
GEAR DATABASE PROJECT PROPOSAL



The GEAR database is an initiative by the Health Intervention and Technology Assessment Program (HITAP) International Unit (HIU) designed to aid in research and analysis for economic evaluations. This database is funded by the international Decision Support Initiative (IDSi) and supported by the Department for International Development (DFID), UK, and the Bill and Melinda Gates Foundation (BMGF). This proposal is intended as a supplement to the accompanying Terms of Reference for web developers and designers contracted by the HITAP. Additionally, this initial proposal is to be used as a reference for international donors of the HIU's intended use for the database. The details and project description encompassed within this proposal are meant as a guide for contractors in the initial setup of the database. The project requirements, with the exception of the chosen hosting arrangement and the proposed content management structure, are subject to change in accordance with the Project Leads' instructions. This document is to be used as the project proposal for the Guide to Economic Analysis and Research (GEAR) Database.

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I. PROJECT DESCRIPTION

In 2016, the **HITAP International Unit** will launch the **Guide to Economic Analysis and Research (GEAR) Database**. The GEAR database is intended as a tool for identifying and resolving gaps and technical issues in economic evaluations. The database is dedicated towards exploring not only these issues but also potential solutions and future research questions to address these issues. It will serve as a global platform, specializing in helping low- and middle-income countries (LMICs) academics, researchers and economic evaluation practitioners worldwide in conducting high quality, policy relevant healthcare research.

II. BACKGROUND

The GEAR Database is based on the working paper *Identifying Priority Methodological Issues in Economic Evaluation in Low- and Middle-Income Countries: Finding the Holy Grail*, a study conducted by the HIU in 2015 through the International Decision Support Initiative (iDSI). Based on a literature review of economic evaluation methodological issues, a questionnaire was developed and used to survey national and international experts, academics, public health officials, and relevant stakeholders to identify priority methodological issues found in the conduct of economic evaluations in LMICs. The respondents ranked the issues by order of priority or importance according to their own experiences working in LMICs, either their country and/or abroad. The results of this survey are intended to be presented in the database.

III. PURPOSE AND OBJECTIVES

The database will serve as a globally acceptable platform that connects the gaps between contextual research issues and research solutions offered by different economic evaluation and health economics experts. This database is intended to be used as a research tool by economic evaluation professionals. Ultimately, the goals of this project are: to develop a growing, up-to-date database of issues and solutions and to create an interactive website to allow users to access immediate solutions to methodological issues in conducting research as well as present and get input to their own research questions.

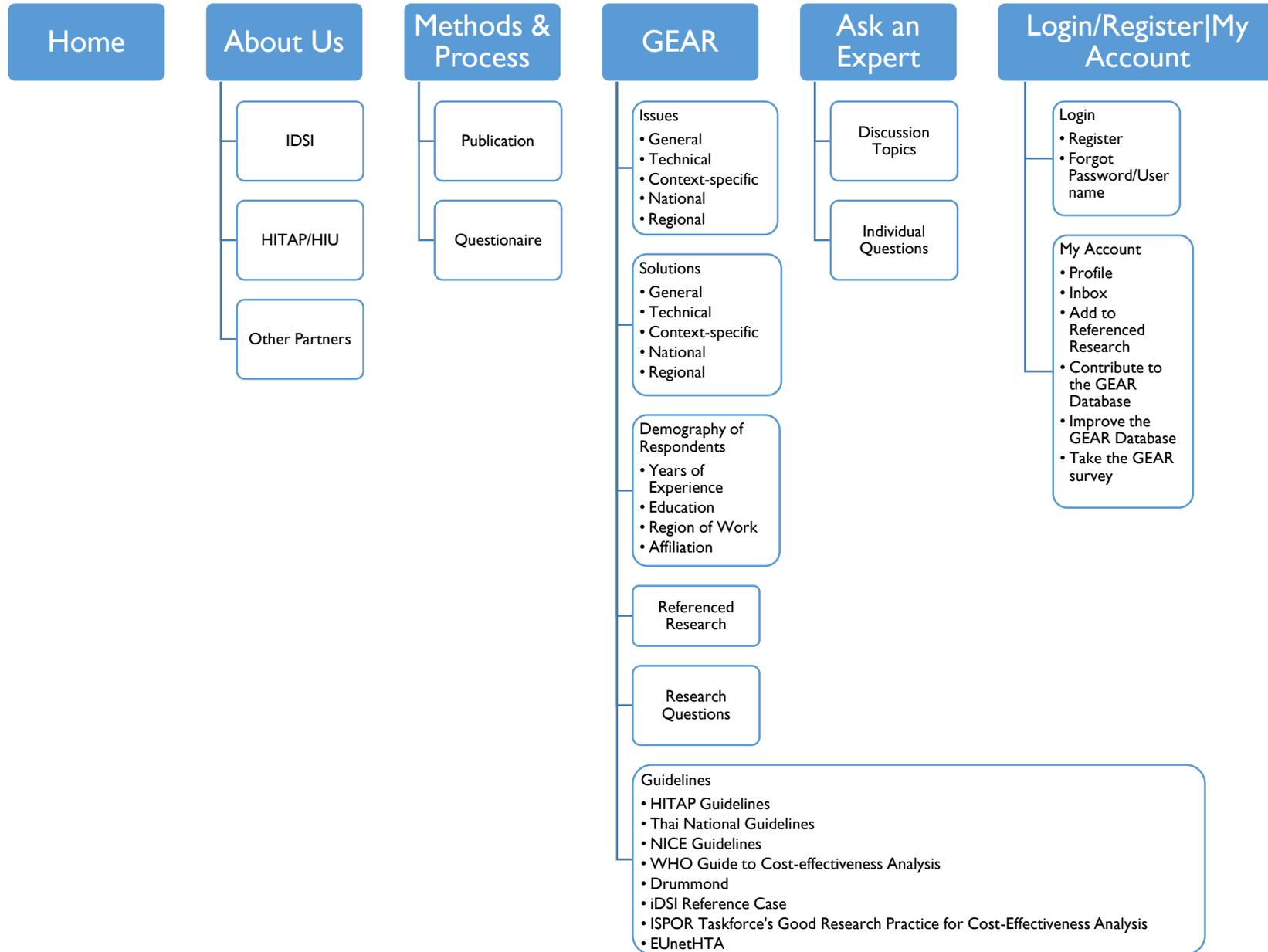
IV. HOSTING ARRANGEMENT AND CONTENT MANAGEMENT SYSTEM

Hosting arrangements will be independent from web development. The database website will be hosted on a cloud server dedicated for the database with its own domain name. The Web Server System has to use the following: CentOS7; Apache 2.4; Mysql 5.6.24; PHP 5.5.24. Preferred CMS include Drupal, WordPress, and other user friendly and viable CMS for databases that have a discussion and forum feature as well as a user input feature. The web maintenance given by the developer will be through a one-year duration. The developer is also to set up a server backup system in which the data within the database as well as within the website will be safely recovered in the event of a server crash or loss of data due to technical issues. Additionally, given that external access to the server will not be available, the developer is to bundle all the site files, or initial deployment on the server.

V. CONTENT AND PROPOSED STRUCTURE

The site will be comprised of standard text web pages, user online login, inbox and private messaging, interactive reports and data publishing, search tool, online survey/questionnaire integrated with the interactive reports in real-time, drag and drop windows, filtering options, photos, videos, pop-up windows and discussion forums. Section VI presents the site Map and structure of the pages within the entire GEAR website. The main pages of the website include: Home, About Us, Methods & Process, GEAR, Ask an Expert, and Login/Register | My Accounts page. The subsequent sections following the site map present detailed information regarding the features within each page of the website.

VI. SITE MAP



VII. FRONT END EXPECTED USERS

The expected number of users within the first two years of the database is within 1000. The website is to have three different types of users at the front end. Specifically there will be 1) Registered User – Expert Status; 2) Registered User – Regular and 3) Viewers. Each user is able to access the website however certain features and pages will be limited to specific users. The following table summarizes the functions and pages available for each user.

Type of User	Viewable Pages	Description	Available Functions
1) Registered User – Expert Status	All Pages	Registered Users with an expert status are users who have been invited by the Site Administrator from the pool of registered users to have an expert status and who have accepted the expert status as part of their account.	The expert is able to use all functions of the GEAR database that registered users are able to use with an addition. The expert is able to receive messages in their inbox sent by the site Academic Moderator (refer to Section XI for the types of backend users/accounts) specifically indicating that a question or a discussion topic that requires their expert opinion has been submitted into the Ask an Expert page. When the expert answers the discussion question, their response is immediately placed in the expert section of the Ask an Expert template, i.e. immediately after the question/discussion topic.
2) Registered User – Regular	All Pages	Regular registered users are those who've signed up and completed the registration of their account by email verification sent by the site auto mail upon initial registration	Registered users are able to access and view all the information within the GEAR database and use all its functions. They are able to post discussion questions in the Ask an Expert sections of the database, use the mind mapping feature and have input into the database by answering the GEAR survey, contribute to referenced research, submit solutions, hypothesis and research question suggestions and submit suggestions to improve the database in the My Accounts Page . Registered users are able to download reports from the mind mapping feature within GEAR. They are also able to change their account profiles and passwords.
3) Viewers	Home About Us Methods Process	Viewers are the general users visiting the website who are not registered.	Viewers are not able to use any of the functions of the GEAR database. They are able to preview the functions of the database from the instructional and promotional videos found in the Home page. They are also able to view the About Us page.

Upon registration for an account, the users are to see the Login/Registration page. The only information needed for registration will be **email** and **name**. Once the user has inputted the registration information, the site will automatically send a **verification email** asking them to set their **password** and in order to verify their account. The registration is completed upon email verification. The registered user is able to edit their profile in the **My Accounts** page once logged in. If the user forgets their password or username, in the login page, the user is able to click the **Forgot Password/Username** button and the site is to have a system of changing password/username via registered email.

VIII. GENERAL TEMPLATE

The general template for all pages to be finalized in collaboration with the developer will contain the following sections and features in terms of page navigation:

- The first header is to contain the HIU Logo (as illustrated in Figure 2: HIU Logo 1) accompanied by iDSI and HITAP in plain text and a link to the globalhitap.net website.
- The second header is to contain the main menu which is to function as the main navigation for the pages in the website. The main menu is to include the following: HOME; ABOUT US; METHODS & PROCESS; GEAR; ASK AN EXPERT; LOGIN/REGISTER. When the user is already logged in, the Login/Register button in the menu is to become the MY ACCOUNT button.
- The third header is to include the title of the database, “GEAR” as well as the user navigation guide (to inform the user which part of the website they are viewing). Additionally this area may also contain social media share buttons or may be included in a fourth header depending on the developer’s template designs.
- The footer area is to contain the circular logo of the HIU (as illustrated in Figure 3: HIU Logo 2) as well as the copyrights, privacy statement and terms of use text for users with the accompanying links to the text of the document.



Figure 1: Sample General Template



Figure 2: HIU Logo 1



Figure 3: HIU Logo 2

IX. DETAILED DESCRIPTION OF PAGES AND PAGE FEATURES

Static Pages and Information

Some pages of the site are expected to be static, in particular the Home, About Us and Methods & Process Pages. The following sections illustrate sample templates for the static pages and information. **Figure 4** presents a sample home page template.

HOME

Most of content in the home page is to be static. It is to contain a short introduction about GEAR, is free text and can be changed by the site administrator. A short section presenting the GEAR survey and a link to the GEAR survey that will lead to the survey if the user is registered and logged-in but will link to the **Register Page** if the user is not registered. The only part that is not static is the display for top-rank research questions which will be displayed real-time according to user's response.

A small side bar located in the right will have a link to an instructional page, a **How-to-Use VDO** and a promotional VDO on how the user will benefit from using the website.

A section of the GEAR survey respondent demography shall show the graphical representation regarding relevant information such as geographical distribution of respondents, affiliation distribution, etc. This section then will not be static and varies according to survey only if deemed cost-effective by the Project Leads, i.e. the graphical figures can be programmed to automatically link to the survey.

A section featuring the mind map function of the website will also be present in the home page. The representation may be a GIF illustrating to the user the mind map can help in terms of guiding them on how to frame their research.

