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The influences on Internet adoption and usage of the Bottom of the Pyramid in Vietnam

A preliminary model

Nhung Nguyen

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Supervisor: Tamar Almor
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Bachelor's Program in International Business
Mikkeli Campus

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ABSTRACT OF
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Author: Nhung Nguyen
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Objectives

This research attempts to assess potential influences on the Bottom of the Pyramid (BoP) in using the Internet by proposing a technology acceptance model. In the course of doing so, the study also provide a better understanding of how the BoP accesses the Internet.

Summary

The author modified the Unified Theory of Acceptance and Usage of Technology using previous studies of the BoP to create an initial conceptual framework. The model consists of four independent variables: performance expectancy, ease expectancy, social influence and facilitating conditions and a dependent variable: usage behavior. Then, eight in-depth individual interviews with the BoP in Vietnam are conducted. Content analysis is adopted to improve the variables proposed in the initial model. Next, the variables are coded to carry out correlation tests, which help suggesting the relationships between them.

Conclusions

Performance expectancy, which is how much the BoP believes the Internet helps achieving job goals, entertainment and information needs, positively influence the adoption. Ease expectancy measuring the affordability of the Internet and the ease of accesing it also positively correlates with usage behavior. Social influence takes into account the degree the BoP thinks that reference groups expect them to use the Internet, that Internet is a social norm which should be abided to, and that the Internet is beneficial for the whole household. The probability that the BoP uses the Internet increases with Social Influence. Last, Facilitating Conditions, which is the level the BoP believes that a technical infrastructure exists to support their usage and that the BoP have control over their usage, positively influence the degree of usage of the Internet.

Key words: Vietnam, the Bottom of the Pyramid, the Base of the Pyramid, Internet usage, Internet, technology acceptance, poverty alleviation

Language: English

Grade:

Contents

I. Introduction

1. Background

"Like slavery and apartheid, poverty is not natural. It is man-made and can be overcome and eradicated by the actions of human beings."

-Nelson Mandela-

Poverty alleviation has always been a heated topic in every international development discussion. Non-governmental organizations (NGOs) and governments have been thought of as the main contributors to this process. The motivation to enhance the wellbeing of society has driven NGOs and governments to provide aids in the form of donations or public policies to promote economic growth. Despite this common goal, some actions aiming to assuage poverty have triggered controversial debates due to the fact that successful poverty reduction involves numerous complicated facets to consider such as economic liberation, employment, human capital, infrastructure, and technology and requires a long time to make any substantial progress. Poverty reduction is undeniably a tough challenge to tackle, yet fortunately, researchers are unanimously determined to solve this problem.

One notable effort in addressing poverty alleviation is the work by Prahalad (2002). Breaking the conventional thought that helping the poor was similar to charitably giving away, the author substantiated the power of 4 billion poorest people in the world, so called the Bottom of the Pyramid. He introduced multinational companies as a major actor in relieving destitution and asserted that firms could simultaneously make a profit and reduce poverty with appropriate strategies. The idea, although requires companies to make tremendous changes, has motivated enterprises to take actions and brought insights for how they can tackle poverty.

The emphasis in the suggestions made by Prahalad and his colleagues is technological innovation. One of the reasons why the Bottom of the Pyramid continues to be in the lowest economic group is their disconnectedness to the market. This issue can be overcomed with the widespread use of mobile phones and the Internet. Nevertheless, these technologies have remained beneficial largely to the richer ones, for whom the new tech is always available and affordable (Brewer et al, 2002). The adoption rate of the Internet of low-income people is only 12.5% compared to 45.9% average of the world (World Bank). Thus, to fully implement the Internet for the benefits of the poor, practitioners need to possess a rigorous understanding of the behaviors of the Bottom of the Pyramid in taking on and using this technology.

Consequently, this study aims to better comprehend the aforementioned topic by creating a suitable framework for studying the influences on the Bottom of the Pyramid in adopting and using the Internet. In order to achieve this goal, the researcher will first look at a prominent model of technology acceptance, Unified Theory of Acceptance and Usage of Technology, and previous studies on the Bottom of the Pyramid. Then, in-depth individual interviews are conducted to enhance the argument and an appropriate model is derived from the empirical research. In addition, the research will reveal the Internet usage behaviors of the Bottom of the Pyramid in light that it will aid business in targeting this emerging market.

2. Research Problems

Even though the Bottom of the Pyramid is a relatively new topic, numerous studies in the field have been focusing on ICT innovations because, as explained briefly above, it is an important facet of the whole concept. However, two limitations prevail, leaving a research gap to be filled. One is that researchers tend to take the perspective of companies or organizations, thus, their findings center around strategic tactics rather than focusing on investigating the psychology of the poor. Another drawback is the dominant use of case study of a particular project or company as methodology. Although case study provides in-depth analysis, it is perhaps too specific to make any general statements and render

findings as somewhat factual. As a result, our understanding so far of the digital mentality of the Bottom of the Pyramid is relatively case-specific, fragmented, and insufficient.

