

Resilience Measurement Technical Working Group

Qualitative Data and Subjective Indicators for Resilience Measurement



This paper supports the overall objectives of the Food Security Information Network (FSIN) to strengthen information systems for food and nutrition security and promote evidence-based analysis and decision making.

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Acknowledgements

As part of the effort to advance resilience measurement, this paper on qualitative and subjective measures is one of a series of technical products developed under the auspices of the Food Security Information Network's (FSIN) Resilience Measurement Technical Working Group (RM TWG), with overall coordination provided by RM TWG Chair, Mark Conostas. It was prepared jointly by Dan Maxwell (Tufts University) as lead author, with contributions from Mark Conostas (Cornell University), Timothy R. Frankenberger (TANGO International), Dorothea Klaus (UNICEF) and Nancy Mock (Tulane University).

This paper, which reflects the deliberations of the RM TWG as a whole, elaborates on the concepts presented in Technical Series Nos. 1 and 2 regarding the definition, principles and proposed common analytical model for resilience measurement. Selected members of the RM TWG served as internal reviewers of earlier drafts of the paper, and feedback was also provided during a one-day meeting in April 2015 in Rome, where Technical Series lead authors presented drafts of their respective papers to leaders from World Food Programme (WFP) and the Food and Agriculture Organization (FAO) jointly responsible for creating and coordinating the RM TWG. It is in this regard that the RM TWG recognize the contributions of Arif Husain (Chief Economist and Deputy Director, Policy, Programme and Innovation Division, WFP) and Luca Russo (Senior Economist, Agriculture Development Economics Division, FAO). The RM TWG also wish to thank the individuals in the field who provided compelling questions and informal contributions. Ultimately, the demand for high quality and useful measures of resilience for food security has been the most fundamental motivation behind the group's activities.

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Abbreviations

FAO	Food and Agriculture Organization of the United Nations
FSIN	Food Security Information Network
RM TWG	FSIN's Resilience Measurement Technical Working Group
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
WFP	World Food Programme

I. Prologue: Cautionary Tales in Understanding and Measuring Resilience

Resilience measurement, like most efforts to measure complex phenomena, requires a multi-dimensional, multi-method approach. One of the main benefits of qualitative data and subjective data is that they provide a more detailed understanding of the dynamic relationships that explain variations in well-being following exposure to shocks and stressors. The following two scenarios illustrate the value of qualitative and subjective data.

“Consider... the contrasting (real) cases of two initially non-poor women in rural Africa whose husbands each died suddenly, one from cholera, the other from a traffic accident. The loss of an able-bodied adult worker would certainly have set these widows and their children back anywhere. In one woman’s case, her extended family stepped in and sent a teenage male cousin to live with her and help out with farm work, and congregants from her church and neighbors made extraordinarily generous donations to cover the costs of a funeral and the fatherless children’s school fees. She was traumatized but able to adapt to her new circumstances, supported by a social network that helped her and her children remain non-poor. The other woman was not so lucky. By custom, she had to slaughter the family’s only cow to feed mourners at her husband’s funeral. Her brothers-in-law took possession of the farmland and home and, when she protested, turned her and her children out. Moreover, since one of her brothers-in-law was quite prominent in their village, her neighbors were reluctant to host her and the children. Alone and suddenly destitute, she withdrew the children from school, moved to a slum in the nearest big city, and turned to begging and informal street trade to try to make ends meet. The customs and power relations prevailing in the system of which she was a part greatly magnified the injury of her husband’s untimely death, casting her deep into a poverty trap she had not anticipated confronting.”

