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The power of thick data: unveiling the hidden facets of COVID-19 impact and the next emerging development issues. Country case study from the Republic of Moldova

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COVID-19 threw Moldovan governance into chaotic domain (in Cynefin terms), where cause and effect are unclear, events are too confusing to wait for a knowledge-based response and Government has to act and sense before responding. The Republic of Moldova used thick data (micro-narratives) to unveil the hidden facets of COVID's impact. Using thick data helped to provide a more nuanced response to challenges, for instance by better shaping communication strategy. Thick data should not be considered as contradicting big data, but rather as complimentary and enriching sensemaking. Empowering people to reflect on their assessed anecdotal evidence helps to enrich insights.

All data are different, but some are useful

Data are the nucleus of sensemaking and decision-making. In social sciences there are two approaches to data for sensemaking—qualitative and quantitative methods. These are generally based on the number (N) of cases or data points. These two paradigms constitute different cultures, each internally coherent yet marked by contrasting norms, practices, and toolkits². Both approaches

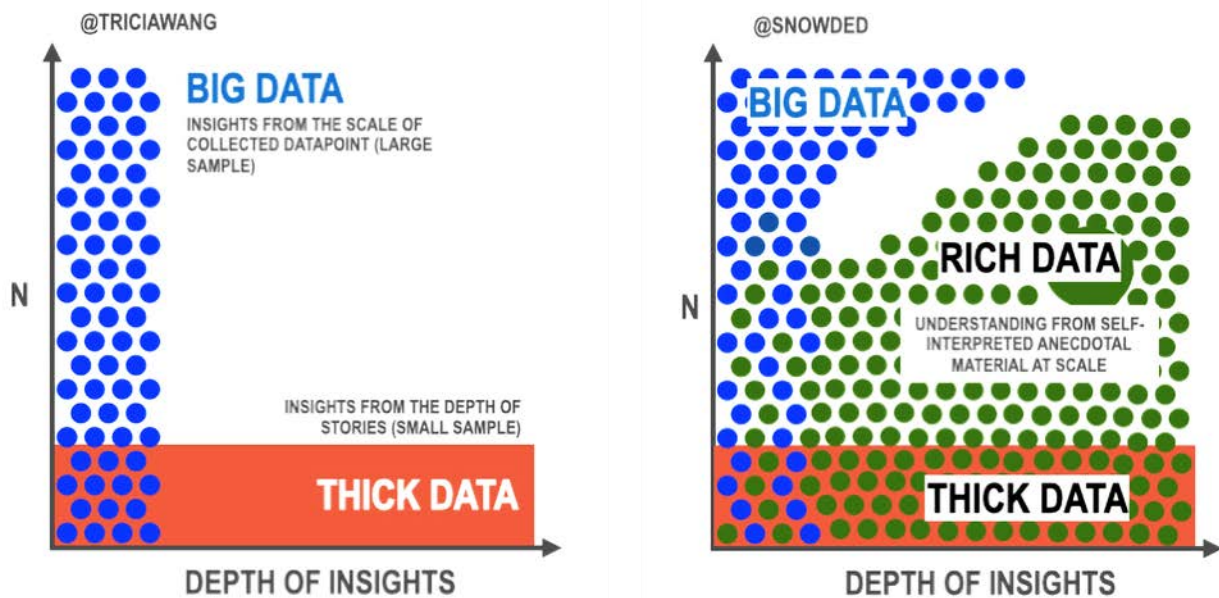
have their own merits and limitations. Qualitative methods use a low number of cases but provide greater details and in-depth insights. Two obvious drawbacks of this approach are questionable generalisation and framing. It is very hard to generalise deep insights based on one or two cases. How often does this happens? Is it unique or common? A second concern is how the issue

is framed by researchers. In many cases framing could omit important items outside of the viewpoint, simply because they are not on the research agenda³. Quantitative methods are booming, and in-depth insights from big (and very big N) are increasing. However, two obvious drawbacks still exist: narrowness of measurements and representativeness vs distribution. All indicators measure only a small part of a bigger and more complex phenomenon. While they are useful for sensemaking, they require interpretation to be useful, and can often be deceiving. On the contrary, quantitative approaches tend to focus on the central tendency and representativeness of the results. This comes at the expense of ignoring

distribution, especially extremes in distributions. In fact, important, novel practices with disproportional impact often appear at these ends⁴.

The way forward lies in two directions. The first is to promote exchange and learning, enabling thinking beyond the cultures (big N or small N) and integrate (or triangulate) big data and thick data for richer insights. The second and perhaps more important is to empower people to interpret their own anecdotal material (and not delegate it to an algorithm—in big N—or an anthropologist—in small N)⁵. Figure 1 from Snowden (2020) illustrates how rich insights are appearing from big and thick data.

