CLIMATE CHANGE COMMUNICATION AND THE USE OF FACEBOOK BY NON-GOVERNMENTAL ORGANISATIONS: A CASE STUDY IN MALAYSIA

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Abstract: Climate change is of global concern as it affects all aspects of human society. Climate change communication is, therefore, the purview of many stakeholders, including organisations in the non-profit sector. This study seeks to examine climate change communication efforts by Malaysian environmental non-governmental organisation (ENGO) EcoKnights® in fostering patterns of pro-environmental behaviours among local communities. The study specifically described the strategic use of social media platforms such as Facebook to communicate content designed to foster sustainable behaviours. Content analysis and expert interviews revealed that this ENGO primarily utilises Facebook for relaying information to target audiences. The results are consistent with prior research of climate change communication on social media in different socio-cultural contexts and, furthermore, they provided descriptions on the level of public engagement with the contents published on Facebook. User engagement was greater for information or action-oriented posts, compared to posts that primarily functioned for community-building. Posts promoting an organisational event, for example, elicited a large number of likes, comments and shares compared to posts giving recognition and thanks to stakeholders for their work at EcoKnights®. A clear picture of the actual influence of contemporary social media use by ENGOs in Malaysia on public behavioural patterns is, therefore, possible with future research that build upon the descriptions provided here.

Keywords: Climate change communication, social marketing, sustainable behaviours, user engagement.
Abbreviations: ENGOs - Environmental non-governmental organisations.

Introduction

Climate change is considered by scholars and intellectuals as one of the most challenging problems in the 21st century (Rogelj *et al*., 2016). Apart from national and international policies to combat the destructive phenomenon, there is need for a community-scale social change that includes adoption of sustainable and pro-environmental behavioural practices. An impediment to such change can be the lack of awareness and concern by average citizens of the problem and its consequences. A major study in 2015 that analysed the level of awareness of climate change among populations in 119 countries found that only 50 % to 75 % of the Malaysian population was aware of the issue (Lee *et al*., 2015). Even when level of awareness

is high in certain segments, the value systems that are sceptical and opposition to behavioural intervention remain an obstacle to overcome the problem (Price *et al*., 2014). It is here where civil society plays a key role. The principles of democratic civic engagement can be important in building the required social capital for the changes prescribed by experts with knowledge on mitigating and adapting to climate changes (Brulle, 2010).

Within this context, communicating climate change related issues to the public is an important endeavour for concerned stakeholders, including organisations in the non-profit sector, which are perhaps the most active at the community level. Communication efforts as part of social awareness and action campaigns

should be based on the most effective climate change communication frameworks that suit the socio-cultural contexts of different countries (Kahan, 2010; Corner & Groves, 2014). Research in climate change communication has grown significantly in the last 10 to 15 years (Moser, 2016). Broadly, five major perspectives can be seen in literature: research into public understanding of climate change, research into the role of mass media in climate change, research into strategic communication of climate change (Schäfer, 2012), research into the effects of communicating climate change, and conceptual articles on climate change communication (Ballantyne, 2016).

While a certain number of articles can be categorized according to one of the above perspectives, majority studies usually involved a few perspectives. In Malaysia, the climate change communication landscape, including efforts of organisations in the non-profit sector, is little explored. Saleh *et al.*, (2018) noted that the semi-democratic nature of Malaysian society means significant constraints may exist on environmental non-governmental organisations (ENGOs) to freely communicate through mainstream media. New media platforms can, therefore, be an important avenue for the communication efforts of ENGOs in the country. In line with this, there is some research involving interviews of communication experts from organisations under the Malaysian Environmental NGO (MENGO) alliance, for example, to describe their use of various media (Nasir & Ahmad, 2013). However, a recent meta-analysis revealed that Southeast Asia accounts for only 4.4 % of the academic literature exploring climate change representations in the media (Schäfer & Schlichting, 2014). This meta-analysis also found that print media remains a major focus of many studies, highlighting the need for research in Malaysia that explores the use of new media platforms and their role in communication efforts and advocacy of ENGOs to promote sustainable behavioural patterns.

ENGOs such as Greenpeace have long been communicating climate change-related issues and advocating for change around the world. As a result, these organisations can be legitimate advocates for sustainable and pro-environmental policy outside mainstream establishment structures, communicating outside official state channels and challenging the spatial scales of power that lock environmental decision-making within national bureaucracies (Nulman & Özkula, 2016). From already existing typologies regarding the practices of non-profit organisations, Nulman & Özkula (2016) have identified five ways through which ENGOs applied the tools at their disposal: direct communication, information broadcasting, media attention, appeal to action and reinforcement. Though these are broadly distinct functions, they are not mutually exclusive, and most ENGOs will engage in more than one type of effort. More broadly, the contribution of ENGOs can largely be a direct result of their organisational size, availability of resources and geographical context (Nulman & Özkula, 2016). Surveys conducted in the early years of social media revealed that experts at ENGOs would prefer a significant presence on new media platforms (Spitzberg *et al.*, 2006). However, research has shown that the adoption of new media strategies can be slow in organisations that have been around for years, where traditional models of NGO activism and communication strategies may be preferred (Waters *et al.*, 2009). For certain appeals to action or lobbying policymakers, for example, communication experts at smaller organisations may prefer person-to-person (non-digital) communication or one-directional digital communications (such as email), which can also be less resource intensive (Hestres, 2015).