Chris Barrett and Mark Conostas, 2014, p. 12

“In July 1995, a heat wave killed 739 people in Chicago. Social scientists studied the geographical patterns of mortality within the city to see which factors made some neighborhoods more resilient than others. The results were unsurprising: death rates were highest where air-conditioning was absent, poverty was highest, violent crime was most prevalent and where there were the highest concentrations of African-Americans. Eight out of the ten areas with the highest death rates followed this description. A closer look, though, revealed a more subtle story. Three out of the ten areas with the lowest mortality from the heat wave also had this same profile. The standard, generic models of resilience could not explain why one of the poorest and most violent neighborhoods, with a 99% African-American population, had death rates lower than some of the most affluent parts of the city. Comparing two neighboring areas with similar vulnerability profiles showed that mortality was high where a declining population had brought the closure of many shops and businesses: in contrast, where people still had reason to hang out on the street, a strong fabric of social relations had prevented people from dying alone. This was statistically more important in saving lives than having air-conditioning. No one had thought to include these kinds of parameters in their profiling. If future interventions were guided by the very crude story told by generic indicators of resilience, future interventions to build resilience to heat waves would be very different from a programme based on understanding the local stories. Chicago 1995 should ring alarm bells for all those searching for the holy grail of universal resilience measurement.”

Simon Levine, 2013, p. 1

Measuring resilience is not a straightforward task. As with most measurement issues, there is increasing demand for universal measures that can quickly and accurately capture complex phenomena and summarize them in easily digestible and policy-relevant ways. Quantitative measures are not only able to summarize such phenomena in recognizable ways, they are also more widely believed to be objective and less subject to the whims and opinion of either the analyst or the population of study. But as both of the anecdotes above highlight, an understanding of resilience must rely on information that is not readily captured by quantitative models. The very fact that these are called 'anecdotes' tends to devalue their analytical importance (i.e. they are 'anecdotal evidence').

However, they are 'anecdotal' not just because they are words instead of numbers, but also because they defy easy generalization or prediction. It is also clear that without the explanations offered by these two stories, any measurement model for understanding resilience would be – at best – incomplete, and at worst, downright wrong. Furthermore, both of these stories – and many, many more – are about the relationship between the nature of social relations and resilience. Social networks, social relations or 'social capital' have long been the most difficult element of livelihood assets and resilience to understand and measure. Yet social relations are often the single most important element to capture when assessing resilience.

Resilience measurement therefore requires multiple method assessment approaches that capture perceptions, opinions, judgments and the nature of social interactions as well as the observable or easily measurable characteristics of social ecological systems. Resilience has not yet been well conceptualized or codified, which means that measurement tools are still blunt and an array of qualitative and quantitative techniques is required to assess and understand resilience beyond universal, quantitative measures. Measuring resilience means understanding the perspective of affected populations and individuals, so analysis must include context-specific, qualitative and subjective information – and some kind of measures of that information. This technical briefing summarizes what we know about these measures; in it, we identify how they can complement more quantitative forms of analysis and we highlight gaps in knowledge.

II. Importance of Qualitative and Subjective Measures

There is a long epistemological/ontological debate about the nature of knowledge. Disciplinary fields such as anthropology and sociology operate from somewhat different philosophical viewpoints on what constitutes knowledge and how to represent it. However, from a practical perspective, both qualitative and quantitative techniques have demonstrated utility in measuring and understanding complex phenomena.

What are subjective and qualitative measures?

Qualitative and subjective measures are two separate categories of information. Qualitative information is primarily captured with words or narrative: it cannot be directly presented in numeric form. Subjective measures are those that gauge the perceptions, opinions, preferences or self-assessments of specific actors: in this case, the views of either technical experts (e.g. through Delphi processes) or experiential experts – the people living in protracted crises or risk-prone environments.

Table 1. Differentiating subjective and qualitative information

Data Type	Empirical Focus					
Numeric (Quantitative)	Subjective			Objective		
	E.g. survey data on perceptions, preferences, self-assessment			E.g. survey data on events, behaviours and material conditions		N.A.? Trend analysis?
Mixed	↕			↕		
Textual (Qualitative)	E.g. interpretation and affective states, meaning or reason of preference or perception			E.g. political allegiances, social relations, decision-making, institutional forms		N.A.?
Time Frame	Past	Current	Future	Past	Current	Future

Some subjective measures can result in quantitative data (e.g. Likert scales). Similarly, there are qualitative measures that are objective – i.e. that reflect verifiable phenomena external to the individual – but that cannot be captured meaningfully as numeric information. These could refer to institutional factors or social relations that may shape resilience but which are not easily captured quantitatively. The columns in Table 1 express the difference between objective and subjective information; the rows express the difference between quantitative and qualitative information.