Figure 1: Data: big, thick and rich



Source: Dave Snowden. *Big, thick and rich (the data)*. Blog April 12, 2020

COVID threw Moldovan society and governance into chaotic domain, in Cynefin terms⁶, where turbulence prevails and immediate stabilizing action is required. In addition to all the negative impacts that COVID has had on socio-economic areas, it has also brought about the necessity for reframing the decision-making process. Due to the emergency and uncertainty that occurred when the crisis ignited, the Government was put into a situation to make urgent decisions that would tackle and diminish the glaring challenges caused by COVID, but which would also allow the subsequent socio-economic resilient recovery. The Government established the National Extraordinary Public Health Commission (NEPHC), which was headed by the Prime Minister and included representatives from all ministries and departments. The Commission met weekly during March-May

2020 to assess the situation and make decisions for immediate implementation. In other words, the Government took an Act-Sense-Respond approach.

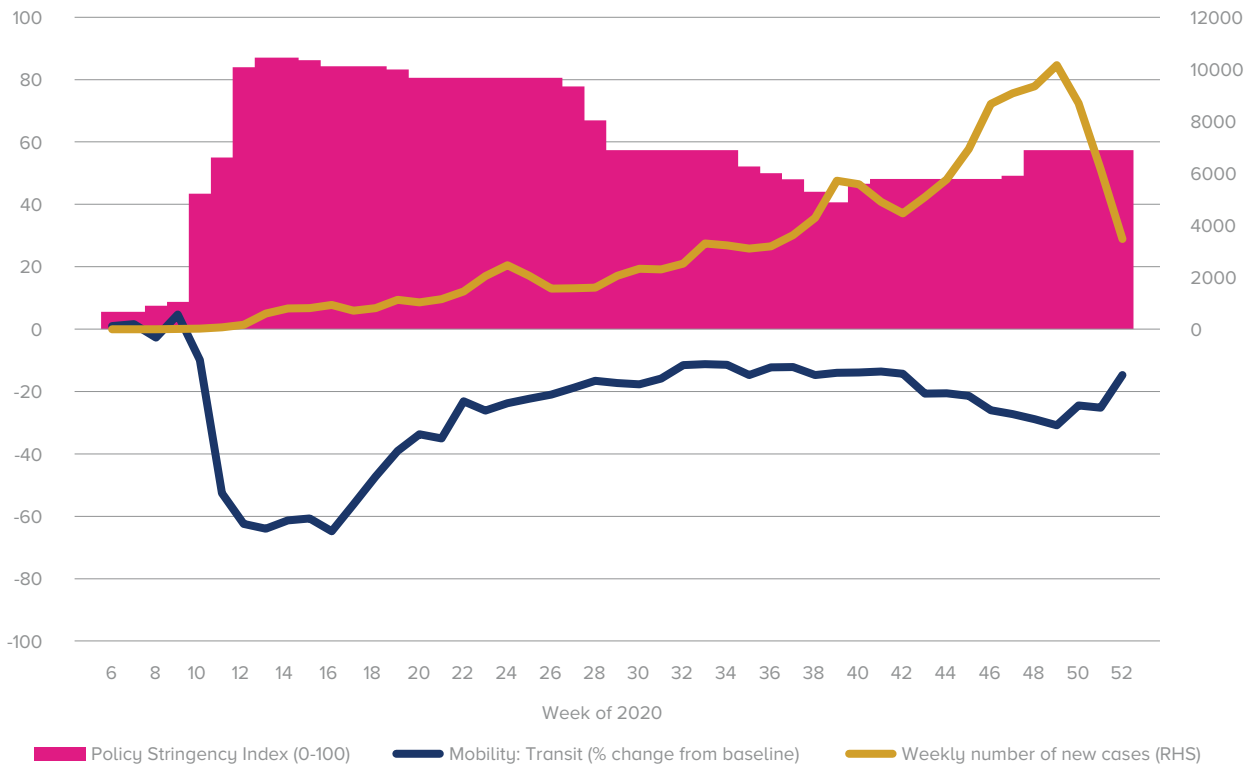
To satisfy sensemaking needs, UNDP and the Government, together with a myriad of private sector corporate citizens, developed a set of ultra-new services to track, monitor and generate actionable intelligence based on several layers of big data, but particularly from satellites, telecom and electricity distribution datasets. Such services will possibly become the focus of subsequent position papers.

Figure 2 provides a visual explanation of governance challenges in the chaotic domain. It shows the weekly number of new cases, stringency of policy measures and population response

(proxied by mobility at transit stations)⁷. Government acted quickly, introducing preventive measures (around week 12-13). This immediately resulted in lower mobility, as the population responded to measures. However, around weeks 16-18 mobility resumed, without (formal) relaxation of policy

measures. In late 2020, when the number of new cases rose significantly, Government did not introduce very strict measures, *inter alia* taking into account the significant impact on the most vulnerable groups and considering the interests and the experiences of those groups.

