

Working Paper

Underpin the Procedure of SWOT-guided Theme Development from the Qualitative Data Analysis into Framework

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1.0 Introduction

This working paper is part of the project "Development of a framework for implementing the Sustainable Development Goals on a local level - Phase II." The project aims to examine and reimagine the role of Institutions of Higher Learning (IHL) in assisting local communities in implementing the Sustainable Development Goals (SDGs). This project captures the reflective and concurrent practices of those working in IHL to collaborate and engage with local communities for sustainable development. This is a collaborative effort between six universities: the University of the Philippines Diliman, the TERI University in India, the Universitas Gadjah Mada in Indonesia, the Universiti Sains Malaysia in Malaysia, the Keio University in Japan, and the Chulalongkorn University in Thailand. The project is coordinated by Chulalongkorn University and sponsored by ProsPER.Net. USM is represented in this initiative via the Regional Centre of Expertise on Education for Sustainable Development in Penang (RCE Penang), USM.

Since 2005, USM has hosted a Regional Centre of Expertise on Education for Sustainable Development in Penang (RCE Penang), which was recognised as one of seven founding RCEs by the United Nations University-Institute of Advanced Studies (UNU-IAS) Tokyo. This network of established formal, non-formal, and informal education organisations came together to provide education for sustainable development (ESD) to local and regional populations. The RCE Penang is part of a global network of RCEs dedicated to achieving the United Nations Decade of Education for Sustainable Development (DESD) goals by translating them into the context of local communities. RCE Penang partners with key stakeholders to effect change that promotes

community sustainability. The network brings together partners from the voluntary, public, educational, and corporate sectors to create and implement innovative environmental sustainability projects and programmes in Penang.

2.0 Methodology

The research is conducted by administering questionnaires to respondents, conducting interviews, and conducting focus group discussions. The questionnaires were emailed to coordinators or staff members at each institution who are responsible for community engagement projects in ten (10) public IHL in Malaysia. The study used a snowball sampling technique to choose respondents from repository data. The survey was distributed via email during the Covid-19 pandemic's onset and statewide lockdown. To avoid breaching the social distancing regulations, the focus group discussion and interviews were conducted remotely to facilitate data collection. Thirty-three respondents were contacted through email for this study, which ran from March to June 2021. Apart from safeguarding the session remotely, questioning people during a global pandemic requires consideration of the numerous ways the new norm may impact everyone's health and mental wellness, implying the research's validity. As a result, the data collection procedure was handled with sensitivity and the narratives about the pandemic's impact on the project may provide a far more complete picture on the project coordinators' resiliently facing the health crisis.

3.0 Data Analysis

Both methods of data collection are SWOT-focused analysis. The interview focuses on the concurrent and retrospectives individual narratives of the projects. Another critical point is the language of data collection which is in the Malay/English language. The data is then reviewed and mapped in English for peer-reviewing. Flexibility to respond to the questionnaire either in English or Malays in the Malaysian context eases the data collection. The narratives of the situational issue of the projects are better perceived during the interview compared to the questionnaire. The respondents refer to their project as 'successful' as they face the challenges and adapt/adopt whereabouts. Respondents reflected that their project meets their targeted goal as in the proposal either the project progressed as proposed, deferred in the timeline or adjusted according to the current situations.



SWOT definitions vary depending on how individuals understand them. In theory, SWOTs are used as input to create possible strategies and however, categorizing variables into one of the four SWOT quadrants is challenging. The same factor can sometimes be fitted in two categories. A factor or variables can be perceived as a strength and a weakness at the same time. In addition, strengths that

are not maintained may become weaknesses. Opportunities not taken, become threats at several instances. The classification of a variable also depends on the purpose of the projects

By sharing the specific intra-cases among the peers from the same institutions, we are able to have the common understanding of the variables in the respective quadrant of SWOT-analysis and framed in the community engagement projects in IHL. In the same time, we also acknowledge the importance of bringing the findings into discussion among our peers from partners institutions periodically and concordiantially. As such, we are able to consolidate the inter-cases SWOTs for better learn from each other.

SWOT-analysis begins with coding the identified variable as the current strengths, weaknesses, opportunities, and threats.

In a few approaches in defining the SWOT, there seems to be a universal understanding on SWOT referring to a current or past action/project. As for the potential project in future, a re-occurring project, or reflection on how to make it better, we must acknowledge that the prospective and projection is non-evidential. Therefore, the definition of SWOT in the context of this study is critical. The definition is thoroughly proposed by discourse of expert discussion among the researchers of partnering institution. The Table 1 below is the definition of SWOT used in this project analysis.

