

Information Seeking Behavior of Expats in Asia on Facebook Open Groups

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ABSTRACT

With the rise of the global economy and an increasingly mobile global workforce, expat communities are commonplace the world over. Information Communication Technologies (ICTs) play an increasingly important role in keeping people connected, facilitating the formation of virtual communities based on interest, stage of life, profession and other commonalities. These virtual communities, much in the same way as traditional communities, feature social transactions of different kinds, including information seeking. Using content analysis, our study seeks to delineate patterns of information seeking on three Facebook groups for expats in terms of the categories of information sought and shared, speed of responses and group participation using the Facebook metrics for stakeholder engagement as proposed by Bonson and Ratkai (2015). We found that certain themes of information seeking/sharing were popular across the three groups. We also found that for all the groups, the most engaged members were those that responded the most to other's posts. This study can shed some light in viewing social media as an important and alternative source of information for expatriates - a less explored yet sizable user group. By understanding the process of information sharing between the expatriates in social media groups, our study can provide insights that may be of interest to group administrators and others.

KEYWORDS

Facebook groups, Expatriates, Information Seeking, Virtual Communities, Virtual Social Networks

INTRODUCTION

The advances in Information Communication Technologies (ICTs) in recent times have had a profound impact on how people create, seek out, and consume information. Social media and the rise of social networks has changed the way in which people interact with one another - giving way to virtual communities where access is easy and transparent. These virtual communities, much in the same way as traditional communities, feature social transactions of different kinds, including information seeking.

Our study focused on the specific demographic of expats living in Asia and analysed how they use Facebook to look for information and from virtual communities. Expats as a demographic group while

being an increasingly commonplace phenomenon is an area that is largely unexplored, and we hope that our study will shed some light on how they use social media for everyday information seeking and bonding with others in a similar life situation. We selected Facebook as the social media platform within which to situate our study. Facebook reports that as of June 2015, there are a total of 968 million daily active users on average, approximately 83.1% of these are outside the US and Canada. This indicated to us that Facebook would be a rich source of data for us to tap on.

RESEARCH OBJECTIVES

The main objective of the study is to understand the modalities of information seeking and sharing in Facebook groups. We also make some preliminary observations on the level of engagement that might impact participation of members on Facebook groups.

Research Questions

The research objectives of our study fall into two broad categories: Information Seeking and Sharing and Virtual Communities. The specific research questions that we explore are:

RQ 1: What are the modes and themes of information that are shared and searched for in the groups, and what are the similarities/differences across groups?

RQ 2: What are the modalities of the information sharing/seeking process, and are there any specific factors – such as the presence of visuals, as well as other factors that have a bearing on overall ‘responsiveness’?

RQ 3: Can participation within these groups be seen as a ‘social investment’ for prominence within the group? What are the differences in the levels of participation and engagement across groups? What is the level of engagement of the members within the groups?

Significance of the Study

Examining and understanding the trends in the information exchange behaviour of expatriate group members may reveal important insights into this process. These insights can enlighten new members on the popular themes and modalities of group interaction. These can then encourage them to direct their posts according to the strengths of the specific group. These insights may also help retain new members. This means that information seekers would be more aware of how long they might have to wait for a response. Otherwise, a long response time might disillusion an information seeker on the effectiveness of such groups, and might potentially dissuade them from returning in future.

LITERATURE REVIEW

Facebook and Facebook Groups

Facebook is a social networking site founded in 2004 that seeks ‘to give people the power to share and make the world more open and connected’ (Facebook, 2015). Facebook reports that as of June 2015, there are a total of 968 million daily active users on average, approximately 83.1% of these are outside the US and Canada. The most recent rankings on Alexa.com rank Facebook as the second most popular site in the world based on web traffic, with Google being number one (Alexa.com, 2015). Google Communities which markets itself as an interest based social network would be the nearest comparison

to Facebook. Officially launched in 2011, the number of active users of Google Communities is slightly harder to determine. A study done by Forbes magazine in 2015 found that despite Google having 2.2 billion users, the number of active profiles on Google Communities was approximately 111 million users, with only 3.5 million having had 50 or more posts in the last 30 days. (Forbes, 2016).

Facebook defines groups as ‘private spaces where you can keep in touch with people by sharing updates, photos or documents’ (Facebook, 2014). Facebook groups are ‘dedicated spaces where you can share updates, photos or documents and message other group members’ (Facebook, 2015). We were unable to find more recent statistics, however based on figures from 2010, Google has indexed approximately 620 million Facebook groups. Presumably this number has increased since then (Adweek.com, 2010).

Social Media, Social Capital and Information Seeking

Several studies have examined the relationship between social media (including Facebook) use, social capital, and information seeking (Ashghar, 2015; Johnson, 2014; Sin & Kim, 2013, Vitak & Ellison, 2013). Sin and Kim (2013) in their study on the everyday information seeking of international students found that social networking sites (SNS) are useful channels for ‘purposeful, everyday life information seeking’. Their study also indicated that age and personality traits contribute to the frequency of use of SNS for information seeking. Everyday needs of foreigners (such as international students), as reported by Sin and Kim (2013) are indeed satisfied through information seeking on Facebook. The concepts of ‘surreptitious support’ and ‘counterpublics’ resonate strongly with the formation of and interaction within the Facebook open groups that we seek to study. A study (Lee, 2012) concerning the use of social media by students on exchange programs hints at the need for students to understand the differences and similarities between their own culture and the foreign culture, but this tends to be a self-discovery process and not easily taught. This is relatable to expatriates who have to learn and apply adaptive skills, which are not easily taught, when they come into contact with a foreign culture. Thus, it would be an incentive for any new expatriate to tap into the pool of knowledge residing within expatriate Facebook groups, and not have to learn from scratch in their self-discovery process (Lee, 2012).