Figure 2: Moldova in a chaotic domain: new cases, stringency of policy measures and population response



Source: Own calculation based on COVID-19 Data Repository by CSSE/JHU, Oxford COVID-19 Government Response Tracker, and Google Community Mobility Reports

Later in 2020, as the situation stabilised, it moved into complex domain, characterised by multiple interactions and feedback loops, where the only way to understand the system is to interact (Probe–Sense–Respond approach). The approach of the Government of the Republic of Moldova combined short-term emergency responses with medium-term recovery and resilience planning (up to 18 months). The Recovery and Resilience Plan (partially funded by the EU) was designed and linked to Sectoral Work Plans. The UN system in Moldova supported it through Social-Economic Impact Assessment.

In such a situation, the regular data (official statistics) or other kinds of information (for instance, administrative reports) that usually serves as evidence in the decision-making process, was not sufficient for well-founded decisions. This is due to the sporadic updating and availability, lags in data collection and processing as well as challenges

for data collection under social distancing. Additionally, in crisis and recovery situations (chaotic and complex domains) relationships are not clear or discoverable through traditional analysis and require a sensing system response to actions and experiments.

This was the first experience of the Government of the Republic of Moldova with thick data and micro-narrative tools. The pressing task was to assess the impact of COVID on households in the Republic of Moldova. The tool provided an alternative source of information for the decisions aimed at providing state support or other measures for those in need, especially vulnerable groups. Combining the usual statistical data with thick data allowed the decision-makers to make sustainable and evidence-based decisions that will, at the same time, engage those who are harder to reach with generally focused decisions.

The information that arose from micro-narratives allowed us to better understand the multifaceted challenges caused by COVID that were determined to be more widespread and deeper than falling socio-economic indicators. Thus, the Government had the opportunity to identify unexpected problems (described in sections below) or previously unexpressed needs of people through their real experiences.

Thick data in COVID social-economic impact assessment

The COVID pandemic had a negative impact perceived at a very granular level by most excluded and marginalised groups. The complexity of such an impact is certain—with multiple intertwined vulnerabilities and difficult access to income and public services, the most vulnerable groups found themselves even more excluded from society. While statistical evidence is important in understanding the magnitude of the impact, such statistics suffer from several limitations. They hardly capture the most deprived and excluded groups of population⁸. They are not sufficiently granular or come with a significant delay. The time pressure and complexity of chaotic domain (where cause and effect are unclear, and events are too confusing) required the partners to act fast and use new tools and typologies of data to make sense of the experiences of people from the vulnerable groups. In the Republic of Moldova these were the thick data (via micro-narratives) and big data (including mobility data, electricity use data and earth observation data). Therefore, UNDP and its partners decided to test the thick data and use it to derive insights and eventually act upon the key findings in order to find rapid solutions in support of the most vulnerable.

UNDP Moldova partnered with Cognitive Edge and the State Chancellery of the Republic of Moldova in a joint effort to answer the question: “What is the impact of COVID on the communities of Moldova?” UNDP Moldova used thick data, referred to as micro-narratives, alongside quantitative data gathered through SenseMaker[®]. This method is oriented towards identification of patterns (including deviants), rather than achieving statistical representation⁹. Therefore, the method works with even small number of stories (hundreds) through identification of clusters of stories¹⁰.

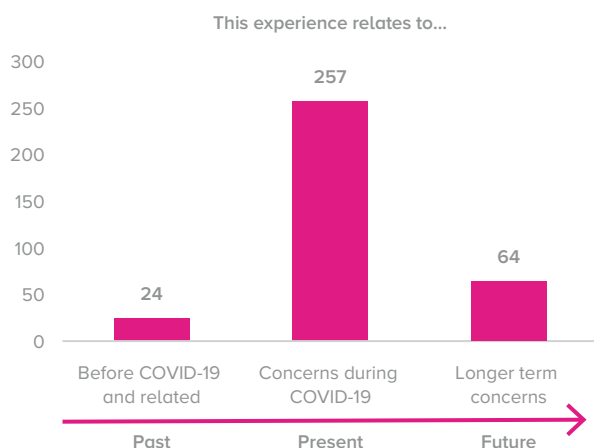
The approach combines narratives with people’s own interpretation of their stories, done on a massive scale. Data collection comprises two steps. First, people relate their story in response to the story prompt: “What is the impact of COVID

on your life?” In the second step people interpret their stories using a set of quantifiers, by positioning their stories against a set of questions. For instance, they might be asked how their situation could be improved—by better information, tools and technologies, or cooperation between people. Massive collection of stories (in hundreds, ideally in thousands) allows this interpretation to happen on a large scale, thus combining thick and big data into rich ones.

We also ran a sensemaking community workshop to facilitate further discussion, interpretation and exploration of the data. The combination of quantitative and qualitative data collection, through SenseMaker[®], allows for statistical patterns to emerge and for the respondents themselves to use the qualitative data as a narrative explanation for the quantitative data gathered. The responses to multiple choice questions enable further in-depth analysis and the data to be filtered by various demographic and content questions. The framework itself was designed in a participatory manner, taking into consideration the needs of the key vulnerable groups of the population and the fact that their “voices” should be an important part of the analytical efforts to unveil the real impact of the pandemic at the most granular levels. Micro-narratives were collected mainly through local partners, CSOs and academia and through available online platforms, including the one for the State Chancellery.