Regarding technology acceptance in general, the field have yielded various theories which can be quite adequate to study the influences in adopting and using new technology. Yet, none has fully evaluated the vastly unique mentality of the Bottom of the Pyramid due to the restraints they face. Rönnlund in her creation of Dollar Street project, which takes pictures and short videos of 264 households with different incomes in 50 countries (www.gapminder.org), discovered that families across countries with the same income level basically live in relatively same way. The study signals that the main factor creating differences in behaviors is perhaps income level rather than cultures.

3. Research Questions

Based on the problems presented above, it can be inferred that a model with a focus on studying the behavior of the BoP is needed. For this research, antecedent studies of the BoP and the Unified Theory of Acceptance and Usage of Technology (UTAUT) support an initial model, which will be modified as the author gains deeper insights from interviews with the BoP. The reason UTAUT is chosen will be explored in the literature review. This study aims to solve the previously stated problems by seeking answers to the following questions.

1. How has the BoP integrated the Internet in their lives?
2. What are the influences on the Bottom of the Pyramid to adopt and use the Internet?
   a. How does expectation for job gains influence their usage?
   b. How does the perceived ease of using the Internet affect the actual behavior?
   c. How do reference groups affect their choice?
   d. How does the available infrastructure impact the adoption?

4. Research Objectives

In the quest of responding to these queries, the research will:

1. Assess probable influences on the psychology of the Bottom of the Pyramid
2. Propose a suitable model for studying the Bottom of the Pyramid's acceptance and usage of the Internet.
3. Provide a better understanding of how the Bottom of the Pyramid accesses and uses the Internet.

5. Structure of the Thesis

Following this introduction, the thesis will be divided in five parts. First, closely related literature will be synthesized and critiqued, which serves to provide readers with a general picture of the characteristics of the Bottom of the Pyramid and the discussion around the topic. It also presents the hypotheses and a conceptual framework developed by the author based on the original UTAUT. Second, advancing the research, the author describes the chosen methodology. Third, the findings will be presented in coherence with the research questions and objectives. Forth, upon the acknowledgment of the findings, the author analyzes, explains, and compares them with the literature in the next section called Discussion. Last, the research concludes by summarizing the main findings, indicating the implications for business, pointing out the limitations of this research and suggesting gaps for future research.

II. Literature Review

The purpose of this literature review is to establish a roadmap for later empirical research by modifying the Unified Theory of Acceptance and Usage of Technology (UTAUT) to be applicable for studying the Bottom of the Pyramid (BoP) based on previous studies of this market. First, a definition of the Bottom of the Pyramid is provided due to some variance on the topic across the literature; an overview of Vietnam as a market for research is also provided. Second, some applications and impacts of the Internet on the BoP are discussed. Last but not least, four independent variables of the UTAUT will be scrutinized.

1. The Bottom of the Pyramid (BoP)

1.1. The definition

1.1.1. Brief history & the original definition

Franklin D. Roosevelt is believed to be the inventor of the term "the Bottom of the Pyramid" (BoP). In his famous radio address, The Forgotten Man, he urged for economic plans that "build from the bottom up and not from the top down, that put their faith once more in the man at the bottom of the economic pyramid." Refining this initial concept, Prahalad and Hart published a groundbreaking article named "The Fortune at the Bottom of the Pyramid" on Strategy+business in 2002, in which the authors defined the BoP as:

> "four billion people with their annual per capita income - based on purchasing power parity in U.S dollars - is less than $1,500, the minimum considered necessary to sustain a decent life".

The tremendous potential of this biggest untapped market is fully highlighted and effective business models for companies aiming at the BoP is explored in the article.

More than a decade later, the literature has enlarged quickly with thousands of research and so does the definition of the BoP. Currently, so many different definitions have been developed due to numerous poverty measurement methods, two of which are absolute poverty and relative poverty (Kolk et al, n.d). The latter one calculates the poverty line as an income lower than a certain percentage of the median income (OECD). For example, people whose income is less than 50% the average income can be considered poor in relative poverty. Initially created to quantify poverty in developed countries where the poorest people might even make more than a middle class in developing countries (OECD), a poverty line resulting from this type of measurement can be quite misleading because it includes individuals whose income is high enough to afford expensive goods (Karnani, 2006). Therefore, absolute poverty, which applies a fixed poverty line throughout countries, is more preferred in measuring the world's poorest people.

Nevertheless, variation in usage of absolute poverty remains. Some prominent research uses an extreme poverty line of $1-2 per day (Prahalad & Hart, 2002; Banerjee & Duflo, 2007). Currently, World Bank (2015) has updated the extreme poverty line to $1.90 per day. Some others apply an annual income of less than $1500-3000 (Prahalad et al, 2002; Prahalad, 2005; Hammond et al, 2007), which is quite equivalent to the $8-per-day set by World Economic Forum (2009) or the $6-per-day (Subhan & Khattak, 2017).