This finding is supported by Vitak and Ellison (2013), who report that network composition and size may have an impact on the effectiveness of information seeking on Facebook. A small and homogeneous network may limit a user's ability to ‘exploit the information benefits of Facebook’ (Vitak & Ellison, 2013, p. 253), while conversely a highly diverse network may expand the probability of getting a response.

Facebook Communities

Chiu and Juang (2013) studied Facebook pages on children with disability, focusing on the development of Facebook communities, the nature of information exchange and the patterns of interaction. They found that the information that was shared could contribute to several needs such as ‘facilitating the patient's’ health consultation with medical professionals and to accelerate healing and recovery’ (Chiu & Juang, 2013, p. 387). Johnson (2013) in her study comparing face-to-face support groups and online groups in the context of information seeking of transitioning first-time mothers introduced the notions of ‘surreptitious support’ and ‘counterpublics’ (Johnson, 2015, p. 238). ‘Surreptitious support’ hinges on the anonymity and invisibility while receiving ‘advice, information and reassurance’. ‘Counterpublics’ refers to an environment that enables public discussions of issues and concerns normally considered private. Counterpublics are of special significance as spaces where ‘subordinate groups can engage away from the surveillance of dominant groups’ (Johnson, 2015, p. 238).

A study by Pi, Chou, Liao (2013), postulates that a group member is most likely to share information if he is treated equally. This means that if fellow members respond to his post, then he will feel the need to return the favour and hence respond to his responders' posts equally (Pi et al., 2013). A study (Greene et al., 2011), about information sharing between diabetics on Facebook points out that new diabetics can gain a sense of assurance and confidence when sharing their concerns and fears with seasoned diabetics. Since most of the seasoned diabetics have gone through the same problems as the new diabetics, the former can share their ideas and experience, thus assuring the latter that all will be well. Likewise, the need for assurance and confidence can serve as a motivation for new expatriates to participate and build relationships within expatriate Facebook groups.

The formation of virtual communities and networks can also be seen as an important factor for expats when joining such Facebook groups. Their level of engagement and participation in such groups can help to determine the "energy level" of the group. A study focusing on virtual communities (Cao, Lu, Tang, Li, 2013) suggests that bonding helps to explain members participation in virtual communities. The members participate and cooperate with each other for mutual benefits. Schmidt and Iyer report that when it comes to the source of information, members are most likely to trust their own friends or peers more than the information that comes from commercial companies (Schmidt, K., & Iyer 2015).

Factors Influencing Quality of Responses

Additionally, as reported by Vitak and Ellison (2013), the impact of both the composition and size of one's social network on the possibility and the quality of responses may explain why information is sought in Facebook groups that have many more members than one's personal Facebook page. Another aspect of literature that is linked to our study is that even simple information sharing around a common theme can contribute positively in satisfying unarticulated information needs (Chiu & Juang, 2013). However, Shu (2011) points out that members belonging in an exclusive group are more enthusiastic towards knowledge sharing than non-group members due to a sense of belonging. As per Gang & Ravichandran (2011), the sense of self-worth which is gained by group members' contributions to the knowledge pool can be a contributing factor to knowledge sharing. Plus, it helps to explain the motivation for information exchange despite the lack of any monetary gains (Gang & Ravichandra, 2011).

A study conducted by Hofmann, Beverungen, Rackers and Becker (2013) on German government Facebook pages found that posts that had some form of a multimedia or visual component attached to the post had almost four to five times more 'likes' and comments than those without, suggesting that these features tend to engage and activate the interest of the members of the group more (Hofmann et al, 2013).

Facebook Metrics

Bonson and Ratkai (2013) determined a set of metrics specifically related to Facebook to measure this level of stakeholder engagement, namely Popularity, Commitment and Virality. Popularity is measured through the number of 'Likes' on posts. Commitment is measured through the number of comments on posts and Virality is measure through the number of shares of the posts. In our study, we have used the measures for popularity and commitment to determine the level of stakeholder or member engagement in the groups. The likes and comments act as a form of dialogue among the members of the group allowing them to build up or foster a sense of community spirit that would otherwise be harder to

develop ‘in real life’. Without the active participation by the members whether through ‘liking’ or ‘commenting’ it may be next to impossible to sustain the life of the group leading to members leaving the group or even a closure of the group. Furthermore, studies by Graham et al. (2009), Glazer (2012) and Tan et al. (2012) who studied the use of Facebook in libraries have indicated that measures calculating number of posts, responses and likes can prove a substantial level of engagement with members. Glazer (2012) further emphasises that comments and “likes” are the “two most important metrics to focus on” in Facebook (Glazer, 2012).

Furthermore, Swani (2013) points out that when a user clicks ‘Like’ on a post, the post is likely to appear on the user’s friends’ feed. Thus, the ‘Like’ can be viewed as a form of ‘word of mouth’. It indicates the popularity of a post, thereby encouraging more users to engage with that post.

METHODOLOGY

Data Collection Method

We identified content analysis as the method to be used for this study. Neuendorf defines content analysis as “a summarizing, quantitative analysis of messages that relies on the scientific method, and is not limited as to the types of variables that may be measured or the context in which the messages are created or presented” (Neuendorf, 2002, p.10).

Research Objectives and Measures

Listed below are our research objectives, measures and operationalization based on the RQs defined above.

RQ1: Topic 1: Information Seeking and Sharing		
What are the modes and themes of information that are shared and searched for in the groups, and what are the similarities/differences across groups?		
Research Objectives	Measure	Operationalization
What categories (modes) of information are sought within these groups?	Measure the kinds of information being sought in terms of the number of questions asked	Count the instances and calculate the percentage of posts that fall into each of the four modes.
What theme of questions gets a greater number of responses?	Measure the number of responses received for each theme.	Tag each of the posts to 12 predetermined themes. Then count the total number of posts per theme.
How engaged are the participants in each of the three groups?	Measure the level of engagement through number of posts, number of responses and the speed of responses within each of the groups.	Calculate the average number of posts per day for each group, and the average number of post per member for the group. Calculate the average amount of time it takes to get a response in each of the groups.

