



MQUAD

A Guide to Create Data Collection Form

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Introduction

MQUAD is a reliable web interface. It facilitates to conduct or organize surveys with ease and collect accurate data. It allows research organizations, primarily working in development sector (health, nutrition, education, etc.) to conduct surveys and collect data through electronic means. Furthermore, it presents data by using custom statistical widgets.

It aims to digitize the process of survey without compromising security and privacy. It assists in customizable dashboard making module to manage the cases effectively. Interestingly, MQUAD works remotely and internationally as well.

MQUAD strengthens monitoring anywhere and everywhere it goes. It is a cloud based and knowledge driven system.

Features of MQUAD:

- MQUAD provides comprehensive solutions to store, exchange and access tools, questionnaires and data collected as part of MQUAD or otherwise.
- Advanced form management.
- It implements algorithm to draw samples without storing data.
- It provides a range of data quality parameters including time, GPS, key stroke and audio.
- It is user friendly. It is menu driven, easy to locate functions, rich help files and samples of the excel forms.
- It allows data export into multiple forms such as excel, STATA, SPSS and JSON.
- It offers support services such as response within 12 hours, demo videos and MQUAD community.



Steps to design an excel form to upload it on the MQUAD website (mquad.org) for survey generation:

A basic understanding of excel as well as a good understanding of designing a survey questionnaire is required.

- Download sample excel file from the MQUAD website under form tool <>New form<> Download template<>, the sheets are as follows:
 - **Survey**- This sheet comprises all the survey questions along with their corresponding type, label, restrictions, coding, and other instructions which are to be interpreted by the MQUAD server, once uploaded.
 - **Choices**- This sheet lists all the choices related to **select one** and **select multiple** questions written in the survey sheet.
 - **Lookups**- This sheet is not necessary for every type of survey. It consists of the collection of datasets to be used in the survey sheet for auto-populated data in the field according to the search parameter.

	A	B	C	D	
1	type	choice_relation	name	lookups	label
8	number		su_number	sample_fsu_number	Selected sample sub
9	number		hh_number		Household number
10	text		respondent_name		Respondent's name
11	number		respondent_nme		Respondent's line n
12	number		sss_number		SSS number
13	select_one	interview_type	interview_type		Interview type

Survey Sheet

Excel Form

Pre-defined column heads will be available in excel which should not be edited at any stage in preparing the form. Importantly, to avoid any error in uploading the excel form, no additional column should be added.

type	choice_relation	name	dictionary_label	label	limit	hint	relevant	default_response	constraint	constraint_message	required
paradata	appearance	choice_filter	parameters	repeat_count	read_only	calculation	deidentify	unique_id	preserve	lookups	

Figure 1: Screenshot of survey sheet of excel form

	A	B	C	D	E	F	G	H	I	J	K
1	type	choice_relation	name	dictionary_label	label	limit	hint	relevant	default_response	constraint	constraint_message
2	select_one	state	state	Study state	Please select the study state	1					
3	select_one	cityname	cityname	City name	Please select city	3					
4	number		resnum	Respondent identification number	Please enter respondent's identification number	3					
5	number		facility_ID	facility_ID	Facility_ID (NIN No.)	10					
6	text		intname	Investigator name	Please enter name of the investigator	50					
7	date		int_date	Interview date	Please select the date of interview	10			nowdate		
	select_one	yesno	consent	Consent to participate in the survey	Please take the consent from the respondent and mark the "YES" code to start the interview. 	1					
8											
9	begin_group		begin					consent =1			
10	number		q1	q1: Age of the respondent	Q1: How old were you on your last birthday? Write age in completed years	2				min=14, max=19	Please check the response entered
11	number		q2	q2: Completed years of education	Q2: What is the highest level of education you have completed (standard completed)?----- Never attended school= 95	2			{95}		
12	select_one	q3	q3	q3: What is your current marital	Q3: What is your current marital status?	1					
13	select_one	yesno	q4	q4: Did you attend any vocational training/programme/courses in the last six months?	Q4: Did you attend any vocational training/programme/courses in the last six months?	1					
14	select_multiple	q5	q5	q5: Which programmes/courses did you join?	Q5: Which programmes/courses did you join?	15	MULTIPLE RESPONSES POSSIBLE	q4=1		Selected!=Y count=1	Please check, option "Y" not possible with other options
15	text		q5o	q5o: Which programmes/courses did you join? ...Others	Q5o: Which programmes/courses did you join? ...Others (specify)	100		q5=X			
16	number		q6m	q6m: In which month, did you get married?	Q6m: In which month, did you get married? Don't remember=98	2		q3!=6	{98}	>=1<=12	Please check the month entered

Form languages

MQAD forms can be created in any language, or even contain multiple languages in the same form.