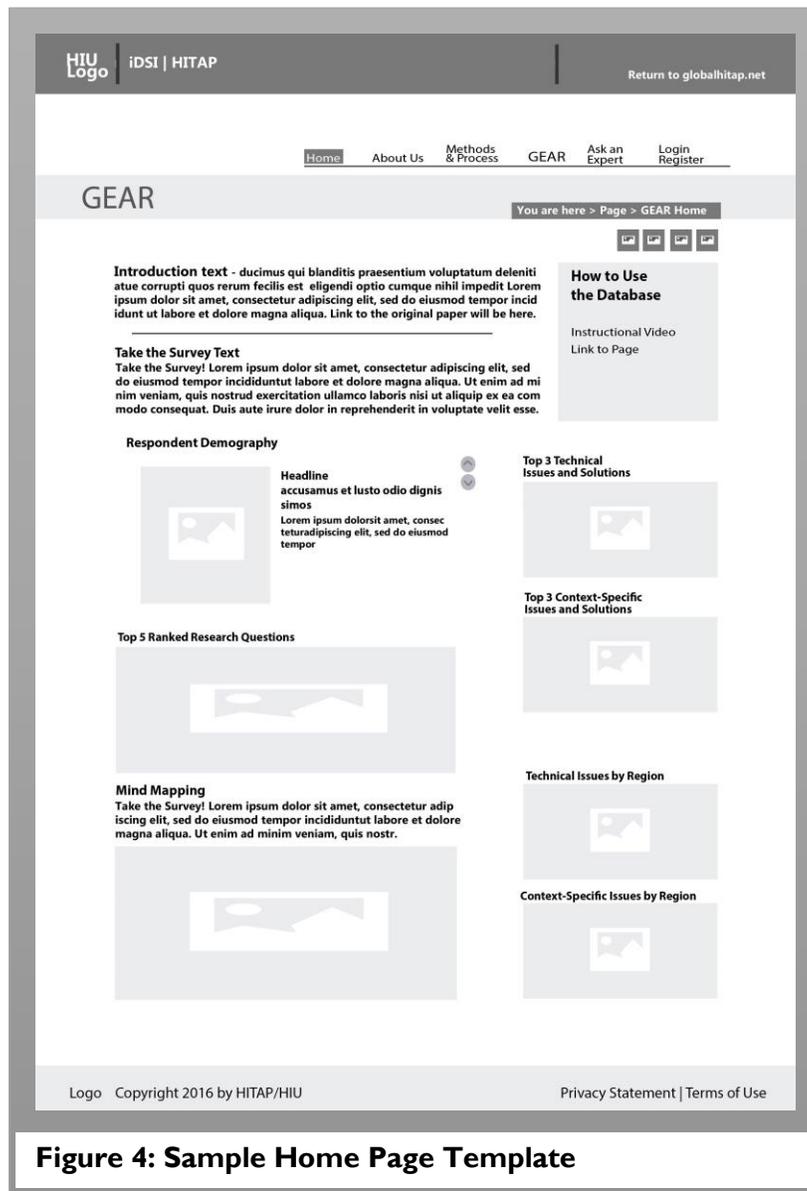


Figure 4: Sample Home Page Template

Additionally sections on the Top 5 Research Questions based on the survey responses, Top 3 Context-Specific issues and solutions, Top 3 Technical Issues and Solutions, the Top 3 context - specific issues by region and the Top 3 technical issues by region will be presented graphically in the home page. These sections are also not static, and are automatically linked to the data in the GEAR database that is controlled by the GEAR survey. The following can be used as a reference for constructing this page: <http://databank.worldbank.org/data/databases.aspx>; <http://www.healthdata.org/results/data-visualizations> (For display of the graphs and mind map GIFs).

ABOUT US

The **About Us** page contains free text information on GEAR Background and Purpose, iDSI, HITAP|HIU and support partners. This information can be changed by the site administrator from the backend. In the section on iDSI, a photo slider containing photos that are linked to specific iDSI websites when clicked can be found. Similarly, for the HITAP|HIU section, a photo slider with photos linked to the other HITAP|HIU websites when clicked can be found. For the support partners, a photo slider of all the logos of the support partners can be found and when clicked would lead directly to their main website. See **Figure 5** for a sample **About Us** template. The following website can be used as a reference: <http://irri.org/about-us/our-organization>



Figure 5: Sample About Us Template

METHODS & PROCESS

The Methods & Process page of the website is to have the original information in sections of the study that HIU conducted in 2015: *Identifying Priority Methodological Issues in Economic Evaluation in Low- and Middle-Income Countries: Finding the Holy Grail*. Specifically the study design, literature review, survey questionnaire, study population and data analysis sections of the study. The format preferred for this page is one where the sections are expandable when clicked. In the literature review, links to the articles included in the bibliography will be available. For the section on the questionnaire, a link or button is to be available. Once the link or button is clicked, a pop-up will showcase a pdf of the original survey (not downloadable) that was used in the 2015 HIU study. **Figure 6** shows a sample template of the **Methods & Process** page.

For references on template preference the following website can be used:
<https://www.cia.gov/library/publications/the-world-factbook/docs/profileguide.html>

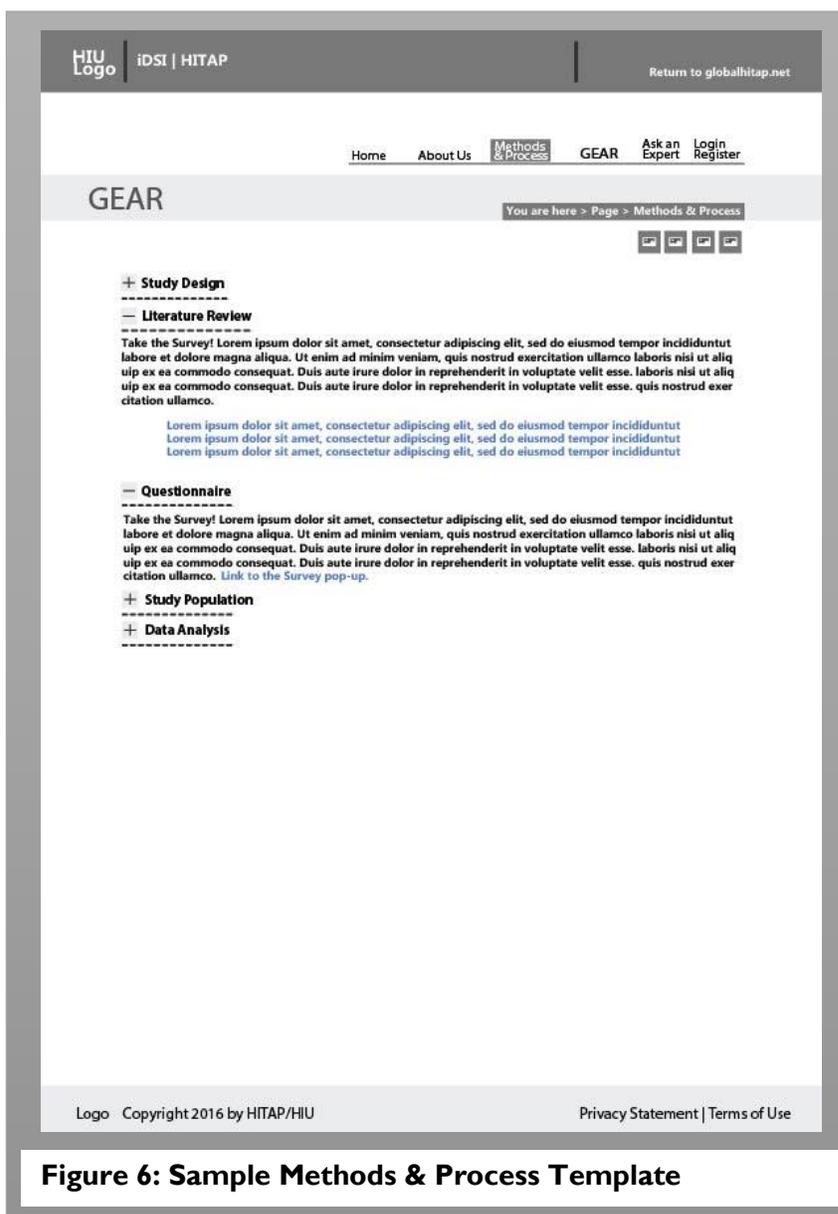


Figure 6: Sample Methods & Process Template

Interactive Pages

The main pages within the website that are interactive are the main page of the **GEAR** database, including all of its features, the **Ask an Expert** page and the **Login/Register | My Accounts** page. For the purposes of this project, interactive is defined as such, *designed to respond to the actions and input of the users from both the front end and the back end of the website.*

GEAR

GENERAL DATABASE

In general, the database is to contain the following sections that present the actual data within the GEAR Database: ISSUES | SOLUTIONS | RESPONDENT DEMOGRAPHY | REFERENCED RESEARCH | RESEARCH QUESTIONS | GUIDELINES | GUIDELINE SUMMARY COMPARISSON. These sections are under the **Main Filter Options** of the template. All the data within GEAR and all of its features are linked to various data input areas within the website. For additional information regarding the data within GEAR refer to **Section X: Data Flow** of this document.

Template Area Requirements

The template of GEAR is to have the following areas:

Top Discussions Area – This area contains the top discussions inputted in the **Ask an Expert** feature of the database. A top discussion thread is to be measured based on the total number of comments, number of likes and number of shares to twitter or facebook.

Main Filter Options – This main filter options contains the different sections of the actual data within GEAR.

Search Terms Area – This area is to function as the secondary navigation area of the website. The user can directly input a search term and limit their search through filtering by category and by section of the database. The results will be immediately highlighted in the main filter options and the user can then click the section to view the results.

Database Results Area – This area is to be at the center of the template designed to display the actual data within the database based on user input upon application of filters.

Additional Features Area – This area allows the user to open other features of the database. If possible there is to be an option for the user to change the data from a tabular format or in plain text format under the **Table** button in this section. This section also has an option to further **Filter Results** by the following: respondent years of experience, respondent affiliation, respondent region of work and respondent educational attainment. This section additionally has the button to open the **Mind Map** feature of the database. Upon clicking the Mind Map Button, a popup window for the mind map will appear.

Comments Area – This is the inputting mechanism designed for the user to post their questions to experts. The user will be required to input tags to their question so as the database can categorize under which topic the question is to be located in the main **Ask an Expert** page. This section should be minimizable so as not to bother the user when they are looking at the database. All the inputs into this section will be received, viewed and approved by the Academic Moderator in the backend before the input will appear in the **Ask an Expert page**.

The following can be used as a reference for this page:

<https://www.cia.gov/library/publications/the-world-factbook/docs/profileguide.html> - As reference for the Main Filter Options of the database

<http://databank.worldbank.org/data/reports.aspx?source=gender-statistics> – As a general reference for the database.

For a sample general template with references to the prior mentioned template areas, see **Figure 7**.

The data will be presented in a tabular format for the following sections: ISSUES | SOLUTIONS | REPODNT DEMOGRAPHY | REFERENCED RESEARCH | GUIDELINE SUMMARY COMPARISSON. The Guideline summary comparison will contain a summary of all the guidelines in the database. This will be manually inputted by the academic moderator in the backend. For a sample template on this section of the database along with a sample of the **Filter Results** feature see **Figure 8**.

The following site can also be used as a reference for this page: <https://www.cia.gov/library/publications/the-world-factbook/docs/profileguide.html>

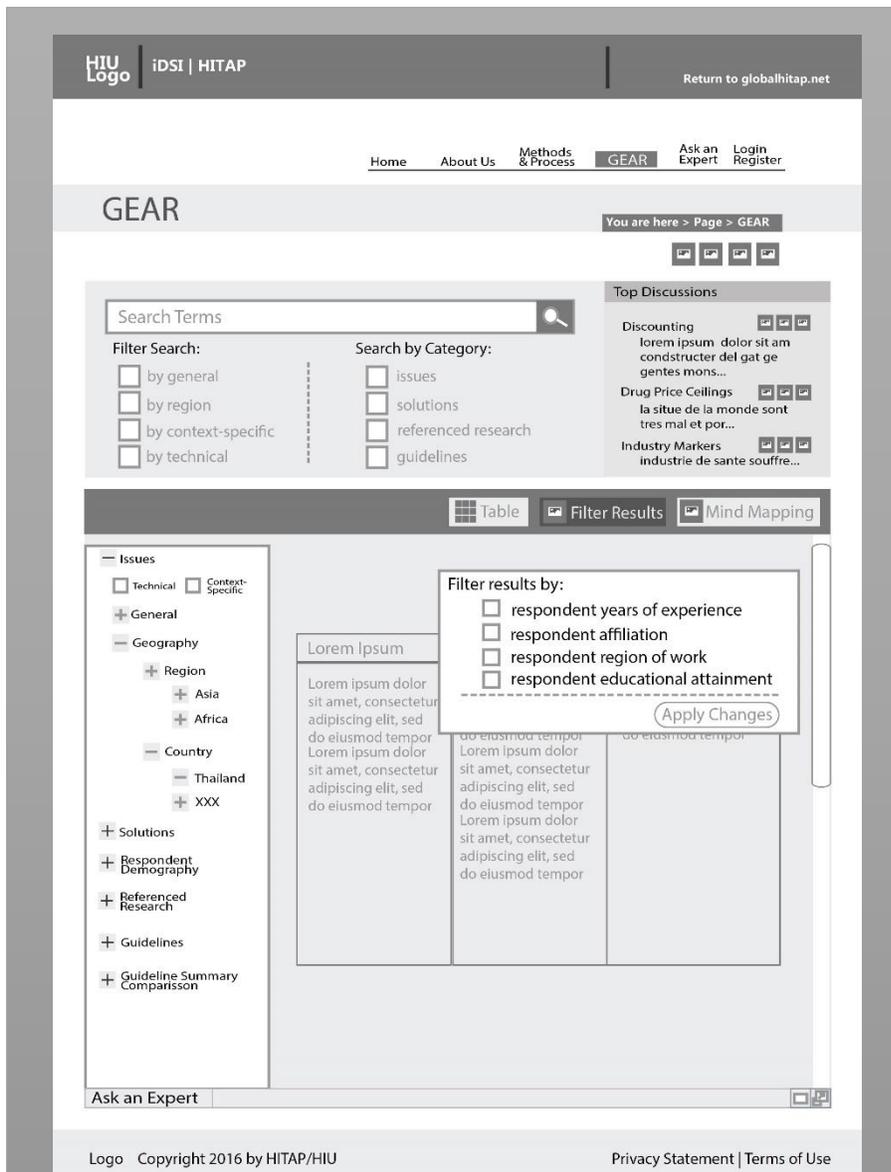


Figure 8: Sample GEAR ISSUES|SOLUTIONS|RESPONDENT | DEMOGRAPHY|REFERENCED RESEARCH SECTION

GUIDELINES SECTION

For the RESEARCH QUESTIONS | GUIDELINES section of the database the data will be in an expandable form for each section of a guideline. This format may change pending further research into each data inputted in the guidelines section For a sample template on this section of the database see **Figure 9**.

