



VALIDATING HUMANITARIAN
DATA ANALYSIS THROUGH
COLLECTIVE INTELLIGENCE:
A PILOT STUDY

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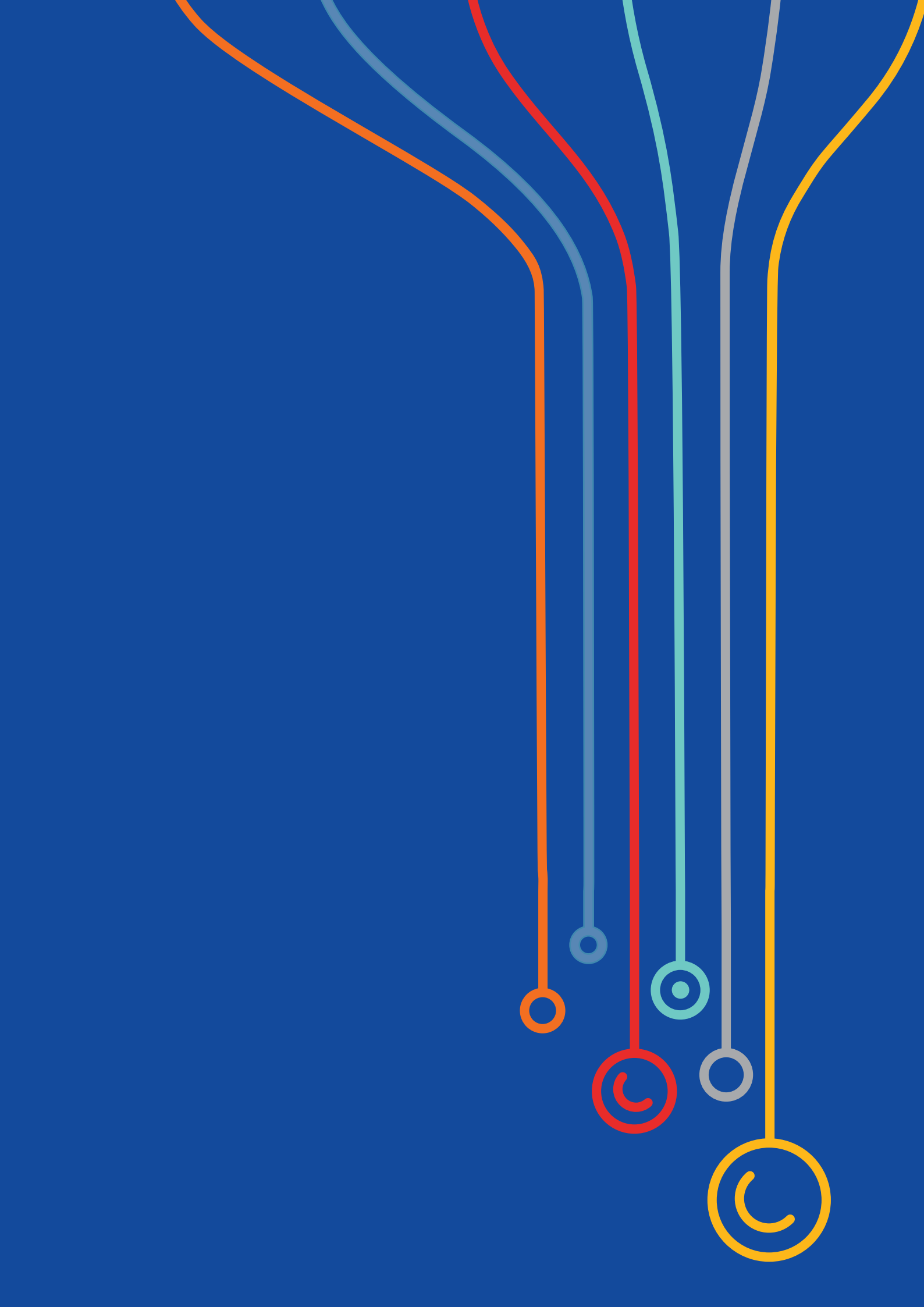
ACRONYMS

AI	artificial intelligence
AAP	accountability to affected populations
CI	collective intelligence
DTM	Displacement Tracking Matrix
ICRC	International Committee of the Red Cross
ICT	information and communications technology
IOM	International Organization for Migration
IP	Internet protocol
IRI	Iraq Return Index
KI	key informant
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development

ABSTRACT

Affected populations in humanitarian settings rarely provide feedback or validate the findings from data collection and analytical processes despite possessing context-specific knowledge relevant to humanitarian operations. This exploratory study pilots a novel form of collective intelligence (CI) that enables returnees in Iraq to validate and improve processes for the collection and analysis of data related to the conditions in their local area. In doing so, the CI methodology allows for more meaningful participation of affected populations than is typically afforded, as well as improving organizations' accountability to affected populations and transparency. Collecting data through digital channels, the initiative examines whether a larger and more diverse cross section of returnees could be engaged to validate findings resulting from key informant data collection. Using GPS technology, location-specific conclusions drawn from previous data collection activities are shared with affected communities to confirm or reject them and gather open-ended, qualitative input. The study finds that the demographics of respondents are more diverse than those of the pool of key informants. While the limited number of respondents in each location prevents the attainment of statistically significant results, some findings are nevertheless indicative of the potential of CI-based methods in evaluating and improving assessment tools by identifying areas of disagreement between key informants and CI participants across various indicators and demographic groups.

Keywords: key informant(s), collective intelligence (CI), humanitarian data collection, accountability to affected populations (AAP), participation revolution



VALIDATING HUMANITARIAN DATA ANALYSIS THROUGH COLLECTIVE INTELLIGENCE: A PILOT STUDY

Responding effectively to humanitarian crises can be challenging, not least because key data is incomplete, complex or delayed. Critically, affected communities – who are likely to best understand their own needs, as well as the nature of the humanitarian situation – rarely feed into the aid and recovery planning processes that impact them the most (Nuaimy-Barker, 2019; Konyndyk and Worden, 2019). Data collection that targets affected populations is often one-way and extractive, with respondents unsure of how or if, at all, their responses inform subsequent operations and decision-making by the humanitarian community or government (Chambers, 2007). The process typically does not involve consultations with affected populations or seek their participation once data collection is complete. Common data collection modalities may also fail to reach marginalized communities or demographic groups due to security concerns, restrictions on social access to certain public or private spaces, and financial constraints. Furthermore, the views of key informants may fail to represent more marginalized demographic groups that differ from them (Nkata et al., 2021). This phenomenon has been acknowledged in the sector, and reform towards enhancing localization, participation and inclusion, alongside increased engagement between humanitarian and development actors, has been a key inter-agency sectoral priority – as exemplified in The Grand Bargain, launched in 2016 (Inter-Agency Standing Committee, 2016). Based on these concerns, this pilot study on the use of a collective intelligence (CI)-based methodology was designed to understand how community participation through direct digital engagement could be used to complement and strengthen existing assessment tools by enabling the evaluation of results obtained using them.

Collective intelligence generally describes the process through which intelligence (i.e. insight) is gathered from crowds and aggregated to reach conclusions believed to be superior to those reached by a single expert (Verhulst, 2018). The CI methodology aims to address issues pertaining to affected populations' participation and feedback by “mobiliz[ing] a wider range of information, ideas and insights” than would normally be sought when addressing complex societal problems (Peach et al., 2019). It can take many forms and is widely used in such diverse fields as participatory budgeting and the building of “wikis” (such as Wikipedia). The application of collective intelligence in humanitarian settings brings together diverse sources of data, thereby enabling a more comprehensive and nuanced picture of needs that allow decision makers to produce better outcomes.

This paper argues that humanitarian beneficiaries are willing to share their perspectives on the conditions in their local areas or localities (“locations”), and that data collected through collective intelligence may be used to augment data collected through more conventional methods. In particular, a data collection methodology that uses collective intelligence may reach a more diverse population, and disaggregation of data by age and gender categories may highlight areas of dissonance in the findings when compared to traditional data sources such as key informants. Statistically significant differences between CI data and more traditional forms

of data can be used to improve more traditional or conventional data collection practices to obtain more accurate and targeted data.

Using a web-hosted survey advertised on the IOM Iraq Facebook page, the CI methodology results in a more diverse sample in terms of age and sex. Additionally, it enables the identification of areas of disagreement between respondents and traditional sources across particular indicators and after disaggregation by age and sex. While the small sample size of the survey used in this exploratory study, relative to its geographic scope, prevents drawing statistically significant conclusions, it nevertheless points to indicative differences, which can be confirmed by future studies. In addition, detailed feedback provided by respondents in the open-ended questions of the survey suggests a willingness on their part to share their views, whether positive or negative, when offered the opportunity.

COLLECTIVE INTELLIGENCE, ACCOUNTABILITY AND THE HUMANITARIAN SECTOR

Collective intelligence has been recognized as a transformative mode of knowledge production because it elevates the crowd above experts as a source of information (Büscher et al., 2014). Scholars such as James Surowiecki (2005) have emphasized the “wisdom of crowds” because the aggregation of independent conclusions drawn from a large sample may be more accurate than those collected from a single expert. Similarly, Peach et al. (2019) assert that information is often dispersed and that collecting data from a large and diverse set of people can result in a deeper understanding of complex problems. Wider access to information and communications technologies (ICTs) offers new opportunities for collective intelligence by facilitating collection and mosaicking of large data sets (ibid.). Additionally, some forms of artificial intelligence (AI), such as natural language processing and sentiment analysis, enable scaling of CI techniques by reducing the effort required for analysis (Verhulst, 2018).