1.1.2. The definition in this research

The report by World Economic Forum in collaboration with the Boston Consulting Group (2009) re-examined the 4 billion most deprived people and concluded that they are earning less than $8 per day. This group, then, is divided into three smaller quintiles:

1. Income $2-8: 1.1 billion people
2. Income $1-2: 1.6 billion people
3. Income less than $1: 1 billion people

One criticism of the BoP is that if included only the poorest with income less than $2, constituting a market of only $1.9 trillion, most companies are unlikely to achieve financial success (Subhan & Khattak, 2017). Thus, including the next 1.1 billion people, making the BoP a market worth of $2.3 trillion a year will enlarge a potential area of profitability for multinational companies. In addition, some major literature also utilizes the $1500-3000 line (Prahalad et al, 2002; Hart et al, 2004; Prahalad, 2005; Hammond et al, 2007). Therefore, this study will define the BoP as people with annual income lower than $3000.

1.1.3. Vietnam as a research focus

Vietnam is one of the most promising emerging markets. Within a decade from 2001-2010, its average GDP growth was 7.26%, the second highest in East Asia region, only after China (GSO, 2011). Not only praised for its economic growth, Vietnam is also applauded for Doi Moi, a chain of policies aiming to mitigate poverty, which has remarkably reduce poverty rate from nearly 90% in 1993 to approximately 40% in 2008 using a $2/day line (World Bank, 2012). Nonetheless, Vietnam still has a long way to complete poverty eradication. Around 70% of the population still belongs to the poorest 4 billion of the world. Regarding living standard, Vietnam ranked quite low, 115th of all 188 countries in Human Development Report (2016). In addition, income inequality is increasingly becoming a salient problem: the highest income quintile makes 9.8 times more than the lowest income quintile and the gap is only widening throughout the years.

1.2. The debate.

The BoP concept, like most topics in the world today, faces with controversy. Prahalad (2005), in his acknowledgment of the opportunities at the Bottom of the Pyramid, suggested 12 strategic moves for companies to successfully capitalize on the BoP market and eradicate poverty at the same time. To summarize, his recommendations

emphasized on a cost-efficient business model that reduces product price yet maintains product quality, a thorough understanding of the BoP consumer psychology to invent suitable products and a focus on innovation, especially in technology. On the other hand, Karnani (2006) presented another strategic viewpoint. The author argued that profiting from the poor is less effective in reducing impoverishment, rather, companies should consider the BoP as producers, foster more income-generating opportunities, and increase productivity of the market that the BoP operates in. While Prahalad takes a corporate stand and mainly views the BoP as consumers, Karnani regards them as producers, entrepreneurs, and business partners. Each opinion has its own merit regarding poverty alleviation and should be scrutinized for application when firms want to enter the BoP market. One thing that both sides of the debate agree on is that the Internet is an incredibly valuable tool for both the BoP as consumers and producers and companies aiming at this market.

1.3. The BoP and Internet

Bartel (1968) developed the theory of market separations, which can provide an organized and big picture of what kinds of deprivation that the BoP faces. Those include spatial, temporal, informational and financial separations. Prahalad et al (2002) may have been correct in his assertion that the Internet is one of the most important strategies in targeting the BoP because of its ability to bridge the separations.

First, spatial isolation illustrates that the BoP, residing in remote areas, is physically distant because of the poor transportation system. Temporal disconnectedness refers to the enormous distribution time that causes products to gradually deteriorate. Both separations imply a lack of physical infrastructure that results in the fact that BoP, as consumers, must purchase low-quality products and, as producers, sell their goods for lower price and face the risk that their perishable goods will be rotten by the time it arrives to the customers (Tarafdar et al, 2013). In these cases, the Internet perhaps serves as a

suitable marketplace. The BoP can acquire products that are unavailable at their locations via the Internet. Some items such as pre-paid mobile phone card even transform their nature from physical to digital in order for the BoP to easily buy them (Tarafdar et al, 2013). Moreover, the BoP consumers have been purchasing products at a higher price due to informal economies and inefficient infrastructure, which is called poor man's penalty (Subrahmanyan et al, 2008; Barki et al, 2010). The BoP can now access cheaper products via the Internet. As producers, with the Internet, the BoP can contact their customers/suppliers well beforehand about the purchases to ensure that the products stay as fresh as possible when delivered.