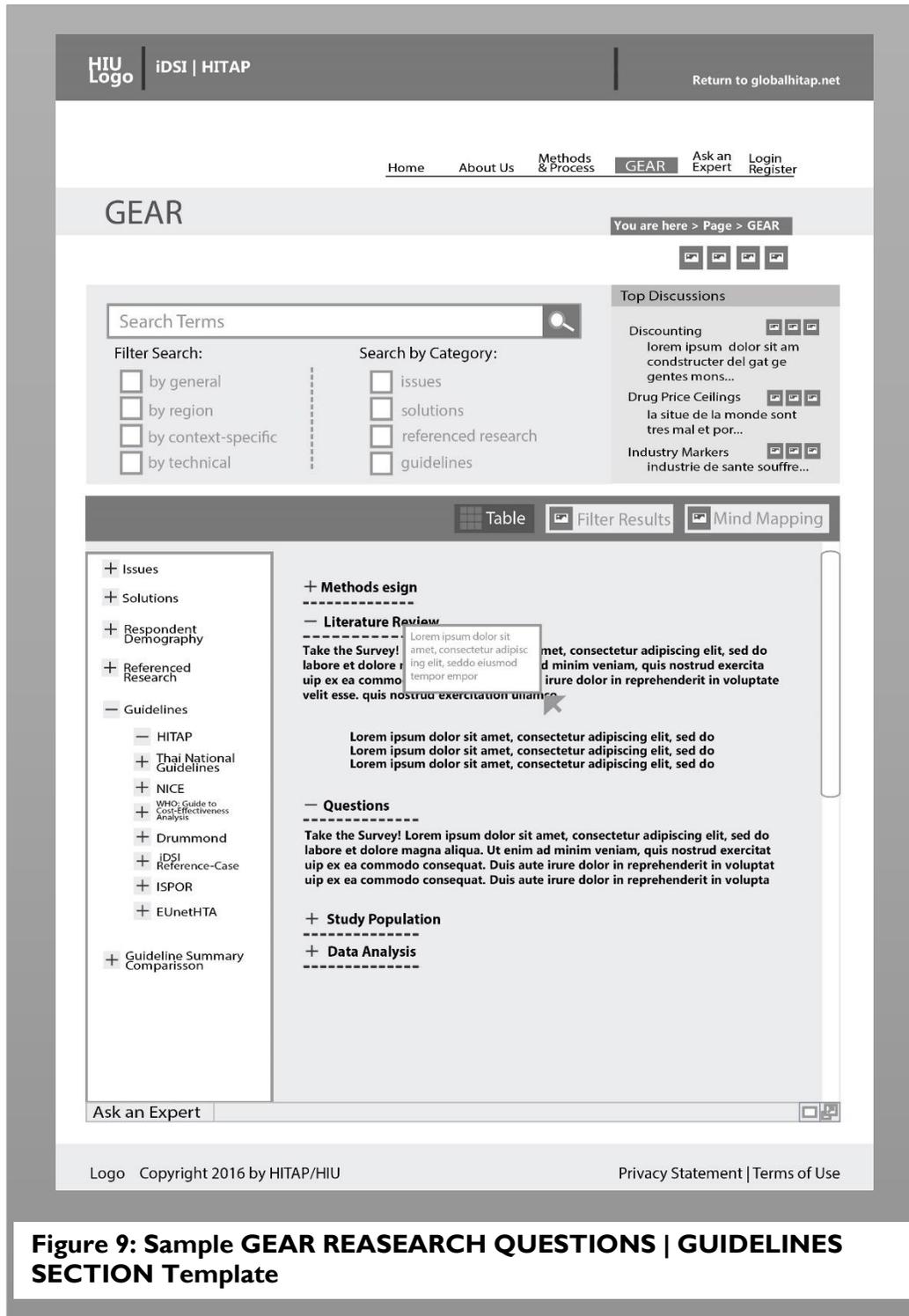


Figure 9: Sample GEAR REASEARCH QUESTIONS | GUIDELINES SECTION Template

MIND MAP FEATURE

The **Mind Map** feature of the database is accessible via the mind map button in the additional features area of GEAR. The purpose of the mind map feature is to visualize information that is included in the database. This part of the website will be used for search and display of the existing research data within GEAR. Only within this feature can the user export the data output from the database. As such each exportable file is the result of the user’s interaction with the mind map feature of the database. For more information on the format of the exportable files and the data in association with the controls of the mind map feature, refer to **Section X** on the description of the data flow and data output format within the database.

Mind Map Definition of Terms

For the purposes of this proposal, each piece of data presented in the display board of the Mind Map will be referred to as a **Node**. The node in the center is the **Main Node** and all the subsequent nodes will be categorized into **Tiers**. **Figure 10** shows an illustration of the specific terms in the mind map. There are seven tiers in total at minimum that will always be available, i.e. regardless of the main node that the user chooses, these seven tiers will always exist. The following are the seven tiers: Tier 1, 2, 3,4,5,6 and Tier X. Tier X is the last tier. The additional number of tiers beyond Tier 6 is variable of up to 3 more tiers, depending on the chosen main node, which is in Tier 4. In total, the mind map feature may have 10 tiers of nodes depending on the chosen main node. **Metadata** is defined as data that provides information about other data. The metadata in GEAR is a combination of structural and descriptive metadata, i.e. it has metadata that gives the user a link to the location of the information regarding the data and metadata that gives the actual information regarding the data. For further information on the data contained within the metadata see **Section X** for a description on the data flow within GEAR.

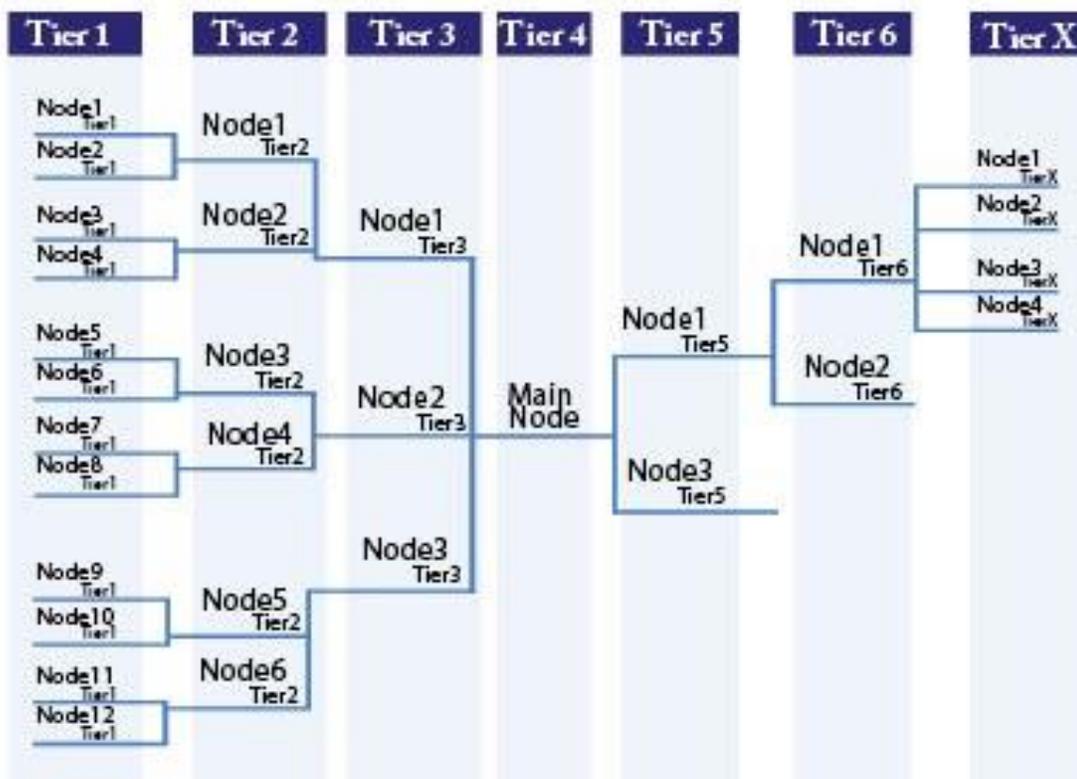


Figure 10: Mind Map Terms

Template Area Requirements

The template of the **Mind Map** feature is to have the following areas, see **Figure 11** for a sample Mind Map template with reference to the area requirements:

Display Board Area – The display board area is where the **Mind Map** results and output are presented based on what the user has inputted in the **Control Area**. All nodes in the display board will elicit a corresponding response when prompted by a mouse-click. For more information on the specific response, refer to the subsequent section on Mind Map Node Functions.

Control Area – This area controls the main node and specific tiers that are shown in the Mind Map. This area is to contain the option for the user to choose the data that will be shown in Tiers 1 to 4. It additionally has the option for showing or hiding Tiers 5 to Tier X by having the **Scenario Tree** button. When the scenario tree button is clicked, it shows the 5th tier and activates the option to click any of the nodes in that tier in the display board area. When the scenario tree button is clicked again, it should hide Tier 5 to Tier X. This control area should additionally have an option to change the graphical format of the display under the **Format** button.

Metadata Area – This area contains all the metadata for each specific node. The metadata area is activated when the user clicks a specific node in the display board area. This area also contains the **Comparator Tool** button. The comparator tool is activated with a mouse click.

Once activated the comparator tool should reveal the metadata of both nodes that were clicked. **Figure 12** illustrates a sample template of how the comparator tool should function.

Comments Area – The comments area functions in a similar manner as it will function in the comments area found in the main GEAR database as found in Section IX|Interactive Pages|GEAR.

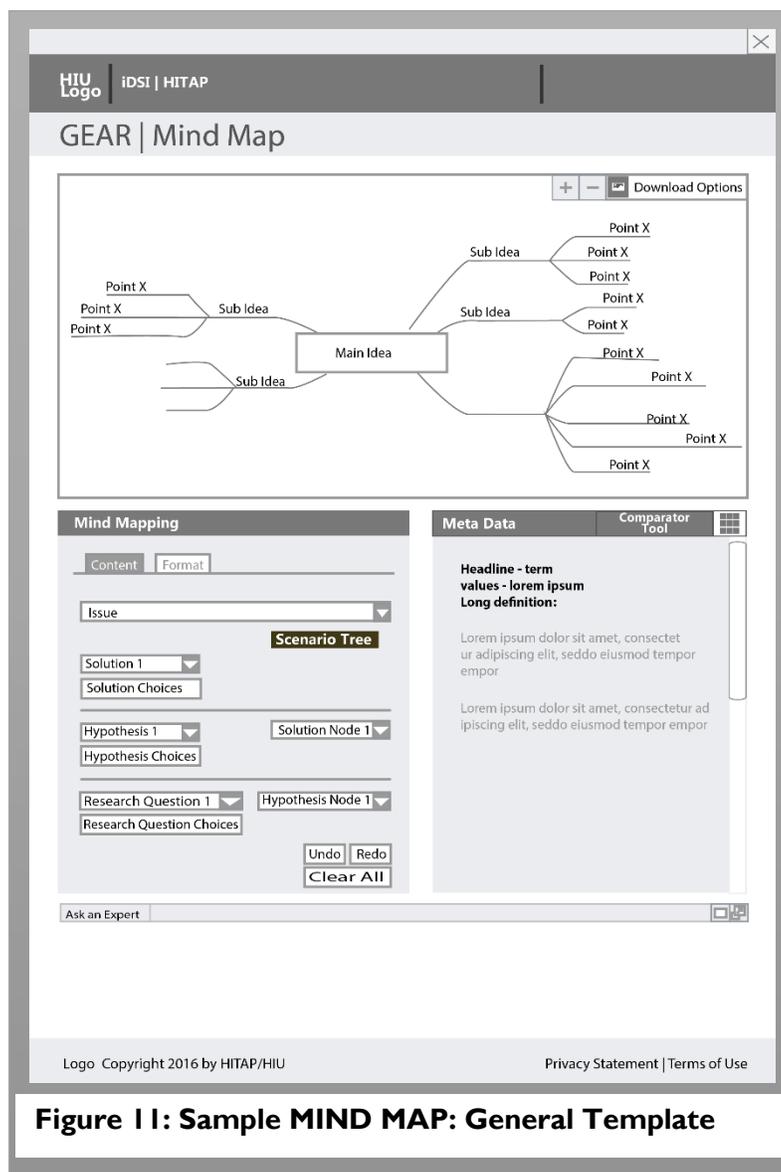
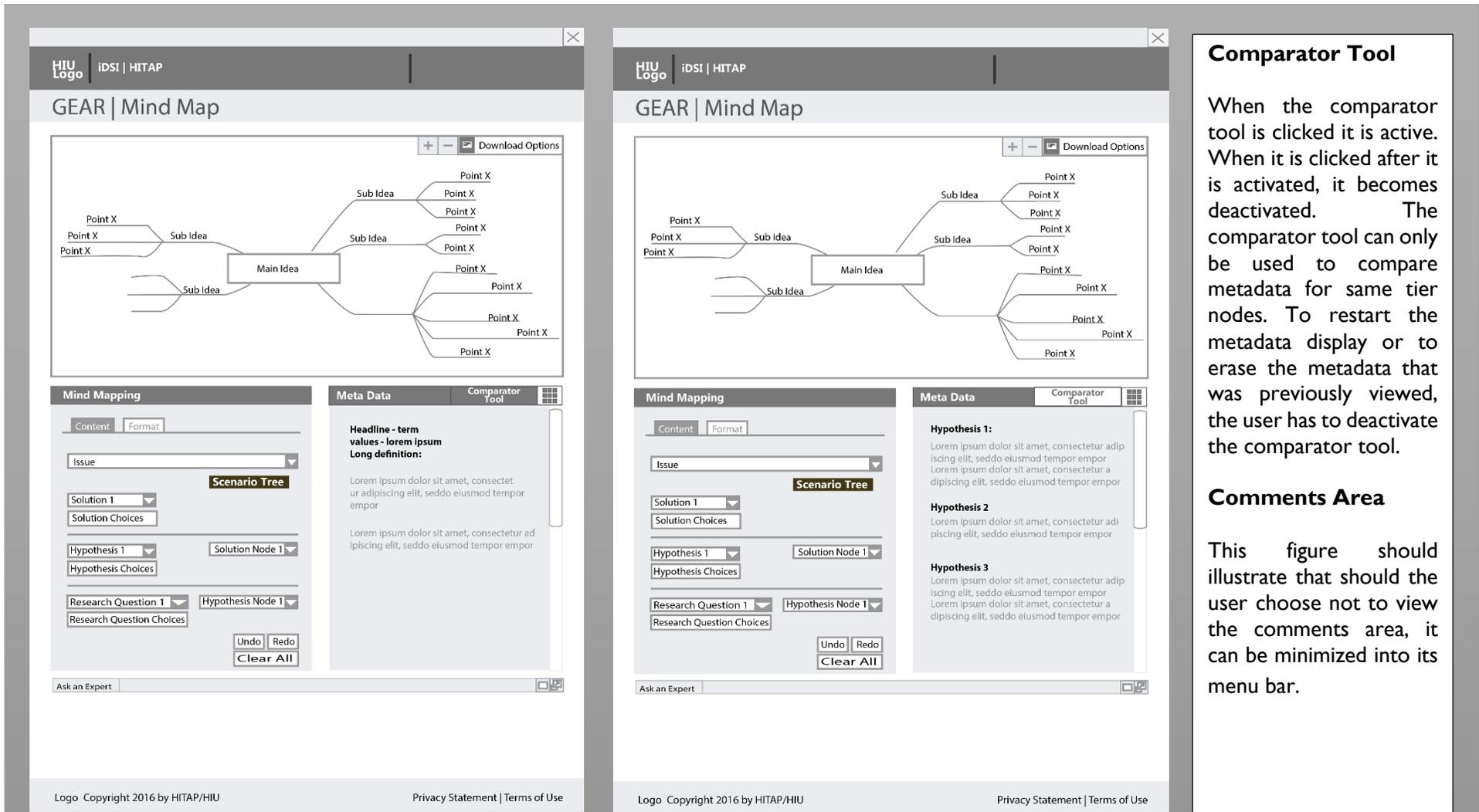


