the size of the same person, Z. D and E might report that Z, who is six feet tall, is big, whereas F might say that Z is medium. The problem is that the concept of size is ambiguous and open to different interpretations; for some people it might mean more than just height; therefore, size lacks validity. D might consider Z big because Z is much taller than D. E

might think of Z as big because Z is heavier than E. F might report that Z is medium because Z is about the same size and height as F, and F thinks of herself as medium. In fact, the ambiguity of the notion of size is a problem; it is a threat to reliability and validity.

It is for these reasons that exit polls and opinion polls should be interpreted with extreme caution. Exit and opinion polls often produce unreliable estimates of actual vote results on election day. This is because exit polls measure recollections, and opinion polls measure intentions concerning citizens' votes. For quite understandable reasons, people are tempted to misreport either how they voted or how they intend to vote. Quick counts, by comparison, are reliable and valid because observers collect official vote count results from individual polling stations. Quick counts measure behavior, not recollections or stated intentions. They measure how people actually voted, not how they might have reported their vote to a complete stranger.²



FREQUENTLY ASKED QUESTIONS

How can quick count leaders ensure that quick count data are reliable and valid?

The first step is to ensure that all leaders and staff understand these concepts. Everyone involved should be aware that quick count results will be compromised if data are not reliable (independently verifiable) and valid (measuring what is intended). The second step is to describe the implications. For example, questions on observer forms must be tested for validity; and observer forms should contain response categories that allow data to be reliably reported. Training programs are also crucial. They must be designed to ensure that all volunteers understand the concepts involved in observation, and that all observers will measure the same event using the same form in the same way.³

The Sample

The robustness of quick count data also depends on how the sample is constructed; the sample determines which votes are used as the basis for estimating election outcomes. The basic idea of a sample crops up in many different ways in everyday life. For example, chemists routinely take a "sample" of a compound and analyze that sample to make accurate statements about the chemical properties of the entire compound. Physicians take blood samples from patients to determine whether the composition of a their blood is causing illness. Fortunately, physicians do not need to drain all of the blood from patients' bodies to know exactly what it contains. Such an approach is impractical and

² Quick counts also measure qualitative aspects of voting and counting processes, and, as discussed in Chapter 6: *The Qualitative Component of a Quick Count*, great care is required in designing questions to measure qualitative indicators.

³ These issues are considered in more detail throughout the manual. In particular, Chapter Four, *Building the Volunteer Network*, discusses designing observer forms and manuals, recruiting and training volunteers. Chapter Six, *The Qualitative Component of a Quick Count*, lays out further recommendations for designing quick count observer forms.

Quick count samples provide a reliable foundation for making accurate estimates of the total population.

Quick counts begin with the assumption that the vote count data themselves are reliable and valid.

unnecessary, since a single blood sample reveals all that a physician needs to know about the contents of a patient's entire blood supply.

Quick count samples rely on exactly the same principles. An observer group might consider asking volunteers to observe every single polling station in the country and report every single result. That strategy would require a huge amount of resources, and it is unnecessary. Like the chemist and the physician, observer groups can learn everything they need to know about the entire voting population by using a carefully designed sample. The method is faster, cheaper and more practical.

Quick count samples provide a reliable foundation for making accurate estimates of the total population because a sample is a particular subset of the total population, a subset that reveals population characteristics. Even so, designing samples means making choices, and those choices have a profound effect on both the accuracy of the data and the kinds of data analysis possible.

The Population

Technically, a population refers to all the relevant individual cases that exist within a certain boundary. Often statisticians are not concerned with counting individuals. Quick counts are not interested in every individual living within the boundary of a particular country. Quick counts are concerned only with the relevant population—every individual who is eligible to vote.

The quick count's relevant population excludes all people who, for whatever legal reason, are not eligible to vote. The electoral laws of most countries have clear rules concerning voting age, for example. Very young people are not usually eligible to vote, although the precise age limit varies from one country to the next. Similarly, most countries have citizenship requirements that allow only citizens to vote in national elections.⁴

Getting from a Sample to a Population

Quick counts begin with the assumption that the vote count data themselves are reliable and valid. In other words, quick counts assume that the official vote counts produced at polling stations—the data collected by observers from each and every sample point—are robust information. In fact, observer groups are able to verify that assumption by undertaking a systematic qualitative observation of the voting and counting processes at the polling stations.⁵

If a systematic qualitative observation of election-day procedures establishes that the vote count data are reliable and valid, and if basic statistical princi-

⁴ It should be noted that the democratic nature of an election can be negated by improper, discriminatory exclusions from voting eligibility and/or by manipulations of official voter lists. Such issues are not addressed by quick counts but should be covered by other election monitoring activities. See, e.g., *Building Confidence in the Voter Registration Process, An NDI Guide for Political Parties and Civic Organizations* (2001).

⁵ Chapter Six, *The Qualitative Component of the Quick Count*, details the procedures followed to systematically evaluate the quality of the voting and counting procedures.

ples are followed, then accurate estimates of the distribution of the vote for the entire country can be made on the basis of a properly drawn sample. It is possible to make very accurate estimates about the behavior of a population (how the population voted) on the basis of a sample (of the results at selected polling stations) because of the theory of probability.

Probability: The Law of Large Numbers and the Central Limit Theorem

Probability concerns the chance that an event, or an outcome, will occur. It is possible to estimate the probability of unknown future events – that Brazil will win the World Cup, or that it will rain today. No one knows ahead of time what will happen, but it is possible to make an educated guess based on the team's performance in other events, or the meteorological conditions outside. It is also possible to make predictions about probability based on the known likelihood that something will happen. Consider the classic statistical example of tossing a fair coin, one that is unbiased:

A coin is tossed in the air 100 times. With a fair coin, the chances are that the outcome will be heads 50 times and tails 50 times, or something very close to that. Suppose now that the same rule was tested using only a few tosses of the same coin. Tossing that same coin 12 times in the air might produce outcomes that are not exactly even. The outcome could be 9 heads and 3 tails. Indeed, in exceptional circumstances, it is possible that, with twelve throws, the coin could land heads up every time. In fact, the probability that such an unusual outcome will occur can be calculated quite precisely. The probability of twelve heads in a row turns out to be one in two to the twelfth power $(1/2)^{12}$, or one in 4,096 or 0.024 percent. That is, the chance of getting twelve heads (or tails) in a row is one in four thousand and ninety six. Probability theory indicates that the distribution between heads and tails showing will even out *in the long run*.