Second, informational separation indicates not only a lack of market information, making the BoP susceptible to scams, but also the low literacy and lack of education, making the BoP unable to generate more income. Barnejee et al (2007) found out that the BoP works many jobs including farmers, small business owners, housemaid, daily wage workers at construction sites, carpenters, and so on but they are underpaid due to their lack of specialization. The Internet can be an information hub where the BoP can find relevant knowledge aiding their daily lives and acquire more skills. Regarding market information, the BoP can better analyze their stands in the market to negotiate a good deal. For example, Indian farmers are now able to plan their crops and decide the price based on the market information they can get through e-Choupal, an initiative which provides Internet kiosks in rural India (Annamalai et al, 2003). Looking at skill enhancement, a salient instance is Kenyan children are trained to become professional web page designers (Prahalad et al, 2002)

Last, by acting as a beneficial marketplace and an information hub, the Internet eventually creates more opportunities for the BoP to bring about more income and reduce the financial gap. For BoP consumers,

Despite the many bright sides, Internet adoption in poverty alleviation also poses some threats. Cai et al (2007) insightfully recognized that some BoP Internet users utilize the technology as a platform for gambling. Additionally, in rural areas, young parents tend to migrate to the urban to find jobs, leaving their sons and daughters behind with grandparents (Cai et al, 2007; Barnejee et al, 2007; Leonhardt et al, 2017). On the one hand, these children, without sufficient caretaking, can easily get addicted to online gaming; some even steal their parents' money and drop school to be at the Internet kiosks playing games. On the other hand, they are perhaps the earliest adopter of new technology as in the case of Kenyan children mentioned above (Prahalad et al, 2002).

It is undebatable that these risks are worth bearing in mind while diffusing technology to the BoP. However, they can be avoided with appropriate monitoring actions. For instance, the Internet kiosk moderators can supervise what content users can access and the amount of hours users spend at the kiosks.

In conclusion, the advantages of the Internet appear to outweigh the disadvantages and different stakeholders such as private firms, non-government organizations, and governments have been endeavoring to make the Internet more widely accessible for the BoP. Currently, there are three most salient ways the BoP can access the Internet: kiosks, mobile broadband or personal computers donated by researchers, universities, and students. In spite of the effort, according to World Bank, only 12.5% of low-income individuals are using the Internet; less than 10% of the population of most African countries have Internet access while the number is more than 90% for most European countries. A report by World Economic Forum showed that in 2015, 57% of the world population is not connected to the Internet while 78% already have available mobile broadband. Why do the BoP decide to opt out? What can influence their adoption and usage of the Internet? These are the important questions to be considered in order to integrate and maximize the benefits of the Internet to the BoP. A model that can propose an answer is the Unified Theory of Acceptance and Usage of Technology (UTAUT).

2. Unified Theory of Acceptance and Usage of Technology.

Unified Theory of Acceptance and Usage of Technology was created in 2003 by Venkatesh, a renowned researcher in Technology Acceptance field. The model was first based on a comparison of eight most used previous theories: Theory of Reasoned Action, Technology Acceptance Model (1&2), Motivational Model, Theory of Planned Behavior, Combined Technology Acceptance Model and Theory of Planned Behavior, Model of PC Utilization, Innovation Diffusion Theory, and Social Cognitive Theory. Then an empirical longitudinal test is conducted in four industries where employees are trained to use new technology; and out of more than 32 constructs from the eight models, four are found to be the most influential in demonstrating the technology adoption and usage. While the eight models only explain between 17 to 53 percent of the variance, UTAUT can explain up to 70 percent, thus, for this reason and its comprehension, the UTAUT is utilized in this research as a theoretical background to analyze the BoP.

UTAUT consists of four independent variables: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions; and four moderating variables: gender, age, experience, and voluntariness of use. For the scope of this paper, only the four independent variables will be scrutinized of their fitness for examining the BoP in later sections.

2.1. Performance Expectancy

This construct is combined from five other concepts: Perceived Usefulness (Technology Acceptance Model and Combined Technology Acceptance Model and Theory of Planned Behavior), Extrinsic Motivation (Motivational Model), Job-fit (Model of PC Utilization), Relative Advantage (Innovation Diffusion Theory) and Outcome Expectations (Social Cognitive Theory). The main theme throughout all of these concepts, which is summarized by Venkatesh (2003), refers to:

"the degree to which an individual believes that using the system will help him or her to attain gains in job performance".

As illustrated above, the Internet is initially utilized as a tool for economic empowerment, helping the BoP become wiser consumers and more productive producers. For example, Ndung'u et al (2011) and Christoph et al (2013), in their research of African countries, identified that young people at the BoP also use the Internet for receiving and sending emails, which can increase their employability. However, in reality, its usage extends beyond job purposes. According to Viswanath et al (2013), Kreutzer (2009) and Christoph et al (2013), the BoP also uses the Internet for browsing social media sites, downloading music or videos and messaging, which are mostly entertainment and communication. In addition, Barnejee et al (2007) recognized that the rural BoP is unsatisfied with the limited options they have for entertainment, hence, it can be hypothesized that the Internet may also serve to fulfill this unmet demand of leisure activities besides its assistance in professional work. Information search is another use described widespread in the literature (Ndung'u et al, 2011; Kuriyan et al, 2008; Tarafdar et al, 2013). The acquired information can be related to any subject of interest such as job-related issues, healthcare information, and sports. Seemingly, similar to the rule of economics, the BoP would try to make the most out of their limited resources. As a result, the Performance Expectancy should be extended to include all the benefits of entertainment, communication, information gathering and job accomplishment.