Default language

The default language of the form specifies the language of its basic form elements (field labels, field hints, field messages, choice labels, etc.). If you're designing a form in English, you don't need to change anything in form, as new forms all start with "English" as their default language. If you're designing a form with a different default language, you should change the default language by adding relevant language code (see annexure XX). For example: "label" header in excel form is by default in "English" language but if you want to use Hindi language as one language in form then you need to add "language code" after "label::hi" for Hindi.

If you would like to switch between languages while filling out the forms, you can use the language icon mentioned on the right corner of the application and change the language preference.

In the spreadsheet form, follow these steps to add additional languages to any of your forms:

- On the survey worksheet, use the additional new language column for each label, hint and constraint message, respectively.
- On the survey worksheet, add additional columns for each non-default language translation, and name those columns (in row 1) the same as the existing columns – but with **::languagecode** (e.g., label::languagecode, hint::languagecode, or constraint_message::languagecode, where "languagecode" is "hi" for Hindi language, "fr" for French language, or some other language code of your choosing).

Where to put the new language columns?

A helpful hint: when you add columns to your worksheets, you can add new language column next to label column instead of putting all the way at the end (to the far right). Any new column can be added irrespective of their position and there will not be any error in uploading the excel form.

Detailed description about the headers in the excel form

Header	Description
Type*	All questions should be categorized in their respective type for MQUAD to recognize them. The type column specifies the type of entry you are adding. The types column includes text, select_one (for single responses), select_multiple (for multiple responses), number (integer value), date (date, time, datetime), picture (capture images), begin group (grouped questions), end group, begin repeat (repeat grouped questions), end repeat, audio, video, note and gps_button.
Choice Relation*	For select one and select multiple type questions, write the list name from the choices sheet for available options to the questions. All elements under this column must be same as the list name of choices field.
Name*	Elements in this column are the headers for the responses. The names should be related to the questions. All elements under this column must be unique. It should not contain any spaces. The names can only be in letters, numbers with or without underscore. For example 'A102', 'respondent_name', 'district', 'q_1' etc.
Label*	All elements under this column will be shown in the survey form. Basically, this is how the survey questions will appear once the form is successfully deployed. There is no specific format on how you should type in the questions here. You are free to type in your intended questions. For example, What is your name? Date today?, Which of the following is/ are true. You can use the html tag to control the style of text, font, size, colour and background of the area. For Example, <center>INFORMATION AND CONSENT</center></br></br><p>INFORMATION</p>
Hint	Elements in this column are the hints to describe question and provide some instruction about the question. For example, if you have a question "how old were you on your last birthday?" use hints "age of person in years" or question "enter your age" and hints "age bracket should consist of 18 to 70 years" Any additional comments that can help to explain how the questions should be answered can be added here. It will appear in the pop-up. Click on 'i' icon, right to the question text.
Limit*	Elements in this column are mandatory and numbers only. The value represents the number of responses allowed. For example, <ul style="list-style-type: none"> select one type question- Question: "Select Gender. Options : 1-Male, 2-Female, 3-Other So the limit should be written "1" for this question select multiple type question- Question: What skills do you have? Options are: A-Designing B-Singing C- Arts and craft D-Dancing So the limit should be written maximum "4" for this question because there can be upto 4 responses.