One aspect of probability theory at work in the above coin toss example is the law of large numbers. This statistical principle holds that, the more times that a fair coin is tossed in the air, the more likely (probable) it is that the overall distribution of total outcomes (observations) will conform to an entirely predictable and known pattern. *The practical implication is clear: the more data we have, the more certain we can be about predicting outcomes accurately.*

This statistical law of large numbers is firmly grounded in mathematics, but the non-technical lesson is that there is safety in numbers. A second example illustrates a related point important to understanding the basis of the quick count methodology.

Consider a class of 500 students taking the same university course. Most students will earn Bs and Cs, although a few students will earn As, and a few will earn Ds, or even F's. That same distribution of grades would almost certainly not be replicated precisely if the same course

The greater the number of observations we have, the more likely it is that we can make reliable statistical predictions about the characteristics of the population.

had a class of 10 or fewer students. More importantly, the grades of exceptionally good, or exceptionally poor, students will have quite a different impact on the average grade for the entire class. In a small class, those “outlier” grades will have a big impact on the overall distribution and on the class average; they will skew the results of the grade curve. But in a larger class, the impact of any individual exceptional grade will have a far smaller impact on the average mark for the whole class.

The practical implication of the grade distribution example is simple: as the amount of data (number of observation points) increases, the impact of any one individual data point on the total result decreases.

A second statistical principle that is vital to quick count methodology is known as the central limit theorem. This axiom holds that, the greater the number of observations (sample points), the more likely it is that the distribution of the data points will tend to conform to a known pattern. A class of 500 physics students in Brazil will produce the same grade distribution as a class of 300 literature students in France, even though the marks themselves may be different. In both cases, most of the data points will cluster around the average grade.

These two statistical axioms – the law of large numbers and the central limit theorem – work in conjunction with each other. Together they indicate that:

1. the larger the number of observations (sample points), the less likely it is that any exceptional individual result will affect the average (law of large numbers); and
2. the greater the number of observations, the more likely it is that the dataset as a whole will produce a distribution of cases that corresponds to a normal curve (central limit theorem).

A general principle follows from these statistical rules, one that has powerful implications for quick counts: the greater the number of observations we have, the more likely it is that we can make reliable statistical predictions about the characteristics of the population. However, it is absolutely crucial to understand that, for these two statistical principles to hold, the selection of the cases in the sample must be chosen randomly.

Randomness

A sample can be thought of not just as a subset of a population, but as a miniature replica of the population from which it is drawn. The population of every country can be considered as unique in certain respects. No two countries are the same when it comes to how such characteristics as language, religion, gender, age, occupation and education are distributed in the population. Whether an individual possesses a car, or lives in a city rather than a town, or has a job, or owns a pet dog contributes to the uniqueness of personal experience. It is impossible to produce a definitive and exhaustive list of every single feature

that distinguishes us as individuals, let alone for entire populations; there are just too many possible combinations of factors to document. Fortunately, quick count methodology does not require this. Quick counts are not concerned with all of the things that make people different. Quick counts are only concerned with factors that have a demonstrable impact on the distribution of votes within the voting population.

Sample points from the relevant population must be selected at random, and only at random, for the resulting sample to be representative of the total population. In practice, randomness means that the probability of any single sample point being selected from the population is exactly the same as the probability that any other sample point will be selected. And for reasons that have already been outlined, the law of large numbers and central limit theorem indicate that the larger the sample drawn, the more accurately that sample will represent the characteristics of the population.

Homogeneity and Heterogeneity

Reliable samples do not require huge amounts of detailed information about the social characteristics of the total population. However, it is essential to know whether the population of interest is relatively diverse (heterogeneous) or not (homogenous). Assessments of heterogeneity and homogeneity have a significant impact on how populations can be reliably sampled.

There are several ways to examine the level of heterogeneity, or diversity, of any population. Ethnic composition, religion and languages can impact heterogeneity. The primary concern for quick counts, however, is not just with the level of ethnic or religious heterogeneity in a population. The vital question for quick counts is the question of whether that heterogeneity has a significant impact on voting behavior. If one candidate is preferred by 80 percent of the population, then that population is considered relatively homogeneous, regardless of the religious, linguistic or ethnic diversity of the population. Similarly, if the electoral race is close, with the votes evenly divided between two or more candidates, a population is considered relatively heterogeneous.

A common misperception is that socially diverse populations will always be heterogeneous voting populations. However, just because populations are socially heterogeneous, it does not follow that they will be heterogeneous when it comes to voting. For example, India has a multiplicity of languages and religions but is relatively homogenous when it comes to constructing a sample of the voting population.

The greater the heterogeneity of the voting population, the larger the sample has to be in order to produce an accurate estimate of voting behavior. A comparison of required sample sizes for three countries with very different population sizes – Canada, the United States and Switzerland – illustrates this point.

Sample points must be selected at random, and only at random, for the resulting sample to be representative of the total population.

The greater the heterogeneity of the voting population, the larger the sample has to be in order to produce an accurate estimate of voting behavior.

FIGURE 5-1:
DESIRED SAMPLE SIZES FOR THE US,
CANADA AND SWITZERLAND

	UNITED STATES	CANADA	SWITZERLAND
Population:	263,814,032	28,434,545	7,084,984
Margin of error:	+/-2%	+/-2%	+/-2%
Desired sample size:	1200	2400	4300

The safest strategy is to make the conservative assumption that the voting population is heterogeneous.