What kinds of information? What kinds of considerations?

Social relations – patriarchy, kinship, clientelism, gender – are key to determining resilience, particularly for households, but also for communities, whether they face idiosyncratic risk (as per Barrett and Constan) or covariate risk (as per Levine). While new advances are being made in the field of quantitative network analysis, quantitative data cannot yet easily distinguish multi-layered and complex realities, the strength of social bonds, or the way in which these influence resilience. Social relations are extremely difficult to capture solely with quantitative information, and the impact of social relations on resilience and livelihoods or poverty outcomes generally is extremely difficult to predict in the absence of good qualitative information. Qualitative and subjective forms of information are critical not only to an emic understanding of resilience, they can often answer questions not just about *whether* households or communities are resilient, but also why some are resilient and others are not. This information can help to explain behaviour and decision-making processes by revealing motivational or cultural value systems and beliefs.

Although some elements of (absorptive, adaptive and transformational) capacity may lend themselves to accurate quantitative measurement, many require a qualitative analysis of complex relationships. Indeed, judging these *types* of capacity and the kinds of behaviours and outcomes associated with them is likely to be both subjective and qualitative. The role of institutions is critical in shaping resilience, and any judgment of the resilience of the institutions themselves is likely to require qualitative information. Some elements of behaviour can best be explored through qualitative methods, e.g. illicit or illegal activities, violence, anti-social behaviour or shadow economic behaviour. Approaches that provide clear indications of intentions or driving factors for decision-making are needed to understand transformational intentions or opportunities that can drive (or undermine) resilience.

The explanatory value of subjective information is the knowledge that individuals or households have about their *own* status. This includes the experience and perceived severity of shocks; the occurrence of shocks can be captured objectively, but not the experience of shocks. Measures of well-being and quality of life are also subjective and can be captured by self-assessment or ranking. Self-assessments can sometimes be used much more effectively and accurately than complex objective assessments. However, they can also be easier to manipulate if the assessment is attached (or is perceived to be attached) to some kind of assistance or programme participation. Finally, information on aspirations or future-oriented projections is also subjective (note the time frame of information in Table 1).

Information may be both qualitative and subjective

This can include information that allows for an emic explanation of phenomena as opposed to generating meaning through external models of logic. It can also include information that helps to uncover or understand 'hidden' or 'irrational' realities. Important dimensions of resilience are both qualitative and subjective: preparedness; acceptance and neglect; attitude, values, needs and wants; identity and belonging (including social status); physical, socio-cultural and psychological well-being; optimism/pessimism; confidence/mistrust; and satisfaction/dissatisfaction. Finally, a good analysis of resilience requires information on psychological strength and perceptions of resilience – information on perceived needs and wants, and feedback on local acceptance or rejection of proposed solutions.

III. Basic Features of Qualitative and Subjective Measures for Resilience

Qualitative and subjective measures are important for an analysis of resilience. In this section, we identify the key resilience topics that fall into these two categories of information. As noted, these are two different – but sometimes overlapping – kinds of information.