In the humanitarian sector, CI innovations typically involve mapping crowdsourced information shared by affected populations through social media and SMS (i.e. mobile text). For example, in the aftermath of the 2010 Haitian earthquake, volunteers with Ushahidi, a not-for-profit technology company, mapped information collected from text messages, social media and the company’s website to better understand humanitarian needs (The PLoS Medicine Editors, 2012; Büscher et al., 2014). Crowdsourcing platform MicroMappers similarly collects social media data from disaster zones, which volunteers review and classify to produce operational insights for humanitarian workers (Givoni, 2016). The categorized information is then used to train an AI algorithm to collect relevant data and perform this categorization automatically. In both examples, affected populations largely serve as sources of data and are not involved in higher-order tasks such as validation, analysis and decision-making. Where affected populations are involved in data validation, it frequently entails: (a) reviewing information crowdsourced from volunteers, (b) providing feedback during project implementation and/or (c) validating conclusions derived from formal data sources (Stauffacher et al., 2012; Hunt and Specht, 2019; Peach et al., 2019). This project explores the application of a novel form of collective intelligence in the humanitarian sector, combining the second and third approaches: As part of the validation process, it directly solicits feedback from affected populations on conclusions reached through traditional data collection processes and analysis.

Another novel aspect of this project relates to its consultation of affected populations, a key tenet of the concept of “accountability to affected populations” (AAP). While the importance

of AAP has been signalled in nearly every humanitarian reform effort since the 1990s, progress towards this goal has been limited compared to other reform areas (Nuaimy-Barker, 2019; Konyndyk and Worden, 2019). According to the typology designed by the Active Learning Network for Accountability and Performance (ALNAP), AAP activities include, from the most passive to the most active: (a) information provision, (b) consultation, (c) two-way communication, (d) accountability mechanisms, (e) participation and (f) ownership (Brown et al., 2014; Nuaimy-Barker, 2019). Humanitarian activities around AAP typically fall on one end of the spectrum, centring on information-sharing and feedback collection (Nuaimy-Barker, 2019). For example, the International Committee of the Red Cross (ICRC) established a “social media listening” activity to gather comments posted on social media as a form of feedback, while Médecins Sans Frontières (MSF) uses Facebook for information dissemination and feedback collection (ibid.). However, even when feedback is solicited, it is infrequently integrated into humanitarian operations planning, including in data collection, preventing it from meaningfully influencing activities (Nuaimy-Barker, 2019; Konyndyk and Worden, 2019; Metcalfe-Hough et al., 2019; Ground Truth Solutions and OECD, 2018). Additionally, feedback collection often occurs during the implementation and monitoring stages, rather than the design and evaluation stages, which prevents affected populations from asserting real influence over the conception of projects (Nuaimy-Barker, 2019). Moreover, a survey of affected populations, conducted in line with the Grand Bargain by the non-governmental organization (NGO) Ground Truth Solutions and the OECD, concludes that humanitarian organizations underutilize ICTs in their efforts to communicate with beneficiaries (2018).

This project addresses some of the aforementioned problems by consulting affected populations at an earlier stage (during the needs assessment stage versus post-delivery of services) and at a higher level (validation versus information/feedback provision). By consulting affected populations earlier in the programme cycle, project managers can actively use their feedback to enhance both the provision of aid and data collection activities. In this way, a CI methodology allows for more meaningful participation by affected populations than is traditionally afforded and, in addition, improves accountability and transparency, including to affected populations. Collecting data through well-known ICTs, such as Facebook, can also result in a more diverse respondent sample than those provided through traditional data collection methods. Key informants, for example, tend to be composed largely of older males, while ICT samples may promote participation among women and younger generations. The use of digital channels for data collection can also increase participation without requiring significant time and resources, which is particularly valuable in fragile and conflict-affected humanitarian contexts, where access to affected populations is operationally challenging (Faith, 2019). Finally, providing feedback online affords respondents a greater degree of anonymity, thereby mitigating the fear that critical feedback would result in a loss of aid or other forms of reprisal (El Taraboulsi-McCarthy et al., 2020).

The participation of affected populations has the potential to render humanitarian aid more effective, efficient and accountable (Brown et al., 2014). Affected populations have the greatest investment in the successful recovery of their communities, as reflected in their role as first responders and their engagement in the post-recovery period following a crisis (Gibbons et al., 2018; Nuaimy-Barker, 2019). With respect to data collection, information provided by affected populations is more likely to be accurate and their recommendations are often more appropriate for their context (ACAPS, 2015; Hunt and Specht, 2019; Plantin, 2014). From an ethical perspective, participatory modes of data collection allow affected populations to assert greater control over decisions affecting their lives (Büscher et al., 2014). Consultation with

greater swaths of an affected population can also increase the diversity of respondents and improve representation of marginalized groups (Givoni, 2016).

Nonetheless, certain limitations to CI data collection that use only ICTs may impede full realization of AAP. Humanitarian organizations may be reluctant to rely on data collected from social media due to fears of undermining data quality (Hunt and Specht, 2019). Additionally, disparities in access to ICTs along lines of ethnicity, age, sex, gender, socioeconomic status and education – known as the “digital divide” – means that reliance on data from social media may amplify pre-existing inequalities (Givoni, 2016; Nuaimy-Barker, 2019). While this limitation is not entirely overcome in Iraq (the setting for this exploratory study), high levels of ICT use among the affected population may allow for engagement of a broader cross section (Bahia, 2019). Finally, scholars such as Michal Givoni (2016) have advanced a broader critique of participatory digital tools used in the humanitarian sector, arguing that they impose more responsibility on affected populations to solve their own problems while reducing the pressure placed on political and humanitarian organizations to address underlying structural problems that result in crises.

COLLECTIVE INTELLIGENCE APPLIED TO THE IRAQ RETURN INDEX

The objective of this pilot study was to engage a broad subset of the affected population in Iraq to explore whether and why their assessment of their neighbourhood or village differed from that of the key informants, as captured in the Iraq Return Index (IRI), a pioneering tool developed by IOM in Iraq (IOM, 2020a, 2020b). Returnees are defined in this report and in the IRI as Iraqis displaced since 2014 who have since returned to the location in which they originally resided, regardless of whether they are dwelling in their original home (IOM, 2018). The IRI is built on a list of indicators developed in consultation with relevant partners and stakeholders to reflect the displacement context in Iraq, focusing on the returnee population (Table 1). To measure the severity of conditions in each location of return, the IRI uses 16 indicators grouped into two scales: (a) livelihoods and basic services and (b) social cohesion and safety perceptions. The data that informs the IRI is collected from a network of 2,000 key informants, including mukhtars, community leaders, local authorities and security forces across locations of return (IOM, 2020b). Key informants are generally leaders of a community and provide information for multiple rounds of assessment. In this report, they are contrasted with “citizens” and “returnees,” who provide feedback in an individual, rather than leadership, capacity.

The IRI uses a logistic regression model to assess the impact of each of the indicators on facilitating or preventing returns and to calculate scores for the two scales. For example, the model tests how much less likely a location is to witness returns if no agricultural activities have resumed, compared to a location where such activities have fully resumed. The scores on these two scales are combined to produce the overall severity index, which ranges from 0 (all essential conditions for return are met) to 100 (none of the essential conditions for return are met). Higher scores thus denote more severe living conditions for returnees. Severity index scores are grouped into three categories: “low” “medium” and “high” severity (the “high” category includes “very high severity” identified in some locations).¹

¹ More information on the IRI methodology can be found in the report, “Building blocks of the Return Index in Iraq” (IOM, 2020a).

Table 1. Indicators and scales of the Iraq Return Index

Scale 1 (livelihoods and basic services)	Condition(s) evaluated in each location	Scale 2 (social cohesion and perception of safety)	Condition evaluated in each location
Residential destruction	Existence of destroyed houses, combined with the presence of reconstruction efforts.	Community reconciliation	The need for a reconciliation process that is currently not taking place.
Employment access	Part of the population is unable to find employment.	Multiple security actors	Presence of at least four different armed groups in control of security provision.
Water sufficiency	Part of the population has insufficient public water supply.	Blocked returns	Part of the pre-conflict population is not allowed to return.
Recovery of agriculture	Agricultural activities not taking place as before.	Checkpoints controlled by other security actors	Presence of groups in control of checkpoints apart from the Iraqi Army, the local police and the Federal Police, combined with concerns about harassment by these groups.
Electricity sufficiency	Part of the population has insufficient electricity supply.	Daily public life	Existence of tensions among residents and preference to not leave the house unless necessary.
Recovery of businesses	Existence of businesses that have not been restarted.	Illegal occupation of private residences	Presence of private residences illegally occupied by others (e.g. residents and armed groups, among others).
Access to basic services	Existence of access difficulties to primary education or primary health.	Mines	Existence of concerns among the population about explosive devices in (or around) houses.
Provision of services by the Government	Lack of government service provision.	Sources of violence	Existence of concerns among the population about violence in the area (targeted attacks, acts of revenge, clashes between security forces, or ethno-religious-tribal tensions).
Scale 1 score: 0 to 100		Scale 2 score: 0 to 100	

This exploratory study relies on two research questions: (a) Can a digital CI method be used to engage an affected population in a fragile and conflict-affected setting, specifically those who are conventionally underrepresented in humanitarian assessments? (b) Can the data gathered using such method be used to validate and improve key informant (KI) data collection methods by highlighting areas in which the views of affected populations differ significantly from those reported by key informants?

The project aims to test the following hypotheses:

- (a) **Hypothesis 1:** Affected populations in Iraq would demonstrate a willingness to provide feedback on the conditions in their localities (“locations”) using a digital channel, as measured through respondent diversity and volume relative to that obtained through the IRI methodology.
- (b) **Hypothesis 2:** Key informants (who are almost exclusively men, with the majority aged 35–59) would form a different assessment of the conditions in their localities (“locations”) than the broader population of residents, who tend to be younger and more evenly split by gender.

If statistically significant differences are detected, citizens' feedback on assessment results could be used to highlight areas of dissonance for Displacement Tracking Matrix (DTM) teams to consider in survey design and to monitor during enumeration and analysis of the IRI. Even in the absence of statistically significant differences, however, findings that indicate divergence can form the basis for future study and exploration by academics and humanitarian practitioners alike.