The more confidence required that the sample distribution will reflect the population distribution, the larger the sample has to be.

As Figure 5-1 demonstrates, heterogeneity is not determined by the ethnic characteristics of these populations. Heterogeneity is determined by the likelihood that one candidate will win a majority of the electoral support. In a two party system, as in the United States, the electoral race is often easier to follow and much easier to predict – voters usually have only two choices. But in Switzerland, the larger number of parties makes electoral competition more complicated. Swiss political parties are clearly supported by different language and religious groups. Even a country such as Canada, with five official parties, is less heterogeneous than Switzerland.

A related principle is also illustrated in Figure 5-1. The required sample size is determined by the expected level of homogeneity in voting results, not by the total population size of a country. These three countries with very different total populations require different sample sizes to maintain a margin of error of plus or minus two percent (+/-2%). Indeed, it turns out that the country with the larger population requires the smallest sample. In fact, the variations in the required sample size are attributable to variations in the homogeneity of the three different populations.

In practice, reliable information about the heterogeneity, or homogeneity, of voting populations in many countries is hard to find. The safest strategy under these circumstances, one that requires no guess-work, is to make the conservative assumption that the voting population is heterogeneous. As will become clear, that assumption has a profound impact on how a quick count's sample size is calculated.

Confidence Levels: Specifying the Relationship between Sample and Population

One additional piece of information has an important impact on how statisticians estimate population on the basis of a sample—the confidence level. Confidence levels concern how the sample data can be compared to the population. The more confidence required that the sample distribution will reflect the population distribution, the larger the sample has to be. This is because, in larger samples, exceptional individual results will have less effect on the distribution.

The conventional practice for statisticians is to rely on a confidence level of 95 percent. Technically, the confidence level expresses, as a percentage, the probability with which one is certain that a sample mean will provide an accurate estimate of the population mean. Thus, a 95 percent confidence level indicates that 95 percent of all sample means will, indeed, correspond to the mean for the population. Because the consequences of inaccurate quick count results can be so serious, the standard practice in election observations is to design the sample with more conservative parameters, a 99 percent confidence level.

CONSTRUCTING THE SAMPLE

The practical business of constructing a quick count sample involves making a combination of judgements. These include:

- identifying the unit of analysis;
- determining the margin of error and confidence levels;
- determining the most appropriate type of random sample; and
- estimating correction factors for sample retrieval rates and non-voting.

The Unit of Analysis

The unit of analysis refers to the precise object that is being examined. If the goal is to generalize about an entire population, then the unit of analysis is often the individual. However, it is possible in some cases to generalize from a sample to a population by adopting a larger aggregate as the unit of analysis, such as a household or city block.

With quick counts, the objective is to estimate the distribution of citizens' votes between political parties. In a democratic election, the individual vote is secret and so the individual vote cannot be the unit of analysis. Instead, quick counts typically use the official result at an individual polling station as the unit of analysis. This is because the polling station is the smallest unit of analysis at which individual votes are aggregated and because election rules usually require that an official count take place at the polling station.

The Margin of Error: How Accurate Do We Need to Be?

The margin of error is one of the most important pieces of information considered when constructing a sample. Expressed as a percentage, the margin of error refers to the likely range of values for any observation. The following example illustrates the concept:

Results from one polling station indicate that 48 percent of votes support Candidate A. If the designed margin of error is five percent, there is good reason to be confident that the actual results for Candidate A will fall somewhere between 43 and 53 percent when all voters within the population are considered.

Because the consequences of inaccurate quick count results can be so serious, the standard practice in election observations is to design the sample with a 99 percent confidence level.

Quick counts typically use the official result at an individual polling station as the unit of analysis.

Civic organizations conducting quick counts typically design the quick count samples to have a margin of error of plus or minus 0.5 percent (+/-0.5%).

Civic organizations conducting quick counts typically design the quick count samples to have a margin of error of plus or minus 0.5 percent (+/-0.5%). There is occasionally a reason (e.g., the expectation that a vote will be very close) to select an even more stringent margin of error. The desired margin of error depends on what degree of accuracy is required from the estimates.

The margin of error is calculated using the following formula:

$$ME = \frac{s}{\sqrt{n}} * z$$

Where

ME = margin of error

s = standard deviation (assume 0.5)

n = sample size

z = z value for the selected confidence level (for 95% is 1.96, for 99 is 2.58)

Any dataset, a set of sample point observations, has at least two properties. The data will have a central tendency, around which most of the results cluster. They will also have a variance or spread. Variance refers to how widely, or narrowly, observations are dispersed. There are different ways of measuring central tendency and dispersion, and these are relevant in calculations of the margin of error.

Measures of Central Tendency

The most widely known measure of central tendency is the mean. The arithmetic mean is simply the average value of all recorded observations. The arithmetic mean is derived by adding the values for each observation in a data set and then dividing by the number of observations. The following example illustrates this process:

The following set of numbers: 1, 3, 4, 6, 7 and 9 has a mean of 5. This is because $1+3+4+6+7+9=30$, the number of observations is 6, and so $30 \div 6 = 5$.

There are other ways to measure the central tendency of any data. The mode, for example, refers to the number that occurs most frequently in any set of data. In the following set of numbers: 1, 3, 3, 3, 5, 6 and 7, the observation occurring most frequently is 3. Notice, however, that the arithmetic mean of this same set of numbers is 4 $[(1 + 3 + 3 + 3 + 5 + 6 + 7) \div 7 = 4]$.