Research that explored social media use by non-profit organisations has traditionally focused on the organisational side of social media networks, for example, examining the fluctuations in the number of followers of organisational profiles (Smith, 2018). As a result, user engagement with the content published by non-profit organisations has been less thoroughly explored. This can be due to the difficulties in message level analysis on

Facebook or Twitter with respect to cost and resources. Also, it has become apparent that the level of public engagement with online content is varied across different socio-cultural contexts and heavily dependent on already-held conceptions on the topic at hand.

Research has revealed that a vast majority of communications that take place online and in social media platforms occured between individuals who are not part of the scientific community, or those who can be labelled as "experts in the field" (Haider, 2016). As a result, the online discourse on climate change has failed to mature with obvious results in, for example, efforts to address the patterns of unsustainable consumption in energy production. Furthermore, assumptions on the levels of engagement have most often been based on inferences from surveys of individuals sampled as regular users of social media (Smith, 2018). Surveys, however, cannot capture the complex relationship between the contents published on social media and user engagement, which is short-lived and constantly evolving based on the latest viral trends. Therefore, studies involving measurements of user engagement may go beyond analysis of profile pages by assessing unique social media functions such as the "like", "comment" and "share" features of Facebook. These data points can then be used to make inferences on the level of dialogue or participation on behalf of the work advocated for by ENGOs and their goals of meaningful social change, respectively (DiStaso *et al.*, 2011).

Considering the above discussion, the focus of this study lies at the crossroads of NGO advocacy and strategic communication using new information and communication technology (ICT). The study seeks to describe the communication strategies, including the use of Facebook, by EcoKnights® in fostering pro-environmental and sustainable behaviours amongst the public. Organisations that are part of the Malaysian environmental NGO (MENGO) alliance (https://www.mengo.org) include Water Watch Penang, Biji-Biji Initiative (https://www.biji-biji.com/) and the Malaysian Nature Society

(https://www.mns.my/). EcoKnights® serves a leading role and has been the headquarters of MENGO for a brief period. Along with the diversity of events, programs and experiences by EcoKnights®, including the benefit of interviewing the founder, this organisation's choice for this study is justified. Using social marketing theory, the study asks the following questions:

RQ1: What are the specific functions of the posts that EcoKnights® publishes on Facebook?

RQ2: What is the level of public engagement on Facebook to the content published by EcoKnights®?

RQ3: What are the challenges faced by EcoKnights® in undertaking their work?

RQ4: What is the overall efficacy of the communication strategies of EcoKnights®?

Theoretical Framework

The social marketing framework is used to discuss the findings of this study and to finalise coding categories for the information-community-action classification scheme of social media content according to Lovejoy & Saxton (2012). Though several definitions are used, social marketing can broadly be referred to as the application of commercial marketing concepts and techniques in achieving specific behavioural changes for the good of a society. Social marketing first emerged in the 1970s and the techniques had since been applied to a wide range of campaigns to improve public health, prevent injuries and contribute positively to communities (Gordon *et al.*, 2006). Empirical evidence from such efforts has shown that strategies involving social marketing may be beneficial to stakeholders seeking to alter specific behaviours for the benefit of the environment like discouraging the use of plastic packaging (Peattie & Peattie, 2009).

Social marketing relies on communication strategies and marketing principles that considered various factors, including the levels of awareness to a given subject matter, in order

to alter individuals behaviours. Social marketing experts identify roughly four types of behaviours they wish to influence their target audience into doing: accept a new behaviour, reject a potentially harmful behaviour, modify a current behaviour or abandon an already practiced behaviour (Andreasen, 2003). Social marketing professionals also seek to target individuals within communities who hold positions of power, focusing on creating the most meaningful impact. Motivating such individuals of the merits of behavioural change can lead to policy prescriptions that reduce barriers for individuals within their circle of influence. Many social marketing professionals agree to this approach that broadly targets social networks that include politicians, community activists, law enforcement individuals, judges and foundation officials, amongst others, in achieving more long-term social change (Bostrom *et al.*, 2013).

Social marketing is often related to commercial sector marketing and they are similar in some ways but also differed in various respects. This comparison is perhaps the best way in understanding the social marketing framework. In terms of similarity, both approaches recognize that public orientation is critical and that there is the need to identify and position their offering relative to the competition. Also, exchange theory is fundamental in both approaches, where the target audience must perceive a greater benefit in adopting change (Andreasen, 2003). For the social marketing framework, this means identifying everyday behaviours for which alternatives can be communicated as easy-to-adopt and necessary for societal wellbeing. However, this is a major reason for why social marketing, generally, is a more difficult undertaking than commercial marketing when targeting behaviours are related to the environment and climate change (Corner & Randall, 2011). An example of this difficulty is reflected in the fact that campaigns for brands of commonly purchased grocery items are much more prevalent than campaigns designed to convince individuals to bag groceries using non-plastic or recyclable materials.