RQ 2: Topic 2: Information Seeking and Sharing		
What are the modalities of the information sharing/seeking process, and are there any specific factors – such as the presence of visuals, as well as other factors that have a bearing on overall ‘responsiveness’?		
Research Objective	Measure	Operationalization
What is the relationship between ‘richer’ posts - those including links and visuals on the number of likes and comments?	Compare the number of likes and comments on posts with visuals and posts without visuals.	Count the number for each of the two categories. Count the number of likes and replies for each of the two categories. Compare.
RQ3: Topic 3: Virtual Communities		
Could participation within these groups be seen as a ‘social investment’ within the group? What are the differences in the levels of participation and engagement across groups? What is the level of engagement of the members within the groups?		
Research Objective	Measure	Operationalization
Who are the ‘dominant’ or ‘top’ participants in the groups?	Measure the returns on ‘social investment’ as seen via the frequency of participation in the group	Measure the number of ‘top’ poster ‘top’ commenter ‘most’ engaged
What is the level of engagement within the group?	Measure the ‘Commitment’ and the ‘Popularity’ in the group (based on Bonson and Ratkai, 2015)	Popularity: %of the posts that have been liked Average number of likes per post Commitment: % of posts that have been responded to Average number of responses per post

Table 1: Research Objectives, Measures and Operationalization

Coding Procedure

From the research objectives and measures described earlier, the team brainstormed and identified the categories to be coded in order to meet these objectives. The team went through a few iterations to understand and define the coding and classification scheme that was to be used to map the posts across the three identified groups. We randomly selected and analysed ten posts from each of the three groups. After multiple discussions and revisions, we identified four main modes to which all the posts would be coded by from this initial analysis. These were then used as a controlled vocabulary by which all the posts were coded. A description of the modes is shown in Table 2 below. Besides determining whether a post belonged to one of the four identified modes, we also further tried to determine the theme of the post. The theme reflects the specific content or subject domain that was discussed, shared or asked in the post. Thus from the mode and the theme of the post we are able to determine the broader category of the type of post, whether information seeking, information sharing etc. as well as a narrower subject domain of the post, for example whether the post was information seeking in the theme of childcare, information

sharing in the theme of community and so forth. Twelve themes were identified and defined in Table 3 below.

Mode	Definition	Example
Information Sharing (1)	Posts that are generally unsolicited and which are advisory or informational in nature. These can range from posts sharing information about where to get the best tomatoes to information sharing the locations of potential roadblocks and army presence. It includes posts sharing positive and negative experiences felt by the poster.	“Hi everyone, I just learned about a place where one can learn Argentine Tango in case there are others who are looking For a place to dance and have Fun. There is a class every sunday at 4 pm at Nutmeg , oktroi plaza. Jl.kemang utara (across mcdonald). Go and have a try”!
Information Seeking (2)	Posts that describe the searching for information to satisfy a need, purpose or goal. These can be the form of seeking information on products, services, directions, or any other need.	“Hey there guys. There’s a military control on beach road, between US embassy and Pertamina. Guys heavily armed with long guns. They are only stopping cars, which seems odd. Anyone know what’s going on”?
Commercial Information Sharing (3)	Posts that are commercial in nature, which are advertising or marketing products, services, service providers etc. There is a monetary transaction that is mentioned in some way within the post.	“House For rent, very good deal, south jkt, cilandak area (close to toll and cipete) 450sq mtr house, 5 bedrooms, 24h security, 1000 sq/ mtr garden, pool, gazebo, quiet. 1800\$/ month. Available end sept For 1 year or more. Pm Me if interested tks”
Miscellaneous (4)	Posts that do not fit into any of the above defined modes.	“Rosa Horta Carrascalao and Licinia Ramos Horta be proud”!

Table 2: Definition of Mode used in Code Sheet

Theme	Definition	Example
Childcare (1)	Posts about services and products, as well as events centered around children	“Long shot - does anyone have a spare twin breastfeeding pilloe that they are not using? Would like one as a prototype for breastfeeding support at HNGV. Hoping someone out there can help!! Ingrid”
Community (2)	Posts that communicate Information related to the expat community. They are mainly of local relevance including	“Tonight’s topics For the Pub Quiz at de Hooi: 1 Female Action Heroes 2 Engrish 3 Indonesian Traditional Houses 4

	seeking help within the expat community for issues or opportunities for expats to contribute to and get involved in local affairs.	Indonesian Fruit 5 Star Wars Characters As always, quiz starts 830pm. Teams of 4, or come solo and be paired-up. Two bottles of spirits For the winners! The most fun, engaging and interactive quiz night anywhere in Jakarta. See you tonight!”
Employment (3)	Posts related to sharing employment opportunities or second order employment seeking for friends or staff of expats about to leave	“Urgent. Pat Walsh at PCAVR has a short term part-time malae position available in Dili assisting with the international distribution of the CAVR report. Own computer and independent access to internet required. Email enquiries to padiwalsh@gmail.com”
Finance/ Insurance/Legal (4)	Posts related to financial, insurance related or legal advice.	“Can someone guide me about car insurance premium please. I have been given a quotation that could actually nearly rent a car for the same money”
Healthcare (5)	Posts related to healthcare, medicine, local doctors and allied health providers such as chiropractors, nutritionists etc.	“Looking For a wholistic chiropractor In Jakarta . (uses kinesiology and the activator etx) anyone ,?”
Household/ Domestic (6)	Posts seeking recommendations for local services and products or sharing reviews on local services and products.	“Hi All..! Anyone need plumbing or renovate bathroom or house please pm thank you ...!”
Local News/Local Interest (7)	Posts related to news, events, happenings related to the city/ country	“Antônio da Conceição, current Minister of Commerce, Industry and Environment, will be the new Minister of State For Social Affairs Coordinator and Minister of Education. Agência Lusa (04aug)”
Rental/ Accommodation (8)	Posts related to seeking accommodation/rentals; or seeking to rent out their accommodations	“Hi, Accommodation available by end of September. Long term \$450per month or Short term \$20 per night - includes all amenities listed below, cheers”
Selling/Buying (9)	Posts that are related to expats looking to buy or sell products or services. These are posted by individuals and are not commercially posted advertisements of products and services.	“Selling a Few things - Bed Cover & Pillows \$50(SOLD) - 2Pk Memory Foam Pillows (Brand New)\$50 - Kogan E-Reader \$50 - Food Steamer \$50. (SOLD) Please pm if interested”