A third measure of central tendency is the median. This number occurs in the middle of a given set of observations. For the following data set: 1, 3, 6, 7, 8,

8 and 10, the number in the middle of the observations is 7; there are three observations smaller than 7 and three observations with values that are greater than 7. The mode for this dataset, however, is 8 because 8 occurs most frequently. The arithmetic mean for this data set is 6.14. Statisticians usually report the mean, rather than the median or the mode, as the most useful measure of central tendency.

Measures of Dispersion

A second feature of data concerns measures of dispersion, which indicate how widely, or how narrowly, observed values are distributed. From the example above, it is clear that any given data set will have an arithmetic mean. However, that mean provides no information about how widely, or narrowly, the observed values are dispersed. The following data sets have the same arithmetic mean of 3:

2, 2, 3, 4, 4

-99, -99, 3, 99, 99,

These two datasets have quite different distributions. One way to express the difference in the two datasets is to consider the range of numbers. In the first set, the smallest number is 2 and the largest number is 4. The resulting range, then, is 4 minus 2, or 2. In the second set, the smallest number is negative 99 and the largest number is positive 99. The resulting range is positive 99 minus negative 99, or 198.

Obviously, the different ranges of the two datasets capture one aspect of the fundamental differences between these two sets of numbers. Even so, the range is only interested in two numbers -- the largest and the smallest; it ignores all other data points. Much more information about the spread of the observations within the dataset can be expressed with a different measure, the variance.

In non-technical terms, the variance expresses the average of all the distances between each observation value and the mean of all observation values. The variance takes into account the arithmetic mean of a dataset and the number of observations, in addition to each of the datapoints themselves. As a result, it includes all the information needed to explain the spread of a dataset. The variance for any set of observations can be determined in four steps:

1. Calculate the arithmetic mean of the dataset.
2. Calculate the distance between every data point and the mean, and square the distance.
3. Add all the squared distances together.
4. Divide this by the number of observations.

The formula, then, is as follows:

For a dataset containing observations $x_1, x_2, x_3 \dots x_n$

$$s^2 = \frac{(x_1-x)^2 + (x_2-x)^2 + (x_3-x)^2 \dots (x_n-x)^2}{n-1}$$

Where

s^2 = variance

$x_1, x_2, x_3 \dots x_n$ are the observations

x is the mean

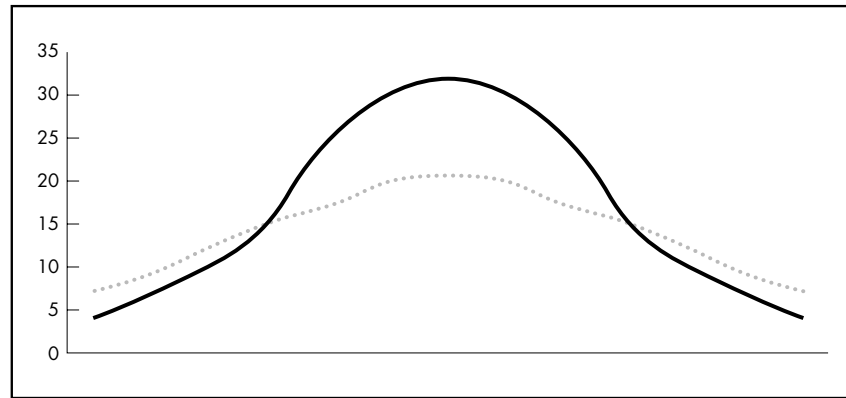
n is the number of observations

In short form, it appears as: $s^2 = \frac{\sum (x-x)^2}{n-1}$

The standard deviation is the square root of the variance. Statisticians usually rely on the standard deviation because it expresses the variance in standardized units that can be meaningfully compared. The larger the standard deviation for any dataset, the more the data are spread out from the mean. The smaller the standard deviation, the more tightly are the individual data points clustered around the mean.

There is one additional measurement concept that needs to be considered: the normal distribution. The preceding discussion shows that, in every data set, individual data points will cluster around an average, or mean, point. Another way to express the same idea is to consider what proportion of all of the observations fall within one standard deviation of the mean. If datasets are large enough, and if they conform to the principles of randomness, the dispersion of the data values will conform to what is called a normal distribution. The normal distribution has well-known properties: the normal curve, as seen in Figure 5-2, is bell-shaped and symmetrical, and the mean, mode and median coincide.

FIGURE 5-2:
NORMAL DISTRIBUTION CURVES



The size of the variance determines the precise shape of the actual distribution. The key point for quick count purposes is that any dataset that conforms to the normal distribution curve has exactly the same standard properties. These are: 68.3 percent of all observed values will fall within one standard deviation of the mean, 95.4 percent of all results will fall within two standard deviations of the mean and 99.7 percent of all results will fall within three standard deviations of the mean. Not all datasets will conform to this exact pattern. If there is a lot of variance within the data, the curve will be relatively flat. If there is little variation, the curve will appear more peaked.

The distance from the mean, expressed as standard deviations, can also be referred to as Z scores or critical values. Most standard statistics textbooks contain a table of Z values for the normal distribution and analysts do not have to calculate Z values each time they confront a data set. Significantly, if data have a 95 percent confidence interval (95 percent of all sample means will include the population mean), then it is clear that the results will fall within 1.96 standard deviations of the mean. Similarly, a 99 percent confidence level indicates that 99 percent of all results (for which the sample mean will include the population mean) fall within 2.58 standard deviations from the mean. In these cases, the values 1.96 and 2.58 represent the critical values, or Z values, for the confidence levels 95 percent and 99 percent, respectively.

Calculating the margin of error requires relying on the standard deviation and Z values. The standard deviation and Z values, in turn, involve measures of central tendency, measures of dispersion and confidence levels. As Figure 5-3 shows, margins of error vary with confidence levels and with sample sizes. In general, the higher the confidence level, the higher the margin of error. The larger the sample size, the lower the margin of error. Decisions about what margin of error can be tolerated with a quick count will directly impact calculations to determine the required minimum sample size.