IMPLEMENTING COLLECTIVE INTELLIGENCE IN IRAQ

The displacement crisis in Iraq posed several challenges to data collection. At the time of the study, restrictions and guidelines imposed in Iraq due to COVID-19 prohibited in-person mobilization and enumeration. This was compounded by security and other operational constraints on larger-scale household data collection. Differential access to ICTs in Iraq reflects social inequalities and was judged to be at a sufficient level for this study of whether digital channels could be leveraged to test the CI framework in a fragile and conflict-affected humanitarian setting (Faith, 2019). Additionally, the IRI assessment, being a rigorous statistical model that employs a conventional KI methodology, was identified as a uniquely suited case study. This provided a useful control against which the potential of a digital CI methodology could be tested.

Without the ability to mobilize or engage affected populations in person, the study sought a safe and scalable ICT method for soliciting feedback from Iraqi returnees on KI assessments of the conditions in their villages or neighbourhoods. To avoid the negative consequences of one-way and extractive data collection processes, the study sought to identify an active and sufficiently large digital forum through which returnees could be engaged in a data collection and validation process that was easily accessible and discursive, allowing for regular (and anonymous) exchange of ideas and opinions, to generate further engagement (Srinivasan et al., 2019; Chambers, 2007). Such spaces are not limited to social media, but for this study, the public IOM Iraq Facebook page was selected to pilot digital engagement and consultation.

Technical details of the online survey

A website-hosted survey was used in this project because it represented a more accessible platform for data collection than other digital channels, such as a downloadable app (ICRC et al., 2017).² By using an online survey, a broader cross section of returnees could be reached by relying on the existing social network of the IOM Iraq Facebook page, which had 93,038 followers in Iraq at the time of the study. Around 25 per cent of these followers were female, and 51 per cent were between the ages of 25 and 35, enabling access to new demographics. Outreach via the IOM Iraq Facebook page was conducted in English, Arabic and Kurdish (Figure 1). Throughout the data collection period, additional "boosts" (paid promotion of a particular social media post so that it appears more prominently in users' "newsfeeds") were conducted to target low-response areas, with a total of four targeted boosts taking place between 23 March and 4 May 2021. To reach a broader pool of returnees, the survey link was also shared with the rapid assessment and response teams (RARTs) for distribution within their networks. The impact of this wider survey distribution on the response rate, however, is unknown.

² ICRC et al. (2017) reports that recent studies have found that "refugees [and other affected populations] are comparatively less likely to download new, bespoke apps to communicate with humanitarian agencies, particularly given the recent proliferation of such new apps."

Figure 1. Example of messaging advertised on the IOM Iraq Facebook page



Note: The Facebook post was also published in Kurdish and Arabic.

Indicator selection and survey design

The IRI covers 16 indicators across 5 thematic areas. For this study, one indicator from each major category was chosen to reflect an aspect of the conditions in returnees' locations and was cross-referenced on the web-hosted form (Figures 2 and 3). The choice to streamline indicators ensured the brevity of the survey. The chosen indicators were:

- (a) Housing destruction;
- (b) Employment;
- (c) Business recovery;
- (d) Community reconciliation;
- (e) Security.

The first set of questions were designed to validate the status of the respondent, including his or her location in Iraq, return status and demographic information such as age and gender. In general, the survey asked respondents the same questions that key informants had answered about their locations to ensure uniformity in design and to enable comparison. Additionally, the use of open-ended questions in the event of disagreement with key informants' conclusions allowed respondents to describe conditions at return using their own words and introduce new information that close-ended data collection might fail to detect.

Figure 2. User view of the IOM Collective Intelligence platform with six indicator questions shown (one per page)

The figure displays six sequential screenshots of the IOM Collective Intelligence (CI) platform interface, each showing a different indicator question. The interface is consistent across all screens, featuring a 'Welcome to IOM CI' header, a location-based title for 'Baghdad, Mahmoudiya, Al-Yousifya, Al Mustafa Village-(Al Jomlatiya Southern)', and a progress indicator with six numbered steps. The background of each screen shows a map of the location.

Screen 1: Question 1
 Question: Are the houses destroyed or heavily damaged due to the 2014 crisis in your village/neighborhood?
 Options: More than half the houses are destroyed, About half the houses are destroyed, Less than half the houses are destroyed, None of the houses are destroyed (they were never destroyed), None of the houses are destroyed (they all have been reconstructed).
 Buttons: Previous, Skip.

Screen 2: Question 2
 Question: Can residents in your village/ neighbourhood find employment?
 Options: Most or all residents can find employment, Around half the residents can find employment, Less than half the residents can find employment, None of the residents can find employment.
 Text: Based on the answer received by one of your community leaders: Around half the residents can find employment. We will be happy to learn why your answer differs from the community leader.
 Input: Why do you think the answers are different?

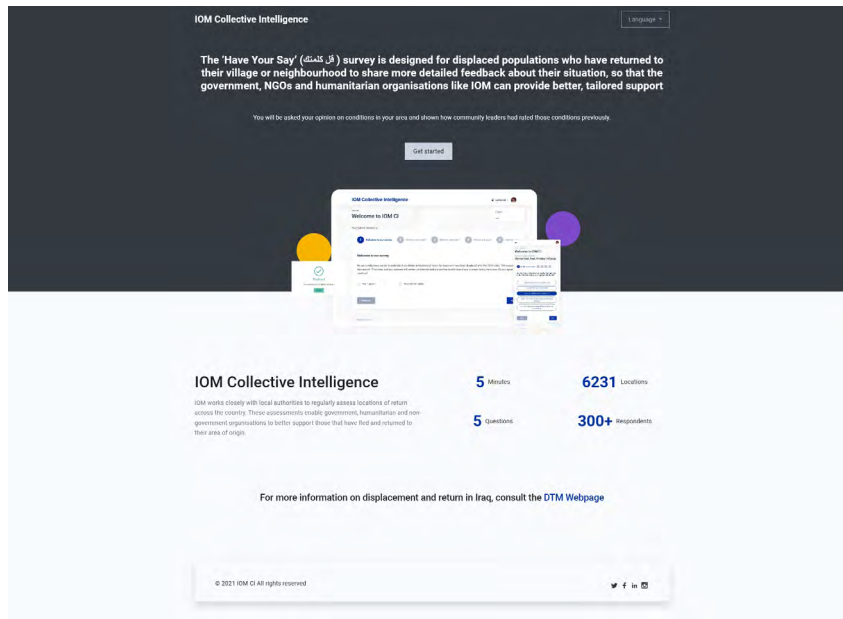
Screen 3: Question 3
 Question: Are the small and/or big businesses (public or private sector) in your village/neighborhood currently operating? This includes any type of shops (bakery, etc), businesses (car repairs, etc), factories, etc
 Options: Most or all businesses are open as before, Some businesses are open as before, None of the businesses are open as before, There is no business in the location.
 Text: Your answer is the same as the community leaders. No further action is required.
 Buttons: Previous, Next.

Screen 4: Question 4
 Question: Does your community need reconciliation with other ethno-religious/tribal communities in the sub-district to achieve a peaceful co-existence and prevent further violence?
 Options: Yes, the community in this location needs reconciliation with other ethno-religious/tribal communities in the sub-district to achieve a peaceful co-existence and prevent further violence, No, the community in this location does not need reconciliation with other ethno-religious/tribal communities in the sub-district to achieve a peaceful co-existence and prevent further violence.
 Text: Your answer is the same as the community leaders. No further action is required.
 Buttons: Previous, Next.

Screen 5: Question 5
 Question: The last question is about safety and security in your village/neighborhood. One of your community leaders has reported that there are 3 different security actors in your village/neighborhood. This can include the army, the federal police, local police, and other armed groups. Do you think this number of security actors is accurate?
 Options: Yes, No, there are less, No, there are more, I do not know.
 Text: Your answer is the same as the community leaders. No further action is required.

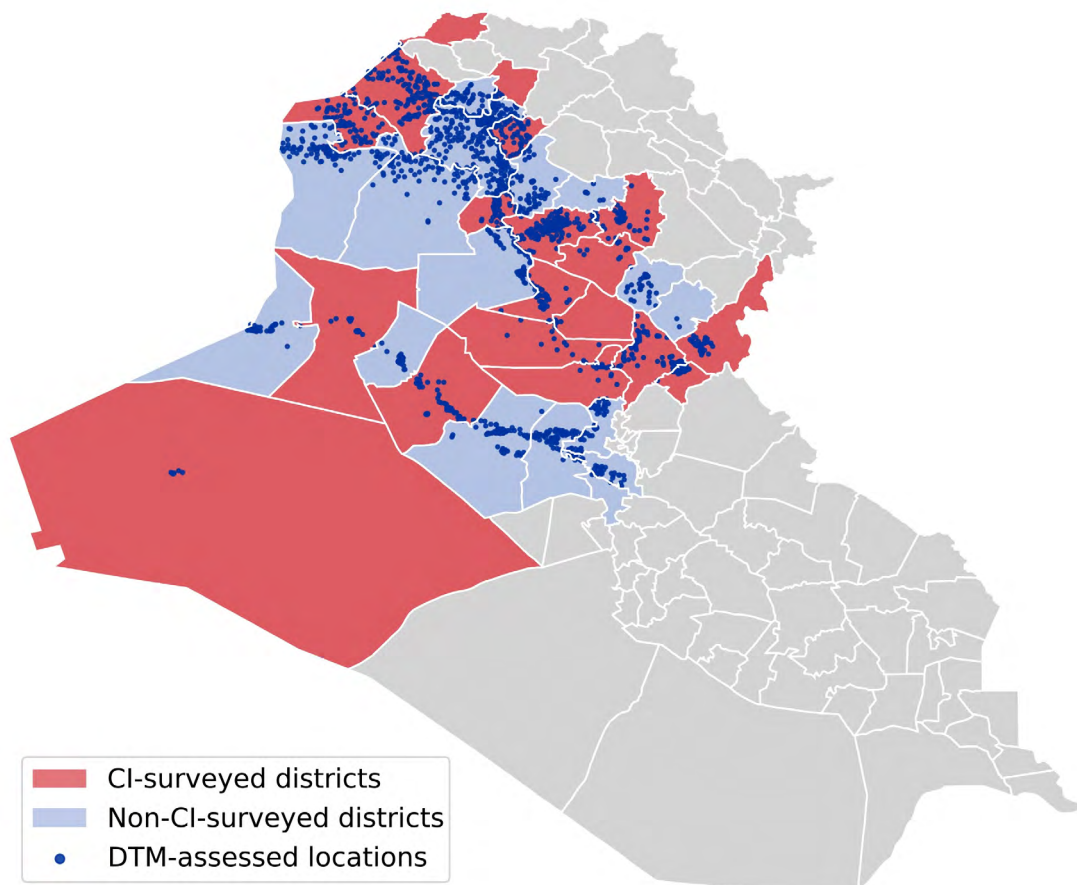
Screen 6: Question 6
 Question: According to our analysis, this number of security actors means that the security situation in good in your village-neighborhood? Do you agree with this evaluation of the situation?
 Options: Yes, No, I do not know.
 Text: Based on the answer received by one of your community leaders: good. We will be happy to learn why your answer differs from the community leader.
 Input: Why do you think the answers are different?