Where the two differed fundamentally is that in commercial sector marketing, the competition is defined as any organisation offering similar goods and services or one that satisfies a similar need. In social marketing, the competition is defined as the current set of behaviours of the target audience that the campaign is being developed to alter. Also, commercial sector marketing fundamentally focuses on financial gain, whereas social marketing seeks societal gains, and so, the methods used to select target audiences are different. Commercial sector marketing strategies seek to target audiences that will deliver on the highest volume of sales of a certain product or use of a certain service. In social marketing, audiences most ready to accept behavioural change are of focus to experts in the field (Bostrom *et al.*, 2013). Some methods, including survey and demographic data collection, can be used in both. However, research in social marketing includes techniques that allow for a better understanding of the barriers to adoption of new behavioural practices, for example, focus group interviews (Andreasen, 2003). There are some experts who argue these fundamental differences mean social marketing has, in fact, become a distinct framework from commercial sector marketing and should be pursued as such (Andreasen, 2012). Nevertheless, it is rational to assume that any local environmental organisation working to achieve sustainable behavioural patterns will, at the very least, employ strategies and principles of the social marketing framework (Bostrom *et al.*, 2013).

Methodology

To answer the four research questions of this study, two methodological techniques were employed: content analysis and interviews. Content analysis of Facebook posts published by EcoKnights® was carried out to answer the first two research questions on the function of the posts and the levels of user engagement. Briefly, the "function" of social media posts provides a means of classification based on the type of online response solicited from the users

engaging the content. To answer the remaining research questions of this study, semi-structured interviews of two climate change communicators of EcoKnights® (the founder and program director) were carried out.

Content Analysis

Sampling Procedure for Content Analysis

To describe the specific functions and level of user engagement of content published by EcoKnights® on Facebook, the time frame selected for this study was from the June 1 until Dec 31, 2018, with a total of 330 social media posts. EcoKnights® operates its events, programs and other activities on an annual basis, beginning around the middle of April and ending early November. Therefore, six months of Facebook posts provided a significant snapshot of their activity on the platform. All of the posts were downloaded manually from https://www.facebook.com/EcoKnights/?ref=br_rs and were archived for coding and analysis. The units of analysis were the Facebook page information, the post headlines and text.

Coding Procedure for Content Analysis

The study employed the priori coding approach, finalising the coding categories based on linking key principles of the social marketing framework to the Information-Community-Action scheme developed by Lovejoy & Saxton (2012). By including the well-established precedent of the scheme for message-level analysis of social media content, a sound theoretical rationale for possible functions of Facebook posts published by EcoKnights® could be provided (See Appendix for sample of codebook).

Facebook post functions:

1. Information — posts of news, facts, reports, organisational activities and highlights of events that were relevant to stakeholders. This categorization of posts contained only one sub-category, and its sole function was a one-way communication to the public.

2. Community — posts that helped to foster dialogue and community-building. The first two subcategories (giving recognition, thanks and acknowledgement of current & local events) served the function of community-building, while the third sub-category (response solicitation) served the function of dialogue.

3. Action — posts that encouraged stakeholders to "do something" for the organisation, including donating time and finances, purchasing products like T-shirts, or engaging in advocacy campaigns and organisational events. This category of posts was perhaps the most outcome-oriented aspects of the ENGO's social media utilization, seeking to foster meaningful changes in behavioural patterns, building social capital and fostering political will for social change.

Data Analysis of Facebook Content

The 330 posts by EcoKnights® were analysed using descriptive statistics. The total number of posts that fitted into either of the three major functions of information, community and action was calculated to ascertain the relative frequency of each function. The total number of likes, comments and shares of each post was similarly drawn from the codebook and tabulated to determine the relative frequency of each function in relation to its post. For example, the frequency of likes for information posts was determined by dividing the total number of likes for all posts, etc.

Expert Interviews

To answer the remaining two research questions, an intensive interview was used. This allowed for elaboration of opinions, values, experiences and feelings of the experts being interviewed. Based on a review of the literature and following analysis of Facebook posts published by EcoKnights®, a set of questions was finalised (Table 1). Broadly, the research questions sought to determine the various challenges faced by EcoKnights®, its strategy of social media use and the efficacy of its work.