Figure 11: Sample MIND MAP: General Template



Comparator Tool

When the comparator tool is clicked it is active. When it is clicked after it is activated, it becomes deactivated. The comparator tool can only be used to compare metadata for same tier nodes. To restart the metadata display or to erase the metadata that was previously viewed, the user has to deactivate the comparator tool.

Comments Area

This figure should illustrate that should the user choose not to view the comments area, it can be minimized into its menu bar.

Figure 12: Sample MIND MAP: Comparator Tool and Controls Display Template

Mind Map Node Functions

The first three tiers are located on the left-hand side of the mind map and are designed to function for brain storming purposes. See **Figure 10** for references to Mind Map terms. The 1st Tier corresponds to nodes that are under the **Research Question** category data. The 2nd Tier corresponds to nodes that are under the **Hypothesis** category data. The 3rd Tier corresponds to nodes that are under the **Solution** category data. As these three tiers are designed for brainstorming, the user may view multiple nodes under each tier at the same time in the display board. The control area is to have an option to choose what to do for each tier. In **Figure 12** the template sample shows these options in a drop down format, however this may be changed to a function that is more user friendly. The developer is to identify and suggest possible ways in which the user interface can vary in order for the user to be able to access the node options for Tier 2 with the corresponding node in Tier 1. The same holds for the relationship between Tier 2 and Tier 3. The developer may use this site as a reference for additional functions:

[http://vowl.visualdataweb.org/webvowl/;](http://vowl.visualdataweb.org/webvowl/)

[http://marmelab.com/ArchitectureTree/;](http://marmelab.com/ArchitectureTree/)

http://www.nytimes.com/interactive/2012/11/02/us/politics/paths-to-the-white-house.html?_r=1&

The 4th Tier corresponds to the Main Node, the Issue. This is located in the center of the Mind Map and should graphically be highlighted as the center of the mind map.

The 5th Tier and the subsequent Tiers until Tier X is to function in a manner similar to a decision tree. These tiers are located at the right-hand side of the mind map. The functionality of these tiers are such: the 5th tier is prompted by the **Scenario Tree** button in the **Control Area**. Once the 5th tier is prompted the user is able to utilize the **Comparator Tool** to make a decision under which scenario to proceed based on the information provided by the metadata. Once the user decides to go with a specific node, the next tier's node may be prompted by clicking on the node of choice from the previous tier. Unlike the left-hand side of the mind map, the right hand side may only show one sub-branch at a time. In this manner, the user simulates making a decision by choosing the scenarios under Tier 5 and the subsequent options under Tier 6 to Tier X. Under Tier X the information on each node's metadata will have the following categories: Guidelines Comparison, Referenced Research, Expert Opinion (Link to Ask an Expert), and Case Studies (CEA Database).

Mind Map Coding

The following reference is recommended for the programmer's use in coding for the Mind Map. The programmer may use the free code downloadable through this site:

<http://www.brightpointinc.com/2013-federal-budget/>

Given the availability of this coding, the developer must examine and advise on the minimum and maximum number of nodes per tier that would be deemed feasible and optimal.

Media and Downloadable Content From Front End

The output of the mind map from the user's interaction with the mind map is exportable into a JPG file, a CSV file and PDF file.

JPG File

When the user decides that they have gotten sufficient information from the Mind Map they should be able to download their results shown in the display board area via a button for **Downloadable Content** as shown in **Figure 11**, located in the display board area. **Figure 13** below shows an illustration of what the JPG file might contain.

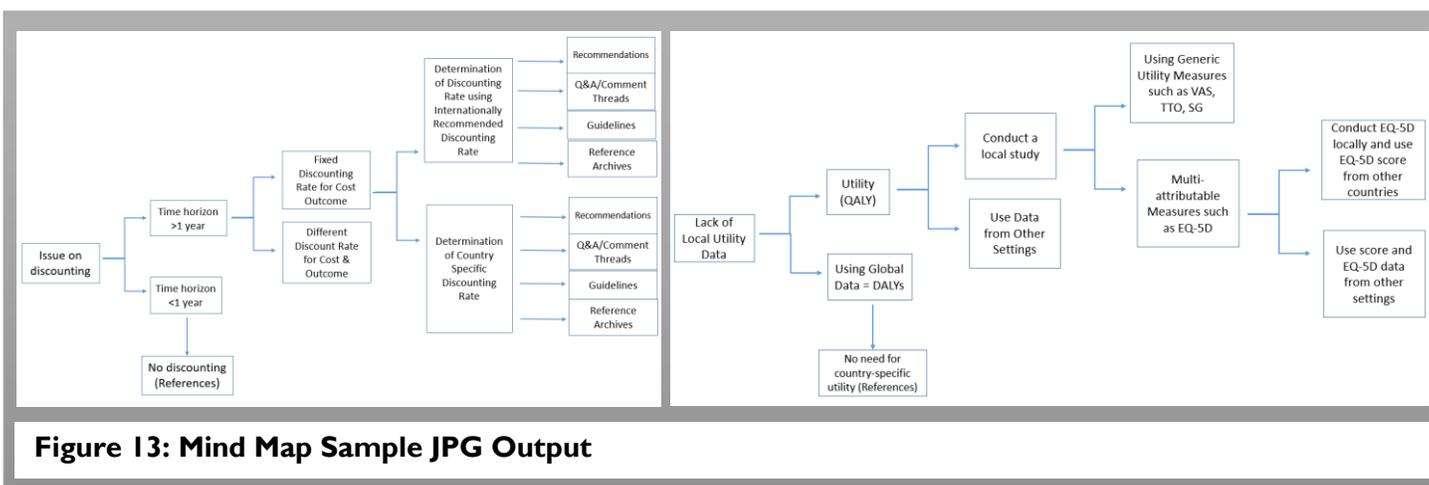


Figure 13: Mind Map Sample JPG Output

CSV File and PDF File

Similar to the JPG file, after the user has completed their mind map, the data output on the nodes and the metadata behind the nodes are exportable via a CSV File and a PDF file. The PDF file is in plain text output. It is organized in two sections however the developer may suggest another format for organizing the data in order to make it easier for the user to understand. The first section is all the metadata in the left-hand side of the mind map or the brainstorming side of the mind map as it relates to the Main Node. The second section is all the metadata on all the node outputs in the right-hand side of the mind map or the Scenario Tree as it relates to the main node.

Figure 14 shows the format designed for the export of mind map content by users. It is separated into 2 main components: gaps and immediate advice. The former which focuses on existing gaps in the conduct of economic evaluation contains 4 major points. The first point is solutions which can be multiple for each issue. Overall, the solutions, hypotheses, and research questions will be expressed in short phrases as seen on the mind map while metadata provide more information on each point which is not shown on mind map. There may be more than one solution available for an issue. The same applies for hypotheses of which more than one may exist for each solution and for research questions of which more than one may exist for each hypothesis. The other component is the immediate advice (decision tree area). The pattern remains the same: short phrases for scenario, options and specifications and accompanied by their metadata explaining each point. Moreover, more than one option may be available for a scenario and so on. In each tier, the number of nodes may be a minimum of 3 and a maximum of 5 (but 10 would be preferable). This file will be made available by the project leads for the contracted developer's use.

Downloadable Content Format_BS.xlsx - Microsoft Excel non-commercial use

File Home Insert Page Layout Formulas Data Review View Acrobat

Clipboard Font Alignment Number Styles Cells Editing

MIND MAP REPORT

Date of Access:
Time of Access:

Issue	Gaps						Immediate advice									
	Solutions	Solution Metadata	Hypotheses	Hypothesis Metadata	Research Questions	Research Question Metadata	Scenario	Scenario Metadata	Options	Option (1) Metadata	Options	Option (1) Metadata	Specifications	Specification Metadata		
a	aa	xxxxxxxxxxxx	aaa	xxxxxxxxxxxx	aaaa	xxxxxxxxxxxx	aa	xxxxxxxxxxxx	aaa	xxxxxxxxxxxx	aaaa	xxxxxxxxxxxx	aaaaa	xxxxxxxxxxxx	aaaaaa	xxxxxxxxxxxx
			bbb	xxxxxxxxxxxx	bbbb	xxxxxxxxxxxx			bbb	xxxxxxxxxxxx	bbbbb	xxxxxxxxxxxx	bbbbb	xxxxxxxxxxxx	bbbbbb	xxxxxxxxxxxx
			ccc	xxxxxxxxxxxx	cccc	xxxxxxxxxxxx			ccc	xxxxxxxxxxxx	ccccc	xxxxxxxxxxxx	ccccc	xxxxxxxxxxxx	ccccc	xxxxxxxxxxxx
bb	xxxxxxxxxxxx	ddd	eee	xxxxxxxxxxxx	gggg	xxxxxxxxxxxx	bb	xxxxxxxxxxxx	ddd	xxxxxxxxxxxx	ggggg	xxxxxxxxxxxx	gggggg	xxxxxxxxxxxx	ggggggg	xxxxxxxxxxxx
			fff	xxxxxxxxxxxx	hhhh	xxxxxxxxxxxx			fff	xxxxxxxxxxxx	hhhhh	xxxxxxxxxxxx	hhhhh	xxxxxxxxxxxx	hhhhh	xxxxxxxxxxxx
cc	xxxxxxxxxxxx	eee	fff	xxxxxxxxxxxx	iiiii	xxxxxxxxxxxx	cc	xxxxxxxxxxxx	eee	xxxxxxxxxxxx	iiiii	xxxxxxxxxxxx	iiiii	xxxxxxxxxxxx	iiiii	xxxxxxxxxxxx
			ggg	xxxxxxxxxxxx	jjjjj	xxxxxxxxxxxx			ggg	xxxxxxxxxxxx	jjjjj	xxxxxxxxxxxx	jjjjj	xxxxxxxxxxxx	jjjjj	xxxxxxxxxxxx

Type of data: Text

Source: GEAR Database
© 2016 HIU, All Rights Reserved.

Mind Map Report | GEAR Survey Respondent Report | GEAR Contributions Report | Sheet1 | 55%

Figure 14: Mind Map Sample CSV Output

ASK AN EXPERT

The **Ask an Expert** page is a feature of the database that is interrelated to other pages of the database, particularly the data entry fields for users are located in the **Ask an Expert** page as well as **GEAR** and the **Mind Map** pop-up window. The **Ask an Expert** page can be accessed from the main menu. This page should be in the format of a discussion board. When users submit a comment or a question this question is then placed in the actual Ask an Expert page. However, there is a caveat that all questions and comments will first be reviewed and edited by the Academic Moderator in the backend of the database before it is posted in the actual page. In this manner the Academic Moderator controls the questions and the comments that are shown in the page. For the discussion on this process, see **Section X** on Data Flow. The page that immediately comes up when the **Ask an Expert** menu button is prompted is the Ask an Experts | Discussion Topics.

This page is to contain all the identified (posted by the moderator) discussion topics sent to Admin by the users. See **Figure 15** for the sample template of the Ask an Expert page. There are only three area requirements in this template: the **List of Experts** area, the **Comments Area** and the **Discussion Topics** area. Under the list of expert's area, the photo and one-liner bio descriptions of all the experts that respond to the questions in the database are to be shown. Each expert section must be linked to a separate page that shows the expert's bio and resume. There may also be a button in this area that is linked to another page that shows all the experts associated with the database.