Figure 3. IOM Collective Intelligence platform landing page



Automatic filters were initially used to eliminate ineligible respondents whose IP addresses did not match their self-reported locations. However, these filters were removed when it became evident that IP addresses were not a reliable validator of location within Iraq due to the widescale use of virtual private networks (VPNs). A filter remained in place to exclude respondents with IP addresses outside the country.

Figure 4. Geographic coverage of the IOM Collective Intelligence platform



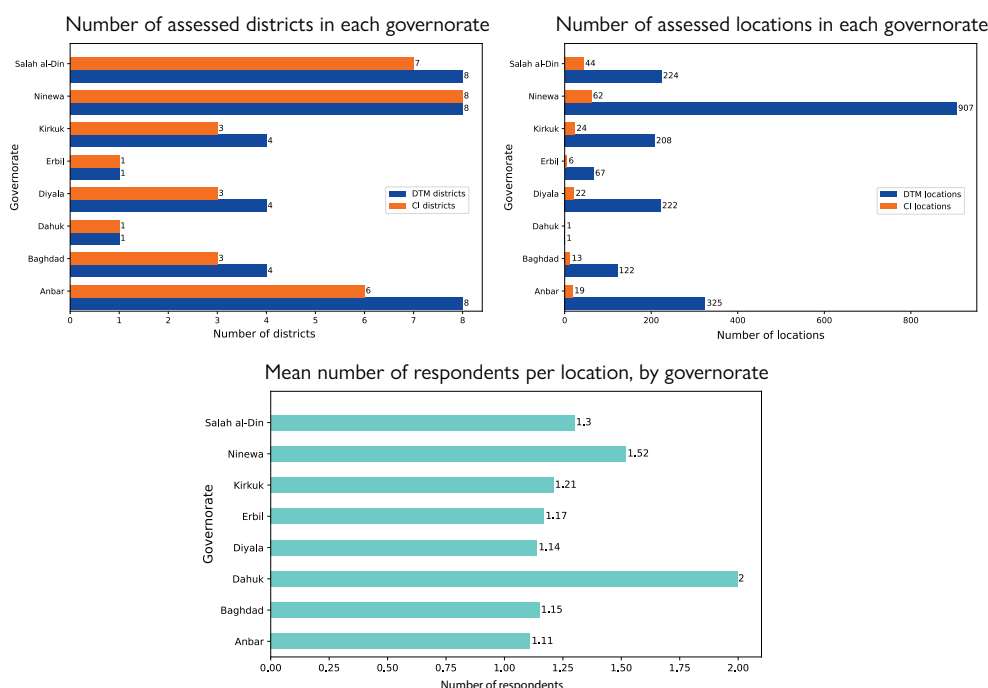
SAMPLE CHARACTERISTICS

Entries into the data collection system were tracked daily for a seven-week period between 23 March and 4 May 2021. By 4 May 2021, 977 users had accessed the app, with 251 users having entered data into the system. Throughout this period, all 251 respondents submitted answers to at least one question, with 31 per cent completing the survey and 10 per cent answering only one question. All questions received answers from more than half of the respondents. In terms of geographic coverage, all eight governorates included in the study were assessed through the CI app; 192 individual locations (9.2% of the total 2,706) in 32 out of 38 districts were reached. The mean number of respondents per location was 1.3 (Table 2 and Figure 5). Of the four targeted boosts, the second one (undertaken during the second week of data collection) had the strongest impact on the cumulative response rate.

Table 2. Geographic distribution of participants: DTM assessment versus IOM Collective Intelligence platform

Governorate	DTM		IOM Collective Intelligence platform			
	No. of districts	No. of locations	No. of districts (% of DTM number)	No. of locations (% of DTM number)	No. of respondents	Mean no. of respondents per location
Anbar	8	325	6 (75%)	19 (5.8%)	21	1.1
Baghdad	4	122	3 (75%)	14 (11.5%)	15	1.1
Dahuk	1	1	1 (100%)	1 (100%)	2	2.0
Diyala	4	222	3 (75%)	22 (9.9%)	25	1.1
Erbil	1	67	1 (100%)	6 (9.0%)	7	1.2
Kirkuk	4	208	3 (75%)	24 (11.5%)	29	1.2
Ninewa	8	907	8 (100%)	62 (6.8%)	94	1.5
Salah al-Din	8	224	7 (87.5%)	44 (19.6%)	57	1.3
Total	38	2 076	32 (84.21%)	192 (9.2%)	250	mean = 1.3

Figure 5. Geographic distribution of participants (summary): DTM assessment versus IOM Collective Intelligence platform



Most survey respondents were male (86%). Most were also young adults ages 18–34 (65.2%) (Figures 6 and 7), showing broader participation of an age group less likely to be represented among key informants. A chi-square test of independence was performed to assess whether (or not) there was a statistically significant dependence between: (a) the population categories (by age, governorate or sex) and (b) the level of agreement between key informants and CI survey respondents across different topics. The correspondence of answers between key informants and survey respondents could only be rejected for the variable governorate, and only for the questions on housing destruction, employment, recovery of businesses and security status (Table 3). Thus, governorate was the only demographic variable identified that could have influenced survey respondents' answers to be different from those of key informants. The other two variables (age and sex) did not influence the answers of the respondents. However, it must be stressed that the total number of respondents in the CI roll-out is insufficient to draw statistically significant conclusions in relation to hypothesis 2 (Key informants would form a different assessment of the conditions in their locations than the broader population of residents, who tend to be younger and more evenly split by gender).

Figure 6. Respondent demographics

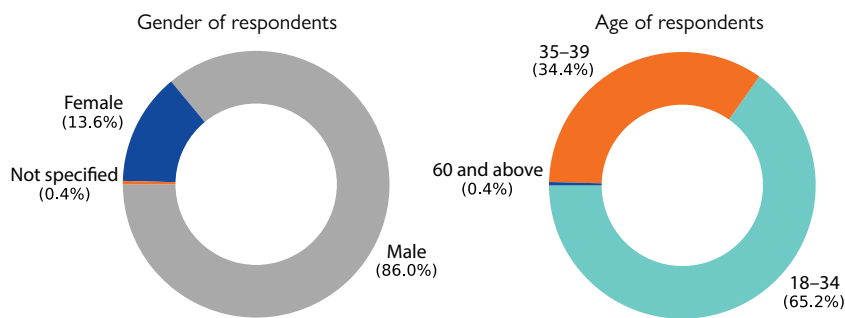


Figure 7. Percentage distribution of respondents by age group and by sex

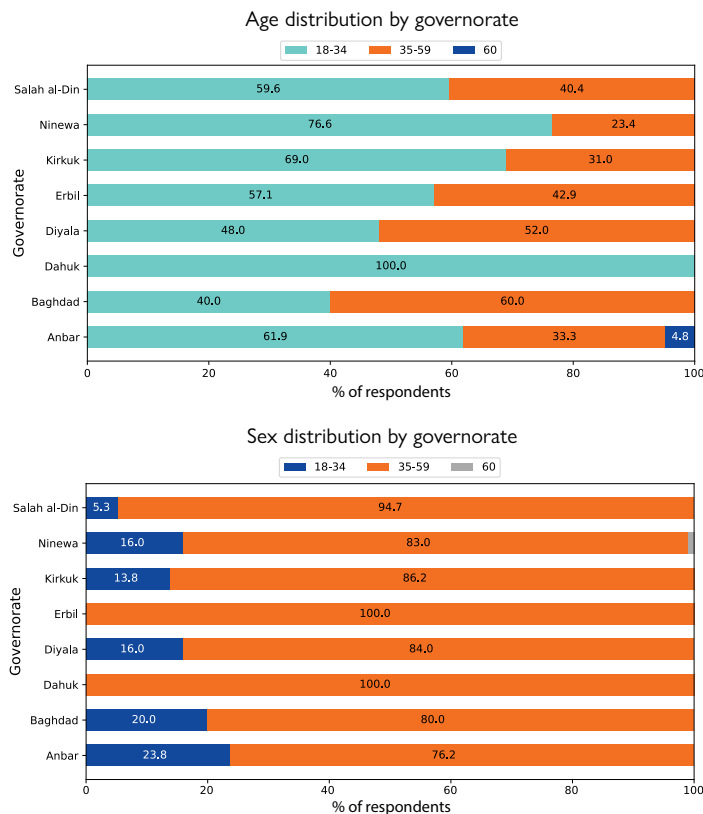


Table 3. Chi-square test of independence between demographic variables and level of agreement between key informants and CI survey respondents on each topic