Table 1: List of interview questions

Number	Interview Question
1.	Could you begin by briefly describing when EcoKnights® was established and when you decided to introduce the organisation on Facebook?
2.	What were the main reasons for bringing your organisation to Facebook?
3.	Could you briefly describe the progress you have made in outreach efforts to local communities? Include please, the level of growth in interest with the work undertaken at your organisation?
4.	What are some of the challenges that you see facing Malaysians, as weather patterns shift from changes in the climate?
5.	If you were to rate the level of awareness and concern towards the risks from climate change, how would you rate the Malaysian public at large in 2018?
6.	Could you briefly outline the overarching social media strategy of your organisation, specifically with respect to Facebook?
7.	Malaysia is a multicultural and multi-ethnic country. How do you go about integrating diversity into the communication efforts of your organisation on social media?
8.	How do you see the role of ENGOs such as yourself in the policy decisions that are being made at the Federal level that impact the issue of climate change? For example, with regards to the issue of deforestation of land for palm oil plantations, what role do ENGOs have to play?
9.	Could you briefly outline the challenges you have had to face in your line of work over the course of the year? Examples from the year 2017 would be helpful.
10.	Finally, how effective do you believe well developed social campaigns can be in combating the issues related to climate change in Malaysia? In terms of both fostering sustainable behaviours amongst the public, and in helping to usher in policy solutions agreed upon by international bodies such as the Intergovernmental Panel on Climate Change (IPCC).

Sampling Procedure for Interviews

Since the focus of the interviews was on professionals engaged in climate change communication with local communities, the founder and program director of the organisation were chosen as interviewees. The founder of *EcoKnights*® had worked in the non-profit sector for 20 years, having served as a scientific officer and subsequently a communication officer in WWF-Malaysia between 1997 and 2002. She also served as the chairperson of MENGO for four years from 2012 to 2017.

The program director first got involved in *EcoKnights*® as a volunteer in the Kuala Lumpur Eco Film Festival (KLEFF) in 2008. After 10 years of working in the organisation, the program director now served as the festival director of KLEFF and was responsible in overseeing the coordination and administration

of programmes in the organisation. The experts were informed about the purposes of the research and the intent to publish. The location of the interviews was set at the convenience of the participants and communications were carried out through email as requested by the experts. Emails containing the interview questions were forwarded to both experts simultaneously and the replies were received at two different times. A complete transcript of the interview questions and the responses were archived for analysis after receiving both sets of responses.

Interview Analysis

After receiving the interview responses, analysis was carried out in a systematic manner to generate a final report. First, familiarization with the data was undertaken and involved reviewing the interview responses, reading and re-reading the

texts, and noting down initial ideas. Next, initial codes were generated based on the literature reviewed and this included for example, "S" for strategies. Following this, themes were searched for across the entire interview text like pro-environmental behaviours or education levels. These themes were reviewed to check to see if they worked in relation to the coded extracts and upon consensus, a thematic map was produced that included defining and naming the themes. A final selection of compelling extracts that related the analysis to the research questions and literature was carried out to produce a report.

Results

Content Analysis Findings

The presence of EcoKnights® on Facebook had generated a total of 11,488 likes of the profile page, along with 11,565 fans or followers up to Dec 31, 2018. A demographic breakdown of the followers was requested but not available at the time of writing. For this study, the classification scheme adapted from Lovejoy & Saxton (2012) comprised 11 functions for Facebook posts. Not all the 11 functions were coded for in the EcoKnights® Facebook activitities. As such, the results described below did not include four (donation appeals, lobbying and advocacy, learn how to help and join another site or vote for another organisation) of the seven sub-categories of action posts that were not coded for across the sample. In total, there were 330 posts analysed, which received 7,713 likes, 178 comments and 1,543 shares (Table 2).

Information Posts

From the 330 posts that were coded, 235 primarily functioned as information (71 %). An example was one published on June 5, providing news on sustainable housing initiatives, followed by a link to the external news article. The 235 information posts generated a total of 3,217 likes (41 %) from the total number of likes received for all posts. A total of 117 comments were received for informational posts (66 %) from the total comments for all posts. A total of 1,178 (76 %) shares from all the shares generated, went to the information posts. The finding that a majority of posts published by EcoKnights® were informational, and they matched those from the early years of social media that revealed ENGOs utilising social media platforms for one-way communication, similar to the function of websites and blogs (Bortree & Seltzer, 2009; Waters *et al*., 2009). Furthermore, posts that were coded as informational received the largest number of comments and shares, and just under half of all likes. This revealed a significant engagement of the Facebook audience to content providing information on climate change.

Community Posts

This function consisted of three sub-categories that helped to foster dialogue and community-building, and 35 (11 %) of the posts analysed were coded as community posts. In total, community posts published on Facebook by EcoKnights® received 752 likes (10 %), , 20 comments (11 %) and 78 (five per cent) shares.

Table 2. Summary of likes, comments and shares in the EcoKnights® Facebook page
From June 1 to Dec 1, 2018

Function of Post	# Likes	%	# Comments	%	# Shares	%
Information	3,217	42	117	66	1,178	76
Community	752	10	20	11	78	5
Action	3,744	49	41	23	287	19
Total	**7,713**		**178**		**1,543**	

Giving Recognition and Thanks

Giving recognition and thanks received 295 (39 %) likes for community posts, 11 (55%) for community posts and 10 (13%) of shares for community posts. A basic aspect of a non-profit's activities was to highlight the efforts of those involved in working with ENGO, and more than half of all the community comments from stakeholders went to this subcategory, indicating the usefulness of this type of post in fostering community dialogue on Facebook. An example was published on June 10, thanking Channel W for inviting employees of EcoKnights® on the talk show *Talking Points* hosted by Syasya Jamal.