All the discussion topics will be categorized. The format preferred are expandable texts that show the submitted questions or comments by the users when a specific category is prompted. The categories will be identified by the **Academic Moderator** in the backend of the website. It will also be the job of the Academic Moderator to organize the submitted questions according to the categories they should be under based on the tags that the user has inputted when they submitted the question or comment.

The **Comments Area** is to have a mechanism that automatically identifies possible tags for questions, i.e. there should be a list of common tags that shows up when you type a letter or when the typing cursor is prompted when clicked. The list may be presented in a pop-up box or a similar feature.

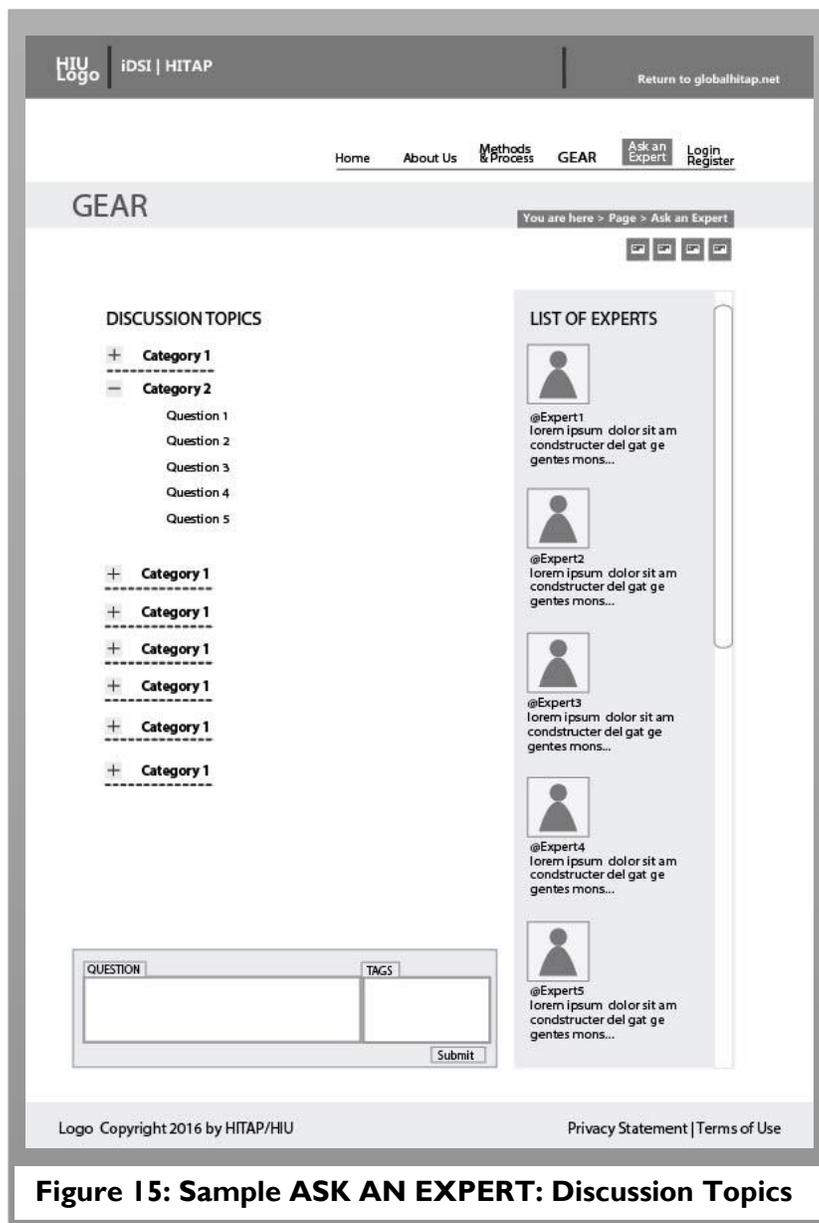


Figure 15: Sample ASK AN EXPERT: Discussion Topics

For viewing the questions within the **Ask an Expert** page, the user may click the individual question or comment and it should lead to a separate page that has the discussion board with answers to the question. For a reference, the developer may use the following site: <https://www.quora.com/> as well as the sample template in **Figure 16**.

The Ask an Expert Questions Page is to have a **List of Experts Area**. This area is different from that in the Ask an Expert discussion topic page as the experts shown in this area are only those who have responded to the question or comment post. In this area there should also be a button that leads to the List of Experts page.

This page is also to have a **Question | Comment Area**. This area is to show the name or the user handle (e.g. @kluz15) of the user that posted the question, the question, the date the question was posted (for the purposes of this database, the posting date is considered as the date at which the question has undergone and passed the process of verification by the Academic Moderator. This section is to have the reply button and the report abuse button and private message button. Users can reply to the question by clicking the reply button, which will prompt a text box to appear beneath the question where the user can input their reply.

If the user has an expert account, the site should place their response into the **Expert Answers Area** immediately below the Question | Comment Area. The order of the expert answers will be on the basis of which expert answered first. Clicking the **Private Message** button will prompt a popup where the user could write in plain text and send to the GEAR Inbox (found in the **My Account** page) of the other user. The other user whom they had clicked the Private Message button for, would have their user handle in the Send To: line of the message..

If the user that responds to the question or comment was under a regular user account, then their responses will be shown in the **Comment Thread Area** right below the Expert Answers Area. This comment thread area will have a section to show the name or user handle of the user who replied to the original comment or question. This will also show the information on the date the answer was posted. Additionally there will be a reply button and a report abuse button. Users are able to reply to the comments in this section and their responses will be shown immediately after the question to which the user is replying to. The report abuse button is for every user of the website. If untoward or inappropriate comments and posts are shown, the site users are able to alert the Site Administrators and the Academic Moderators. For more information regarding the report abuse button, refer to **Section XI** which shows the requirements for the Backend and its users. Additionally, in a similar manner to the Ask an Expert Discussion Topic page, the **Comment Area** will also be available in this page.

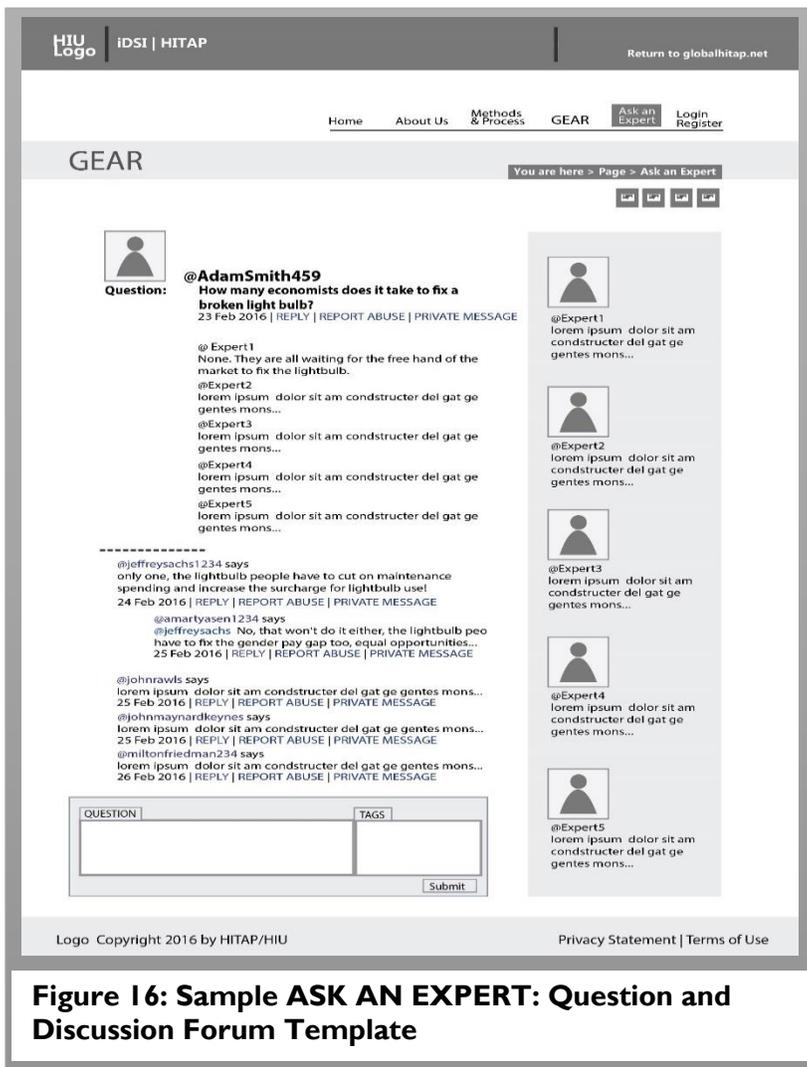


Figure 16: Sample ASK AN EXPERT: Question and Discussion Forum Template

LOGIN/REGISTER | MY ACCOUNT

The menu tab for the **Login/Register | My Account Page** functions in two ways: First is for users characterized as viewers in **Section VII** which describes the front end expected users. For the viewers, this menu tab will read as **LOGIN|REGISTER**. When the viewer clicks the tab, it should lead to the log in page where the fields for username and password are shown. If the viewer is not registered, there should be or text linked to the page for registration. A sample template for the login page is shown in **Figure 17**.

For registration, in order to reduce the disincentives for users in going through the registration process, the registration will only require from the user their first name, last name and their email. Upon registering their name and email, the website should automatically send them an email asking to verify their registration by setting up their username and password. The username they give is to be their GEAR handle in the Ask an Expert page. When the user has completed this verification process, they should be able to login into their account. After logging in to the user's account, the menu tab for **LOGIN | REGISTER** should change into **MY ACCOUNT**.

Given that general viewers are restricted only to seeing the **Home** page, and the **About Us** page, when the viewers click the menu tab for the **Methods & Process, GEAR Database** and the **Ask an Expert** page, they should be immediately lead to the registration page. Once they have become registered users, they can then view these pages.

Lastly, when the registered user forgets their password or username, there should be a mechanism to reset their password or username. The link to undergoing through this process should be found in the log in page, as in **Figure 17**.

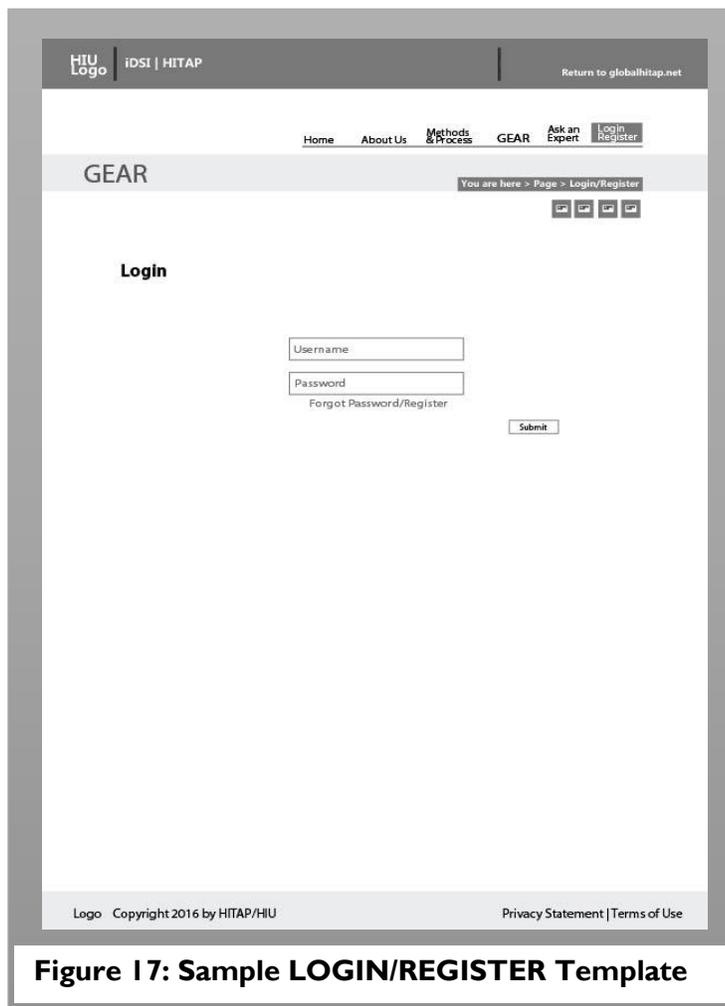


Figure 17: Sample LOGIN/REGISTER Template

After clicking the **Forgot Password/Username** link, it should lead the user to a page asking for their first name, last name and email. Once this information is taken, the site should send an email asking them to reset either their username or password, depending on which one they have forgotten.

After the user has logged in, it leads them to the My Account page. The My Account page has several required template areas and features, specifically the **User Profile, Inbox, Add to Referenced Research, Contribute to the GEAR Database, Improve the GEAR Database, and the GEAR Survey (Year)**. The preferred format for this template is similar to that of the CIA World Fact Book Guide to Country Comparisons: (<https://www.cia.gov/library/publications/the-world-factbook/rankorder/rankorderguide.html>)

In the **User Profile** area when maximized should have several fields. Namely the following fields should be available and editable: users' GEAR Handle (username), password, email, picture upload, gender, date of birth, type of affiliation, years of experience in the field of economic evaluation, country and area of work. The user profile is optional, i.e. not a requirement for the users to register. Only the GEAR Handle, password and email are required. This should additionally have the option for them to choose to subscribe to the HTAsiaLink Newsletter, the HITAP Newsletter and receive notifications in their email for private messages sent to them via GEAR.