Sports (10)	Posts related to sports, exercise, gym memberships and other sports related activities.	“Hi, anyone knows a golf teacher working at Senayan Driving Range? Thanks”!
Travel and Leisure (11)	Expats discussions on local and regional travel and leisure (surfing, fishing, nightlife etc.) activities	“Can anyone tell me what time the Chinese Embassy opens and if we are able to get a Visa from there for Travel to China... Cheers”
Trivia (12)	Random sharing of information not of immediate relevance/interest to the group.	“Boa noite a todos. Good night to all of you”.

Table 3: Definition of Themes used in Code Sheet

Nine variables were identified for coding purposes. These variables and their definitions are clearly stated in Table A1 in the appendices. [Editor’s Note: see supplementary file for all appendices] Facebook postings from the three groups were studied from 1st August 2015 to 31st August 2015. Each team member was assigned a group and tasked to code all the posts according to these variables. While in the process of coding, it was determined that the postings for Dili Expats were significantly larger compared to the postings for Johor Bahru Expats. As such the team member coding Johor Bahru Expats was also enlisted to code the postings from Dili Expats for the last two weeks of the month. While the majority of the criteria are quantitative in nature, the team member would need to exercise judgement in determining the mode and the sub theme for each post.

During the coding process, the team determined that it would be meaningful to also study the percentage of male and female participation within the groups as well as the participation of the group admins within each group. Thus a second codebook was devised to capture this data. Six variables were identified for this coding and their definitions are stated in Table A2 in the appendices.

While we needed to identify the name of the participants from the posts, the individual names of the participants will not be used within this study. The main determinant is to understand the ratio of male to female participation within the groups as well as the presence of the admins within the groups.

Sampling Method

From the identified research questions and measures, we searched Facebook for suitable expat groups for our study. We used the following criteria to identify and narrow our search:

1. The Facebook groups must be open, public groups.
2. The groups should have at minimum of 1000 members
3. The groups should be based in Asia, and be city level groups (rather than country level groups)
4. The exchanges conducted within the group should be predominantly in English
5. The group should not be a predominantly commercial group where most exchanges were commercial posts selling or buying products and services

The team searched Facebook and identified a few Facebook groups that were open and situated within Asia. Some groups were discarded as they did not meet our criteria as above. For example, the

exchanges in those groups were mainly commercial in nature, the posts were not predominantly in English or the exchanges were very minimal.

The final three Facebook groups that were identified for this study were Jakarta Expats, Johor Bahru Expats and Dili Expats. The groups differed in terms of the number of members and amount of interaction (as seen in the quantum of posts made and responded to). While the study took place August – October of 2015, coding was done only for the posts made in August 2015 across all three groups.

Study Groups

A brief description of each Facebook group is provided below in Table 4. A brief description of each city is provided in Table A3 in the Appendices.

<p><u>Dili Expats</u> Group is currently invisible Dili Expats is a public groups comprising expats living in Dili, Timor-Leste. The group currently has 3307 members. The purpose of the group clearly states that it is meant for current, former or future expatriates in Dili or for other foreigners with a genuine and non-commercial interest for expat living in Dili. There are currently 3 admins managing the group. The group has been active for approximately 3 years.</p> <p>Source: Dili Expats Facebook Group About Us Page</p>	<p><u>Jakarta Expats</u> https://www.facebook.com/groups/4895993539/ Jakarta Expats is a public group comprising expats living in Jakarta, Indonesia. The group currently has 7257 members. The description on its About page states that this is meant to help members with local subjects and it now includes expats in Bali as well. There is currently one admin managing the group. The group has been active for approximately 5 years.</p> <p>Source: Jakarta Expats Facebook Group About Us Page</p>	<p><u>Johor Bahru Expats</u> https://www.facebook.com/groups/514564345319161/ Johor Bahru expats is a public group comprising expats living in Johor Bahru, Malaysia. The group currently has 1063 members. Its purpose is to provide an outlet for expats to ask questions, share experiences, provide information or reviews and offer information on networking/ community events and resources and opportunities for expat children. There are 2 admins managing the group. The group has been active for approximately 2 years.</p> <p>Source: Johor Bahru Expats Facebook Group About Us Page</p>
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Table 4: Description of the Facebook Groups

Inter-coder Reliability

The three member team coded one group each. The first step we took to increase reliability of coding was at the initial phase of the study. We analysed ten random posts to begin the process of identification of common modes and themes. This controlled vocabulary that the team jointly developed over several iterations served to increase the reliability of coding. To further increase the reliability of coding, we undertook an inter-coder reliability test that required the coders to swap their groups and code a sample (the first ten posts) for the new group. After completion of this stage, the new coding results of each group were then compared with the coding done by the original coder. The purpose of this test was to check whether the new coding and the original coding match. The more the two coding results match,

the higher the inter-coder reliability. The researchers scored a 100% match for coding of the four modes. For the themes – the match ranged from 75% to 90%.

Representative Reliability

Representative reliability concerns the issue of whether the findings can be applied to different groups of people. In our study, the three groups are based in three different countries that differ considerably in culture and language. Thus, the findings in our study should be fairly consistent to groups in different countries. Furthermore, by studying groups of different sizes, our findings should have a higher representative reliability.