Qualitative information includes the following:

- a) Information about social relations and power.** People are often vulnerable not just because of their asset holdings or the kinds of hazards they face, but because of the power structures they operate in and the relationships that define them. Lautze and Raven-Roberts (2006) note that under certain circumstances, livelihood assets can actually turn into liabilities, and this change can occur without warning. This kind of information may be difficult to quantify, but it is crucial to understand.
- b) Understanding trade-offs.** The literature on livelihoods and coping is full of the discussion of trade-offs. Yet these are often poorly understood in practice, and taken for granted in analysis rather than considered in context.
- c) Understanding conflict dynamics.** Some risks or hazards are relatively easy to quantify. Yet the issue of conflict as a hazard is often completely left out of either the analysis of resilience or programmatic interventions to address vulnerability and improve resilience. It is vital to get to grips with conflict and incorporate it into resilience analysis.

d) Other assets. A list of illustrative indicators for measuring resilience¹ notes that much of the measurement of social capital is qualitative, as is information about the quality of services, many of the indicators of learning and innovation, much of the information about inclusiveness and participation, and much of the information needed about natural resource management. Note that many of these things do not appear in purely quantitative indices or measures.

Subjective measures capture the following:

a) Information about risks, the perceived severity of risks and the impact of shocks. This may involve ranking or weighting risks and perceived severity. Note that much of this kind of information may be quantitative or semi-quantitative.

b) Information about self-assessment and aspirations. Sometimes asking directly about status or aspirations can provide much more information than trying to analyze determinants. Sometimes subjective information can be collected via a questionnaire module, sometimes not. But also note that such information may not be very meaningful in the absence of good qualitative field work, and it may be difficult to compare across different contexts. Examples include the comparison in section 3 from Ethiopia of a self-assessment measure of food security status (which is entirely subjective, but results in a quantitative scale) and the Coping Strategies Index (which is mixed). Analysts may fear self-assessment measures or any kind of information that might be used to 'play the system' (particularly if the information is presented like a needs assessment). But there is significant evidence that self-assessed measures often track more objective measures quite closely. The Ethiopian case is but one example.

Several observations follow regarding the use of qualitative and subjective information:

a) Information may be idiosyncratic. But idiosyncratic information may have the most explanatory power. A major challenge is how to incorporate idiosyncratic information into a general analysis. However, qualitative analysis should not simply describe idiosyncratic outliers; it should look for deeper patterns in the data, or broader generalizations.

b) Different kinds of information may be more applicable to different levels of analysis. At a minimum these include individual-level information; household information; group or community-level information; institutional information; and system or population-level information.

c) There are many well-documented techniques to collect subjective information. Delphi methods poll and re-poll knowledgeable individuals until they converge on a 'finding'. There is a relatively new method that uses random sampling with strategies to help the sample understand the issues being discussed and then conducts a follow-up poll of the same sample, demonstrating knowledge or attitudes when people are informed. These methods have documented validity and reliability, and they could easily be integrated into resilience analysis.

1. Frankenberger et al., 2013.

IV. Examples of the Value and Potential Use of Qualitative and Subjective Measures for Resilience Assessment

There is little doubt that the main models for capturing resilience and changes in livelihood capacities over time are going to be mathematical and quantitative, with at least the intent of universal applicability. The point of both qualitative and subjective measures is to add context and facilitate the in-depth understanding that is part of a comprehensive analysis but which cannot be adequately predicted or captured with a purely quantitative approach. The following examples demonstrate the potential of qualitative or subjective measures in resilience assessment:

Focus groups in Haiti

A Gates Foundation-funded resilience evaluation in Haiti combined qualitative and quantitative approaches in the following way. Structured workshops among key stakeholder groups of affected populations were first used to identify the drivers of vulnerability and resilience in relation to the Haiti earthquake. One of the drivers identified by a majority of the groups was psychosocial health. The evaluation team then researched cross-culturally applicable psychosocial metrics and applied these scales to a quantitative survey. Subsequent to the quantitative findings, focus groups were conducted to explore the reasons behind the low psychosocial status of camp residents and to devise potential high impact interventions. These were used in the results and conclusions sections of the analysis and provided a basis for better programming.²

Subjective, qualitative and quantitative indicators pointing to similar trends

A study in Ethiopia aimed at capturing both current status and change over time for livelihood resilience used a combination of objective/quantitative indicators (dietary diversity); a mixed indicator that combined a subjective measure of adequacy of intake and the severity of coping alongside an objective/quantitative measure of coping behaviours (the Coping Strategies Index); and a purely subjective self-assessed measure of food security. While these measures produced different prevalence estimates for food insecurity, they tracked similarly over time (and the differences in estimates were more about the cut-off points or thresholds assigned to different categories than the indicators themselves).³