A total of 285 voluntary and anonymous stories (a non-representative sample) were collected during June–August 2020. Individual stories inevitably referred to household and community issues. A questionnaire block of the story collected information about the storytellers and their households. An absolute majority, 99% of respondents lived in the country, primarily from the previously identified vulnerable groups. Over 75% of the responses came from women. The age of respondents was widely distributed. All but ten households included one to five people, and over half of these households contained no school-aged children. The majority of households had a medium income. About 66% of stories shared were marked by respondents as negative, which means there are still, perhaps surprisingly, positive stories in this uncertain COVID pandemic period.

Figure 3: Temporal focus of stories: past, present and future



Informal networks in a crisis period

Micro-narratives allowed sensemaking of the initial impact of the COVID pandemic. Overall stories had a pessimistic spirit and state of the mind with 66% of the shared stories outlining a negative experience during the COVID period. At the same time, a significant number of stories were viewed by the respondents as positive—mostly involving the benefits from online opportunities and receiving or giving support to the community. At the same time a worrisome one-third of the respondents did not receive any help or support during the period.

“The organisation, ProMotori de ACASĂ, organised a first-time event, brought together a diaspora from the locality with beautiful ideas and initiatives. Following the initiative to get involved in organising the Children’s Day, in Budești, with the involvement of 80 families, grandparents, parents, children (online), it was possible to identify a donor, who contributed to the purchase of 80 gifts for participants, in the amount of 8000 lei, inclusive, including coverage of transport costs.” Female, 26-35 years

The most important themes of the stories were financial stability, healthcare and security. The biggest challenges were getting correct information, healthcare, and keeping in touch with people.

COVID mostly affected personal well-being and relationships, with slightly different patterns forming depending on the respondents’ ages. For respondents aged 26-35, equally important were business and economic health, infrastructure and services. For people over 65 years old—mainly personal well-being and relationships mattered. Despite the nature of the pandemic, a reasonable number of people expressed maintaining normal living which could highlight some noncompliance with the restrictive measures imposed during the lockdowns (See Figure 5).

Nearly one-third of respondents believed that the situation could be improved by better community cooperation, but there was a small cluster of stories highlighting the need for improved information. This could be a weak signal for the existence of fake news / miscommunication, which is supported by the previous findings. Many of the shared experiences focused on creating coping strategies to get them through rather than on curiosity and finding meaning. However, given the prioritised challenges and largely negative nature of experiences, these coping strategies could be maladaptive.

People did not refer to trusting scientific reports, which, accompanied with previous findings about information, could again signal an issue with miscommunication. People were more likely to trust the community than governance. The findings also showed more of an atomistic and individualistic culture, where people were focused on themselves rather than their communities and even less on the economic well-being of the country.

Specific challenges arising from the data analysis and interpretation in the sensemaking workshop were related to the lack of trust in scientific information, lack of access to quality and consistent information, lack of specific support programs for the most affected and vulnerable groups, the often individualistic nature of people and weak community engagement motivation, amongst others. We would like to emphasise on two key insights derived from the sensemaking sessions: the access to information and importance of informal networks and mutual support in such a crisis situation.

Figure 4: The greatest challenges in stories

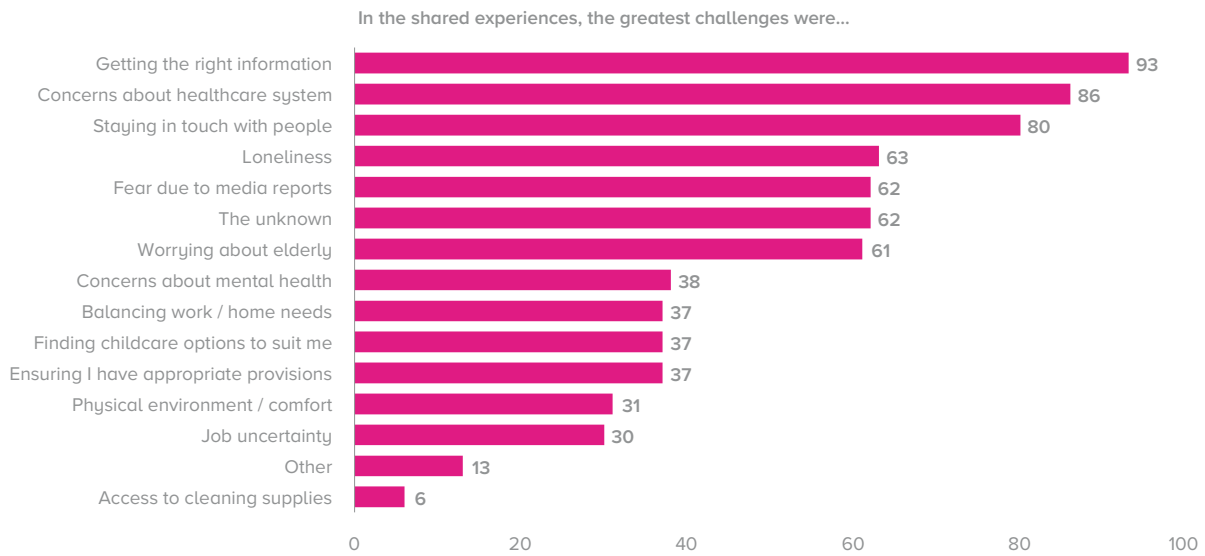
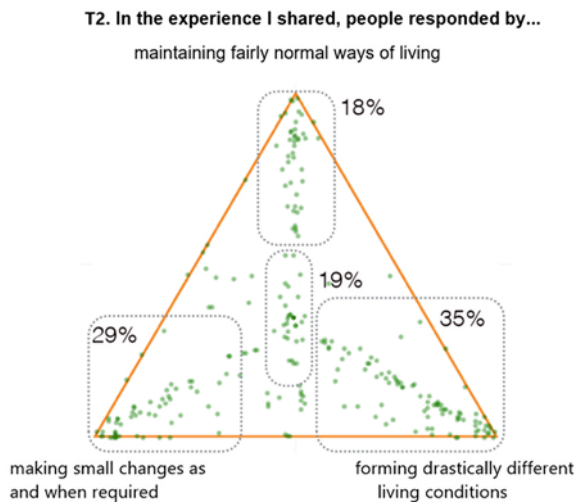