Validity

The four modes used in our study may be valid not only for expatriate groups but also for other interest groups. This is because the modes endeavour to encompass the main areas of information exchange within virtual communities. However, the twelve themes that we used for coding might have limited validity in other, special interest groups.

FINDINGS

A total of 626 posts from Dili, 96 posts from Jakarta and 29 posts from Johor Bahru groups were coded as per the coding variables identified. The average number of posts per day was 20.2 posts for Dili, 3.1 posts for Jakarta and 0.9 posts for Johor Bahru.

RQ 1: Mode of Posts

We first sought to understand the major mode of the posts within the time frame for each group.

Mode	Dili	Jakarta	Johor Bahru
Information Sharing	35.8%	16.5%	10.3%
Information Seeking	28.6%	46%	82.7%
Commercial Information Sharing	32.9%	37.5%	3.4%
Miscellaneous	2.7%	-	3.4%

Table 5: Mode of Posts by the Three Groups

It can be seen from Table 5 above that more than 60% of the posts in all three groups are within the modes of information seeking and information sharing, and the percentages for information seeking are higher for both Jakarta and Johor Bahru. The percentage for commercial type posts were similar for both Dili and Jakarta but significantly lower for JB; and miscellaneous posts were low for two groups and non-existent for one.

RQ 1: Mode of Post and Mean Number of Responses

At the mode level, we also looked at the mean number of responses received for each mode. For Dili (Table A4) the mean number of responses for Information Sharing (Mode 1, $M=2.7$) and Information Seeking (Mode 2, $M=4.9$) were higher than the mean responses received for Commercial Information Sharing (Mode 3, $M = 2.0$) and Miscellaneous posts (Mode 4, $M = 0.9$). For Jakarta (Table A8), Information Sharing (Mode 1, $M= 2.6$) and Information Seeking (Mode 2, $M= 4.8$) also received higher responses than the mean responses received for Commercial Information Sharing, (Mode 3, $M = 0.5$). There were no Miscellaneous (Mode 4) posts recorded for Jakarta Expats.

Johor Bahru (Table A12) also shows the same trend in that mean responses for Mode 1 ($M = 4.3$) and Mode 2 ($M = 6.4$) were higher than the responses for Modes 3 ($M = 1.0$) and Mode 4 ($M = 0$). Thus we can show that information sharing and information seeking posts tend to receive more responses across all three groups.

We ran one-way Anova tests for all three groups to test whether the number of responses differs by the mode of post. We looked at the Levene's test and noted that for Dili (Table A5) the p-value was 0.001 and for Jakarta (Table A9), the p-value was 0.008. This suggests that the data has violated the homogeneity of variance assumption. Thus for these two groups, we reported the results of the Welch tests, which did not assume homogeneity of variance. For Dili (Table A7), the Welch test showed $p=0.000$ and for Jakarta (Table A7), $p= 0.012$. Thus a statistically significant difference was found between mean responses received and mode of the post for Dili ($p=0.000$) and Jakarta ($p=0.012$).

For Johor Bahru (Table A13), Levene's test showed $p=0.921$. The data did not violate the homogeneity of variance assumption. The Anova test (Table A14) showed no statistically significant difference between the mean responses received and the mode of the post ($p=0.724$).

RQ 1: Mode of Post and Mean Time Taken to Respond

We assumed that the mean minutes taken to respond to Information Sharing (Mode 1) and Information Seeking (Mode 2) would be faster compared to commercial information sharing (Modes 3) and Miscellaneous posts (Mode 4).

For Dili (Table A16), the mean time taken to respond to an Information Sharing mode post (Mode 1) was the fastest at 105 minutes (less than 2 hours). For Jakarta (Table A20), Commercial Information Sharing posts (Mode 3) had the fastest mean response time at 974 minutes compared to Information Sharing (Mode 1, $M= 2995$ minutes) and Information Seeking (Mode 2, $M= 6404$ minutes). For Johor Bahru (Table A24), the mean time taken to respond to Mode 1 type post was also the fastest at 4 minutes mimicking Dili in that information sharing posts had the fastest response.

We ran one-way Anova tests to determine if mean time taken to respond to a post differs according to the mode of the post. We first looked at the Levene's test and noted that $p=0.002$ for Dili Expats (Table A17) and $p=0.000$ for Jakarta Expats (Table A21). As such we report the results of the Welch test for these two groups, which did not assume homogeneity of variance. For Dili (Table A19), ($p=0.258$), hence no statistical significance is observed between mode of the post and the mean time taken to respond. For Jakarta (Table A23), ($p=0.006$), indicating there is a statistically significant difference between the mode of the post and mean time taken to respond.

Levene’s test for Johor Bahru (Table A25) shows $p=0.331$, thus we look at the Anova (Table A26) where $p=0.951$ indicating that the mode of the post showed no significant impact on the time taken to respond to the post.

RQ 3: Stakeholder Engagement: Commitment and Popularity

Based on the study by Bonson and Ratkai (2013), we used the following formulae to determine the popularity and commitment through the below calculations. These help to determine the engagement level within the three groups by studying the various interactions -- comments and likes that the group members have with the content that is posted.

Popularity:

- Percentage of Total Posts Liked = $\text{No. of posts with likes} / \text{Total no. of posts}$
- Average No. of Likes per Post = $\text{Total Likes} / \text{Total no. of posts}$

Commitment:

- Percentage of Total Posts Commented on = $\text{No. of posts with comments} / \text{Total no. of posts}$
- Average No. Comments Per Post = $\text{Total comments} / \text{Total no. of posts}$

We found that the popularity level for Dili was the highest while the commitment level for Johor Bahru was the highest (Table 6).