Acknowledgement of Current and Local Events

This sub-category received 76 (10 %) of the total likes for community posts, zero comments and only two (three per cent) shares of all community shares. Despite this type of post being a good way to foster a sense of community online by recognizing local holidays, for example, it was not commonly published by EcoKnights®. An example of a post in this sub-category was one that was published on Dec 14, acknowledging the presence and talk by the founder of EcoKnights® and guest speaker Ella on a "Friday Funky Lunch" session, where the staff at EcoKnights® were treated to a meal by a chicken rice restaurant.

Response Solicitation

This final sub-category of community posts received 381 (51 %) of the total likes for community posts, nine (45 %) comments of the total community comments and 66 (85 %) of the total community shares. The direct way in which this type of post encourages stakeholders to respond to published content means commenting and sharing for this subcategory should be significant and this was the case for the number of shares, which was 85 % of all community shares for this post. An example of this sub-category was one published on Nov 21, asking followers to respond to a survey commissioned

by EcoKnights®. Facebook was fundamentally a social networking platform and, therefore, had the potential to create spaces online for two-way conversations and genuine dialogue. EcoKnights® made some use of this with 11 % of their posts being exclusively directed at the community.

Action Posts

This function consisted of seven sub-categories that encouraged stakeholders to "do something" for the organisation, including donating time and finances, or purchasing products such as organisational T-shirts, or engaging in advocacy campaigns. Of the total 330 posts, 60 (18 %) were coded as action posts and these received 3,744 (49 %) of the total likes, 41 (23 %) of the total comments and 287 (19 %) of the total shares.

Promoting an Event

This sub-category received 3,610 (96 %) of the total action likes, 30 (73 %) of the total action comments and 22 (77 %) of the total action shares. Considering that a primary aim of action posts was moving the target audience beyond engaging in community dialogues, this result was not surprising. Most of the likes, comments and shares were generated to mobilize stakeholders to participate in organisational activities and events. An example was one published on Nov 25, promoting a composting workshop called Rhythm Fiesta, which was hosted by EcoKnights® and affiliated partners.

Selling a Product or Service

This sub-category received 34 (one per cent) of the total action likes, four (10 %) of the total action comments and 18 (6%) of the total action shares. A key means of generating income for non-profits, apart from direct sponsorships and donations, EcoKnights® used its presence on Facebook to sell various products relating to environmentally-friendly living and consumption. An example was a post published

on Aug 7 to sell composting bins.

Call for Volunteers or Employees

This sub-category received 96 (3%) of the total actions likes, seven (17 %) of the total action comments and 47 (16 %) of the total action shares. A key way in which non-profits carry out their work is through the efforts of volunteers. This ENGO made some, but limited, use of its Facebook presence to encourage individuals to volunteer their time and effort to the organisation, with five posts coded under this sub-category. An example published on Aug 20 called for volunteers to participate in an upcoming event hosted by EcoKnights®.

The results of the analysis of action posts found a variety of ways in which this ENGO sought to mobilize its followers to participate in various organisational events, activities and social programs. The most common action posts coded were those promoting an organisational event, for example, composting workshops or sustainable living seminars. These posts elicited the most user engagement (96 % of the total action likes, 73 % of the total action comments and 77% of the total action shares). Less common were posts selling organisational products and services, and those that sought to recruit volunteers and employees. Meanwhile, posts that appealed for financial donations, lobbying or advocacy for a cause, and learning how to help were not present among the activities of this ENGO on Facebook.

Interview Findings

Semi-structured interviews of the founder and program director of EcoKnights® were conducted to help with answering the final two research questions. The interviews were conducted through email and the analysis of the responses is organised according to the major themes that emerged. The responses quoted here were accurate, with minor corrections for grammar and clarity.

Strategic Use of Facebook

Social media use by the ENGO, including providing information, creating dialogue and encouraging participation with organisational activities and events, emerged as a theme from the interviews. According to both experts, the main profile page of the organisation was created in 2011. When asked for any reasons for joining Facebook in 2011, the founder of EcoKnights® said,

> "The main reasons were to reach more people, to enhance our communication with our followers on social media, to channel news and information about our work and to socialize our work with netizens. It helps to inform netizens and we are also reachable by them in the case of any environmental issues".

The program director went further while detailing the reasons for joining Facebook, saying:

> "I think it was partly a result of mass migration to Facebook by individuals across the board, especially from other, older platforms, and partly for the promising features for businesses/organisations that began to emerge around that time. As of its current form, Facebook is a tool that allows free, basic and widespread publicity, branding and marketing opportunities for us to exploit (since it is the largest social platform). With greater resource dedication and a knowledge base for using Facebook, this tool can reach out to more people through various strategies such as creating events, selling products and services and exploring new marketplaces of ideas. Ultimately Facebook complements our face-to-face communications very much as it stores information and allows for structure and organisation of that information".