Figure 5: Getting to a “new normal”



Access to information

Although getting the right information was the top greatest challenge during the reported period, the importance of information was not given a high priority. Information was not as important when it came to the means of improving the situation: In one-fifth of the stories, people believed that the situation could be improved by clearer information regarding what to do.

There were no suggestions in peoples’ narratives regarding how the communication could be improved. The stories referred to the overload of information, which is hard to filter, the negative load

and confusion of the information, psychological exhaustion and frustration with people who did not follow the security norms.

“COVID-19 created a lot of stress for me from listening daily to the big flow of information, both true and false. We, the elderly, are not able to select the true information. That is why I try to listen only to the recommendations from specialists, whom I trust.” Woman, 71 years old

“During the pandemic, I observed how a lot of people are indifferent about what is being communicated in respect to protection measures (disinfectants, masks, social distancing).” Woman, 20 years old

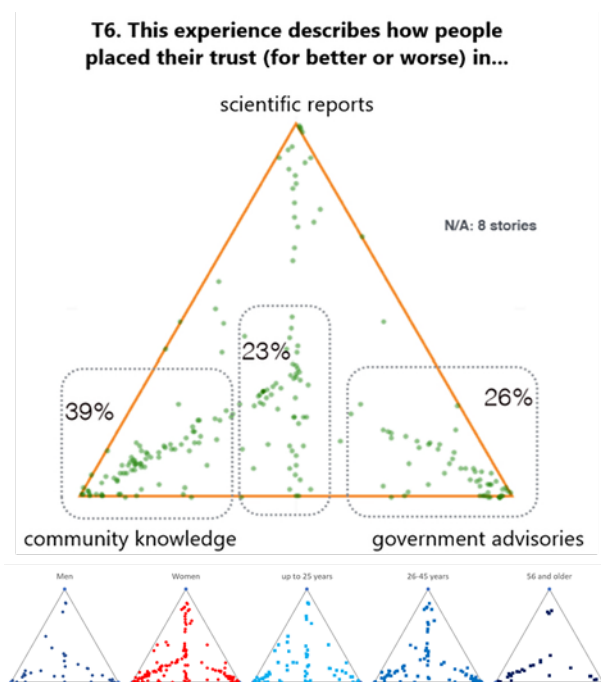
This suggests that having more focused, consistent and trustworthy information, combined with positive examples could improve peoples’ well-being in the time of crisis, as well as improve national respect of safety norms.

Less than 10% of respondents referred to trusting scientific reports in the pandemic (Figure 6), which could be a weak signal for the presented misinformation. In most of the stories, respondents put their trust in local knowledge, rather than Government advisories. The sensemaking exploration led us to the conclusion that limited trustworthy, consistent and accessible information determined that people based their decisions on personal judgements, rather than looking individually for evidence (either from scientific sources or from Government advisories).

Exploration of gender and age profiles of stories revealed slightly different patterns (see Figure 7). Women showed a slightly larger propensity towards trusting community and science reports, while men were more inclined to trust government sources. The mid-age group (26 to 55 years) put more trust in scientific materials and government advisories, while older generation (56 and older) show more trust in community sources. This suggests use of targeted information campaigns to provide trustworthy information.

This also suggests that more scientific evidence about COVID included in the communication, especially through community knowledge networks, could improve people's trust in scientific evidence and increase compliance with restrictions. In the medium to long term, encouraging a research and analytic mindset among the population through public debates, education and civic participation would support the shift.

Figure 6: Sources of information



Access to help and support

Another important challenge was access to social services and support to overcome COVID-19-related problems and help, where one-third of the respondents said that no solutions or help came. The narratives tell us that people faced a lack of support services and limited access to basic services during the reporting period, including health, education, social payments, etc.