Decisions about what margin of error can be tolerated with a quick count will directly impact calculations to determine the required minimum sample size.

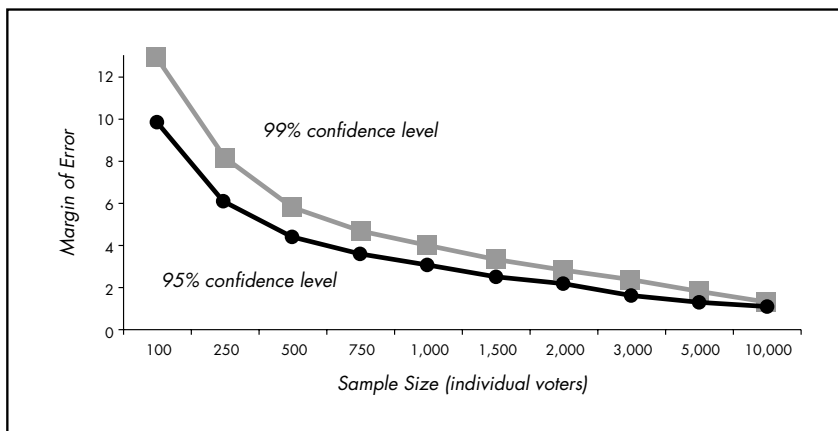


FIGURE 5-3:
MARGINS OF ERROR
AND SAMPLE SIZES

Types of Samples

There are two basic types of samples: probability samples and non-probability samples. Probability samples comply with the principles of randomness and are, therefore, representative of total populations. Quick counts always use probability samples.

Non-probability samples do not select sample points randomly, and the extent to which they are representative of the wider population is not known. Non-probability samples are useful under some circumstances. They are inexpensive and easier to construct and conduct than probability samples. The cases in the sample are chosen on the basis of how easy or comfortable they are to study. For example, a television reporter stands outside a ballpark and asks fans whether they enjoyed a baseball game. The strategy provides quick and interesting footage for broadcast, but it does not provide reliable information about the total population inside the ballpark.

For quick count purposes, the fatal limitation of non-probability samples is that they are not reliable for generalizing to the population. The data they produce, therefore, are not reliable estimates of population characteristics. If, for example, a quick count sample were constructed entirely from polling stations in the capital city, the results would almost certainly be different from those coming from a sample of polling stations in rural areas. People drawing on raw data at convenient, easily accessible, locations are not using data that are representative of the population as a whole.



FREQUENTLY ASKED QUESTIONS

Can statisticians design quick count samples that combine the benefits of the probability sample with the benefits of a non-probability sample?

Absolutely not. Either a sample is a probability sample, in which case it conforms completely to the principles of randomness, or it is a non-probability sample. Combining elements of both sampling techniques will produce a non-probability sample. Consequently, the temptation to substitute “convenient” polling stations for inaccessible ones must be avoided. Sample points cannot be substituted for each other because that strategy violates the premise of randomness – that each sample point has exactly the same probability of being selected. Instead, quick count organizers must find a way to get trained observers to, and information from, the precise polling stations contained in the sample, even if they are in remote areas. Collecting and reporting data from a more convenient polling station can compromise the reliability and validity of the entire quick count.

Quick counts must always use probability samples to produce results that are representative of a defined population.

Quick counts must always use probability samples to produce results that are representative of a defined population. There are several types of probability

samples, and each can provide accurate representations of the population by relying on different methods. The two most common types of probability samples are the general random sample and the stratified random sample.

General Random Samples

In the general random sample, units of analysis are randomly selected one at a time from the entire population. This gives each unit in a population an equal chance of being included in the sample. However, for every unit of analysis to have an equal chance of being included in the sample, there must be an accurate list of all possible units of analysis.

Statisticians refer to the list of all members of a population as a sampling frame. In the case of a quick count, the unit of analysis is the polling station; therefore, the sampling for a quick count can only begin when an accurate and comprehensive list of all the polling stations is available.

Stratified Random Samples

The stratified random sample applies the same principles of randomness as the general random sample. However, the sample frames from which the sample points are selected consist of pre-determined, and mutually exclusive, strata of the total population. For example:

The goal of a project is to use a sample of 1000 students to generalize about a university population of 20,000 students, half of whom are undergraduate students and half of whom are graduate students. While the general random sample approach simply randomly selects 1000 sample points out of the total list of 20,000 students, the stratified sample approach follows two steps. First, it divides the list of all students into two groups (strata), one including all undergraduate students and the other including all graduate students. Next, it selects 500 cases from strata 1 (undergraduates) and another 500 cases from strata 2 (graduates).

In the stratified approach, the selection of each case still satisfies the criteria of randomness: the probability of the selection of each case within each strata is exactly the same (in the above example, 1 in 20). However, the practice of stratifying means that the end result will produce a total sample that *exactly* reflects the distribution of cases in the population as a whole. In effect, the stratification procedure predetermines the distribution of cases across the strata.

Stratification may be useful in another way. Some observer groups do not have the resources to conduct a nation-wide observation. In that case, the observer group might want to limit its observation to a particular strata of the country, perhaps the capital city, or a coastal region. In these instances, with a ran-

The sampling for a quick count can only begin when an accurate and comprehensive list of all the polling stations is available.

The practice of stratifying means that the end result will produce a total sample that **exactly** reflects the distribution of cases in the population as a whole.

domly selected set of sample points within a strata, the observer group can generalize the results of the observation to the entire strata that the observer group covers.



FREQUENTLY ASKED QUESTIONS

Since most populations seem to be stratified when it comes to the vote, why not use stratified samples as a matter of practice?