Variable	Topic	Degrees of freedom	Chi-square statistic (χ^2)	p-value	Hypothesis test result ($\alpha = .05$)
Sex	Residential (housing) destruction	1	2.1344	0.1440	H_0 not rejected
	Access to employment	1	0.0187	0.8913	H_0 not rejected
	Recovery of businesses	1	0.0058	0.9395	H_0 not rejected
	Community reconciliation	1	0.2991	0.5844	H_0 not rejected
	Multiple security actors	1	0.0117	0.9137	H_0 not rejected
	Security status	1	0.0128	0.9101	H_0 not rejected
Age	Residential (housing) destruction	1	0.0286	0.8657	H_0 not rejected
	Access to employment	1	0.2862	0.5926	H_0 not rejected
	Recovery of businesses	1	0.3041	0.5813	H_0 not rejected
	Community reconciliation	1	2.5247	0.1121	H_0 not rejected
	Multiple security actors	1	0.3918	0.5313	H_0 not rejected
	Security status	1	0.2781	0.5979	H_0 not rejected
Governorate	Residential (housing) destruction	5	15.3462	0.0090	H_0 rejected
	Employment access	5	39.4017	<0.001	H_0 rejected
	Recovery of businesses	4	25.0286	<0.001	H_0 rejected
	Community reconciliation	4	11.1628	0.0248	H_0 rejected
	Multiple security actors	5	3.0860	0.6867	H_0 not rejected
	Security status	3	10.0860	0.0178	H_0 rejected

QUALITATIVE FINDINGS

In cases where the CI survey respondents disagreed with the conclusions of key informants, they were prompted to explain in writing what they had thought to be the reason for the difference. There was notable variation in the qualitative response rates: The largest percentage of the 279 qualitative responses concerned housing destruction (21%), followed by security (18%); the smallest proportion concerned reconciliation (13%). Respondents identified seven areas of disagreement with key informants.

1. Credibility of the key informant

Less than 1 per cent of open-ended responses by CI survey respondents referenced the credibility of the key informant as the reason why their submitted answers differed from the said key informant's previously collected responses. The perceived lack of credibility was attributed to the key informant not being a resident of the area, thus the inability to understand the plight of those who were actually living there.

Table 4. Open-ended responses on the credibility of key informants

Governorate	District	Age group	Sex	Response examples
Diyala	Khanaqin	35–59	Male	<i>I do not know [why my answer differs], but it is a reality...or maybe because he [the key informant] is not from the affected area. Some neighbourhoods have been levelled to the ground.</i>
Salah al-Din	Baiji	18–34	Male	<i>Maybe this person has enough money and has rebuilt his house, but he does not know about the [situation of the] poor.</i>
Ninewa	Sinjar	18–34	Male	<i>I am in Sinjar now, and I know the extent of the destruction. As for the [key informant], whose answer is different from my answer – I think that he is not from the area.</i>
Kirkuk	Kirkuk	18–34	Male	<i>What that leader says is incorrect. I think he is not from this community.</i>

1. Housing

Respondents who disagreed with key informants' reports on the housing conditions in their respective areas believed the situation to be worse. These respondents identified mostly the lack of inspections or assessments of their areas as ultimately being the reason for this disagreement. They believed that damage had gone underreported and, as such, more should be done to assist those in need.

Table 5. Open-ended responses on the status of housing (negative)

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	18–34	Male	<i>There are dozens of destroyed houses that need to be visited and assessed, and support must be provided to their owners.</i>
Diyala	Al-Muqdadiya	18–34	Male	<i>Most of the houses in my village were burned and looted. Returnee families tried to rehabilitate their houses, but they are still uninhabitable. The repair and rehabilitation cost has added more burden to the families.</i>
Ninewa	Al-Ba'aj	18–34	Male	<i>My house is completely destroyed, and I'm currently living in a tent. Also, my brother's house and my uncle's house are destroyed. Most of the mud houses have collapsed after being abandoned because of displacement, while some were destroyed during the conflict. Some returnees rehabilitated their homes, but they are still uninhabitable.</i>

Table 6. Open-ended responses on the status of housing (positive)

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	35–59	Male	<i>More than half of the houses are destroyed, but most of the people renovated parts of their houses by their own efforts.</i>
Kirkuk	Al-Hawiga	18–34	Male	<i>No field survey was conducted after the liberation. All the people rebuilt their houses by their own efforts.</i>
Anbar	Heet	18–34	Male	<i>They lie. The people rehabilitated their houses without any support from the Government or NGOs. Nearly eight houses were completely destroyed.</i>

Table 7. Open-ended responses on the status of housing (inadequate)

Governorate	District	Age group	Sex	Response examples
Ninewa	Sinjar	18–34	Male	<i>More than half of the homes have been destroyed because they were made of mud, and [now they are] uninhabitable.</i>
Salah al-Din	Tikrit	18–34	Male	<i>I do not know why [my view differs from the key informant's], but the houses were destroyed during the conflict. The current houses are made of mud, not concrete.</i>
Ninewa	Sinjar	18–34	Male	<i>Around half of the houses are uninhabitable or made of mud and have collapsed over time during the displacement. Some houses were destroyed as a result of military operations, while some are incomplete structures.</i>

3. Employment

Notably, most respondents who disagreed with key informants' assessments of employment in their area believed the situation to be worse. The lack of sufficient opportunities was a pervasive theme. Respondents highlighted their perceptions of corruption and nepotism in their localities, underinvestment, agriculture and rural issues, social marginalization, and COVID-19 as causes (direct and indirect) of unemployment. Nepotism, in particular, influenced who had access to opportunities for skilled roles in the Government and in non-governmental organizations (NGOs). Lack of investment referred particularly to limited construction and rehabilitation of infrastructure, including public works and housing.

Table 8. Open-ended responses on corruption as a reason for unemployment

Governorate	District	Age group	Sex	Response examples
Kirkuk	Al-Hawiga	18–34	Male	<i>The lack of job opportunities and the Government's failure to appoint people with academic degrees are the reasons behind why they do not have work. Job opportunities are very little because of the lack of government support for agricultural and industrial projects.</i>
Ninewa	Mosul	18–34	Male	<i>Because only those who have connections work with the NGOs.</i>
Ninewa	Mosul	18–34	Female	<i>Because of favouritism and corruption.</i>

Table 9. Open-ended responses on underinvestment as a reason for unemployment

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	35–59	Male	<i>Because it is a poor area with no investment or construction companies and has little workforce.</i>
Kirkuk	Al-Hawiga	35–59	Male	<i>There are no job opportunities in my area because of lack of government allocations and the absence of new projects in the city that can employ the workforce.</i>

Table 10. Open-ended responses on the state of rural unemployment

Governorate	District	Age group	Sex	Response examples
Salah al-Din	Samarra	18–34	Male	<i>We live on agriculture, but there are movement restrictions by security forces. Our crops are being burned down, and we do not know who is doing that. Also, we suffer from a great shortage of electricity, which is affecting our crops, because we cannot operate the water pumps to water the crops.</i>
Kirkuk	Al-Hawiga	18–34	Male	<i>Agriculture is not considered a good job, because there is no support [for farmers] and the income is too low currently.</i>

Table 11. Open-ended responses on reasons for unemployment (vulnerable populations)

Governorate	District	Age group	Sex	Response examples
Salah al-Din	Tikrit	18–34	Female	<i>[I disagree with the key informant] because there are a lack of jobs and high unemployment rates, and also because most of the displaced families from other areas are staying here.</i>
Salah al-Din	Al-Shirqat	35–59	Male	<i>Most of the population are women who do not have a breadwinner.</i>

Table 12. Open-ended responses on COVID-19 as a reason for unemployment

Governorate	District	Age group	Sex	Response examples
Salah al-Din	Baiji	18–34	Male	<i>Unemploy[ed people] represent 50 per cent of the population in my area [prior to COVID-19], in addition to those who lost their jobs because of the lockdown. The situation is very bad.</i>
Kirkuk	Al-Hawiga	35–59	Male	<i>[I disagree] because of COVID[-19] and the lockdown, in addition to the lack of economic projects and the large number of the unemployed.</i>

4. Business

Findings from the IOM Collective Intelligence platform differed from the conclusions made by key informants, with CI survey respondents identifying lack of investment, the scale of the destruction and the slow return of the population as important factors influencing business opportunities. Survey respondents argued that key informants had an overly positive view of the current business environment. Respondents noted that cycles of violence and displacement had severely weakened the recovery of businesses in many areas of return. In addition, business owners lacked the financial means to repair their premises; infrastructure was heavily damaged; and the fragmented security situation limited the movement of people, capital and goods.

Table 13. Open-ended responses on the status of businesses

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	35–59	Male	<i>There are many destroyed shops and factories, but their owners do not have the financial means to rehabilitate them.</i>
Kirkuk	Kirkuk	35–59	Male	<i>Many people have not returned yet. There is a shortage of infrastructure and funds [capital] for businesses.</i>
Salah al-Din	Baiji	35–59	Female	<i>They are not working as before because of the great damage in the area. Most of the local investors have left their areas and are not investing their money in any businesses.</i>
Anbar	Al-Qa'im	18–34	Male	<i>Most of the households in Al-Qaim's have not returned and this issue has caused a shortage of investment in the market. Many businesses have been looted or sabotaged. Business owners do not have the required funds to restart their businesses.</i>

Table 14. Open-ended responses on the status of businesses (underinvestment)

Governorate	District	Age group	Sex	Response examples
Anbar	Al-Qa'im	18–34	Male	<i>The volume of [local trade] has decreased significantly, unemployment rates are increasing, SMEs have stopped [operating] because of COVID[-19], and the low exchange rate of the national currency has affected all businesses.</i>
Kirkuk	Al-Hawiga	18–34	Male	<i>There are few workers and not enough funds in the area. That is why businesses are not operating as before.</i>
Ninewa	Al-Ba'aj	18–34	Male	<i>Because there are neither financial grants nor support. There are ideas, but there is no money [to start or support businesses].</i>

5. Reconciliation

Respondents' proposed explanations as to why their views on the need for community reconciliation differed from those of key informants highlighted some important themes. Many respondents noted that peaceful coexistence was possible because of a lack of sources of tension, such as tribal disputes, within their communities. Many stated that ethno-religious homogeneity was the crucial determinant of peace within their community – a perception that may be threatened by the return of marginalized communities and may also increase the vulnerability of displaced minorities that are currently hosted in those areas. Relatedly, some of those respondents who believed their local areas needed community reconciliation – where the key informants had suggested it was not needed – reported that ethno-religious grievance was deep-seated.