	% of Total Posts Liked	Average No. of Likes Per Post	Percentage of Total Posts Commented on	Average No. Comments Per Post
Dili	87.5%	8.2	58.3%	3.1
Jakarta	62.5%	1.79	46.8%	2.80
Johor Bahru	51.7%	2.1	75.8%	5.7

Table 6: Stakeholder Engagement Levels for the Three Groups

RQ2: Average Time to Receive the First Response

We determined the average time taken to get the first response to a post. We then measured this against other variables such as whether visuals have an impact on response time.

	Dili	Jakarta	Johor Bahru
Average Time to Receive First Comment	162 mins	3789 mins	1204 mins

Table 7: Average Response Time for the Three Groups

We can see that it takes an average of 162 minutes before one can expect the first comment to be received for a post that is posted for Dili. Dili also had the speediest response time among the three groups in providing the first comment to a post. We noted that compared to the average time to respond to a post, both information sharing and seeking posts had a shorter than average response time for Dili. Jakarta and Johor Bahru also indicates a shorter than average response time for Information Sharing posts than the average time to respond to a post.

RQ 2: Impact of Visuals on Posts

We then identified the presence or absence of a visual or some other multimedia component, whether a link, photograph, video or attached file to determine the response rate for such posts. The following calculations were done. However when we examined the impact of visuals on a post, we found that both Dili and Jakarta took a longer time to respond to posts with a visual as compared to the average time taken to respond to a post. However, when it comes to the average number of responses to posts with visuals, Jakarta showed a greater number of responses when compared to posts without a visual, while both Dili and Johor Bahru registered a smaller number.

	Dili	Jakarta	Johor Bahru
Percentage of Posts that have a Visual	66.6%	36.4%	6.9%
Percentage of Posts that have a Visual that have responses	46%	31.4 %	0
Average No. of Responses for Posts with Visual	2.1 ↓ ¹	3.4 ↑ ²	0 ↓
Average time taken to respond to a post with a visual	380 mins ↑	5634 mins ↑	0

Table 8: Impact of Visuals on the Three Groups

¹ ↓ signifies a decrease when measured against the average

² ↑ signifies an increase when measured against the average

RQ 2: Likes and Responses on Posts with Visuals

	Dili		Jakarta		Johor Bahru	
	Likes	Responses	Likes	Responses	Likes	Responses
Post with Visuals	4051	892	52	34	4	0
Posts without Visual	1061	1022	120	235	58	167

Table 9: Likes and Responses for each of the Three Groups

While we expected as per the study by Hofmann et al. (2013) that posts with a visual would receive more responses than posts without, our data shows that for all three groups posts without a visual garnered more responses than those with a visual. This is especially true for Jakarta and Johor Bahru where comments for posts without a visual significantly outnumber responses for posts with a visual.

The number of likes for posts with a visual for Dili are approximately four times more than likes for posts without a visual. However both Jakarta and Johor Bahru do not present the same findings.

RQ 1: Impact of Theme of Posts

We then coded the posts by the various themes as identified in Table 2 above and sought to understand the proportion of posts within that theme, the average time it takes to get a response to a particular theme and the average number of responses a theme gets. Detailed figures can be seen in Table 3 in the appendices.