The stratification approach seems to be an ideal, but there are two reasons why it may not be appropriate. First, if quick counts are using conservative assumptions about margins of error and confidence intervals, then the sample is likely to be large. And, because of probability theory, it is clear that large samples will end up producing accurate replicas of the total population even without stratification. Second, stratification assumes reliable information about how citizens tend to vote within the strata. Around what lines, exactly, should the stratification criteria be drawn? In many countries, the information needed to make that judgement may not be very reliable. Previous elections cannot be a reliable guide, especially if their results were questionable. The stronger strategy is to refer to strata post facto, that is, to check the distribution of cases drawn from a general random sample against strata within the population after the sample is drawn. So, if 40 percent of the voting population lives in the capital city of a country, then 40 percent of the randomly drawn sample points should end up being from the capital city.

Determining Sample Size

To determine the sample size for a quick count (i.e., how many polling stations should be included in the sample), analysts proceed through several steps. They identify the size of the relevant population (number of eligible voters); determine the level of homogeneity within that population, and select the desired level of confidence and the margin of error. Next, analysts calculate the sample size as follows:

$$n = \frac{P(1-P)}{\frac{\Sigma^2}{z_{99\%}^2} + \frac{P(1-P)}{N}}$$

Where

n = size of the sample (number of eligible voters)

P = suspected level of homogeneity of the population (between 0 and 1, so 50% = 0.5)

Σ = margin of error (between 0 and 1, so 0.32% = 0.0032)

$z_{99\%}$ = level of confidence in the case of normal distribution (99% in this case)

N = size of the total population

The case of a quick count conducted during the 2001 Peruvian presidential elections can illustrate the above steps:

The size of the total relevant population (number of eligible voters) in Peru was 14,570,774. The population was assumed to be heterogeneous—the race between two candidates was expected to be close, so the level of homogeneity of the population was set at 50 percent (0.5). A margin of error of 0.32 percent and a confidence level of 99 percent were selected. For the purposed of making a calculation, the proportion of homogeneity was expressed as a value with a range between 0 and 1, as was the margin of error. The expected level of homogeneity was set as 50 percent, the most conservative assumption; it is expressed as 0.5 in the formula, and the margin of error of 0.32 percent (out of a possible 100 percent) is expressed as .0032. These values were plugged into the formula as follows.

$$\begin{aligned}
 N &= \frac{.50 (1-.50)}{(\frac{.0032}{2.58})^2 + \frac{.50 (1-.50)}{14,570,774}} \\
 &= \frac{.25}{\frac{.000010}{6.6564} + \frac{.25}{14,570,774}} \\
 &= \frac{.25}{.000001515 + .000000017} \\
 &= \frac{.25}{.000001532} \\
 &= \mathbf{163,185}
 \end{aligned}$$

At this point, analysts know how many voters have to be consulted. However, the units of analysis are not individual voters; they are polling stations. Therefore, the next step is to determine how many polling stations must be selected to represent the required number of voters. The Peruvian calculation can be continued to illustrate the point:

On average, there were approximately 160 voters per polling station in Peru. Therefore, the sample size of 163,185 (eligible voters) was divided by the number of electors per station (160) to determine the number of polling stations in our sample (1,020). Consequently, the sample size for the 2001 Peru quick count was 1,020 polling stations.

Random ordering is a technique that provides additional assurance that the probability of the selection of each point in the sample is equal to the chances of any other point being selected.

No large-scale quick count undertaken by any observer group has ever been able to deliver data from every single data point in the original sample.

Selecting the Sample Points

Once the required size of the random sample is known, the sample can be selected from the sample frame. For quick counts, polling stations (the sample points) are selected from the complete list of polling stations (sample frame). The simplest way to do this is to use a random computer program. However, this task can also be accomplished without a computer. The first step involves dividing the total number of polling stations by the desired number of polling stations, and the second step requires determining a random starting point. Again, the numbers from the 2001 quick count in Peru can be used to illustrate how this is done:

On election day, the Peruvian universe consisted of 90,780 polling stations. First, the total number of polling stations is divided by the desired number of stations in the sample ($90,780 \div 1,020 = 89$). This indicates that one in every 89 polling stations needs to be selected. Second, a random starting point is selected by placing 89 slips of paper, numbered 1 to 89, in a hat, and randomly selecting a piece of paper. The piece of paper selected contains the number 54. The 54th polling station on the randomly ordered list is the first sample point, then every 89th polling station after that first sample point is selected. Thus the second polling station in the sample is the 143rd polling station on the list (54 plus 89). The procedure is repeated until the total sample size of 1,020 is reached.

Why does the list of polling stations have to be ordered randomly? This strategy further protects the validity and reliability of the quick count. If the original list is organized by size, region, or other criteria, the results of a simple draw could be biased. Usually this is not a serious concern, but random ordering is a technique that provides additional assurance that the probability of the selection of each point in the sample is equal to the chances of any other point being selected.

Correction Factors

It is sometimes necessary to make adjustments to various elements of the quick count methodology. These adjustments apply to volunteer recruiting and training and to more technical elements of the quick count, including sampling. The sample calculations outlined above usually require some additional adjustment. This is because it is assumed initially that all sample points will be identified and that data will be delivered from each and every point. In practice, however, no large-scale quick count undertaken by any observer group has ever been able to deliver data from every single data point in the original sample.

In quick count situations, it is important to draw a distinction between a *theoretical* sample and a *practical* sample. Most theoretical discussions of sampling assume that, once a sample point is selected, data from that sample point will

be generated with 100 percent efficiency. This assumption has never been satisfied in any large-scale national quick count. This is due to any combination of factors including mistakes made by inadequately trained observers, breakdowns in communication systems or unforeseen election-day developments. (For instance, observers are sometimes prohibited from entering polling stations; inclement weather might prevent observers from reaching a telephone or prevent data from being reported.)

Civic organizations undertaking a quick count for the first time, on average, are able to deliver about 75 percent of the data from sample points within a reasonable time frame, about 3 hours. The 25 percent of the sample that is not reported (these are missing data) can lead to problems with the interpretation of the other data. The practical usable sample, therefore, is always smaller than the theoretically designed sample. The margins of error that apply to the practical sample are also necessarily larger than planned.