The **Inbox** area has the feature similar to an emailing system. This should have the All Messages tab, Search tab and Message area. The Message area is to contain the heading, which will have the Photo of the sender, the Subject, the Sender name and the Date the message was sent. The heading area should also have the option to reply which will prompt a pop-up box with a free text field and a send button. The users can only reply to messages sent by other users, unless the user sent in a private message directly to the administrator. The users cannot reply to messages sent by the Administrator, i.e. the reply button should not appear if the message is from the administrator. The administrator's handle will additionally be displayed as GEAR Admin regardless of whether it is the Site Administrator or the Academic Moderator that sent the message. Below the heading will be the actual contents of the message. See **Figure 18** for a sample template of the My Account | Inbox area.

The **Add to Referenced Research** area is to have the following entry fields: **Related To, Title, Author, Abstract, Publication, Volume, Issue, Pages, Date, and URL Link**. The Related To field will be categorized into the following: Issue, Solution, Hypothesis and Research Question. This field should be designed to narrow down which part of the database the referenced research is related to. If the user chooses a specific issue, the user either has the option to add the reference to the specific issue or to continue narrowing it down to a solution and adding the reference to the solution instead. If the user wishes to continue narrowing down the reference further, the template should be able to continue Hypothesis and eventually Research Questions. Below the Related To field will be the free text fields to fill in the Article Title, Author, Abstract, Publication, Volume, Issue, Pages, Date, and URL Link. The academic moderator will review and verify the relevance of references in the response to the selected item. If considered relevant, the responses should appear at the **Referenced Research** section of the GEAR Database that was described in **Section IX | Interactive Pages | GEAR**, after the Academic Moderator has approved it. The Academic Moderators verification of referenced research is estimated to take at least one month before approval. The information that will appear in the GEAR Database under referenced research will be the Vancouver Reference Style Bibliography Citations. A sample of this reference style is the following:

Leurs R, Church MK, Taglialatela M. H1-antihistamines: inverse agonism, anti-inflammatory actions and cardiac effects. Clin Exp Allergy. 2002 Apr;32(4):489-498.

Use the following site and program as a reference: <https://owl.english.purdue.edu/owl/resource/717/01/>; <https://www.zotero.org/>. Note that all the citations will be journals. Although the information on the URL Link is collected by this platform, all citations will not contain the URL Link. The URL Link will instead be available for viewing, if the user clicks the citation, upon which all information collected by this platform will be revealed.

The **Contribute to the GEAR Database** area is the platform with which the user is able to propose new **Issues, Solutions, Hypothesis, and Research Questions** to add to the database. The template of this area will have sections in the following order issues, solutions, hypothesis, and research question. The first field will be the **Issues** field which will have a dropdown menu of all the data on issues inside GEAR. The topmost option for the dropdown menu is **Other** option. If the user clicks the other option, then a free text field should appear for the user to write down their **Proposed Issue**. The user should have the option to either submit their proposal or continue proposing a solution, hypothesis and research question under their Proposed Issue and eventually submit their proposal. If the user chose an issue in the **Issue** field that was already in the database then the next field: **Solutions** should appear, in the same format as the Issues field. If the user chooses other, then the **Proposed Solution** field will appear and so on. The user must additionally have the option to add multiple proposals for each category.

The **Improve the GEAR Database** is the platform with which users can suggest features that they want to add to the database or any improvements they wish to see on the website. The format for this areas template should be a free text field with a submit button. The user’s responses to this area as well as the **Contribute to the GEAR Database** area will be available and exportable from the backend. For further reference on the exportable content described in this section, refer to **Section XI** on the description of the backend.

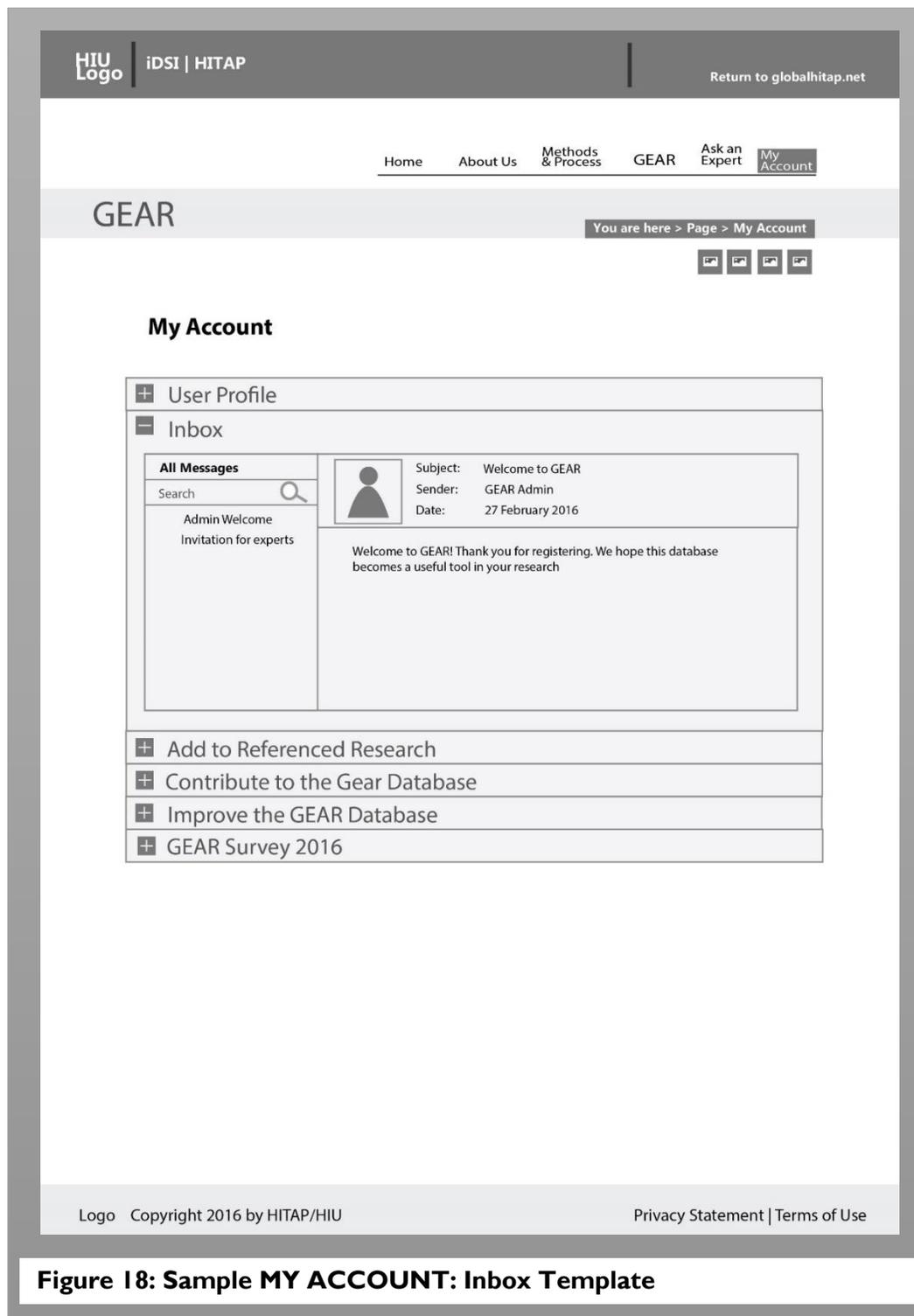


Figure 18: Sample MY ACCOUNT: Inbox Template

The **GEAR SURVEY (YEAR)** area of the template is where users can gain access to the GEAR survey. Some responses to certain questions of the survey will be linked directly into the database, some will go to the Academic Moderator, and some will go into the user's profile. Directly on the My Account page, GEAR Survey area, when the user clicks the tab, the following qualifying questionnaire will appear (see **Figure 19** for the sample template):

THE GEAR SURVEY 2016

Introduction

This survey is a part of a Health Intervention and Technology Assessment Program (HITAP) project funded by the International Decision Support Initiative (iDSI) to support the conduct of economic evaluations in low- and middle-income countries (LMICs). The results will be used to determine those research gaps and issues that prevent the conduct and the use of economic evaluation evidence in policy decision-making. They will also help the prioritization of research topics for the better conduct of economic evaluations in LMICs.

Are you a current or former researcher or research assistant with experience conducting (individually or as part of a team) an economic evaluation in a low- and middle-income country (LMIC)?

- Yes
- No
- I have filled out this survey before

To ensure that we gather the best responses, this survey is anonymous and your responses will in no way be connected to you or your affiliations. As such, please indicate your consent to the use of your responses for the Research Methods Agenda analysis and future presentations, publications, and materials.

- Yes
 - No
-

The questions within the qualifying section of the survey should narrow down which respondents are allowed to take the survey. The country field should have an automatic display of countries. The same applies to areas of work. After filling in the fields in the qualifying questionnaire, the user should be able to click a submit button located at the end of the section. The answers of the user should automatically update the information in their profile.

The respondents will be allowed to proceed to the next section of the survey only if they have experience in conducting an economic evaluation in a low-middle income countries; i.e. if they respond yes to the question: Are you a current or former researcher or research assistant with experience conducting (individually or as part of a team) an economic evaluation in a low- and middle-income country (LMIC)?

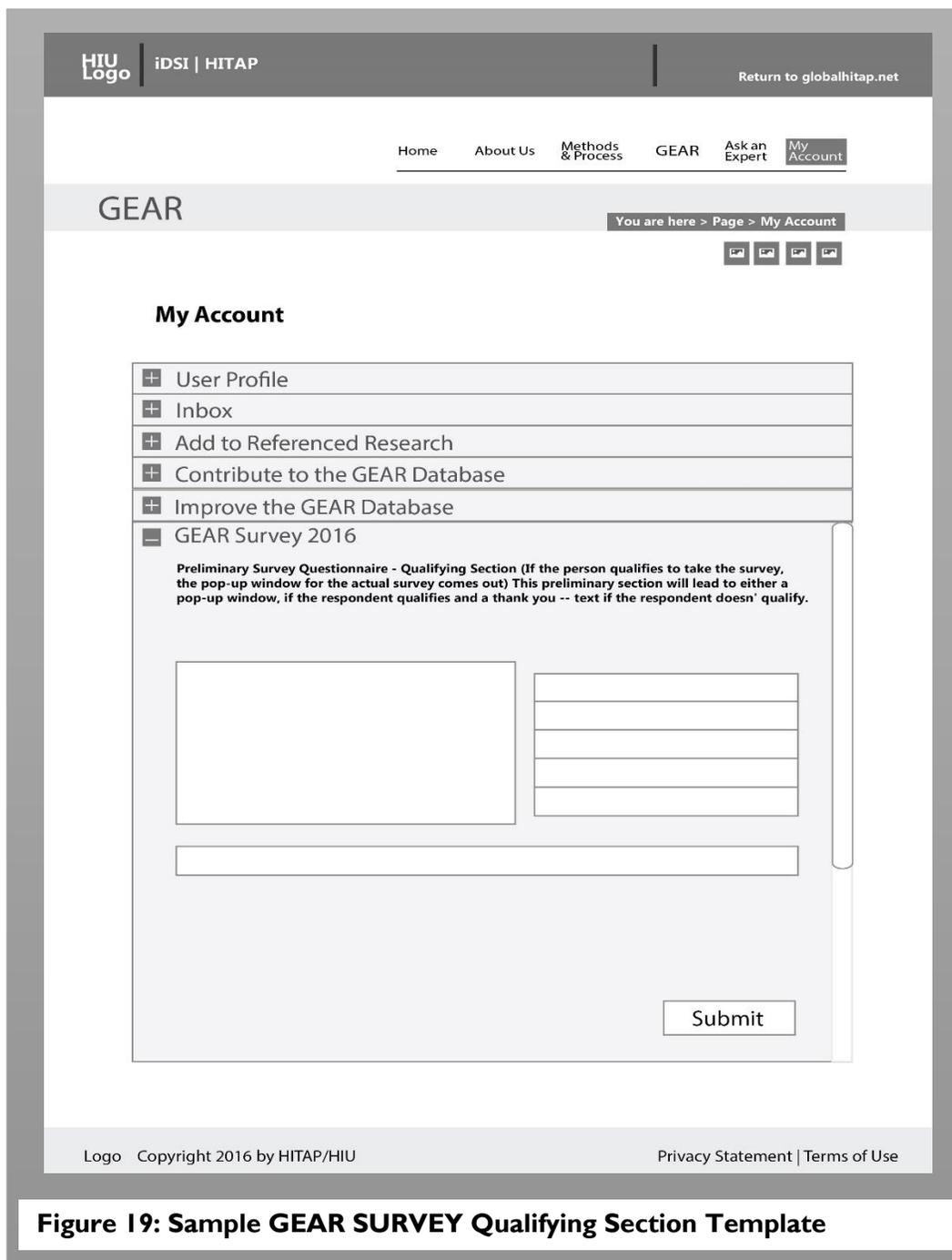


Figure 19: Sample GEAR SURVEY Qualifying Section Template

If the survey respondent doesn't qualify to take the GEAR Survey, this section should show the following message:

Thank You!

We appreciate your time and interest in this survey!

If the user qualifies to take the actual survey, one the submit button is clicked a pop-up window of the GEAR | Survey (Year) should appear. **Figure 20** shows a sample template for the pop-up window of the GEAR survey.

The survey questionnaire will be based on the original survey that was conducted by the HIU in 2015. This questionnaire is available in **Appendix A** of this proposal.

The survey will contain free text and user input fields. The survey has a drag and drop option for specific fields and bars/buttons. The developer is to design a template for the survey which makes the survey as easy to use as possible with an interface that is graphically appealing and encouraging to complete the survey.