Table 1: Definition of SWOT in this study

Term	Definition	Operational Definition
Strength	<p>Internal/present or existing</p> <ul style="list-style-type: none"> Strengths are factors, elements and/or aspects that are supporting or enabling the project/activity for increasing community engagement and addressing the SDGs at the local level. They include, but are not limited to, funding, innovation, addressing community needs, policy, dedicated human resources, capacity-building, resource materials, diverse stakeholders, etc. 	<p>Internal/present or existing</p> <ul style="list-style-type: none"> Any aspect from the Higher Education Institution that is perceived by the respondent as helping the institution achieve its targeted goal of the current and past projects. The aspect could refer to measurable terms (ie: fund, facilities, number of staff), or non-measurable support (ie: culture, reputation, trust, networks,) that the respondent experienced when he/she started to be in the project (refers to the point of entry).
Weakness	<p>Internal/present or existing</p> <ul style="list-style-type: none"> Weaknesses are factors, elements and/or aspects that are limiting the project/activity's community engagement for addressing the SDGs at the local level. What does the researcher/institution want to improve if she/he/they were to do the project/activity again? 	<p>Internal/present or existing</p> <ul style="list-style-type: none"> Any aspect from the Higher Education Institution that is perceived by the respondent as hindering the institution in achieving its targeted goal of the current and past projects. The aspect could refer to measurable terms (ie: fund, facilities, number of staff), or non-measurable support (ie: culture, reputation, trust, networks,) that the respondent experienced when he/she started to be in the project (refers to the point of entry).
Opportunity	<p>External/future</p> <ul style="list-style-type: none"> Opportunities are factors, elements and/or aspects that can be utilized or mobilized to strengthen the project/activity in the future. 	<p>External/future</p> <ul style="list-style-type: none"> Any aspect from the Community and environment that is perceived by the respondent as helping the institution achieve its targeted goal of the current and past projects.

	<ul style="list-style-type: none"> • How will the researcher/institution do things differently in the future or in the next project? • What else can help increase community engagement? Are there any trends, resources, or emerging aspects that can strengthen the project / activity's community engagement? 	<ul style="list-style-type: none"> • The aspect could refer to measurable terms (ie: external fund, dedicated officer, database), or non-measurable support (ie: culture, location, local leaders) that the respondent experienced when he/she started to be in the project (refers to the point of entry).
Threat	<p style="text-align: center;">External/future</p> <ul style="list-style-type: none"> • Threats are factors, elements and/or aspects that can undermine the project/activity's sustainability in the future. • What can undermine the projects or institution's future community engagement? • They include, but are not limited to, competition among the university researchers, focus on academic achievement over community service/action, government budget, political changes, institutional priorities, bureaucracy, etc. 	<p style="text-align: center;">External/future</p> <ul style="list-style-type: none"> • Any aspect from the Community and environment that is perceived by the respondent as hindering the institution in achieving its targeted goal of the current and past projects. • The aspect could refer to measurable terms (i.e.: technical difficulties, location), or non-measurable support (i.e.: non-responsive to email, bureaucracy, dialects) that the respondent experienced when he/she started to be in the project (refers to the point of entry).

4.0 Procedure for data analysis

Given the definition serve as an important guide for analysis, the procedure of data analysis was adapted from Vaismoradi, et al., (2016) to systematically capture the emerging themes from this study. There are four phases of themes development which include: initialisation, construction, rectification, and finalisation.

4.1 Initialisation

Materials for data analysis consist of the filled survey form, interview transcript and discussion points (textual format). Through reading and rereading transcripts and textual responds, the researchers reach an overall understanding of data and the main issues in the phenomenon under study. This understanding prepares the researchers to focus on the most important constructs recognised and presented data of Strength, Weakness, Opportunity, and Threat in each project.

4.1.1 Reading transcriptions and highlighting meaning units

The meaning units refers as the variables that extracted through careful reading of transcripts, and listing meaningful, recurrent ideas and key issues in data. Recurring items of interest such as events or comments that are unusual, noteworthy, or contradictory from researchers' perspectives are highlighted. Next, the researchers look for ideas in the data to recognize explicit and implicit ideas in the transcription based on our own judgement. Remaining close and focused on the data and considering possible meanings and how the ideas are fitted together provide clues for theme development.