Asked to briefly outline the overarching strategy for using social media platforms such as Facebook, the founder responded:

> "We have had several strategies used over the last seven years often evolving from the

previous one. In short, we share a substantial amount of reading versus visual materials. This includes articles published on the website and at times video documentation of what we have done or are doing. We utilise the live video function to share updates in real-time. When it comes to specific campaigns and programs, we normally have a specific strategy utilised to maximise the reach or impact of the program".

The program director reflected similar sentiments regarding the overall strategy, saying:

"We manage a few Facebook pages besides our main page but overall, we create social media strategies that include scheduled posts for various news articles, updates on our programs and campaigns, calls for volunteers, and we subscribe to Facebook Boost (paid). The goal is to increase our followers by providing relevant information and knowledge, so we have more people supporting our efforts and at the same time it provides us opportunities for them to be a part of our many meaningful projects".

These interview responses revealed that social media has created new and different means of communication between EcoKnights® and the public. Both experts recognised the various affordances of new media platforms such as Facebook for a wide variety of communications, branding and marketing strategies. As a result, from initially joining Facebook because it was increasingly popular or trendy, the organisation has evolved its utilisation of the platform. Ultimately, the way EcoKnights® utilises Facebook, like posting more reading versus visual material, will depend on how the experts view the platform's ability to benefit their work and reach wider audiences.

With respect to incorporating the multicultural and multi-ethnic diversity of Malaysia on Facebook communication, the founder said:

"We are not that great at this, as our focus has been predominantly with English and Bahasa speaking audiences. There are some lucky occasions where our programs were covered by the Chinese and Tamil speaking media. The issue I feel is that we reach out to them in either English or Bahasa (as in social media activities, etc.). And I feel this limits our ability to meaningfully engage with them".

The program director, however, did not reflect this same sentiment, saying:

"Our primary language is English, although there is a big demand for content in Bahasa Malaysia. Other than that, we also use local festivities and celebrations (Hari Raya, Chinese New Year, Deepavali, etc.) to spread the message within local contexts. However, the environment is a universal language and can be understood and accepted across all cultures".

Attitudes of Malaysian Public & Challenges Faced

With respect to the challenges faced by the Malaysian public as a result of climate change, the founder identified "a shift in their existing lifestyles including in the health domain", as the most crucial. For the same question, the program director responded, "In the short term, I see difficulties for the public being involved in outdoor activities. Further down, this lack of activity can lead to isolation and lifestyles detached from society and from nature".

The following question asked the interviewees to rate on a Likert scale, the level of awareness and concern amongst Malaysians to the issue of climate change. Here, the founder rated the level of awareness as 7/10 and rated the level of concern as 3/10. The program director rated both as "5 or below because generally more people know about climate change issues, but not enough to be concerned and start taking necessary actions". This supported the content analysis finding that showed a predominant reliance on posting informational content on Facebook by this ENGO. A perceived lack of concern to the issue of climate change was a necessary obstacle to overcome, one which ENGOs were well versed in tackling. By providing information on climate

change through Facebook, it is possible to raise the level of concern to the consequences of a changing climate. Furthermore, this increased awareness and concern of the issue of climate change entails a basic application of the social marketing strategy. Ultimately then, it was possible that this might lead to changes in short-term behavioural patterns if the information being communicated included properly curated materials, such as pro-environmental lifestyle guides.

Efficacy of ENGO Work & Social Campaigns

Another major theme to emerge from the interviews was the ability of EcoKnights® and other similar ENGOs to effect social change in Malaysia. Asked directly on how effective she believed social campaigns developed by ENGOs might be in this regard, the founder responded: "Extremely effective if done well, professionally, and with a great strategy. I think the NGOs are probably the ones that are in the forefront of this but lack resources to amplify their efforts, either due to lack of funds, poor financial capabilities, or lack of human resources and qualified staff to do it".

The program director responded: "Even though many of the social campaigns don't have a direct relation to the solution (for example a campaign to save the forest by asking for signatures for a petition to the government), what is important about such campaigns is to provide the public with some sense of belonging, that there are people who care about certain issues. But it must not stop there, with calls for action to offer more opportunities for the public to get involved being necessary".

Following on, the interview asked both experts to provide an assessment of the progress their organisation has made over the last few years. The founder and program director both referred to their Impact Report published following the fiscal year 2017. Key highlights from the report revealed a systematic approach in assessing the efforts of the organisation that included survey and questionnaire data, as well as qualitative feedback in the form of testimonials. This approach was identical in manner to the process of assessing the impact of social marketing campaigns, where feedback were necessary in improving campaign outcome. Furthermore, the report highlighted local studies such as Mei *et al.*, (2016), that showed Malaysians as being more likely to adopt pro-environmental behavioural practices given the right economic incentives. The report also highlighted how the ENGO had developed an internal theory of change framework for achieving organisational goals. Taken together, this suggested that the experts at the organisation relied on both internal and external, third party and research for tailoring their organisation's communication strategies. Campaigns and programs based on the organisation's theory of change for example, are undertaken in areas such as waste management, sustainable water resource management and responsible consumerism (Source: https://ecoknights.org. my/about/how-we-work/impact-report-2017). Given this, the efforts of EcoKnights® could entail strategies of social marketing where short-term, piece-meal behaviours were encouraged alongside attempts at more long-term social change that utilised campaigns and programs based on frameworks derived from both internal and external research. Overall, this reliance on empirical evidence indicated an effective approach to developing campaign and communication strategies.