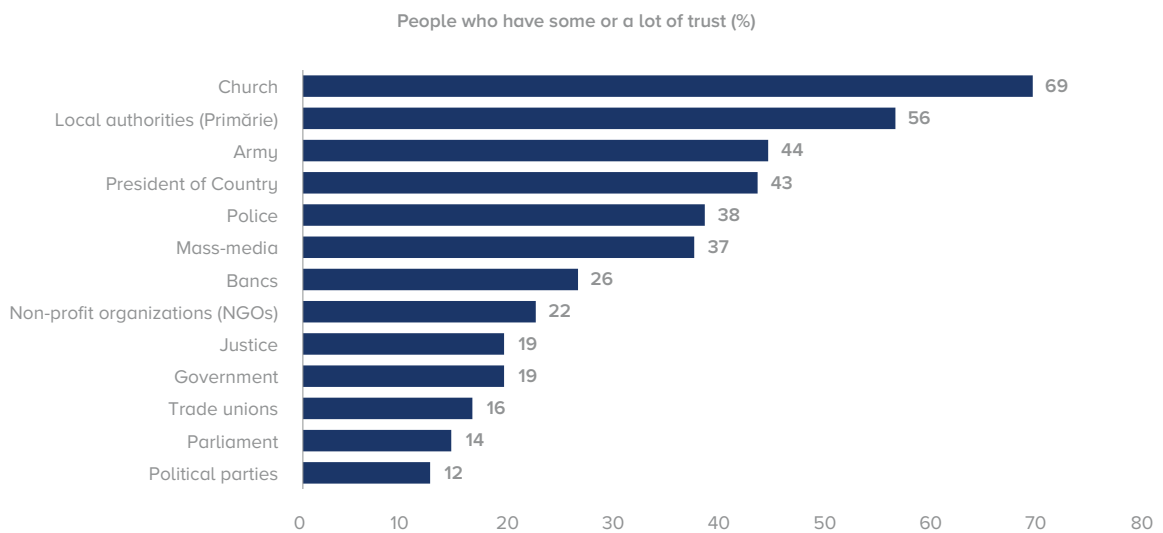
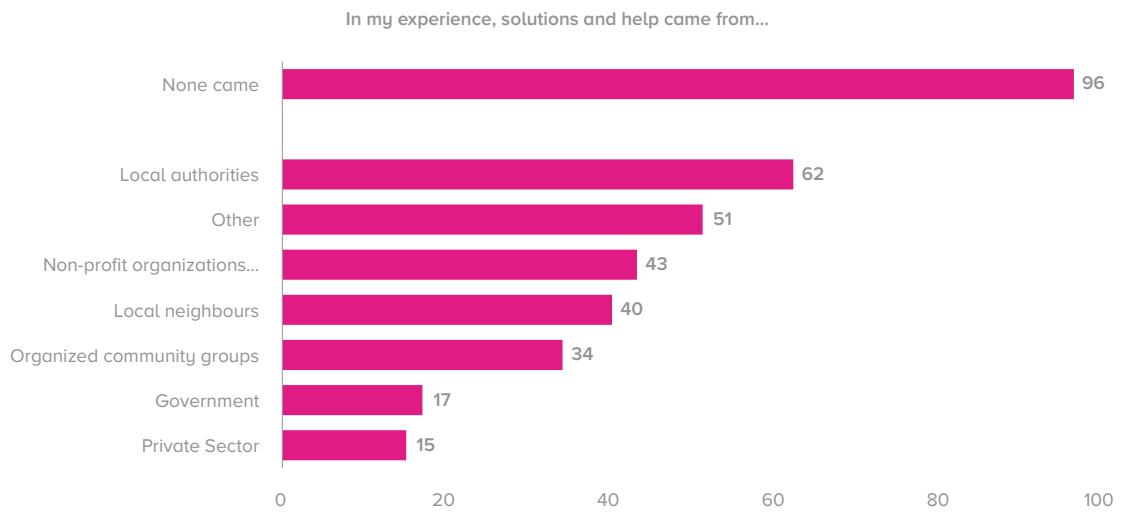
Support from the Government was perceived by the respondents as indirect support, e.g. the outcomes following Governmental decisions, which increased attention to teachers' roles and the role of IT solutions and related improvements. The stories revealed that people expected the Government to help, though little direct assistance came.

More than half (58%) of the respondents indicated that COVID affected their personal well-being and relationships, with higher incidences of this amongst the elderly population. Younger respondents said COVID also impacted their businesses and economic well-being. This could mean people needed solutions and help in maintaining healthy well-being during the pandemic, with differentiated solutions needed for various age groups.

The narratives showed that challenges differed according to age and vulnerable groups; thus, support interventions should be designed to meet the specific needs of different groups (youth, vulnerable women and young mothers, elderly, people with disabilities, HIV positive).