In a closely contested election, missing data can be a very serious matter. Moreover, these missing data are hardly ever just a random cross-section of the total sample. In practice, the proportions of missing data are nearly always greater from remote areas where data are most difficult to recover. If the missing data are not random or representative, they are biased. And if the missing data are biased, so is the remaining sample.

What is the best way to prepare for the fact that not all of the sample will be recovered on election day? The solution must be built into the original sample design; it is to oversample by the margins of the expected recovery rate.

An experienced observer group might have an estimated data recovery rate of 80 percent of the sample points from the theoretical sample. In this case, the practical sample would be 20 percent smaller than the theoretical sample. The most direct way to address this potential problem is to simply increase the sample size by 20 percent by randomly adding 20 percent more sample points to the sample that is first calculated. Such a straightforward strategy would work if the deficit in sample recovery were distributed randomly throughout the population. However, experience indicates that the deficit is usually unevenly distributed between the capital city, other urban areas and rural areas. The most difficulty is in remote areas, and the design of a corrected oversample component must take this into account. Figure 5-4 shows the distribution of a typical sample recovery pattern and the corrected oversample component. As Figure 5-4 indicates, the additional correction for uneven sample recovery would place at least half of the oversample in the rural areas.

In a closely contested election, missing data can be a very serious matter.

The statistician must oversample by the margins of the expected recovery rate.

FIGURE 5-4:
A TYPICAL SAMPLE RECOVERY
PATTERN AND RECOMMENDED
OVERSAMPLE DISTRIBUTION.

	SAMPLE RECOVERY	OVERSAMPLE DISTRIBUTION
Capital city:	85%	15%
Urban areas outside of capital city	75%	25%
Remote areas	65%	35%



FREQUENTLY ASKED QUESTIONS

Isn't the sample very large anyway, since polling stations are being sampled rather than individual voters? If so, can analysts just weight the data after the sample is in?

Yes, the sample is large as designed, but weighting the data is not a substitute for real data. Weighting simply gives existing data "more weight" in the overall sample. There is no way to tell if the missing data from the remote part of the sample are typical of the data recovered from that particular sub-sample. Weighting is a last-resort statistical strategy that is best used after all other options have been exhausted.

The number of polling stations and the number of voters in a polling station will have an effect on the margin of error.

Correcting for Polling Station Size

Sometimes it is necessary to adjust the margin of error for quick count results due to practical considerations. For example, the size of the polling station—the total number of voters expected at the polling station—will affect the margin of error. This stems from the difference between the defined population and the unit of analysis. Recall that the original calculation of the margin of error relied on the total number of eligible voters. This was done to ensure that the sample design satisfied certain statistical principles. However, since polling stations are the unit of analysis, it is useful to revise the margin of error based on the number of voters in polling stations. In the previous example, an average of 160 voters were assigned to each polling station. It would have been important to consider the fact that polling stations can come in different sizes. If polling stations included 200 voters, this would have had an effect of reducing the number of stations needed for sample. If the polling stations were even larger, with 500 voters, then even fewer would have been needed to form the sample.

As Figure 5-5 illustrates, the number of polling stations and the number of voters in a polling station will have an effect on the margin of error. This is

attributable to the role of the sample size in constructing the margin of error. Recall that the formula for margin of error is:

$$\frac{(\text{Assumed heterogeneity}) * (\text{z value at chosen confidence level})}{\sqrt{n}}$$

The fact is that variations in the size of polling station will also affect the 'n.'

	VOTERS	POLLING STATIONS		
		If station size is 160	If station size is 200	If station size is 500
Sample	163,185	1,020	816	324
Margin of error (95% confidence level)	±0.24	±3.01	±3.43	±5.4
Margin of error (99% confidence level)	±0.32	±4.03	±4.5	±7.1

FIGURE 5-5: SAMPLE SIZE AND MARGINS OF ERROR

Notice that the margin of error depends on the number of polling stations in the sample. If the polling stations are large, fewer of them are needed to generate the desired sample of 163,185 voters. The margin of error calculated for the polling stations is larger than the margin of error calculated for the sample of voters. The resulting margin of error for quick counts falls somewhere in between the lower and higher margin of error.

Tracking the changes to the margin of error for a range of polling station sizes shows that, as the number of stations needed to form a sample of voters decreases, the margin of error increases. Figure 5-6 illustrates the relationship between the size of the polling station and the margin of error.

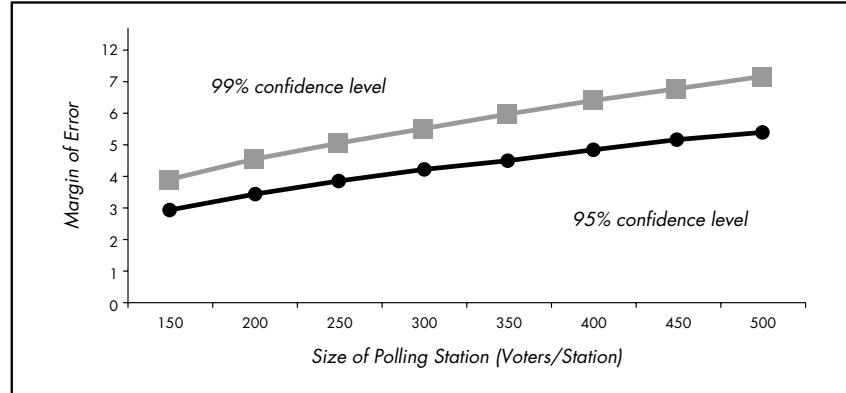
As the number of stations need to form a sample of voters decreases, the margin of error increases.