The survey also has checkbox options. When the user presses submit, certain data from the survey automatically updates the database. The only data that doesn't automatically update are those that are free text fields, which are the open-ended questions in the survey questionnaire, as opposed to multiple choice and set answer fields. The free text fields of the questionnaire will be sent to the backend where the **Academic Moderator** has to edit and approve the answer first before it is inputted into the actual front end of the database.

Additionally, there is to be a built in analytics tracker that allows admin to track survey stats in the backend.

The analytics tracker will have the demography of users presented in either a pie chart, bar graph or some other graphical representation, which will be the image shown for the demography stats of two categories that are in the front page. The data for the entire survey will also be available in the backend for the Academic Moderator in a CSV file. For the discussion on the exportable files in the backend, refer to **Section XI**.

The developer may use the following as references: http://codepedia.info/wp-content/uploads/2015/03/reorder_gridview1.gif (drag and drop sample); <https://us12.admin.mailchimp.com/campaigns/wizard/neapolitan?id=149133> (drag and drop sample) <https://github.com/mbostock/d3/wiki/Gallery> (user demography analytics tracker sample)

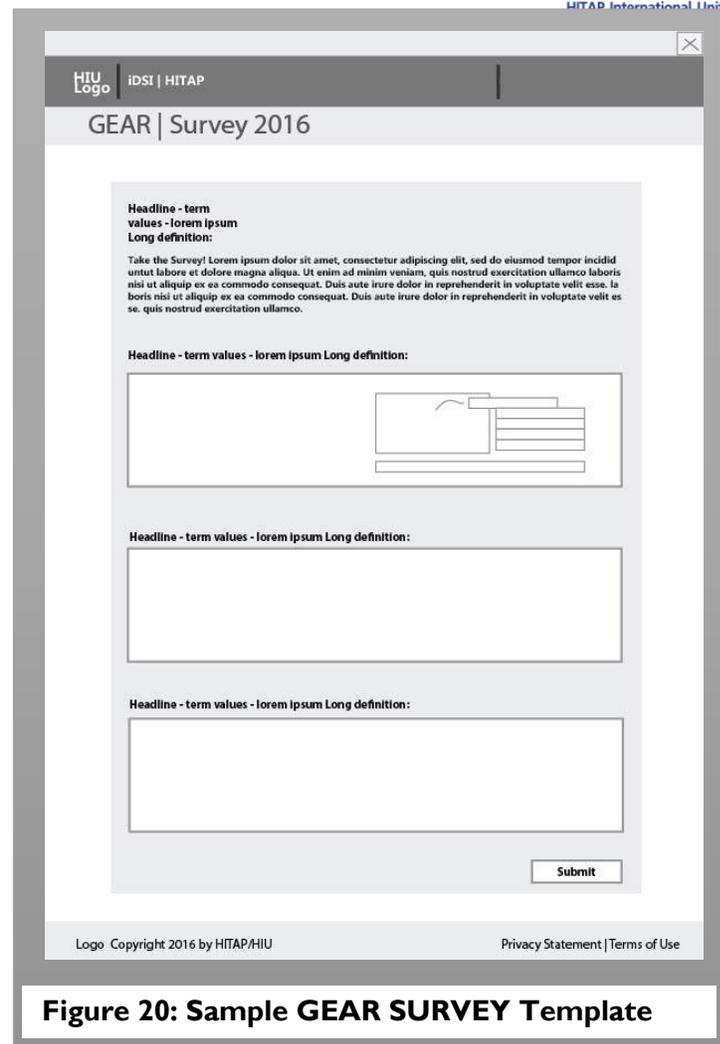


Figure 20: Sample GEAR SURVEY Template

X. DATA FLOW

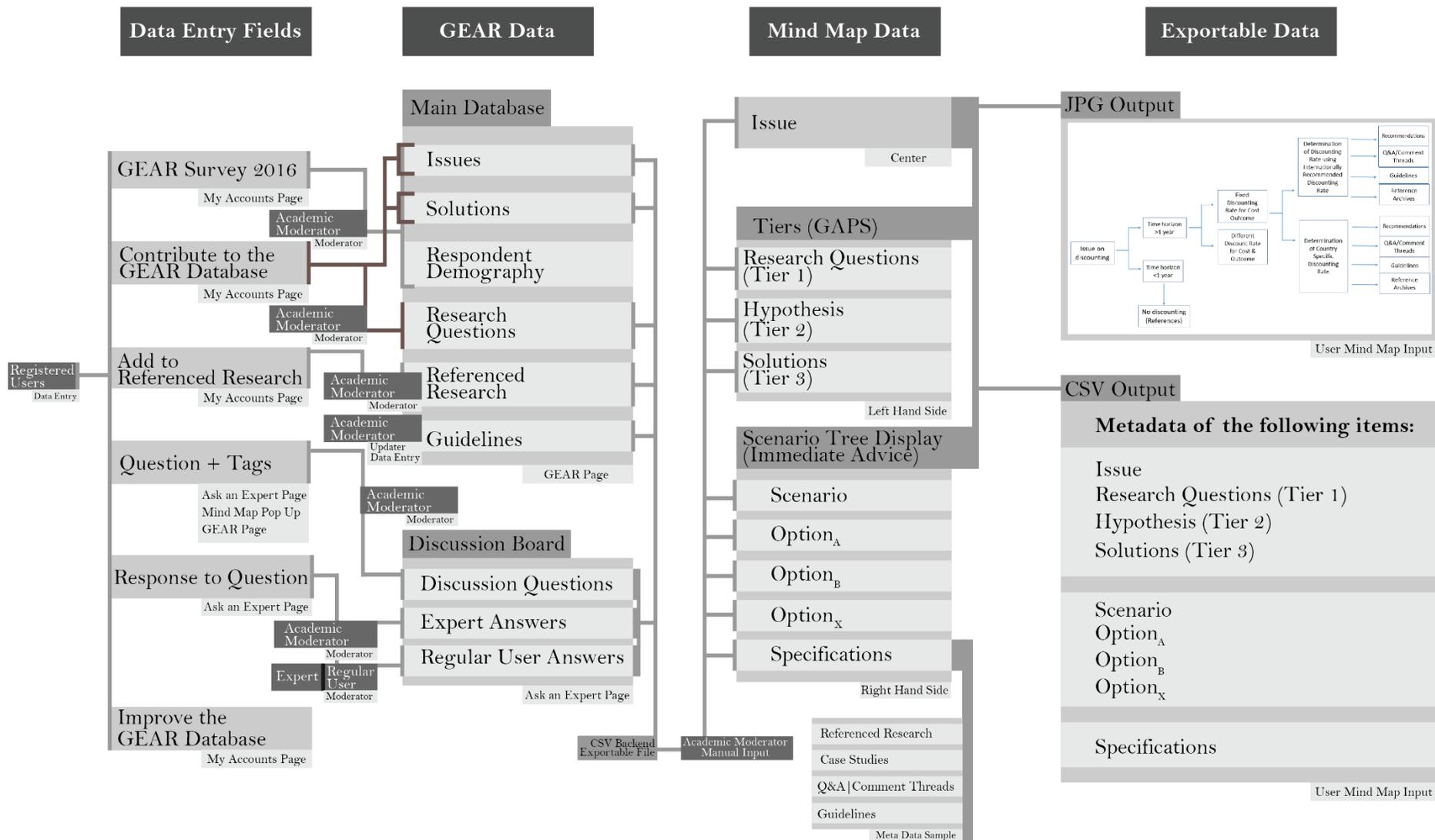


Figure 21: GEAR Data Flow Chart

This section of the proposal describes the projected data flow within GEAR. This section is aimed at aiding the developer in identifying which piece of data goes from one platform of GEAR to another and from which user the data comes from. **Figure 21** is an illustration of the GEAR Data Flow Chart. There are three users that will have a role in data entry, the Regular User, the Expert User and the Academic Moderator. The regular user and expert user only have access to the front end and will be able to utilize the functions described in the prior **Section VII**. The Academic Moderator's role in the data entry is to function as both the user entering the data for certain areas of the database and as a stop-gap measure or a Quality Management System (QMS) which ensures that all the data within GEAR is verifiable and high quality data, especially with regards to qualitative data. All of the Academic Moderator's access to both data entry and the data QMS, will be in the backend (see **Section XI** for backend requirements). The data entry fields that the moderator can access will include the following: user suggested additions to data under issues, solutions, research questions, hypothesis and referenced research as well as all the data within the Mind Map. Hence the backend should include these data entry functions for the Academic Moderator. The developer has to note that although the GEAR Data and the Mind Map data may be similar, the Mind Map is a **stand-alone**, i.e. all the data in the mind-map will be manually inputted by the academic moderator in the backend, feature of the website, unless the developer suggests a cost-effective manner with which the GEAR Data can be linked to the Mind Map data.

As illustrated in **Figure 21**, the following pages are data entry fields that can be filled by the regular users and the expert users: the GEAR Survey (Year) (My Accounts Page), Contribute to the GEAR Database (My Accounts Page), Add to Referenced Research (My Accounts Page), Question + Tags Fields (Ask an Expert; Mind Map; GEAR Page), Response to Question (Ask an Expert Page), and lastly the Improve the GEAR Database (My Accounts Page). The data entered into the GEAR Survey (Year) field in terms of their ranked issues should automatically update the database. The respondent demography should also automatically be updated in the database and is based on the background section of the survey. See original 2015 survey in **Appendix A**.

The data entered into the **Contribute to the GEAR Database** involves proposed issues, solutions, and hypothesis and research questions. This data is subject to the Academic Moderator's approval before it is published into the GEAR database. The data collected by the **Add to Referenced Research** feeds into the GEAR Referenced Research section and eventually to the metadata under specification classified as **Referenced Research**. This data is verified by the Academic Moderator in the backend. As mentioned in **Section IX | Login/Register | My Account** portion, the data inputted into the Add to Referenced Research section will likely take at least a month to verify. The data collected by the **Question + Tags** field feeds into the **Ask an Expert** page discussion board. Before this data is shown in the Ask an Expert page, it is first verified and classified by topic categories by the Academic Moderator in the backend. The verified and classified data is then what the academic moderator inputs into the metadata under the specification classified as **Q&A | Comment Threads**. The data shown in the metadata is not the actual Q & A Discussion Board that is shown in the Ask an Expert page but rather the link to the page. The **Response to Question** field is immediately published into the Ask an Expert pages. However, the responses are classified into those that were posted by users that have an Expert Account and those that were posted by users that have a Regular Account. The QMS for this platform is that all the users can click the **Report Abuse** button which sends an alert to both the Academic Moderator and the Site Administrator. For the subsequent processes regarding reporting abuse, see **Section XI** on the backend. The data collected by the **Improve the GEAR Database** field located in the My Accounts page will simply be collected in the backend. This data will be used for the future improvement of the database. This data should be exportable in pdf format collecting the name of the registered user, time and date that the contribution was sent in. When the user submits an improvement suggestion, they are to receive a notification thanking them regarding their submission and stating that their suggestion will be taken into consideration and may be incorporated in the next update of the database. The data for **GEAR Survey** and the **Contribute to the GEAR Database** should be available for the **Academic Moderator** to download in the backend. The data from the GEAR Survey will be in a CSV format titled GEAR (Year) Survey Respondent Report. The data from the Contribute to the GEAR Database will also be in a CSV format titled GEAR Contributions Report. The template for both reports are provided as a supplement to the TOR for this project.

XI. BACK END

The backend is to have several functions in its menu bar, tool bar and within the different buttons under both bars. The backend users will be classified under two categories, the Site Administrator and the Academic Moderator. All features are to be made available to the site administrator; however the academic moderator will be restricted only to some features of the backend. The following sections describe the features required out of the backend.