Sources of solutions, marked by respondents, strongly correlated to trust in various institutions (as captured by the Public Opinion Barometer). Local authorities were a source of solutions in the majority of cases, and, therefore, they enjoyed one of the highest trust levels. While the general trust in NGOs was relatively low (which could be a sign of mixing "political NGOs" and "social case NGOs"), they provided a significant number of solutions, including crucial support by people with special needs. Most "other" solutions were provided by an extended family.

Figure 7: Sources of solution and trust to various institutions



Source: Micro-narratives and Public Opinion Barometer, February 2021

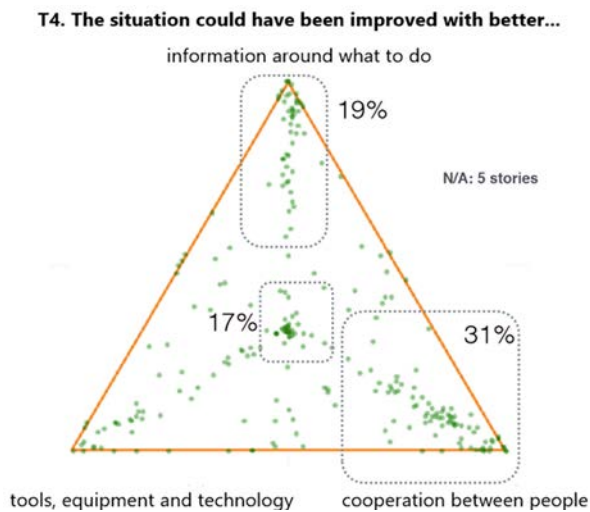
Cooperation, community engagement and judgement

Data show that in shared experiences, people reacted based on their own attitudes and behaviours (69%) rather than community and culture (31%). The shared stories mostly reflected personal perspectives, based on personal judgements and emotions, with limited reflections about community and the national level perspectives. There was little or no reference to evidence or data in support of the narrated events and conclusions. This signifies that people tend to see things from their own point of view, which leads to being critical towards the

systems, lacking empathy towards others (for instance, employees had difficulty understanding employers’ perspectives) and avoiding cooperation at the community level. People were also more concerned with finding solutions for themselves, rather than for the community.

A larger part of the respondent group thought that the situation could be improved by cooperation between people (see Figure 8), although the shared stories did not refer to how that cooperation could be improved.

Figure 8: Way forward: access to information and cooperation



These findings suggest that improved cooperation among people would increase community level peer-support in case of crisis situations and possibly lead to better adherence to security norms. Community level channels could also be used to improve promote scientific evidence and increase trust in scientific reports. Promotion of community engagement initiatives and volunteer work were also areas for improvement.

The realised research and sensemaking allowed us to learn more about real-life stories from people about how COVID has affected their lives and the lives of others in their communities. At the same time, in order to have a broader understanding of the key findings arising from the research, the conducted afterward informal workshop, which gathered together beneficiaries/experts/partners, allowed us to jointly look for the meaning of those reported by people and identify possible ideas to support the identified challenges.

Lessons learned and the way forward

Thick data were successfully employed for sensemaking of COVID responses in the Republic of Moldova. This experience provided several lessons learned.

First, micro-narratives proved to be a useful tool (in combination with other data sources) during the crisis and recovery stage, when regular analytical tools could not be used and traditional data were not available. Clusters of stories signaled common issues, while narratives provided actionable case studies. Hence, a combination of big data and thick data led to richer insights. On the basis of these novel practices, the Government of the Republic of Moldova requested support from UNDP and other partners to conceptualise and operationalise a concept for an Intelligence Unit for Policy Development, that would make use of the new evidence available (including that which was collected through thick data) to inform the next generation of decisions and policies to address the consequences and new vulnerabilities and risks of the post-COVID period. The formation of such a unit will create conditions to build capacities of use of new typologies of evidence, including big and thick data for decision-making.

Second, governmental institutions and other actors should pay greater attention to thick data and make more use of them in the decision-making process. One of the current challenges of the

public administration in the Republic of Moldova is that policymakers still face difficulties in using and analysing data in the process of decision-making, which could affect the quality and sustainability of decisions. Being aware of the importance of using data and understanding what is behind them, is a necessity for consolidating the capacities of civil servants in this sense. Some steps have already been initiated in this regard; however, it is still important to include aspects related to the use of thick data in the training curriculum for civil servants. Similar courses could be designed for NGOs as well, as the Government of the Republic of Moldova is looking for opportunities to engage them more actively in decision-making processes. Thick data turned out to be especially useful in the chaotic domain of decision-making during the COVID pandemic. However, the Government faces similar challenges while working in Complex and Complicated domains¹¹, which require a lot of sensemaking.