Table 15. Open-ended responses on reconciliation

Governorate	District	Age group	Sex	Response examples
Anbar	Al-Qa'im	18–34	Male	<i>Most of the people of the area belong to the same religion, so there is no religious conflict. Even with the forces [armed groups], who are from a different sect. There are some tribal disputes that need reconciliation and awareness, but unfortunately there are no NGOs in the area that are interested in the matter.</i>
Salah al-Din	Baiji	35–59	Male	<i>The people of the area are from the same tribe and ethnicity, so there is no violence.</i>
Baghdad	Abu Ghraib	35–59	Male	<i>All the people of the area are from one ethnic group and get along with the tribes and all other groups in the subdistrict. The tribes have an obligation to fight terrorism in the district, and this is what happened after retaking the areas from ISIS.</i>
Ninewa	Mosul	18–34	Male	<i>There is no dispute because all of the population here belong to the same ethno-religious group.</i>

Table 16. Open-ended responses on reconciliation (destabilization)

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	35–59	Male	<i>Because the area is safe without them [armed groups]. If they return, there will be no security.</i>
Diyala	Khanaqin	35–59	Male	<i>There are no tribal disputes here between the community members – not even with the Kurds, who are accused of demolishing the houses. The accusations are against the political parties. But ISIL is rejected by all.</i>
Ninewa	Sinjar	18–34	Male	<i>The reason for my different answer is that during the time of ISIS, many people from my area and the neighbouring areas joined ISIS and killed, kidnapped and enslaved women. Yet the Government did not punish them – but is [even] supporting them.</i>
Ninewa	Sinjar	18–34	Male	<i>Iraq was a sectarian country. Since the people of this area are Yazidis – and because many Yazidis have become victims of ISIS, to which many of the Muslim neighbours were affiliated – it is understandable why there is no social cohesion among the people of these areas, and they need reconciliation.</i>

6. Security actors

On the question about the number of armed actors in their respective areas, many respondents whose answers differed from the key informants' could not or did not want to offer an explanation for the difference – possibly because of the sensitivity of the topic. Respondents who disagreed with the key informants identified more groups than had been listed. However, those who were able to list more armed groups than the key informants were often unsure about the affiliation of those groups, reflecting the fragmented security situation in some areas of return. Respondents noted how factionalism between various State and non-State security forces hindered return and led to disputes that caused problems within the community.

Table 17. Open-ended responses on security actors (respondents who identified more such actors than key informants did)

Governorate	District	Age group	Sex	Response examples
Ninewa	Sinjar	18–34	Male	<i>Surely there are more than five groups in Sinjar: the Iraqi Army and Federal Police, the PKK [Kurdistan Workers' Party] and Hashd al-Shaabi [PMF], as well as other small groups.</i>
Kirkuk	Kirkuk	18–34	Male	<i>There are many forces in my area, and I do not know who they are with.</i>
Baghdad	Abu Ghraib	18–34	Male	<i>There are armed militias who actually control security on the ground.</i>

Table 18. Open-ended responses on security actors (respondents who identified fewer such actors than key informants did)

Governorate	District	Age group	Sex	Response examples
Salah al-Din	Tikrit	18–34	Male	<i>Only the Federal Police and the PMF [Hashd al-Shaabi] are present.</i>
Diyala	Khanaqin	35–59	Male	<i>Only the local police are in the city, while the rest of the security forces are outside the city centre.</i>
Kirkuk	Al-Hawiga	18–34	Male	<i>There is no armed group in the village.</i>

Table 19. Open-ended responses on the fragmentation of security actors

Governorate	District	Age group	Sex	Response examples
Ninewa	Mosul	35–59	Male	<i>The security situation throughout Iraq is not under the control of the State, but under the control of the political parties, and each party is a "State" unto itself.</i>
Anbar	Al-Qa'im	18–34	Male	<i>We wish that the forces in the area unite.</i>
Diyala	Al-Muqdadiya	18–34	Male	<i>The instability of the area is due to the dispute between the [different] factions and the Army. Life has become difficult for the people who are the victims of such disputes.</i>
Ninewa	Sinjar	18–34	Male	<i>Some armed groups are hindering returns.</i>

7. Security status

Notably, respondents that disagreed with the key informant on the state of security in their area reported that the situation was better than reported. The nuance in these answers was illuminating, as respondents identified a lack of public trust in State security forces. There was also a trend of respondents pointing to returns as an indicator of the security situation and arguing that less militarized law enforcement would be better for regulating movements. Some respondents raised the issue of harassment and other indiscretions by armed groups.

Table 20. Open-ended responses on the status of security (positive)

Governorate	District	Age group	Sex	Response examples
Kirkuk	Al-Hawiga	35 –59	Male	<i>As a matter of fact, the security situation is OK. This is clear because IDPs are returning. Otherwise, the opposite would have happened, so that is why we have so many security forces.</i>
Ninewa	Sinjar	18–34	Male	<i>The security situation is very good and there are no conflicts between these existing forces. The reason is that the “unofficial forces” [armed militia] with the Army and Police are from the area, not external or occupying forces. The reason for their presence is due to the population lack of trust in the Iraqi Army and Police.</i>
Kirkuk	Al-Hawiga	35–59	Male	<i>On the contrary, if it was bad, the security forces would have kept a low profile. The intelligence component is active, and the area needs nothing but law enforcement that could regulate movements.</i>

Table 21. Open-ended responses on the status of security (negative)

Governorate	District	Age group	Sex	Response examples
Salah al-Din	Samarra	18–34	Male	<i>Actually the situation has been stable since the liberation of the area from ISIS, but we suffer from harassment by the security forces, as they accuse community members [to be behind] any security incidents in the area.</i>
Ninewa	Mosul	18–34	Male	<i>It is not bad, but there are some failures by security personnel and commanders.</i>

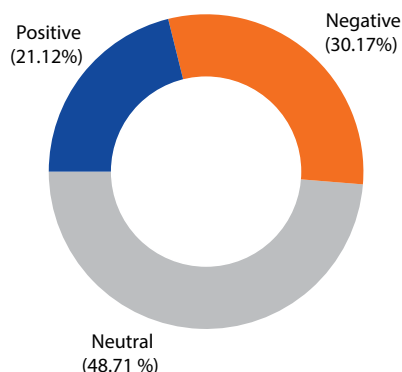
The qualitative findings substantiate both hypotheses proposed by this study. The length and the nuances of the open-ended responses demonstrate a willingness among respondents to share their opinions of the conditions in their respective local area. Second, the qualitative submissions highlight the diversity of views and experiences of affected populations vis-à-vis with the key informants’ assessments. The CI methodology could therefore play an important role in accessing traditionally underrepresented groups and using the data collected to improve assessments following more traditional methods and, ultimately, the humanitarian response.

SENTIMENT ANALYSIS

To aid in the classification of text-based responses, an AI-trained model was used in the analysis. The Valence Aware Dictionary and Sentiment Reasoner (VADER) algorithm classified feedback messages from the survey based on their polarity (“negative”, “neutral” and “positive”) and on the intensity of the polarity categories (Hutto and Gilbert, 2014). This analysis was done after respondents’ answers had been translated from Kurdish and Arabic into English.

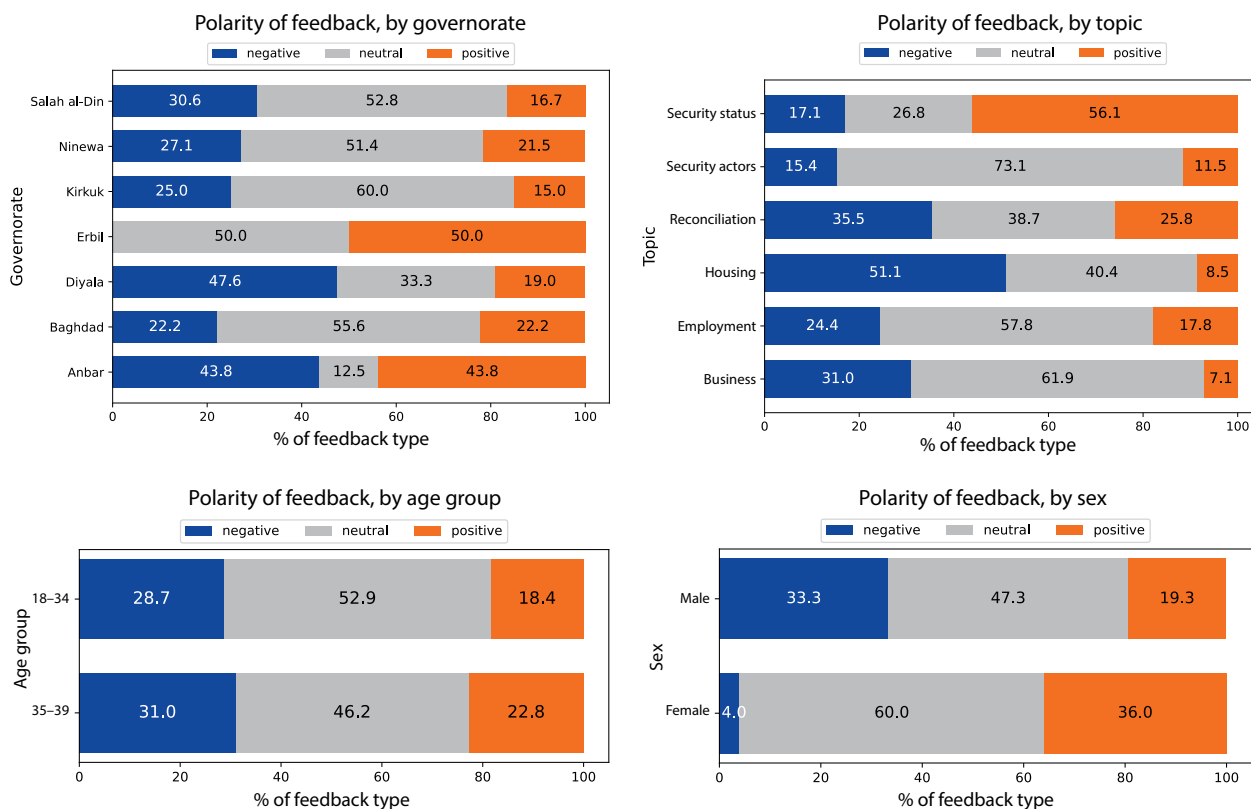
Recent research on accountability suggests that feedback mechanisms within the aid sector suffer from implicit power imbalances. For example, in Yemen, the role of a service provider in asking for feedback made beneficiaries reluctant to provide critical feedback for fear of losing the service (El Taraboulsi-McCarthy et al., 2020). About half of the comments (48%) in this study were not explicitly negative nor positive (Figure 8). Since respondents could give comments only if they disagreed with key informants (i.e. the open-ended responses), one can see that the digital modality (i.e. non-face-to-face feedback) allows respondents to feel more comfortable providing critical feedback by eliminating the risk of being identified. The anonymity gives respondents a feeling of security and an opportunity to voice their concerns despite the power differential.