> *Hypothesis 1: Performance Expectancy, which is the degree to which the BoP believes that using the Internet would cultivate numerous benefits regarding job accomplishments, entertainment, communication, and information gathering, will positively influence their adoption the Internet.* **The higher the Performance Expectancy, the more likely the BoP will use the Internet.**

2.2. Effort Expectancy

Venkatesh (2003) integrated three constructs, Perceived Ease of Use (Technology Acceptance Model, Complexity (Model of PC Utilization) and Ease of Use (Innovation Diffusion Theory) to create the Effort Expectancy construct, to mean:

"The degree of ease associated with the use of system".

First, the naming of the construct might easily confuse readers because the word "effort" opposes the meaning "ease". To illustrate, when reading "the higher the Effort Expectancy", some people might come to think that more effort is put into using the technology, which also means it is not easy to use while in fact, the phrase signifies a higher degree of ease. Consequently, the author would change the name to Ease Expectancy to prevent this misunderstanding.

Second, in this definition, Venkatesh (2003) shortsightedly hypothesized on the effortlessness of the actual use of the technology. For example, in his empirical test, he used items such as "I would find the system easy to use" and "My interaction with the system is clear and understandable". For the BoP, there are two more factors which may possibly create barriers and lower the ease of using the Internet: the cost, the method of access, and the learning effort.

2.2.1. The cost spent on acquiring the Internet

The BoP are price-sensitive customers (Prahalad et al, 2002; Karnani, 2006; Subrahmanyan et al, 2008). Thus, unsurprisingly, financial capability will influence the adoption and usage of the net. Not only the BoP faces the cost of the Internet itself, but also for first-time users, they must bear the expenses of devices like mobile phones and

computers and the cost of maintenance, which can be a burden on the shoulder of these destitute people (Angoitia et al, 2009).

2.2.2. The method of internet access

According to the Organization for Economic Cooperation and Development, the majority of the population accesses the Internet via a personal computer, which might not be the case for the BoP because of their inability to afford a PC (Agarwal et al, 2008). The BoP has fewer options in gaining access to the Internet. The main methods that have been described throughout the literature are Internet kiosks and mobile broadband (Subrahmanyan et al, 2008; Christoph et al, 2013; Kuriyan et al, 2008). These approaches to the Internet yields some benefits concerning the cost and the technological know-how (Christoph et al, 2013); nevertheless, they also posed some limitations compared to PCs: specifically, Agarwal et al. (2008) criticize that Internet kiosk can sometimes be cumbersome to reach because it requires people to travel a long distance; moreover, some websites which are not mobile optimized are inconvenient to use with mobile broadband.

Therefore, the ease associated with using the Internet also depends on which method BoP uses for Internet access and whether they find it advantageous.

2.2.3. The learning effort of using the Internet

This factor is similar to what has been described by Venkatesh (2003).

In light of the three points above, it is suggested that the Ease Expectancy of UTAUT applied to the BoP should also take the cost and the effort associated with accessing the Internet into consideration.

> *Hypothesis 2: Ease Expectancy, which is the perceived ease associated with the access, the affordability, and the use of the Internet, will positively influence the adoption of the Internet.* **The higher the Ease Expectancy, the more probable the BOP will use the Internet.**

2.3. Social Influence

Synthesized from Subjective Norm (Theory of Reasoned Action, Technology Acceptance Model, and Theory of Planned Behavior), Social Factors (Model of PC Utilization), and Image (Innovation Diffusion Theory), Social Influence is defined as:

"The degree to which individual perceives that important others believe he or she should use the system."

This variable is fairly comprehensive because it includes all three aspects: recommendation from important ones and reference groups, and improvements in social status.

The first facet is proven from the study of Viswanathan (2010) and Mehra et al (2004), which found that the BoP mostly obtains product information from social sources such as family, relatives, and friends. The second one, however, perhaps is irrelevant for the BoP. A large portion of the Bottom of the Pyramid lives in South Asia and Africa, where there is a high level of collectivism (Subrahmanyan et al, 2008). The central idea of collectivism is group harmony, meaning each individual within a community tries to maintain a

consistent belief with other members (Hofstede, 1983), hence, it is unlikely that they begin using the Internet to boost social standing.

For the above-mentioned reasoning, it is possible that the BoP opts for Internet mainly because of relatives' recommendations or social compliance rather than enhancement of social status.

> *Hypothesis 3: Social Influence, which is the degree the BOP perceives that their family members, relatives, and reference groups think that the Internet is beneficial for them, will positively influence the adoption of the Internet.* **The higher the Social Influence, the more probable that the BOP will adopt the Internet.**

2.4. Facilitating Conditions

Perceived Behavioral Control (Theory of Planned Behavior), Facilitating Conditions (Model PC Utilization) and Compatibility (Innovation Diffusion Theory) is unified into Facilitating Conditions factor of the UTAUT model. Venkatesh (ibid) clarifies it as:

"The degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system."