Furthermore, when asked about the role and effectiveness of ENGOs in bringing about the necessary policy changes from government agencies and institutions, the response from the founder was,

> "Communication and advocacy. These are the two major areas in which NGOs bring our efforts to the table. We do this, but not specific to the Intergovernmental Panel on Climate Change's (IPCC's) Assessment Report. We work on environmental communication and advocacy in the areas indicated in our Impact Report, 2017".

The program director had similar opinion, saying:

"We must understand that most NGOs' major challenges are resources (manpower, funding, time), thus, the role they play must be specific based on the limitations. There are organisations that focus on specific issues such as palm oil, marine life, forest protection and so on, and they must continue to give pressure to the government to pay attention and act. It is always the case that bureaucracy and transparency are hurdles when dealing with this. As for EcoKnights®, we are moderately vocal in our approach, as we believe in fostering relationships and building trust to create change. We are active in various government discussions, round tables, focus groups and policy discussions".

Discussion

ENGOs had been key players advocating for pro-environmental and sustainable changes across the world, to meet the myriad challenges posed by human-caused climate change. The nature of their work meant that they operated outside mainstream government institutions and corporate media structures, seeking to influence political will and grassroots-level social change (Nulman & Özkula, 2016). The exponential growth of online platforms, such as Facebook and Twitter, had created novel opportunities for ENGOs to engage the masses.

The objective of this study, therefore, was to explore the communication strategies of an ENGO in Malaysia and its use of Facebook. The results revealed that strategic use of Facebook by EcoKnights® was primarily for relaying informational content related to sustainability and pro-environmental behaviours, which fitted the patterns described in previous studies that analysed similar, non-profit organisations (Waters *et al.*, 2009). Furthermore, the results substantiated the social marketing approach in the Malaysian context, since informing the public and raising awareness were key aspects of any social marketing campaign (Andreasen, 2003).

The use of social media platforms by ENGOs could be varied and determining the function of the content they publish online is, therefore, necessary. The information-community-action scheme used in this study to categorize Facebook posts published by EcoKnights® allowed such determinations. A post on June 5, 2018, for example, referred to an article from the website treehugger.com on sustainable 3D printed homes that had become available for viewing. During content analysis, this post was coded as an informational post based on the primary function that it served. Clearly then, this post was published with no intention to elicit a dialogue in the comments section or lead to any type of offline action by users. However, this may not always be the case for posts coded primarily as information. Indeed, content on Facebook might serve several functions at once, for example, the post published on Nov 25, 2018. The post invited the public to participate in an event on composting food waste, with specific instructions on where and when. The primary function of such post was to promote an event under the action category, and was coded as such during the content analysis process of this study. However, for certain individuals who might not be aware, it could serve as an informative post, exposing them to knowledge and environmental benefits of composting food waste. Such a post provided a clear example of the complexity of social media content. Nonetheless, the information-community-action scheme provided the communication experts at EcoKnights® and other ENGOs in Malaysia the opportunity to tailor their Facebook contents in a standardised manner.

With respect to EcoKnights® engagement with Facebook users, there were two key takeaways from the results of this study. Highlighting new sustainable policy initiatives in Malaysia was an example of how this ENGO sought to raise the awareness of tackling climate change-related issues. The news of the introduction of a ban on plastic straws in the greater Kuala Lumpur area that began on Jan 1, 2019, was announced on Sept 21, 2018, in The Star Online news website and reposted on the

EcoKnights® Facebook page, receiving 47 likes, two comments and nine shares. Informational posts such as these elicited 42 % of the total number of likes from all posts and generated most of the user comments and shares (66 % and 76 %, respectively), indicating greater engagement with such content.

Action-oriented posts, on the other hand, received the largest share of likes for EcoKnights® on their Facebook page (49%), an encouraging statistic indicating user engagement with such content. However, only 23 % of the comments and 19 % of the shares from all posts were generated for action-oriented content, revealing a shortfall in this ENGO's ability to engage its audience on Facebook to participate in organisational activities and events. Although all three functions were considered indicators of user engagement with the content published, comments and shares were considered more valuable as they were highest form of social media engagement (Cho *et al*., 2014). Models from studies such as Cho *et al*., (2014) had analysed Facebook messaging strategies and found that engagement was highest with content that elicited comments or conversations, versus simply liking or sharing, which were low and moderate forms of engagement. Given this, the relative merits of user engagement on Facebook depended upon the organisation's strategy that evolved over time and continued to do so, as mentioned by the founder of EcoKnights®.