Qualitative insights in Somalia

A mixed method approach in Somalia relied on in-depth qualitative information gathering and analysis to develop a context-specific quantitative measurement instrument. This enabled the quantitative analysis of many phenomena that might otherwise have been missed: self-perceived psychosocial status; unusual, extreme or illegal coping behaviours; mobility; and self-perceived strength of character. It also permitted the interpretation of quantitative data in more accurate ways (e.g. perceptions about debt).⁴

2. Luu et al., 2012.

3. Maxwell et al., 2013.

4. Luu et al., 2012.

These three examples invite the following conclusions:

- Different kinds of information may be used in a stand-alone analysis, but mixed methods or approaches work well when seeking to understand complex phenomena such as resilience.
- Qualitative information can be used to shape quantitative instruments; qualitative information can also be used to help explain or understand the results of quantitative analysis.
- Sometimes qualitative methods comprise a stand-alone analysis of certain elements of resilience that are simply not well captured by mathematical models.
- Subjective measures may track phenomena as well as more objective measures – and often for a fraction of the data-gathering and analysis costs.

V. Challenges and Limitations

Combining qualitative and quantitative approaches is important but challenging

A major challenge is how to synthesize information meaningfully into one analysis. In many examples, the main analysis is quantitative, with qualitative information provided as background or used to explain certain outliers; nonetheless, the main analysis remains quantitative.

Other mixed methods may work differently. A positive deviance approach might first use quantitative measures to assess which individuals or households are doing better in terms of a series of indicators and then use more in-depth and qualitative methods to understand how and why those households are doing better.

Careless combination of methods can be counter-productive

Qualitative techniques are often equated with methodological looseness when, in fact, qualitative methods typically require more skill and judgment on the part of the interviewer. Focus group methods are a very good example. Qualitative inquiry and qualitative measures often rely heavily on focus groups but these are loosely defined, key informant type approaches. Constructing useful focus group assessments requires a careful selection of participants, replications, an experienced facilitator and either an excellent recorder or electronic recording. Another common error is the use of qualitative methods to extrapolate to population-based estimates of food security status/resilience. Food security literature is heavily quantitative and household-orientated. While data is frequently collected at community level through both quantitative and qualitative techniques, community data is often excluded from food security analysis.

Hindsight and foresight

Many of the examples cited here are easy enough to understand in hindsight. It is far more difficult to incorporate these kinds of examples into a prospective analysis of resilience. Likewise, incorporating idiosyncratic insights into a general analysis is a major challenge. Better use of qualitative information and incorporation of people's own perceptions and aspirations can lead to better prospective analysis.

VI. Conclusion

- **Qualitative and subjective measures are important.** Resilience is a complex phenomenon; multiple methods are required to understand it and to act to support or build it. Qualitative and subjective measures are key to resilience analysis, even though they are often not the main analytical method.
- **Qualitative and subjective measures are different.** Qualitative information takes the form of words or narrative that cannot be expressed meaningfully in numeric format. Subjective information is that which involves the opinion, views or perceptions of individuals about themselves or the circumstances in which they live. Sometimes, information can be both subjective and qualitative, but for the most part, these are separate kinds of information.
- **Qualitative methods give insights into social factors.** These methods are critical to understanding the nature of social relations, social networks or 'social capital'. This kind of information is also needed to understand the trade-offs that people make, conflict dynamics, and complex phenomena like the quality of services, learning and innovation, and capacity.
- **There are different types of subjective data.** Subjective information includes self-assessment, judgments about capacity or impact, and appraisals of the severity of shocks and coping. It includes information about future aspirations and goals. Many forms of subjective information are well suited for inclusion in quantitative measurement instruments.
- **Methods should be combined.** Methods that combine both types of information are increasingly important. They enable a mixed method analysis that is more comprehensive and better able to explain and predict resilience outcomes.
- **Qualitative methods can be difficult to place.** Qualitative forms of information are often not suited for questionnaire modules. Rather, qualitative data collection is labour-intensive, requiring a focused plan and dedicated resources.