The author took organizational infrastructure into account because organizational behavior was the focus of the research. However, for the purpose of this study, which is to understand the individual behavior, technical infrastructure probably will be the main usage support. The BoP receives technical assistance primarily from family members, relatives or internet kiosk moderator (Viswanathan, 2010; Kuriyan et al, 2007; Tarafdar et al, 2013).

In his study, Venkatesh (ibid) finds insignificant influence of Facilitating Conditions on adoption instead this factor only greatly determines the usage. Kuriyan et al (2007) demonstrated this point in the study of Akshaya project, a cooperation between private and public sectors of India to provide e-literacy courses through Internet kiosks to the poor. Subsistence consumers' use of the kiosks is largely limited when the moderators only deliver courses. On the contrary, the use can extend to processing government procedures, paying bills, and searching information if the Internet kiosk moderators offer these services.

In spite of the above-mentioned point that Facilitating Conditions is minor in explaining technology acceptance, the otherwise can be found for the BoP. Banerjee et al (2007) and Bertrand et al (2006) report that the poor is highly risk-averse, thus, if there is insufficient support in the infrastructure, they may withdraw from adopting the innovation.

> *Hypothesis 4: Facilitating Conditions, which is the degree to which the BoP believes there is a technical infrastructure supporting Internet usage, will positively influence the adoption the Internet.* ***The higher the Facilitating Conditions, the more likely that they will adopt the Internet.***

3. Conceptual Framework

The literature review draws a preliminary picture of how the UTAUT can adapt to the BoP. The following framework summarizes the main discussion.
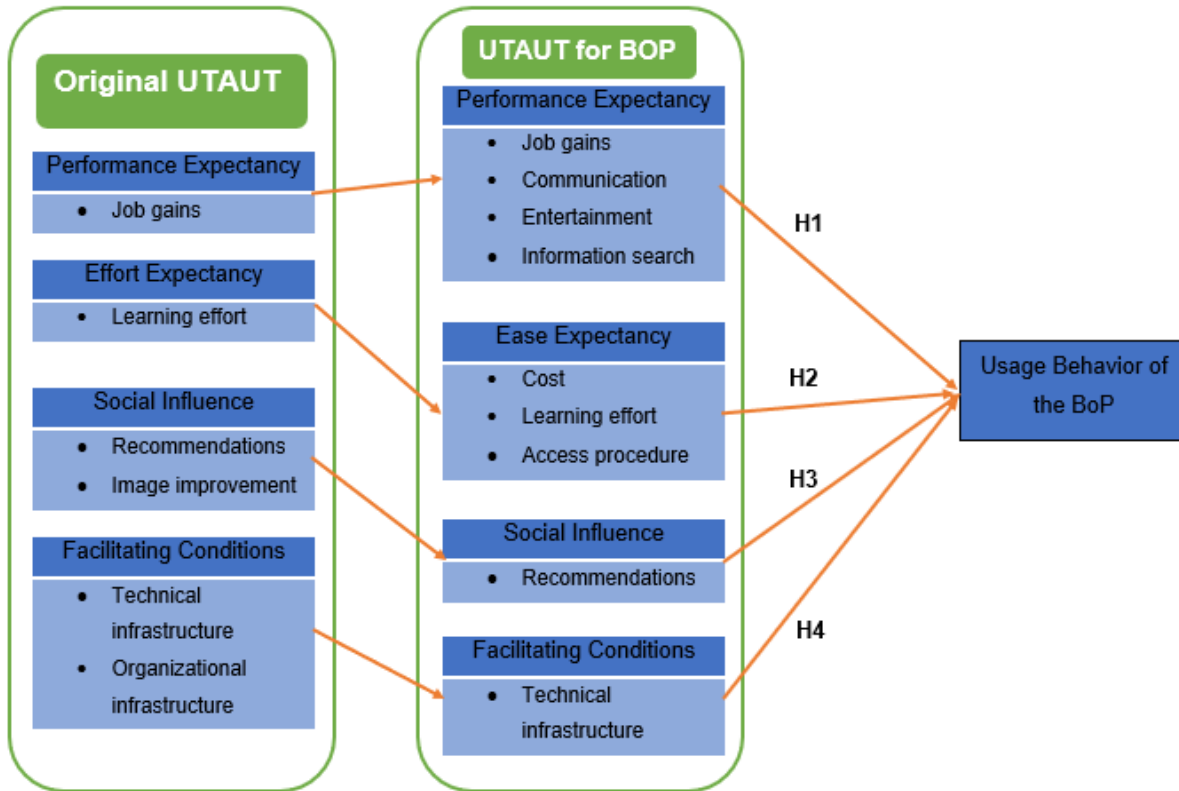
Conceptual Framework (developed by the author based on the original UTAUT by Venkatesh, 2003)

Performance Expectancy includes all the gains obtained from the adoption and usage of the Internet such as entertainment, communication, information search, and job conducting. The BoP has more to consider in making decisions to use the Internet, especially concerning the cost, the access approach and learning effort. Thus, Ease Expectancy should also take into account these factors. Recommendation from relatives and reference groups is considered to be the Social Influence for the BoP instead of social climbing. The last variable, Facilitating Conditions is hypothesized to be an influence on adoption because of the high level of risk-averse of the BoP.