4.1.2 Coding and looking for abstractions in participants' accounts

Coding as the process of data reduction is an element of data organization. The data were coded as 'strength' if the data was about the advantage that the institution provide and 'weakness' if the data was about the challenges regarding the institution. Meanwhile, the data was coded as 'opportunity' if it were about the positive factor regarding the community/environment that the researcher engage with and 'threat' if it was about the challenges regarding the community/environment. The codes and classification not only help in organizing codes, but also enables detailed comparison and classification prior to the subsequent analytical steps.

4.2 Construction

The researchers organize the codes and compare them in term of similarities and differences to assign a place to each cluster of codes in relation to the research question. Then, researchers examine the diversities between codes in terms of meaning. A label is assigned to each

cluster covering similar codes. The definition, translation and description of the label are cornerstones by which the level of abstraction of data analysis is improved and theme is created. This phase consists of five stages: “classifying”, “comparing”, “labelling”, “translating and transliterating” and “defining and describing”.

4.2.1 Classify

The codes were organized by giving a common meaning to a group of codes with various features. According to the principle of mutual exclusiveness, if a code has attributes of more than one classification group, it is assigned only to one that best fits.

For instance, even though a project might receive specific grant, however the project might also suffer the inadequate of staff and need to call for volunteership. Therefore, even though the project coded as ‘strength: funded’ and ‘weakness: not enough staff’ and ‘opportunity: volunteers’, however we organized the codes to explicit the underlying issue is actually the “weakness: inadequate funding’. Thus, the codes refer to the snapshot of individual meaning units or variables.

4.2.2 Comparing

The researchers revise codes, detect negative cases, and connect codes together to delineate themes. When a group of codes are repeated in a patterned way and in multiple situations, they have potential to become a theme. Comparison has the capacity to reveal the link between codes and nominate themes using collective intellectual judgment. Testing propositions and asking questions of similarities and differences between codes enable the detection of theme. The more the same code occurs in a text, the more likely it can be a theme, but the constitution of a theme through the frequency of repetitions must be decided by our collective judgment. In this step, we discussed among our peers the meaning of the codes to delineates the individual biases. While the importance of a theme can be influenced by its level of frequency throughout data, it should rather capture something important in relation to the overall research question. As we portrays in the previous example, we found that the ‘lack of funding’ are also grounded in the policy of the funding

agency or leaderships. Means that as we tried to understand the variables, we could assemble into a fragment of much grouped codes named as sub-theme.

4.2.3 Labelling

“Label” as a conceptual word captures something important about what is presented by the participant. As an easily understood word or phrase, label is taken from the content of the transcript. We sort codes into piles of similar meaning and find labels that give sense of the main ideas developing from them. As we went through the sub-themes of each case, we listed all of them according to similar attributes. In this study the SWOT quadrant and its definition serve as an important attribute. Hence, by doing this cases-by-cases, finally the emerging sub-themes is group and labelled. The labelling process is dynamic and changed over time as we need to find the best-fit term to address the emerging themes. The SWOT analysis from one of the individual projects is shown in Table 2.

Table 2: SWOT Analysis from an Individual Project

Strength	Opportunity
<ol style="list-style-type: none"> 1. Fund, policy and organizational support serve as firm ground 2. Existing collaboration and rapport from other project of similar community 3. Shared understanding of the issue to be address 4. Design of webinar-feedback form/technical adaptation 5. Expertise consultation on the project deliveries 	<ol style="list-style-type: none"> 1. Strengthen the existing collaboration 2. Creativity by using new presentation technology 3. Open for communication technology advancement
Weakness	Thread
<ol style="list-style-type: none"> 1. Miss communication and misunderstanding with new form of communication 2. Uncertainty in crisis- responding duration and shift to the original norms 3. Misinformation led to cost- time, capital 4. Favouritism in funding award 	<ol style="list-style-type: none"> 1. Adapting to new form of communication during pandemic posed challenges with the older generation 2. Copyright issue of new mode of presentation 3. Disrupt routine of officials 4. Limited physical interaction with the villagers 5. New model of copyright and patents

4.3 Rectification

In this phase, to reappraise the analysis process and “distance” themselves from the data for a period to increase their sensitivity and reduce any premature and incomplete data analysis. This phase also may be termed “verification” as the process of checking and confirming, ensures a relative certainty about developed themes. The verification process illuminates some obscured aspects of data analysis during the transformation of data to themes.