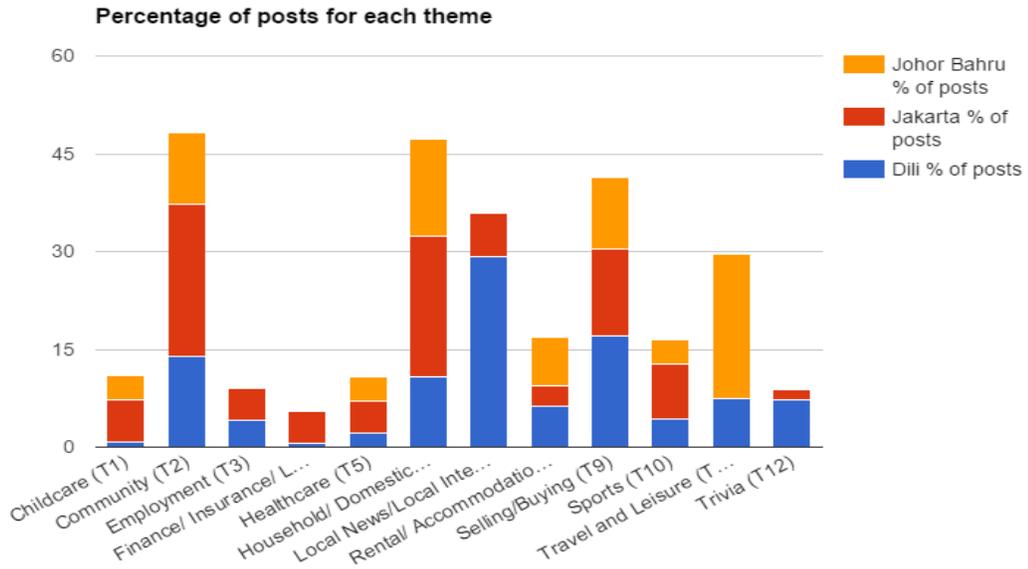


Figure 1: Percentage of Responses at a Theme Level

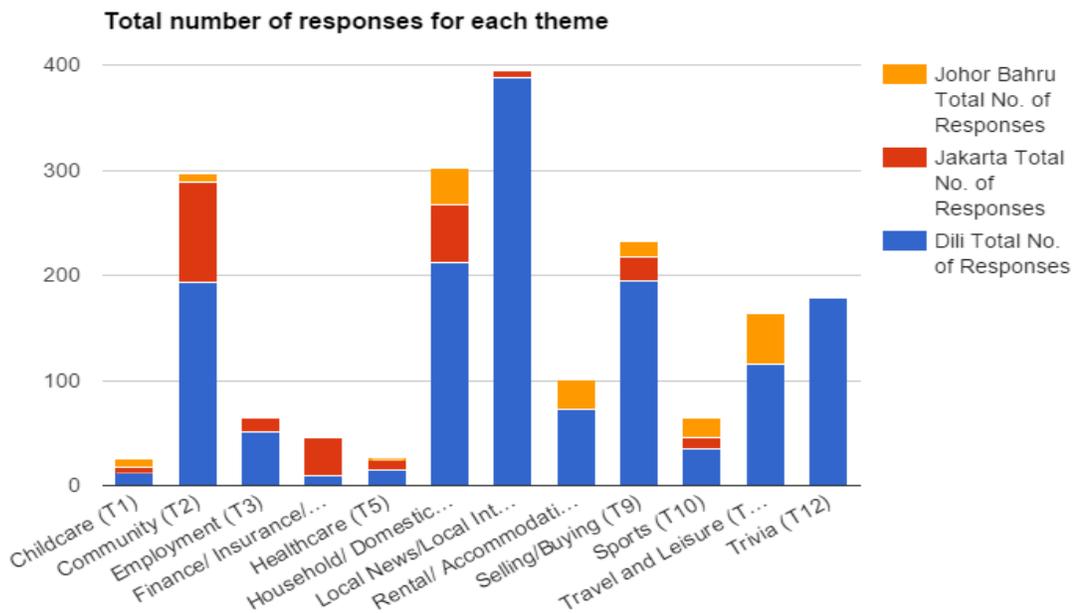


Figure 2: Total No. of Responses at a Theme Level

RQ 1: Theme and Mean Number of Responses

In terms of the percentage of posts by theme, for Dili, the top five were Themes 2, 6, 7, 9, and 11. For Jakarta the top five were 2, 6, 7, 9 and 10 while for Johor Bahru they were Themes 2, 6, 8, 9 and 11. We are able to observe that across the three groups, the themes Community and Household/ Domestic and Buying/ Selling had the highest percentage of posts and were dominant across all three groups. Local News and Travel/ Leisure were among the themes that also had the highest percentage of posts among at

least two of the groups. Please refer to Table A28 in the Appendices for detailed calculations for each group.

For Dili, the highest mean number of responses was received for Themes 1, 4, 6, 11 and 12 (Table A29). For Jakarta the highest mean responses were received for Themes 2, 3, 4, 5, and 6 (Table A33), while for Johor Bahru, the highest mean responses were received for Themes 1, 6, 8, 10 and 11 (Table 37). Thus we can see that across the three groups, Household/ Domestic is the dominant theme in terms of top five highest mean responses. Across at least two of the groups, Finance/ Legal/ Insurance and Childcare were among the themes that garnered the highest mean responses.

We ran one-way Anova tests for all three groups to test theme as a factor against mean responses received. We looked at the Levene's test and noted that for Jakarta (Table A34), the p-value was 0.254. As such the data did not violate the homogeneity of variance assumption. The Anova test for Jakarta (Table A35) showed no statistically significant difference between theme and the mean number of responses received ($p = 0.89$).

The Levene's test for Dili (Table A29) has a p-value of 0.007. For Johor Bahru (Table A38), it was 0.004. These suggest the data have violated the homogeneity of variance assumption. Thus for these two groups, we report the results of the Welch tests, which did not assume homogeneity of variance. For Dili (Table A32), the Welch test showed no statistically significant difference between theme and the mean number of responses received ($p = 0.089$). Similar findings were observed for Johor Bahru (Table A40), ($p=0.641$) indicating no statistical significant difference as well.

RQ 1: Theme and Mean Time Taken to Respond

We also identified the themes that received the fastest mean response time. For Dili the top five themes were 1, 3, 5, 7 and 10 (Table A29). For Jakarta the top themes, 1, 2, 4, 6 and 8 (Table A33) while for Johor Bahru the top themes 1, 8, 9, 10 and 11 (Table A37). Across the three groups, the theme that had the speediest response time was Childcare.

We ran one-way Anova tests for all three groups to test theme as a factor against mean response time. The Levene's tests indicated that the data for Dili (Table A30), ($p = 0.00$), Jakarta (Table A 34), ($p = 0.00$) and Johor Bahru (Table A38), ($p = 0.010$) did not meet the homogeneity of variance assumption. Hence, Welch tests were used for all three groups.

For Dili (Table A32), the Welch test showed a statistically significant difference in the mean time taken to respond to a post by theme of the post ($p = 0.009$). For Jakarta (Table A36), ($p=0.572$) and Johor Bahru (Table A40), ($p=0.542$) indicating there was no statistically significant difference in the mean time taken to respond and the theme of the post.

RQ 3: Virtual Communities

As part of identifying the formation of virtual communities within the groups, we coded the number of times members within each of the three groups posted a comment or made a response within the one month time period. This showed the levels of participation and engagement within the three groups. We identified the top five most engaged persons within the three groups. The commonality that we identified among the three groups shows that the most engaged persons tend to be among the most

responsive. For figures on virtual communities, please refer to tables A41, A42 and A43 in the appendices.

We then ran the Pearson's correlation to measure if there was an association between the number of times a member responded and his engagement level. We measure engagement level as the number of times a member appeared within the one month period, whether as a poster of a post or as a responder to any of the posts within the period.

For Dili (Table A45), the Pearson correlation coefficient r is 0.906, for Jakarta (Table A47) r was 0.967 and for Johor Bahru (Table A49), r was 0.993. These are all statistically significant as p is less than 0.0005.

DISCUSSION

RQ 1: What are the modes and themes of information that are shared and searched for in the groups, and what are the similarities/differences across groups?

RQ 2: What are the modalities of the information sharing/seeking process, and are there any specific factors – such as the presence of visuals, as well as other factors that have a bearing on overall 'responsiveness'?

RQ 3: Can participation within these groups be seen as a 'social investment' for prominence within the group? What are the differences in the levels of participation and engagement across groups? What is the level of engagement of the members within the groups?

Mode

Across the groups, more than 60% of the posts fall into the Information Seeking and Information Sharing modes. The average number of responses on Information Seeking posts is higher than the group averages for all three groups. Same is the case with 'Likes' and Information Sharing. Thus, we can say that the main modalities of interaction within each of the groups are information seeking and sharing.