III. Methodology

This section will elaborate the choice of methodology for the empirical research. The data collection process will also be presented, followed by how the analysis is conducted.

1. Data collection

1.1. In-depth interviews

The focus of the research is on the consumer behavior of the Bottom of the Pyramid, a topic which has gone rather underexplored. Thus, a qualitative approach appeals for two reasons: it portraits a picture of the psychology of the BoP in enormous details, which a quantitative method may lack the tools for, and the rich data rendered from the texts will be a strong ground for future quantitative analysis (Cooper et al, 2014). However, the biggest drawback of qualitative research is its exposure to bias in interpretation of the researcher. Acknowledging this threat, the author has attempted to remain open for new information to integrate and seek explanations for unusual behaviors rather than disregarding the findings.

Of all the available tools in qualitative research, individual in-depth semi-structured interview seems to match the research questions and objectives the most. The rationale behind this choice is that semi-structured interviews allow the researcher to ask more questions that are personally related to the respondents, allowing novel patterns to emerge, but at the same time, the initial variables discussed in the literature review are also explored. In addition, the conversational nature of the interviews might make the interviewees more comfortable in expressing their thoughts and asking for clarifications if they find any questions unclear. This will reduce the chance of misunderstanding (Wilson, 2010).

For this research, in-depth interviews have been conducted with eight individuals at the BoP in a rural town of Vietnam, each lasted for around 30 to 45 minutes. Income level is

the only criterion to identify relevant respondents. They need to have an income lower than 5.7 million VND per month, which equals to the $3000 annually line determined in the literature review, using current exchange rate. In the beginning of the interview, the respondents are asked to introduce themselves based on the basic demographic information such as age, income and occupation, which acts as a filtering process. In addition, potential respondents are also suggested by the interviewees, aiding the researchers in finding more target. The language of the interviews is Vietnamese since none of the respondents is fluent English speaker and communicating in native language might increase the level of understanding between the interviewers and interviewees. During the interviews, notes and recordings are taken to best preserve the data for later analysis. Then, the interviews are transcribed and translated into English by the author, who has 3 years of experience in translating English to Vietnamese and vice versa. The respondents are also briefed about the purpose of the study and that their responses will be kept confidential to maintain the ethical aspect of the research.

The questions come in five sets, one is to collect general information on the historical Internet usage of the respondents and the other four are to analyze the four variables. Both open-ended questions and variable-specific questions are implemented to allow interviewees to fully address the topics that are of investigation. The first set involves demographic information, especially emphasizes on income and job and lifestyle description. The questions will help the researcher determine how the Internet has been utilized in the lives of the poor. The second set tests Performance Expectancy, thus, asking questions related to the usage of the Internet and the purposes they use the Internet for. The third one focuses on Ease Expectancy which will look at the cost, the learning effort and the accessibility of the Internet to the BoP. The fourth set assesses how social factors might affect the BoP. The last set evaluates how the infrastructure facilitate the Internet usage of the BoP. The sets of questions will be presented in the Appendices.

To summarize, the interview process has been administered in the following steps. First, a list of questions representing each purpose of the study is created, which include both

open-ended and purpose-specific questions. Second, the interviewees are selected based on their reported income as well as suggestion from the local people. Third, the interviewees are debriefed and interviewed. Last, the interviews are record, transcribed and translated from Vietnamese to English for analysis.

1.2. Demographics

The research has adopted purposive judgmental sampling, choosing interviewees based on a criterion pre-determined by the researcher. From this sampling process, eight people were chosen to collect data from. Their backgrounds are described in the graphs below.

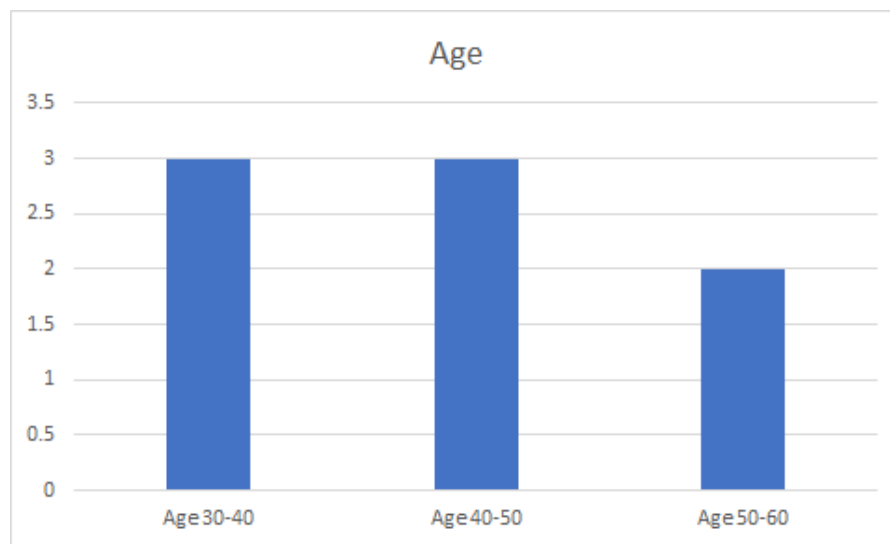*Figure 1. The age distribution of the interviewees.*