Header	Description
Relevant	<p>Elements in this column control the flow of the survey and guide the appearance of the next question. The names should be related to the questions and the comparison value should be the response of the specific question.</p> <p>It must contain question name, mathematical operator and the response value for creating conditions. Multiple condition can be applied through OR, and & operator.</p>
Constraint	<p>If you want to set any condition/restriction for certain questions, here, you can type those constraints.</p> <p>For example, the number of days in a month should never exceed 31 and should not be lower than 0. The command will be ≥ 0 and ≤ 31.</p>
Constraint Message	<p>If any value outside the defined range is provided in the constraint column, a constraint message will pop up. You can specify what error messages you want to show under the constraint message column.</p> <p>For Example: if you put the constraint "≥ 18 & < 75" for the question "Age" so the message for the values outside the range should be "Age Should be greater than 18 Years and less than 75"</p>
Default Response	<p>Elements in this column are the default response to any question.</p> <p>For example, if you want to set the interview type as "household survey" in the data under question. You can set "household survey" in the default response column for the question, interview type. It is editable.</p>
Required	<p>Elements in this column are fixed. Write "yes", if you want to make the question mandatory.</p>
Para Data	<p>Elements in this column are optional though very useful to track the interviewer's activity by capturing response against each question. This field enables to capture Timestamp (T), GPS (G), Audio (A) and Keystroke (K) for any specific question.</p> <p>For the use of this field define, short code for all indicators:</p> <p>If you want to capture Timestamp and GPS, Write "T, G "</p> <p>If you want to capture Timestamp, GPS and Keystroke, than Write "T, G, K" and "A" to capture the hidden audio for the same.</p>
Appearance	<p>This column enables you to determine how your questions will appear on mobile devices. There are multiple commands available to visualize the questions.</p> <p>For example,</p> <p>If you want to collect some description in the text, it requires multiple lines (type=text, appearance=multiline)</p> <p>(type= select one, appearance=none): if left blank, option displays as radio type</p> <p>(type= select one, appearance=dropdown) : if not left blank, then, option display as a dropdown list</p> <p>(type= begin group, appearance= field list): then multiple questions will be displayed on screen</p> <p>(type= select one, appearance= multimedia): then, the image will be displayed as an option</p>

Header	Description
Choice Filter	The names should be related to the questions. All elements under this column must be unique. It should not contain any space. The names can only be in letters, numbers with or without underscore. For example, 'A102', 'respondent name', 'district', 'q_1' etc.
Repeat Count	You can fix the number of times the group questions can be repeated.
Parameters	Reserved for Feature and Not Yet Applicable
Preserve	<p>Elements in this column are fixed i.e. "yes" where it is required or left blank if not required. This field is to be used for specific condition where you want to repeat the same value across the next survey.</p> <p>For example, if there is a question "Enter Village Name." The survey is being conducted in the same village for the entire day. Write "Yes" under preserve column.</p> <p>This field remains editable. It shows the previous response given for the question.</p>
Unique ID	<p>You can create a unique ID (UID) for each survey linked to the responses along with multiple input fields. Write "yes" to all of those questions which are used as a combination.</p> <p>For example, if you want to create a unique id with combination of state code, district code, village code, house no. Write "yes" in this column for all the above questions. Unique id is the reserve keyword for MQUAD application.</p>
Read Only	<p>This column is used for fixed response. It is not editable if marked "Yes". This is a little bit different from default response where user is allowed to edit this response.</p> <p>For example: if you want to set total number of members in the household by calculation of the number of response of male and female members of the family. Write Yes under the question of total members.</p>
Calculation	<p>If any question requires any mathematical operation or any other calculation in the response of a question, MQUAD provides an option to calculate. Under this column, you can type calculation steps that are available within MQUAD.</p> <p>For example, if one wants to calculate the total number of family members by calculating total number of males and females. You can calculate the column and write the name of the question with "+" operator. You can put read-only for calculated total members.</p>
Media File	Elements in this column are the names with extension of the media files such as photos, audio & videos that appear on the question label. With the help of this, column, one may create the image-based questions.
Lookups	Elements in this section are the name of the columns from lookups sheet . Here, value is searched and auto filled for any selective row and the specific column as per the given condition in the lookups sheet.

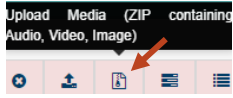
Choices Sheet

While filling up the survey sheet with the questions, you will also need to fill up the choices sheet. In the choices sheet, there are three compulsory column headers: list name, value, and label. Additional column headers such as choice_filter_parent, constraint and media_file can be added as per the requirement of the user. If there is a requirement of any language other than English (default language) then for each language, column should be added, for example: to add Hindi label, add column and named "label::hi", where 'hi' is language code for Hindi (for more language codes, see annexure XX)