Figure 8. Percentages of open-ended answers by polarity



As indicated in Figure 9, respondents were most likely to provide negative feedback related to housing, whereas security status received the most positive feedback. Variations were also present between demographic groups: the governorate of Diyala had the highest disapproval rate, while Erbil had no negative feedback. Further, survey results showed that female respondents were less inclined to providing negative feedback than male respondents. The distributions of the two age groups are roughly similar.

Figure 9. Polarity of feedback by governorate, topic, age group and sex

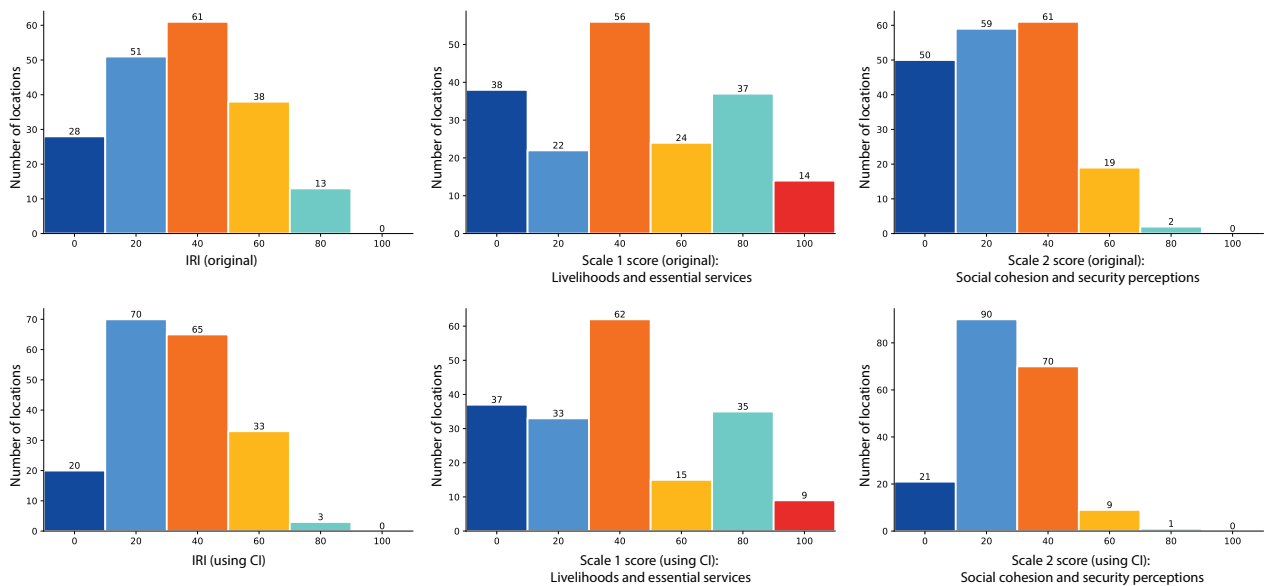


ALIGNMENT WITH THE IRAQ RETURN INDEX

This section explores the relationship between findings of the KI-informed IRI and CI survey responses, an analysis of which will inform how the CI survey results can be used to re-calibrate the IRI in the future. There are several criteria which the comparison between key informant and CI survey responses should be considered an approximation rather than a direct one. First, this current study had narrower geographic coverage than the IRI, with only 192 individual locations out of 2,706 reached (this corresponds to 9.2% of the total locations). Second, out of the 16 original indicators of the IRI, only 5 were used in this study (to keep platform user engagement under five minutes, increasing chances of participation in and completion of the survey by more respondents). A recalculation of the IRI using the CI survey results for these five indicators was thus possible. As such, an “internal version” of the IRI based on CI survey data was calculated based on the most frequent answer (e.g. “less than half of houses are destroyed”) in each location for each of the five indicators. The recalculation of the IRI used these five new scores plus the same scores as in the original IRI for the other 11 indicators. The weight distribution of the indicators was maintained from the original. Hence, a comparison between the original (KI-informed) IRI and the CI-informed IRI may be informative but represents only a first attempt.

There are clear differences between the original IRI and the CI-informed one, with the latter characterized by fewer locations having “very high” and “extremely high” scores (i.e. “very poor” and “extremely poor” conditions). Specifically, there was a reduction in the number of locations rated “very high” (37 in the original versus 35 in the CI-informed) and “extremely high” (14 in the original versus 9 in the CI-informed) on Livelihoods and Essential Services (Scale 1) (Figure 10). A similar pattern is observed in the distribution (histogram) of the CI scores for “Social Cohesion (Scale 2), where only 10 of the locations were rated “high” (9), “very high” (1) or extremely high” (0); in the original DTM data, twice as many locations fell under these categories. With more indicators in the positive, the CI-informed IRI provides a more optimistic version of the situation of returns in the 192 locations assessed.

Figure 10. IRI, Scale 1 and Scale 2 scores: original DTM data (KI-informed) versus CI survey data



For more than 60 per cent of the 192 locations, the difference between the original (KI-informed) and CI-informed IRI scores was less than 10 points, resulting in similar scores for the overall IRI. Despite the overall similarity, about 8 per cent of the 192 locations presented high levels of deviation (more than 30 points), with one location showing 39.5 points of difference, between the original and CI-informed IRI. Thus, there appear to be no differences in the IRI score when it is calculated using the CI survey data. This result is not unexpected, as the IRI is an aggregate of different indicators, meant to provide an overall snapshot of the situation of returnees.

To grasp potential improvements for the IRI based on information captured by the CI survey, an analysis based on each indicator, instead of aggregated metrics, was also conducted. Notably, perceptions of conditions pertaining to housing, employment, reconciliation and security actors tend to differ between the CI data collected and the KI information collected through the DTM, while perceptions of the conditions of businesses do not differ substantially. However, due to the small number of locations and respondents in the CI process, this conclusion cannot be generalized to the whole population (Table 22).

Table 22. Chi-square test of independence between indicator score and source of assessment*

Indicator	Degrees of freedom (df)	Chi-square statistic (χ^2)	p-value	Hypothesis test result ($\alpha = .05$)**
Housing	1	12.80923	<0.001	H_0 rejected
Employment	1	6.412121	0.0113	H_0 rejected
Business	1	1.261649	0.2613	H_0 not rejected
Reconciliation	1	70.49018	<0.001	H_0 rejected
Security actors	1	13.21596	<0.001	H_0 rejected

Note: * Source of assessment: KI-informed DTM data versus CI survey responses, disaggregated by location.

** H_0 : The indicator score is independent of the source.

The findings reveal that for many categories of indicators for gender and age, there is broad agreement between the key informants and the CI respondents.

A similar analysis of KI assessments versus CI survey results was conducted of the gender and age categories of the CI survey respondents: females versus male, and young adults (18–34 years old) versus older adults (35–59 years old) (Figure 11 and Table 23). The comparison was performed with respect to the number of locations in the DTM data with respondents in such categories, providing 33 locations for female respondents, 165 for male respondents, 173 for young adults and 73 for adults. The findings reveal that on many categories of questions and gender and age categories, there is broad agreement between the key informants and the CI respondents. For certain categories, however, there appear to be significant differences. For example, a large majority of key informants reported the status of reconciliation to be “good”, while most young adult CI respondents claimed the inverse. Only the reconciliation indicator shows disagreement between KI data and CI data across all demographic groups, but particularly among female respondents. Given the small sample size, these conclusions cannot be generalized to the entire population. However, disaggregating these data by gender suggests that the contributions of male respondents may mask those of females, due to the underrepresentation of the latter in the sample. Across age and gender, young adults tended to share similar opinions with male respondents (Figure 12).