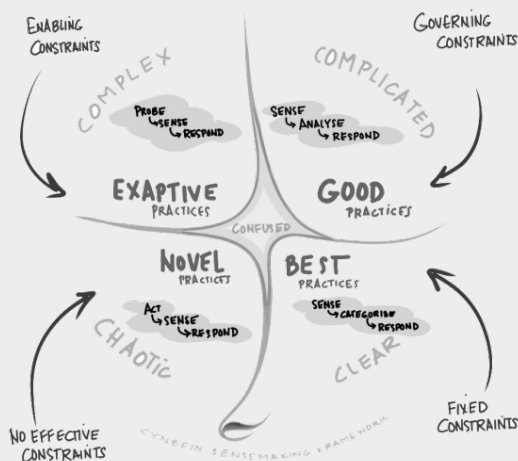
Third, thick data should not be opposed to big data, but rather complement each other to provide richer insight. Thick data can identify hidden societal problems or previously unexpressed needs (and solutions), especially of vulnerable groups of people—by simply giving a voice to underrepresented people. For instance, the very limited trust in scientific evidence and the revealed propensity of people to trust in community-level

knowledge is a leverage point to be further explored by decision-makers to support resilience building and trust at the local level. Another unexpected finding was the magnitude of loneliness and the feeling of a lack of support, especially among people with previous good incomes. Thick data can inform the analysis of statistical data collected periodically by better framing them and adding meaning to figures. Using both big and thick

data leads to mixed analytics that can offer both scale and depth to a problem. Last but not least, we have to make greater use of the opportunities that are available through technology when analysing a problem or challenge for which we seek solution. As revealed during sensemaking community workshops, applying technology is a social activity, not an isolated technical task.

Endnotes

- 1 Dumitru Vasilescu is a policy specialist with UNDP Moldova, e-mail: dumitru.vasilescu@undp.org; Aliona Ursoi is a deputy head at the Department for Policies and Priorities Coordination, State Chancellery, Republic of Moldova, email: aliona.ursoi@gov.md; Mihail Peleah is a programme specialist in Green Economy and Employment at the UNDP Istanbul Regional Hub, email: mihail.peleah@undp.org
- 2 Goertz, G. and Mahoney, J. (2012) *A Tale of Two Cultures: Qualitative and Quantitative Research in the Social Sciences*. Oxford: Princeton University Press.
- 3 For example, Chabris, Ch., Simons, D. (2011) *The Invisible Gorilla: How Our Intuitions Deceive Us*. Harmony.
- 4 Taleb, N. (2007) *The Black Swan: The Impact of the Highly Improbable*. Random House Publishing.
- 5 Taleb, N. (2016) *The Most Intolerant Wins: The Dictatorship of the Small Minority*. (Chapter from *Skin in the Game*) <https://medium.com/incerto/the-most-intolerant-wins-the-dictatorship-of-the-small-minority-3ff83ce4e15>
- 6 Snowden, D. Big, thick and rich (the data). Blog post. April 12, 2020. <https://www.cognitive-edge.com/big-thick-and-rich/>
- 7 The Cynefin framework offers five decision-making contexts or “domains”, which offer a “sense of place” from which to analyse behaviour and make decisions. The domains on the right, clear and complicated, are “ordered”: cause and effect are known or can be discovered. The domains on the left, complex and chaotic, are “unordered”: cause and effect can be deduced only with hindsight or not at all. The central domain is aporia/confused, the state of confusion.



- 8 For more details see Snowden, D.J., Boone, M. E. (2007). “A Leader’s Framework for Decision Making”. *Harvard Business Review*. 85 (11): 68–76, <https://hbr.org/2007/11/a-leaders-framework-for-decision-making>; Snowden, D.J., Friends (2020) *Cynefin - Weaving Sense-Making into the Fabric of Our World*. Cognitive Edge - The Cynefin Co.; The Cynefin® framework <https://www.cognitive-edge.com/the-cynefin-framework/>
- 9 Own calculation based on COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University <https://github.com/CSSEGISandData/COVID-19>, Oxford COVID-19 Government Response Tracker, Blavatnik School of Government <https://covidtracker.bsg.ox.ac.uk/>, and Google Community Mobility Reports <https://www.google.com/covid19/mobility/>
- 10 UNECE (2020) *Poverty Measurement: Guide to Data Disaggregation*. <https://unece.org/statistics/publications/poverty-measurement-guide-data-disaggregation>. Chapter 3 discusses in detail methods to adapt data collection in order to reach beyond the traditional and established survey methodologies and capture the groups that are most exposed to the risk of poverty.
- 11 The questionnaire part of story collection could include questions for interpretation of representativeness of the story, for instance, “How often do such circumstances occur in your locality?” with 3 to 5 options from “All the time” to “Never, this one is an exception.”
- 12 In this sense, percentages reported through the paper should not be interpreted in a statistical sense, but rather as an estimation of the relative size of cluster stories.
- 13 The **complicated** domain consists of the “known unknowns”. The relationship between cause and effect requires analysis or expertise; there is a range of correct answers. The framework recommends “Sense–Analyse–Respond”: assess the facts, analyse, and apply appropriate good operating practices. The **complex** domain represents the “unknown unknowns”. Cause and effect can only be deduced in retrospect, and there are no correct answers. Patterns and practices emerge through experiments. Cynefin calls this process “Probe–Sense–Respond”. In both cases thick data could be an essential part of the “sense” stage.