Image 3: Screenshot of Choices sheet

	A	B	C	D	E	F	G
1	list_name	value	label	label::hi	choice_filter_parent	constraint	media_file
2	state	1	Bihar	Bihar			
3	state	2	Rajasthan	Rajasthan			
4	cityname	1	A	A	1		
5	cityname	2	B	B	1		
6	cityname	3	C	C	2		
7	cityname	4	D	D	2		
8	yesno	1	Yes	हाँ			
9	yesno	2	No	नहीं			
10	q5	A	TAILORING	सिलाई			
11	q5	B	COOKING	खाना बनाना			
12	q5	C	ELECTRIC WORK	बिजली का काम			
13	q5	D	AUTO MECHANICS	गाड़ी ठीक करना			
14	q5	E	TYPING/SHORTHAND	टाईप करना/शार्ट हॅण्ड लिखना/			
17	q12	1	1.Option (A)	1.Option (A)			Bose.jpeg
18	q12	2	2.Option (B)	2.Option (B)			Gandhi.jpeg
19	q12	3	3.Option (C)	3.Option (C)			Nehru.jpeg
20	result	1	Completed	पुरा किया		consent=1 & q12>=0	
21	result	2	R' not at home	उत्तरदाता घर पर नहीं हैं		consent=2	
22	result	3	Postponed	उत्तरदाता ने स्थगित कर दिया		consent=2	
23	result	4	Respondent refused	उत्तरदाता ने मना कर दिया		consent=2	

Header	Description
List Name*	<p>The elements in this column should be referred to the name you type in the select one/multiple of the survey sheet. It will be repeated as many times as options that you provide for that question.</p> <p>For example: when referring to image 1, you can see in row 14, column A, it is written as select multiple "q5" "What is your occupation?". It means respondents can choose to tick multiple options related to "q5". These options as listed in image 2 are tailoring, cooking, electric work, auto mechanics and typing/shorthand with list_name as "q5".</p>
Value*	This is similar to your Name column from the survey sheet. This must be unique for each question. It is related to your choices Labels. You can use letters and numbers as a value to your options.
Label*	The label column shows the answer choice exactly as you want it to appear on the form.

Header	Explanation
Choice_filter_parent	<p>This field indicates the information about dependent options of other question's response.</p> <p>For example: Refer image 2, if you want to categorize the 'cityname' according to 'state'. You can put response value of 'state' variable against the 'cityname' options (see row 5, 6, 7 & 8), if 'state' response is 1 then 'cityname' A and B will be displayed as an options for variable "q5" and similarly for state response 2, the 'cityname' C and D will be displayed as an options.</p>
Media File	<p>Elements in this column are the names with extension of the images that appear on question label. With the help of this column, one can create image-based options. Another task to be done at the Survey Sheet for the same question is to write "multimedia" in the appearance column.</p> <p>For Example: See the image 2 for "q12" 3 options Option A, B and C mentioned with Image name and extension i.e. "Bose.jpeg", "Gandhi.jpeg" and "Nehru.jpeg". To display these images as an option, upload all the media files in a zipped folder after uploading the excel form.</p> <p>Lookup media file (zipped folder) should be uploaded using  icon</p>
Constraint	<p>It is similar to the survey sheet where options will be controlled through mathematical operator with option name.</p>

Lookups Sheet

This is the optional sheet which holds the data file where link to the Survey Sheet is required. If want to add “Lookups” sheet then add one more sheet to existing excel and named as “Lookups”.

Purpose of the lookups sheet

- It is used as selected sample survey.
- It converges data from other sources using unique identifiers.
- It lists out the targeted survey with the help of the filtered column.

How to Use

Usage of this sheet depends on your data structure and the data filter through columns. Column name should be of the same name as the question name where the responses will be filtered. Data will be auto filled in the question responses from the selected rows of lookups file while using single/multiple situations.

Image 3: Screenshot of Lookups sheet data for autofill

	A	B	C	D	E
1	sample_fsu_number	district	residence	village_name	su_number
2	10001	Agra	Rural	Rajrai	2
3	10002	Agra	Rural	Patti Akilkhan	1
4	10003	Agra	Rural	Ranipura	1
5	10004	Agra	Rural	Simrahi	1
6	10021	Kota	Rural	Kandaphal	1
7	10022	Kota	Rural	Bambooliya Khurda	1
8	10023	Kota	Rural	Talchhi	1
9	10008	Agra	Rural	Kathumari	1
10	10009	Agra	Rural	Seora	2

Below the table, a navigation bar shows tabs for 'Survey', 'Choices', and 'Lookups' (which is highlighted in green). There are also navigation arrows and a plus sign icon.

Image 4: Screenshot showing how to use same name from Lookups sheet to survey sheet

	A	B	C	D	E
1	type	choice_relatio	name	lookups	label
2	text		investigator_name		Investigator name
3	number		investigator_no		Investigator code
4	number		sample_fsu_number	yes	Sample FSU number
5	text		district	sample_fsu_number	District
6	text		residence	sample_fsu_number	Residence
7	text		village_name	sample_fsu_number	Village name/ward name
8	number		su_number	sample_fsu_number	Selected sample sub-unit (SU) n
9	number		hh_number		Household number
10	text		respondent_name		Respondent's name
11	number		respondent_nme		Respondent's line number
12	number		sss_number		SSS number
13	select_one	interview_typ	interview_type		Interview type
14	date		start_date		Interview start date
15	time		start time		Interview start time

Example

In case, you want to fill the data of the household's basic information in the current survey from the existing collected survey such as baseline data. Then, put the baseline survey data in the lookups sheet, rename the column head as same as the question's name to auto fill the responses.