Themes

Household/Domestic, Selling/ Buying and Community themes are popular across the three groups. We conjecture that on FB people are looking for information based on personal recommendations/ reviews - mimicking a 'real' community. This may be especially true for expatriates who have a very limited 'real' community to tap on, and so they gravitate towards virtual communities of others who are in similar life situations. Community themed posts related to happenings that are of interest to either specifically the expat community or relate to locally relevant issues. It is possible that participation in such activities is one of the ways in which expatriates are making sense of and finding their way around their new/adopted surroundings.

Visual Elements

As per literature (Hofmann et al, 2013) posts with a visual element are expected to get a better response (likes/comments). One of the study groups (Jakarta Expats) confirmed this, while the other negated this. Factors such as size of the group, time of the post and the quality of the visual element may be factors impacting these outcomes.

Stakeholder Engagement

Dili has the highest ‘popularity’ rate. This could be explained by the fact that it is situated in a new country with a still developing expat community - leading people to gravitate towards this group and participate actively in it.

Johor Bahru was the most ‘committed’. This could be related to the fact that this is a relatively new group that still has freshness and appeal. Since Johor Bahru is a relatively small town, another factor that could come into play is the size and composition of the expat community - and the availability of avenues for expatriates to interact with one another.

For Jakarta, both popularity and commitment figures were low. This could be explained by the overall low traffic of posts in the group, as well as the fact that the average amount of time taken to get responses is very high, signaling an overall ‘sluggish’ quality in the group.

Virtual Communities

We looked at the ‘top’ posters and responders for each of the three groups to see if there was a relationship between the number of times a member posted and the number of responses received by that member. We also wanted to see if members who responded more also got more responses to their posts as postulated by Pi, Chou and Liao (2013). In the three groups that we studied, we were unable to see any relationship amongst these variables. We then looked at the ‘most engaged’ stakeholders; we noticed that for the most part, people in the most responders group are also the ones who are most engaged. (Tables A41, A42 and A43). We calculated the ‘most engaged’ as the total number of times an individual made an appearance in the group within the study period – whether as a poster or as a responder.

LIMITING FACTORS

Facebook groups are inherently unstable. We initially included Expats of Managua as one of the three groups in our study. However, within the 13 week duration of this study, one of the groups - Expats of Managua - went from being a public to a closed group - requiring the researchers to locate and study an alternative group. Also, after the coding had been completed, the researchers noticed that a second group - Dili Expats - went from Public to Closed. Most recently, the researchers discovered that Dili Expats had become a secret group - it is no longer discoverable via a Facebook group search.

We also hypothesize that group admins can play a more active role in ‘managing’ the group; for example by controlling the number of commercial posts, tagging/asking knowledgeable group members to answer specific queries, putting info rich files upfront and referring users to it, etc. In one of our study groups, for example, there were a few posts about how it took a long time - sometimes two weeks - for the admins to approve posts (See figure A13 in appendices).

LIMITATIONS

The three groups that we selected for this study had inconsistencies in the terms of the size of the groups and age of the groups. This has been a limiting factor in our study as some of the differences across the

groups could be explained by the differences in size and composition of the groups as well as the differences in the relating quantum of posts generated for the month of August 2015 that we studied. Our interpretations are based only on manifest data, and we do not analyse the data for latent meanings. We also believe that better insights could be garnered if the data that we collected and analysed was supplemented with other methods - such as a survey of group members or semi structured interviews with group admins.

The overall quantum of observations is also relatively small for our study to be able to make any conclusions that are generalizable. Similarly, one month may be too short a period to discern any major trends.

IMPLICATIONS AND BENEFITS

Our study presents a picture of the information transactions that take place on Facebook groups for expatriates. Studying expat Facebook groups is significant for two reasons - as the world shrinks and people become more mobile than ever before, expatriate communities becomes increasingly commonplace and diverse. Second, expatriates are more likely to use social media to look for information and to form virtual communities - since they have no access to a 'real' community, and there is a tendency to gravitate towards others in similar life situations. Our study also revealed that information seeking around a few specific themes such as Household/Domestic, Buying/ Selling and Community garner faster and a greater number of responses, hinting at a greater information need in the case of the first two and a desire for community involvement in the case of the last. Our study also found that there is a core group of members who are most engaged, and together - through either posting or responding to posts - these 'group champions' play a central role in building and maintaining the group dynamics.

FUTURE RESEARCH

We conjecture that by increasing the duration of study and by using latent coding, we may be able to identify 'subject experts' within each of the groups. It would also be very interesting to test our modes, themes and social popularity and commitment measures in closed groups as they may present a different set of findings. The same could be done for special interest Facebook groups - such as expat spouse groups, travel and recreation groups, baking groups, etc. - both public and closed to see if the rates of information seeking and sharing, as well as engagement are higher.

CONCLUSION

Through this study, we wished to contribute to the greater understanding of information exchange within Facebook expatriate groups. As the study aimed to understand the modalities of information seeking and sharing and virtual communities, we focused on gathering data for the modes, themes of information, response rate, number of likes, commitment and popularity of the virtual groups within Dili, Jakarta and Johor Bahru. During the process of our study, we took special care to minimize any bias that could result by developing detailed definitions and by doing an inter-coder reliability test. We also placed special effort in the organization of the data so as to allow us a clearer view of any possible patterns or trends. However, from our few data findings we noticed that there were differing patterns across the three groups. Due to the quantitative nature of our study, we were not able to delve into the psychological,

behavioural and social aspects of knowledge sharing within virtual communities; which could otherwise help to explain the differences in the results across the groups. Nevertheless, our findings would be useful to other researchers who seek to delve deeper into this field. More importantly, future researchers would be more aware of the setbacks and limitations we faced in the early stages and thus anticipate them.

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