Figure 11. Differences in the IRI using the original DTM data versus CI survey data among younger adult, older adult, male and female respondents

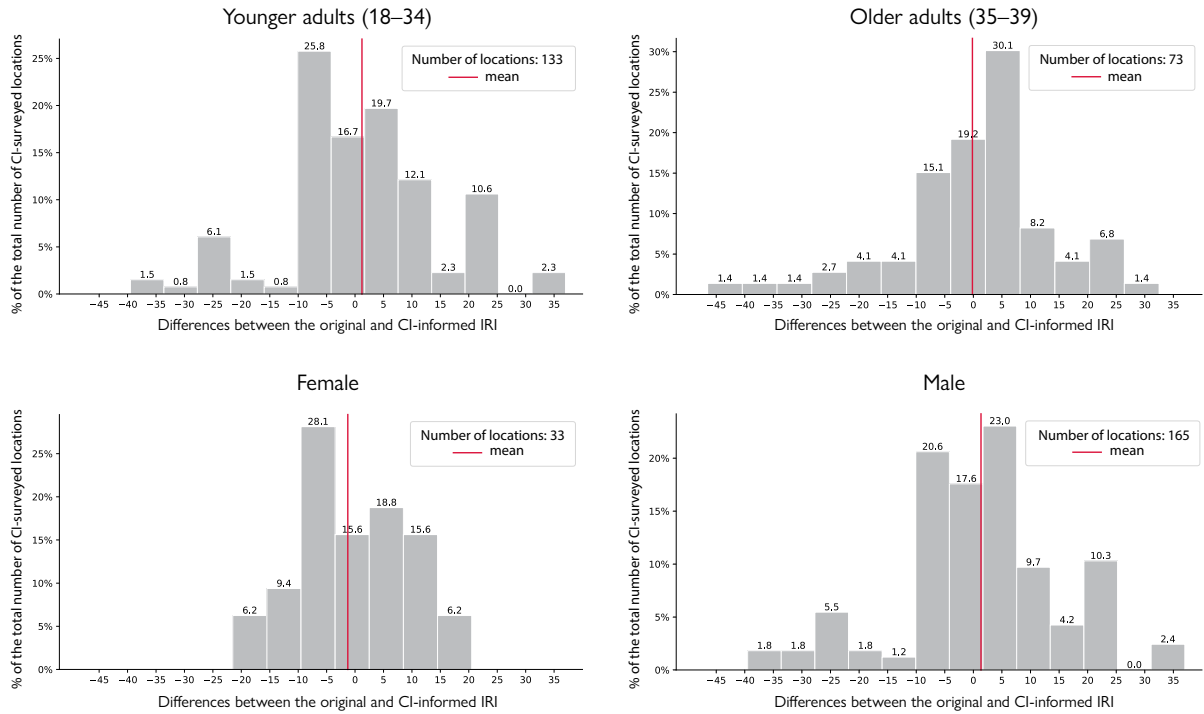
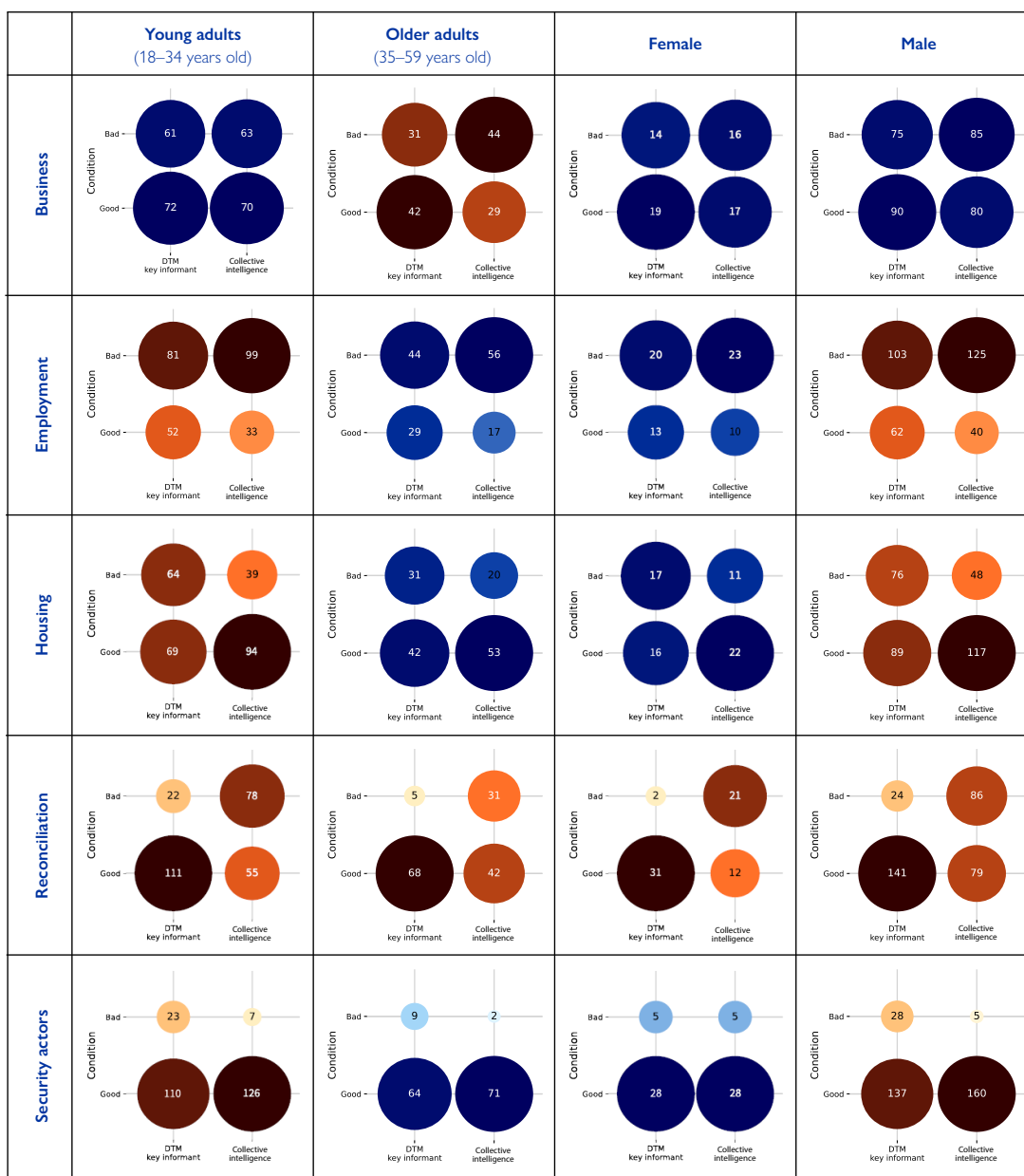


Table 23. Student’s *t*-tests to compare the means of the distribution of differences between the original IRI and CI-informed IRI with respect to the same distribution for each population category: male, female, young adults and adults

Reference Return Index distribution	Category	<i>t</i> -student statistic	<i>p</i> -value	RI distributions have a significantly different mean?*
All CI respondents	Female	1.064	0.288	Not rejected
	Male	-0.131	0.869	Not rejected
	Younger adults (18–34)	0.011	0.992	Not rejected
	Older adults (35–59)	0.688	0.492	Not rejected

Figure 12. Contingency tables for the indicators in the CI survey against the source of assessment



Note: * Source of assessment: KI-informed DTM data versus CI survey responses, disaggregated by location. Hypothesis tested at a 0.05 significance level (95% confidence).

LIMITATIONS

The use of an exclusively digital feedback mechanism introduced limitations related to access and ownership, which may have biased responses. The sample was self-selecting, non-probabilistic and specifically targeted to those signed up on the IOM Iraq Facebook page, where project messaging was conducted. The current restrictions and guidelines imposed due to COVID-19 in Iraq prohibited in-person mobilization and survey enrolment activities. The limits of this approach are evident in the sample demographics which, while more representative than the

key informant approach, nonetheless do not align with the underlying population. Additionally, while indicative findings of divergences between the conclusions of key informants and CI participants offers an avenue for further exploration, the lack of statistically significant results may inhibit operationalization of this feedback. To make these findings actionable, the CI methodology should be integrated into data collection processes to provide validation and feedback in a regular but sustainable manner. Moreover, addressing further gaps in AAP practice will require incorporating affected populations as partners or leaders at earlier and higher levels of the data collection process (e.g. at the design and decision-making stages).

CONCLUSIONS

This project developed and tested a new data collection process based on the theory that affected populations possess critical information relevant to their own situation and well-being. The information collected through collective intelligence was used to vet conclusions generated through traditional data collection practices. Unlike traditional, survey-based projects, the use of CI here meant that affected populations were able to engage with analysis and conclusions, rather than simply providing data. This study reveals the need for deeper engagement with diverse groups of affected people and provides a practical framework for doing so using collective intelligence.

As indicated in the detailed open-ended responses collected through the survey, returnees are willing to provide information about conditions in their environment through engagement with the CI process. The people who participated were more representative of the underlying population than is typically achieved with key informants, though it was still skewed in favour of males. Given the entrenchment of the underlying conditions that cause the sample to be non-representative (such as gendered access to phones), even marginal improvements are encouraging.

While the number of respondents in each location prevented the realization of statistically significant results, some indicative findings point to the potential of CI methods for evaluating and improving assessment tools. On several topics, such as the status of community reconciliation, differences were apparent between the conclusions of key informants and CI participants, regardless of their demographics. On other topics, such as the recovery of small businesses, disagreement with the conclusions of key informants was only present among certain demographic groups. Future research using the lessons of this project to improve sampling should explore these divergences in greater detail.

The challenge highlighted by this intervention is engaging a larger sample of citizens, so that more statistically significant conclusions can be drawn about both the state of returns, and the relationship between KI- and CI-informed analyses. Future studies conducted after COVID-19 restrictions have ceased and in-person outreach is possible may be better able to gather a large enough sample to draw statistically significant conclusions about the broader population. Additionally, limiting the geographic scope of future studies and utilizing digital methods to engage a smaller, more concentrated population may generate statistically significant data on a specific trend. Overall, the project demonstrated a willingness among citizens to engage digitally and points to the potential for CI processes to augment and support humanitarian assessments and decision-making.

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