In the image 4, row no 5, 6, 7 & 8, auto fill using the search of PSU number and the house number through unique identifier of row number 4 i.e., "sample_fsu_number".

Sample_fsu_number in the survey sheet marked as "Yes" under lookups column and the same column name of sample fsu number available in the Lookups sheet. If the number is matched, then the filtered row is selected and auto fill the question's response in row 5, 6, 7 & 8 through the column data of residence, village name & su number.

Type

The user needs to select their question type from the drop-down list by clicking on cell under “type” column of downloaded template.

The question types are available in the following format for different type of questions.

- **Text:** If the user uses text type question, then response to the question will be entered in text which will be open field.
- **Number:** If the user uses number type question, then response to the question will be entered in number type.
- **Date:** If the user uses date type, then response to the question will be displayed in the date format.
- **Time:** To capture time in the specific field, use time type.
- **Datetime:** To capture date-time together in the same field, use date-time type.
- **Picture:** If the user uses picture type then response to the question will be displayed in the image format.
- **Select_one:** If the user uses select one and no command in appearance column, then the options will be displayed in radio button; if the user uses select one and dropdown command in appearance column, then the options will be displayed in dropdown list. Question options to be written in "Choices" sheet using the same fieldname mentioned in survey sheet under column “choice_relation”.
- **Select_multiple:** If the user uses select multiple type, the options will be displayed in the checkbox. Question options to be written in "Choices" sheet using the same fieldname mentioned in survey sheet under column “choice_relation”.
- **Begin group & End group:** If the user uses begin group & end group type, then, you can make any question(s) as a group question(s). Grouped questions can be shown on one screen together by putting “onescreen” command in appearance column and can also be used to ask grouped questions based on some relevant(s).

Image 5: Screenshot showing how to use to begin_group and end_group type

type	choice_relation	name	dictionary_label	label	hint	limit	relevant	appearance
select_one	yesno	consent	Consent to participate in the survey	I have read the purpose of study and I agree to participate in this survey.		1		
begin_group		chk_consent					consent=1	onescreen
number		q1	Q1 How long have you been in service?	Q1 How long have you been in service? Years ----- Less than one year -----0		4		
number		q2	Q2 How long have you been working at this facility?	Q2 How long have you been working at this facility? Years ----- Less than one year -----0		2		
select_one	yesno	q3	q403. What is your main occupation?	q403. What is your main occupation?		1		
text		q3o	q403o. Other (specify)	q403o. Other (specify)		100	q3=1	
end_group								

- **Begin repeat & end repeat:** If the user chooses begin repeat & end repeat type question, then you can make any question as a repeated question.

Image 5: Screenshot showing how to use to begin_repeat and end_repeat type

24	begin_repeat	family_member					
25	begin_group	family_member					
26	text	q_13	13.Name of the member.				
27	select_on q_14	q_14	14.Relation to the head.				
28	number	q_15	15.Age of the member				
29	select_on q_16	q_16	16.Gender of the member				
30	end_group						
31	end_repeat						
32	select_m/q_17	q_17	17.Preferable time to call him/her				

- **Calculate:** If the user uses calculate type, then user have to enter the question as well as answer for that particular question.
- **Audio:** If the user uses audio type, then response to the question will be recorded in audio format.
- **Video:** If the user uses video type, then response to the question will be recorded in video format.
- **Note:** If the user uses note type, then the text mentioned under “label” column will be displayed in paragraph and no response will be entered, this is just to display some relevant text.
- **GPS- button:** If the user uses GPS- button type, then field will capture the GPS coordinates.

Points for reference

- One thing to keep in mind when creating form in Excel is that the syntax (relevant column) you use must be precise. For example, if you write City_name or cityName instead of cityname (which is a unique variable name), the form won't work.
- The columns you add to your Excel workbook, whether they are mandatory or optional, may appear in any order.
- Optional columns may be left out completely.
- Any number of rows may be left blank.
- All .xls file formatting is ignored, so you can use dividing lines, shading, and other font formatting to make the form more readable.