4.3.1. Immersion and distancing

The researchers revisit the data periodically, to have a new perspective of the same data and give evidence of confirmability of theme. At this step, we conducted the inter-cases analysis. Each project was uniquely coded to emphasize the overall SWOT of the project have and might share with other projects.

4.3.2 Relating themes to established knowledge

It is believed that a priori theorising may affect researchers’ ability to innovatively develop theme. However, the benefits of a literature review can outweigh threats to the inductive theme development as it allows researchers to make inferences from data beyond what has been made. Once theme is developed and the literature is studied, researchers can claim that they are ready to formulate theme statements, link themes into theoretical models to develop the study’s story line. At this stage, we able to visualize the emerging themes from the quadrant table into a framework.

4.3.3 Stabilising

Connecting themes and subthemes. Subthemes unlike themes consist of summaries and examples drawn from participants’ accounts related to elements that build themes. The meaning of themes and the quality of their saturation can be found in subthemes.

4.4 Finalisation

In this last phase of theme development, a narration developed by researchers as a written commentary describes and connects various themes and answers the study question. However, in

this study the fine version of emerging themes was linked is presented as a visual representation and description. Then, the themes and subthemes related to their precedential relationships; using the arrow to develop the meaning of the data. At this stage, we try to be creative to carefully visualize the complex interaction among all the factors and variable which we garner from the raw data.

Scrutinized each code, subthemes, themes and labels in finalisation step is quite challenging. We must address that each project is unique as each variable might become the strength/weakness and opportunity/threat, simultaneously. As the research progressed, we found the dynamics of each projects need to be treasured in the final report. The procedure of data analysis from the raw data until the framework formation could be simplified as showed in Table 3.

Table3: Summary of Data Analysis Procedure

Steps	Action	Output
1. Initialization	<ul style="list-style-type: none"> i. Reading text to understand the overall ideas. ii. List out all the variable/meaning units into codes. iii. Predefine the definition of SWOT through peer discussion 	<ul style="list-style-type: none"> i. List of codes. ii. Definition of SWOT and quadrant template.
2. Construction	<ul style="list-style-type: none"> i. Arrange codes to establish the label for the subthemes and themes. ii. Intra-case analysis to consolidate the different themes to be filled in the quadrant. iii. Revisit the definition to establish shared understanding in the used to define SWOT. 	<ul style="list-style-type: none"> i. Individual quadrant. ii. Baseline SWOT definition.
3. Rectify	<ul style="list-style-type: none"> i. Inter-cases analysis ii. Form a composite quadrant. iii. Establish the links between the label from inter-cases analysis. iv. Peer discussion of the inter case analysis. 	<ul style="list-style-type: none"> i. Composite quadrant.
4. Finalization	<ul style="list-style-type: none"> i. Form a visual representation of framework and supportive narrative 	<ul style="list-style-type: none"> i. Visual representation of linked labels.

Step-by-step of SWOT-guided theme development from the qualitative data analysis into framework modified from Vaismoradi, et al., (2016)

5.0 Discussion

Peer discussion and verification could help to eliminate researcher biases. While the guidance is based on our own experiences and may be useful for another research, we also recognise that it is highly subjective. The SWOT analysis has long been known to provide insight into project appraisal; nevertheless, a deeper dive into the typological quadrant into a visual framework is necessary to reconsider the dynamics of the community engagement project. The process of theme development guided by SWOT can also lead to a lot of structured discussion and debate, which rigor in qualitative research. There are differences in theme development that have resulted in different levels of abstraction in data analysis products, which could lead to inconsistencies in evidence-based practice. We have proposed a realistic and step-by-step technique of theme formation based on our own qualitative analysis experiences, which has the potential to assist researchers and enable a better understanding of how themes are generated. Some of the advantages of using our suggested method of theme development in this paper include considering both objective and subjective aspects of the project context in the process of theme development, encouraging researchers to apply creativity in the process of theme development, going through the ladder of the abstraction process step by step, and making a connection between developing themes and current knowledge. The proposed method can be used to decrease ambiguities, increase data analysis quality and rigor, and bring some agreement across researchers on how to gauge the quality of the theme development process. Furthermore, because qualitative research findings provide a deeper understanding of the complexities of human experiences with community projects at the implementation level, the method of theme development proposed in this paper can be a useful tool for informing practical development and advancing the consolidation of results to form well-grounded community-based interventions.

6.0 Conclusion

In conclusion, the methods used, the SWOT analysis and step by step data analysis approach has provided encouraging results from the raw data until the framework formation and finally fulfill the objective of the study as stated in this working paper.