VOTERS/ STATION	# STATIONS TO GET SAMPLE	MARGIN OF ERROR (confidence levels)	
		95%	99%
150	1,088	±2.97	±3.91
200	816	±3.43	±4.52
250	653	±3.84	±5.05
300	544	±4.20	±5.53
350	466	±4.54	±5.97
400	408	±4.85	±6.39
450	363	±5.14	±6.77
500	327	±5.42	±7.13

FIGURE 5-6: POLLING STATION SIZE AND MARGIN OF ERROR

The margin of error increases as polling station size increases. The overall effect of polling station size on margin of error, however, decreases as both rise. Figure 5-7 illustrates this point.

FIGURE 5-7:
POLLING STATION SIZE
AND MARGIN OF ERROR



When elections are very close, quick count analysts must also be concerned with the level of voter turnout.

Correcting for Turnout

When elections are very close, quick count analysts must also be concerned with the level of voter turnout. Even if observers have been successful at retrieving data from each of the 1,020 polling stations in the theoretical sample, low voter turnout will mean that there will be fewer votes included in the sample than if turnout had been high. The original calculation was based on the expectation of some 160 votes per polling station. If turnout has been at 70 percent, however, there would only be 112 votes at each polling station. If that pattern is repeated across the 1,020 polling stations, then the count would include only 114,240 votes, some 50,000 shy of the desired 163,185 needed to achieve a margin of error of 0.3 percent and a confidence level of 99 percent.

FIGURE 5-8:
TURNOUT AND MARGIN OF ERROR

TURNOUT	# VOTERS, VOTES	MARGIN OF ERROR (confidence levels)	
		95%	99%
Desired sample (turnout = 100%)	163,185	±0.24	±0.31
90%	146,867	±0.25	±0.33
80%	130,548	±0.27	±0.36
70%	114,230	±0.29	±0.38
60%	97,911	±0.31	±0.41
50%	81,593	±0.38	±0.49

Consequently, a cautious data interpretation strategy calls for re-calculating the margin of error based on the actual number of votes counted. Figure 5-8 illustrates this point.

As the table shows, as turnout decreases, the margin of error increases. If turnout is above 60 percent, margin of error will increase by approximately 0.02 percent for every 10 percent drop in turnout. As turnout approaches 50 percent, the increase in margin of error is much greater. A graph of the increase in margin of error corresponding to decrease in turnout is presented in Figure 5-9.

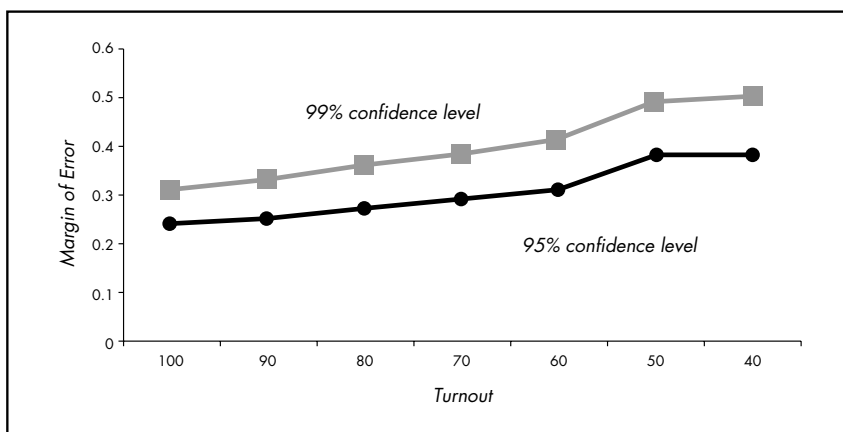


FIGURE 5-9
MARGINS OF ERROR AND
TURNOUT

This chapter has laid out the broad statistical principles underlying quick counts for a general audience, and it has outlined the statistical foundations of the quick count methodology. Organizers should understand this methodology, particularly the concepts of reliability and validity, as well as why a sample must meet the criteria for randomness. This knowledge is vital to the design of effective and reliable observer forms and training programs. It also underscores the importance of preparing to retrieve data from every part of the country—even the most remote areas.

Finally, this chapter also has considered the more technical matters of how sample sizes can be calculated, and how such issues as levels of confidence, margins of error and heterogeneity or homogeneity of the population shape the sample. Most observer groups seek the services of a trained statistician to construct and draw a sample and to analyze the data on election day. Civic groups must realize that the quick count is a matter of applying statistical principles to practical, unique circumstances where standard textbook assumptions may not be satisfied. For that reason, the chapter outlines what are the most common correction factors that should be taken into account when analysts consider the interpretation of the data that are successfully retrieved on election day.



REMINDER

The broad principles underlying quick counts can be understood easily by non-statisticians, and there are important reasons why key personnel in observer groups should become familiar with these principles:

1. Understanding the importance of ensuring the robustness of quick count data will facilitate decisions about the design of the quick count and help staff to develop effective observer forms and training programs.
2. Staff that appreciate the relationship between a sample and a population and the centrality of the requirement of randomness to the integrity of that relationship are motivated to build a strong volunteer network that can cover even the most remote polling stations.

Groups should enlist the support of a statistician experienced in conducting quick counts to undertake the technically complex tasks of constructing a sample and analyzing quick count results. Experience with quick counts around the world underscores several points:

1. The unit of analysis for a quick count is the polling station. Sampling cannot begin until an accurate and comprehensive list of polling stations—the sampling frame—is available.
2. Quick counts always use probability samples (e.g., general random samples or stratified random samples) in order to produce results that are representative of the whole population.
3. Observer groups undertaking quick counts are never able to retrieve 100 percent of the data from the sample. Analysts must prepare for this inevitability. The solution, which can be built into the original sample design, is to oversample by the margins of the expected recovery rate.
4. Analysts must also consider correction factors when designing a sample. Most important are those that take into account variations in (a) voter turnout, and (b) the number of voters in the basic unit of analysis, the polling station.