VII. Glossary

Adaptive capacity - The ability to make proactive and informed choices about alternative livelihood strategies based on changing environmental, climatic, social, political and economic conditions.

Absorptive capacity - The ability of individuals, households, communities or higher-level systems to minimize their exposure to shocks and stressors and to recover quickly when exposed.

Covariate (shock) - When many households in the same locality suffer similar shocks (e.g. crop failure from drought or floods).

Delphi method - An interactive forecasting technique that relies on polling the views of a panel of experts.

Emic (perspective) - The perspective of local people and how they think, based on an inter-subjective understanding of the world.

Idiosyncratic (risk) - When one household's experience is typically unrelated to the risks faced by neighbouring households. It is selective risk that only affects some livelihood groups, households or individuals in a community.

Positive deviance approach - The observation that in every community there are some individuals, households or other groups who have adopted strategies or actions that have enabled them to thrive—or at least achieve better outcomes than their peers and neighbours, even though everyone in the community has basically the same resources and faces the same constraints.

Qualitative measures - Observations that can be expressed only in words, not in numbers.

Resilience - “[T]he capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences” (Constas et al., 2014, p. 6). Resilience can be viewed as “a capacity that prevents individuals, households and communities from falling below a normatively defined level for a given developmental outcome (e.g., food security, poverty level, well-being)” following a shock or stress (Ibid., p. 7).

Shocks - External short-term deviations from long-term trends that have substantial negative effects on people's current state of well-being, level of assets, livelihoods, or safety, or their ability to withstand future shocks (Zselezky and Yosef, 2014).

Social capital - The “expected collective benefits” that are accessed by being a member of some kind of social network or group. It often – though not always – presumes economic benefits from social connections, but implies obligations as well.

Subjective measures - Observations that are based on the judgment or perception of the individual, not on data that can be objectively and externally measured.

Transformative capacity - The ability to create an enabling environment through investment in good governance, infrastructure, formal and informal social protection mechanisms, basic service delivery, and policies/regulations that constitute the conditions necessary for systemic change.

Vulnerability - “[T]he characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard” (UNISDR, 2009).

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Resilience Measurement Technical Working Group



FSIN was launched in October 2012 under the leadership of FAO, IFPRI and WFP to help build sustainable food and nutrition security information systems. One major objective is to provide access to standards, methods and tools on food and nutrition security (FNS) information systems.

Resilience has recently garnered intense, wide spread interest among FNS practitioners and policy makers because it focuses attention on people's and communities' capacities to reduce their exposure and cope with and/or adapt to shocks and stressors. However, a common understanding of how to identify and measure the factors that predict various dimensions of well-being, such as food security, in the face of shock and stressors is lacking. The ability to evaluate the impact of resilience programmes and the opportunity to track progress depend on effective measurement and clear understanding of plausible cause-effect relationships related to resilience. In this context, the *Resilience Measurement Technical Working Group* (RM-TWG) was established by FSIN to identify and promote means of operationalizing the concept of resilience in humanitarian and development practice.

Operationalizing resilience as a focus of measurement requires the provision of credible, data-based insights into the attributes, capacities and processes observed at various scales (e.g., individual, household, community and national). Therefore, the RM-TWG promotes the adoption of best practice in resilience measurement through collaborative development of three primary outputs published as a Technical Series:

- A report that provides a definition of resilience along with resilience measurement principles;
- A report that provides a common analytical model and causal framework for resilience measurement; and
- A set of technical briefings that provide guidance on specific aspects of resilience measurement.

These outputs provide practical guidance for those working in field settings and serve as a reference for continued discussions on how to collect measurement data on resilience that is accurate and useful.

For more information and to join the network: www.fsincop.net