The backend must have the following in its tool bar:

- **Backend Link**
- **Items Awaiting Moderation –**
This tab should show the number of items of new piece of data that the moderator has to review
- **Reported User Abuse –**
*This tab should show the number of cases a user has clicked the report abuse button, it should lead the **registered user** section of the backend which should have a report the abuser's profile and the nature of abuse reported.*
- **New**
 - Administrator
 - Moderator
 - Expert
 - Media
 - Country
 - Support Partner
 - iDSI
 - HITAP | HIU
 - Message
 - Notification
 - New Page
- **Edit Profile –**
The user academic moderator should have the HIU Globe Logo in their Profile picture and have their username be (Academic Administrator), the site Administrator will also have the HIU Globe Logo in their profile picture and have the username GEAR Administrator. This information will be used in the emailing system of GEAR

The backend menu bar must have the following:

Main Menu Tab	Tabs/Feature in Menu Tab	Content Description
Dashboard	Google Analytics	The google analytics tool should report on the number of people visiting the website in total, including viewers and registered users, should include all the features that google analytics has to offer
	Registered User Analytics	This analytics tool should be able to summarize the total number of registered users – with a breakdown on age, sex, geography, affiliation, area of work – information that is included in the user profile; should also include information on the number of people answering the survey, number of people not answering the survey, etc.
	Items Up for Review	Should display the number of items up for review for the following: new responses to survey responses, contribute to the database, ask an expert, add to referenced research, user abuse notification and improve the database
Administrators Profile	All Profiles	Site Administrator can view all profiles and block, change backend user's profile status
	Add New	Site Administrators can add new admin and declare them to become Academic Moderator
	Your Profile	Standard profile; photo will be HIU Global Logo automatically and cannot be changed; even the developer's profile should have the HIU Global Logo
Academic Moderator Profile		Standard profile; photo will be HIU Global Logo automatically and cannot be changed
Registered Users	Regular Account	Contains the list of all regular account holders and all the information in the user's profile; has an option to send notification (which should open the Messaging System tab) to all users with a regular account; has an option to send mail (Messaging System) to a specific user when clicked (e.g. when giving invitation to become an expert, when giving warning for reported user abuse); has an option to block account. Blocking the account of a user will disable their access to the database. (should have

Main Menu Tab	Tabs/Feature in Menu Tab	Content Description
		the option to download all their information in CSV format – if cost-effective).
	Expert Account	Contains the list of all expert account holders and all the information in the user's profile; has the option to send mail notification (messaging system) to all expert account holders; has an option to send mail to a specific expert. Has the option to suspend expert account. The account holder's list should be exportable in CSV format as well.
Social Media		Will have the option to link to the following social media accounts: twitter, facebook and youtube.
Media	Add New +	This tab adds new media content.
	Library	This tab allows the user to see the media library.
Countries		This tab allows the user to input countries that are to become the option choices for the user profile.
Support Partners		This tab allows the user to add in support partners in the picture carousel found in the About Us page under the Support Partners section. The available fields will be to add a logo and to have the logo linked to their website.
iDSI		This tab allows the user to add in a photo linked to the picture in the carousel in the About Us page under the iDSI section. The user should be able to put a link with the picture to the relevant corresponding page with the photo. This is for promotion purposes.
HITAP HIU		The functions in the iDSI section should be applied in the HITAP HIU section in the same manner.
Messaging System	Notification	This tab should allow the user to send a notification to the GEAR Registered User account. It should have the option to send only to experts or to send only to regular users or to all users. Sending a notification mail should automatically send to their registered emails as well. This system will be utilized for sending notifications such as new updates to the survey, the database and others. The site should automatically send a welcome notification from the GEAR Administrator to newly registered users of the database.
	Messages	Some automatic messages include: confirmation to the registration, forget password / reset password / username (automatic when user clicks forget / reset password / username, notification that a specific user's question has been answered. Non-automatic messaging include: invitations to user to become experts – asking for their resume, sending warnings to users that are reported to have abused the Ask an Expert platform.
Pages	Home	Template
	About Us	Template
	Methods & Process	Template
	GEAR	Template
	Ask an Expert	Template
	Login/Register	Template
	My Account	Template
	Experts	Template
Methods & Process		Should have free text fields for the following: study design, literature review, survey questionnaire, study population and data analysis After data analysis, there should be an option to add another category, put the category name and then free text for the contents in that category
Data Tags		Name of tag, slug and description; search for tags – the list of tags associated with the data and expert should be available in all QMS fields

Main Menu Tab	Tabs/Feature in Menu Tab	Content Description
Experts List		Posts format – new post entails new expert that goes into the expert page and into the expert side bar. Experts will have the following fields: name, expertise, bio, and photo, choice to upload resume and data tags.
GEAR Survey		Should have the option to changes the questions and add questions to the GEAR survey – if possible; should have the option to collect report for the users that answered the survey, report format will be enclosed as a supplement to the project proposal.
Respondent Demography		This has all the reports on the demography of respondents. It should be available for the user to download the graphs. There should be a button for each graphical report as to which two reports will be shown in the front end.
GEAR	Issues	<p>QMS Tab Within the QMS Tab option there should be an area in the template that shows the new issues that are up for review and the associated tags to the new issues. The Academic Moderator can then modify or edit the issue proposed and classify it according to the classifications in the GEAR database.</p> <p>Current Data Tab Should contain all the data that is currently in the GEAR database classified under the issue section. Further classification such as whether it's context-specific or technical issue, etc. should be available.</p>
	Solutions	Should function in the same manner as the Issues tab.
	Hypothesis	Should function in the same manner as the Issues tab.
	Research Questions	Should function in the same manner as the Issues tab.
	Referenced Research	QMS – all new referenced research are to undergo the vetting process that could take up to a month, by the Academic Moderator. The academic moderator is to see the actual publication manually and if it is considered to be up to the standard, then the moderator has the option to publish it into the database the newly added referenced research.
	Guidelines	Data Entry Fields – Option to add heading then free text and put tags under each heading.
	Guideline Summary Comparisson	Data Entry Fields – Will be in free text and will have the headings outlined in the guidelines section, e.g. (HITAP, NICE, Drummond, etc.)
	Case Studies	Data Entry Fields – This section of the database is the one linked to the Mind Map specification metadata. The data in this section is added by the academic moderator and is actually data from the CEA Registry.
Ask an Expert	Notifications Sections	This section should show the new questions posted by users and the duration from when the question was posted to the current day. There is to be an alerting system for notifying the academic moderator that the question is near the 7 day mark from whence it was posted.
	Categorize Question Section	This section should have the tags associated to the question and the current categories in the Ask an Expert. This section is to have a mechanism with which the academic moderator can classify the new question into a specific category and then publish the question
	Send Question to Expert Button	After the question has been approved by the academic moderator, an email notification will be sent to all experts. However, the academic moderator must send a message that is ranked high importance to experts that specialize in the specific data. The moderator will be able to decide based on the tags revealed by the data and the tags under the expert's name.
	Expert List Section	This section should automatically show the list of experts that have the most common tags with the question at hand.
Improve GEAR		This section has the list of data entered into the Improve the Gear Database page. This data is simply free text and should be downloadable

Main Menu Tab	Tabs/Feature in Menu Tab	Content Description
		by pdf or word file – to have the user information in the heading of each piece of data.
Mind Map		Should have the option to input each piece of data that is inside the Mind Map. The developer is to suggest an option for UI & UX of the mind map backend. This part will be mainly used by the academic moderator.
Legal		Should have the option to add a link to the pages of the following which are under construction: Privacy policy; Copyrights of the website; Creative Commons of GEAR Data; Data Protection Policy

The access to features as well as the job description of both users explained in the following table:

Account Types	Job Description	Available Back End Features
Academic Moderator	The academic moderator controls the data that is entered into the GEAR Database. The moderator is the key QMS mechanism of the GEAR Database. In this sense, the moderator is restricted to certain parts of the backend.	<p>The Academic Moderator should be able to access the following features:</p> <ul style="list-style-type: none"> • Tool Bar New button – message and notification • Menu Bar <ul style="list-style-type: none"> ○ Dashboard – Registered User Analytics; Notifications ○ Moderator Profile ○ Registered Users – has all features with the exception of being able to block an account and suspend an account ○ Messaging System ○ Data Tags ○ Experts List ○ GEAR Survey ○ Respondent Demography ○ GEAR ○ Ask an Expert ○ Improve GEAR ○ Mind Map
GEAR Administrator	The GEAR Administrator oversees the stability of the entire GEAR Database. The administrator ensures that the database will run smoothly and efficiently, resolves bugs and potential crashes within the website, including ensuring that the Academic Moderator is fulfilling their duties. Potentially, two to three staff will have the GEAR Administrator account type.	All Features of the backend.

XII. GRAPHIC DESIGN SPECIFICATIONS

The graphic design of the website should be minimalist. The design should mostly be black and white, but if the designer must use colors the following are preferred:

Background Colors: Pantone 300 U; Pantone 297 U

Foreground Colors: Pantone 7627 U; Pantone 7417 U

XIII. EXPECTED TIMELINE

2016 Expected Timeline											
Activity	January	February	March	April	May	June	July	August	September	Oct - Dec	Priority Level
Planning	23 Jan										
Consultation iDSI & Finalize Plan	30 Jan										
Developers Meeting		6 Feb									
Finalize Developer			11 Mar								
Main Database Ask an Expert Development				15 April							High
Mind Map Development					30 May						High
Backend in relation to Main database & Mind Map						30 June					High
Home Page Development							6 July				Medium
My Accounts Page and Login Survey Page							27 July				Medium
Backend In relation to survey and QAM								1 Aug			Low
About Us								10 Aug			Low
Methods and Process Page								17 Aug			Low
Launch									September (week 1) Offline Launch!	Official launch 30 DEC!	HIGH
Checking Process									8 September		
Additions Process									22 September		
Legend:											
Activity For HITAP Personnel Activity for developer's personnel Activity for Partners and HITAP  This shading means that the developer and project leads have leeway to improve this feature post-deadline for the given months.											

XIV. APPENDIX A

GEAR SURVEY 2015

Introduction

This survey is a part of a Health Intervention and Technology Assessment Program (HITAP) project funded by the International Decision Support Initiative (iDSI) to support the conduct of economic evaluations in low- and middle-income countries (LMICs). The results will be used to determine those research gaps and issues that prevent the conduct and the use of economic evaluation evidence in policy decision-making. They will also help the prioritization of research topics for the better conduct of economic evaluations in LMICs.

Are you a current or former researcher or research assistant with experience conducting (individually or as part of a team) an economic evaluation in a low- and middle-income country (LMIC)?

- Yes
- No
- I have filled out this survey before

To ensure that we gather the best responses, this survey is anonymous and your responses will in no way be connected to you or your affiliations. As such, please indicate your consent to the use of your responses for the Research Methods Agenda analysis and future presentations, publications, and materials.

- Yes
- No

Background

This questionnaire will take no more than 15 minutes to answer. To begin, we would like to know more about you!

What is the highest level of education you have completed?

- Bachelors
- Post-graduate: Masters
- Post-graduate: Doctorate

Was economic evaluation a major part of your studies?

- Yes
- No

How many years have you been in the field of economic evaluation? Please write single numbers, e.g. 7.

What is your affiliation?

- Academic
- Public Health Institute
- Pharmaceutical Company

Other, please specify: _____

In which country do you currently reside? (Dropdown) _____

In which areas do you work? Please note that this geographical grouping is based on the WHO regions.

- Southeast Asia** (Bangladesh, Bhutan, Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste)
- Africa** (Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Swaziland, Togo, Uganda, Tanzania, Zambia, Zimbabwe)
- Americas** (Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, USA, Uruguay, Venezuela)
- Europe** (Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan)
- East Mediterranean** (Afghanistan, Bahrain, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen)
- West Pacific** (Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Korea, Samoa, Singapore, Solomon Islands, Tonga, Tuvalu, Vanuatu, Vietnam, Taiwan, Hong Kong)

Would you like to be informed of these results?

- Yes
- No

If you answered yes to the question 9, please provide your email address and we will send you the results of this study. Thank you.

Thank you for giving us your information.

The lists we outline in the next two pages are taken from HITAP's review of economic evaluation studies

conducted in LMICs of a randomly selected sample of papers taken from the University of York's Center for Review and Dissemination and triangulated with a review of literature and expert opinion.

Part 1: Technical Issues

Please answer the following questions regarding the methodology for economic evaluations.

The following are commonly met technical weaknesses that can hamper the quality and the use of economic evaluations in LMICs.

Issues	
A	Poor Reporting, e.g. <ul style="list-style-type: none"> • Perspective of analysis not stated • Lack of details of the target population or sub-populations relating to the interventions being evaluated • Lack of detail on the methods used to derive the measure of benefit • Lack of details to enable checking of data sources for benefits / effectiveness • Lack of details to enable checking of data sources for costs • No details of the price year used as the basis of the cost analysis • Methodology not presented in a clear and reproducible manner
B	A lack of commonly accepted standards for economic evaluation that's relevant to the LMIC for which the analysis is undertaken
Benefits / Effectiveness	
C	Lack of high quality local clinical data, where such data are critical to the decision
D	Clinical data not based on systematic review; or primary clinical data not compared with similar studies done elsewhere
E	Absence of locally-relevant health state preference data suitable for estimating QALYs or DALYs
Costs	
F	Insufficient data to conduct study from chosen perspective
G	Uncritical use of charges for cost data
Analysis	
H	Inappropriate choice of comparator (s)
I	Time horizon too short to capture relevant costs and health effects
J	All impacts implied by the chosen perspective not investigated
K	Unexplained differences in discount rates; or the discount rate used does not reflect reality in the local context
L	No incremental analysis
M	No, or inappropriate, sensitivity analysis
N	No budget constraints or thresholds considered
O	Equity and/or gender implications not considered
P	Generalizability not discussed

If there are any additional technical issues that present a challenge to the quality and use of economic evaluation in LMICs, please add the one that you consider the most relevant to the box below.

Q _____

From the list above (A-P or Q, including any issues you suggest), please choose 3 issues that you consider most important and rank them accordingly. Write the letter (A-R) corresponding to the issue you would like to highlight in the space provided below.

Most Important (1) _____
 Second Most Important (2) _____
 Third Most Important (3) _____

Please suggest potential solutions, tools, guidelines, materials, or other ways forward. You may suggest solutions specific to each of the issues you ranked or general solutions.

Part 2: Context-Specific Issues

What other non-technical contextual factors affect the effective application and use of economic evaluation in LMICs?

	Issues
A	Economic evaluations not included as a part of the decision-making process
B	Lack of funding for the necessary research
C	Limited local capacity to conduct or contextualize research
D	Absence of local journal with a high quality reviewing processes
E	Misunderstandings and communications weaknesses between researchers, academia and end users of the evidence

If there are any additional context-specific issues that present a challenge to the use of economic evaluation in LMICs, please add the one that you consider the most relevant to the box below.

F _____

From the list above (A-E or F, including any issues you suggest), please choose the most important issue and write the letter (A-F) in the space below.

Most Important (1) _____

Part 3: Additional Information

Broadly speaking, which of the two types of issues, technical and context-specific, do you consider to be the bigger impediment to better quality economic evaluation in LMICs?

- Technical Issues
- Context-specific Issue

To our knowledge, there is another ongoing project with a similar aim to that of this survey but placed in another context. The project is “Research Agenda for Health Economic Evaluation (RAHEE),” with the focus in Europe. If you have ever come across other projects with similar objectives to this study, please let us know below.

Do you have any suggestion for the improvement of the questionnaire? Please specify which part of the survey was difficult to understand, unclear, or needs revision, and in what way(s).

Thank you for taking our survey!