As a small- to medium-sized ENGO, EcoKnights® operated within national boundaries and was bound to make use of social marketing principles, such as raising awareness and targeting population segments to achieve organisational goals. Merely providing informational content through social media, however, could be considered as just one aspect of the efforts of social marketing campaigns where altering specific behavioural practices in the short term was the objective. Using Facebook for posts that were action-oriented like post times, dates, venues and registration links for upcoming events, might be considered an appropriate use of social media for marketing

pro-environmental behaviours. However, only 18 % of the posts analysed in this study were coded as action, and both action and community posts elicited low levels of user engagement compared to information posts (see Table 2). Therefore, the strategic use of Facebook by EcoKnights® for promoting organisational activities and social programs listed in their Impact Report might mean increasing the relative number of action posts. Given that the program director of EcoKnights® also identified the need for expanding opportunities for the public to get involved in social campaigns organised by EcoKnights®, this strategic shift in their publishing pattern on Facebook made sense. This, in turn, might encourage an already aware online audience to increase dialogue in the form of comments and online networking in the form of shares. It must be noted, however, that such shift was dependent on available resources and personnel dedicated to managing social media accounts, something highlighted by both the founder and program director as being a significant constraint. Striking the right balance between more traditional communication efforts and social media communication continued to be an area of divide between ENGOs that were multinational and financially endowed, and those that operated nationally and were financially less endowed, such as EcoKnights®.

EcoKnights® Facebook activity then primarily entailed relaying informational content to followers, besides advocating for issues of sustainability and pro-environmental behavioural practices. Together with descriptions of the public's engagement with the content published and the various challenges faced by the experts, the findings of this study could be important for future research. This is especially important given the primary limitation of this study, which had focused on just one of several ENGOs operating within the urban landscape of Malaysian society. Nonetheless, the results placed this ENGO's efforts within the broader academic conversation of how new media landscapes were transforming the ways in which communication experts operated. For example, the interviews revealed that the experts

certainly placed some strategic value in new media platforms for connecting various actors and building social capital for change. Future research efforts could explore such networks through Malaysia's multi-cultural and political context, focusing on how demographics and access to new media platforms shaped public opinion and behaviour related to sustainability and pro-environmental subject matter. Such descriptions would allow experts at non-profit organisations such as EcoKnights® to better engage its audiences for more long-term social change.

Conclusion

In order to effectively manage a transition to sustainable development and a pro-environmental society, stakeholders must be able to effectively communicate prescribed changes and associated issues to the public at large. Using a mixed methods approach, this study examined the use of new media by a Malaysian ENGO and the challenges faced by its experts. The study utilised an approach for classifying Facebook posts originally developed by Lovejoy and Saxton (2012), and identified levels of public engagement to the contents. The findings revealed that a clearly distinctive function of Facebook from more traditional online communication tools was not obvious, given that most posts were informational. Low levels of awareness amongst the public, for example, meant new media platforms would primarily be used for connecting audiences to informational content on pro-environmental lifestyles and sustainable behavioural practices, local environmental news and keeping followers informed on all things related to the work of the organisation. Nonetheless, the fact that ENGOs operated outside of mainstream institutions meant that the challenges faced by the experts also presented opportunities to overcome top-down approaches in tackling issues related to climate change and its impact on Malaysian society.

In this respect, EcoKnights® may be an effective social marketer making use of new online media platforms for communicating content designed to encourage sustainable and pro-environmental behavioural practices amongst local communities. Importantly, the organisation is well placed in taking advantage of more contemporary frameworks of communication and engagement with the public, such as place-based frameworks of engagement (Schweizer *et al.*, 2013). This, of course, remains to be examined but it is conceivable that such approaches may be beneficial as the population becomes more aware of the local issues related to global climate change and there is increased grassroots support for sustainable economic development and behavioural practices.

Future research efforts should examine the drivers and barriers to sustainable behavioural practices based on Malaysia's unique demographics and socio-cultural context. Furthermore, the public's access to new media platforms should be explored to determine the various levels of engagement to sustainable and pro-environmental content. Taken together, such efforts will provide communication experts at non-profit organisations such as EcoKnights® more impactful means of tailoring their work to affect long-term social change.

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Appendix

Sample of codebook

1. Disclosure on Profile Page	Description of organisation's programs and services	Present or Absent	
	Organisation's history	Present or Absent	
	Mission statement	Present or Absent	
	Organisation's website link	Present or Absent	
	Logo	Present or Absent	
	List of profile administrators	Present or Absent	

2. Post Number		Example: 1,2,3, etc.	
3. Date		Example: 23/06/17	

4. Function of Post	Information	1	= Information
	Community	2	= Giving recognition & thanks
		3	= Acknowledgement of current & local events
		4	= Response solicitation
	Action	5	= Promoting an event
		6	= Donation appeal
		7	= Selling a product or service
		8	= Call for volunteers & employees
		9	= Lobbying & advocacy
		10	= Joining another site or vote for another organisation
		11	= Learning how to help

5. Number of Likes		Example: 1,2,3, etc.	

6. Number of Comments		Example: 1,2,3 etc.	