The interviewees are mostly middle-aged people, even though there was an attempt to widen the age range, because they are the heads of the family who actually make the decision to adopt the Internet for the household. From the conversations, their personal thoughts on the Internet as well as how the children in the family influence the adoption are explored.
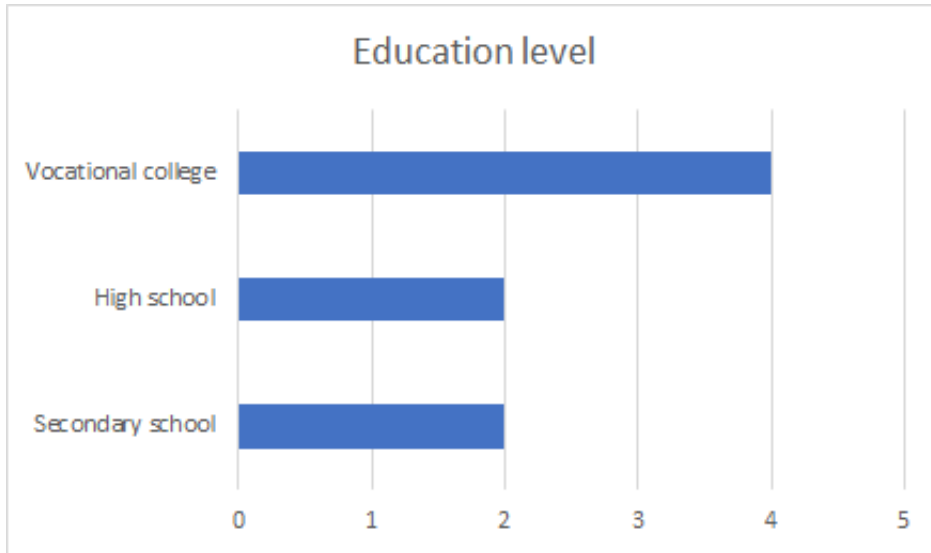
Figure 2. The education level of the respondents

Interviewee	Occupation
Person 1	Teacher
Person 2	Low-level government office worker
Person 3	Construction worker
Person 4	Printing factory worker
Person 5	Rancher and housewife
Person 6	Small business owner
Person 7	Teacher
Person 8	Farmer

Figure 3. The occupation of the interviewees

The majority of the respondents obtained a vocational college degree, which are also the four with more skill-required jobs such as teacher, government worker, and printing factory worker. Two people have high school degree. The oldest two (age 50-60) are also the one with the lowest education level (dropping out of secondary school). The

reason can be that they were born during the Vietnam War and had to drop out of school to support their families.

A wide range of occupations was interviewed partly because of the sampling method, which does not limit to any type of occupation. However, the diversity of the vocations will assist the researcher in identifying how the different job requirements will affect the use of the Internet.

	Income (VND)
Person 1	5,200,000
Person 2	3,500,000
Person 3	4,000,000
Person 4	4,500,000
Person 5	3,000,000
Person 6	3,500,000
Person 7	4,500,000
Person 8	2,000,000

Figure 4. Reported income of respondents

2. Data analysis

The analysis process happens in two steps: a qualitative analysis on the transcript of the interview and correlation tests on the information in order to measure the hypotheses. The motive behind this rather integrated qualitative-quantitative approach is that it enables both the exploration of significant insights from the rich text and the suggestion

for relationships between independent variables and dependent variables of the model (Srnka et al, 2007).

Going to the content analysis, which is to further probe the independent variables, the author applies a combination of hypothesis coding and in vivo coding. The conceptual framework proposed in the literature review acts as a prior coding scheme. From there, new concepts emerge and are categorized under the suitable variables of the initial framework or act as a new category of its own. Each category is color-coded.

Job gains		
Communication	Performance Expectancy	
Entertainment		
Information search		
Affordability		
Learning Effort	Effort Expectancy	Usage Behavior
Accessibility		
Recommendation & Expectation		
Social boost		
Social inclusion	Social Influence	
Family purchase decision		
Need for connection		
Availability		
Problem-solving	Facilitating Conditions	
Perceived behavioral control		
Attitude		
Anxiety		

Figure 5. The color codes and themes used in the analysis

The content from the interview helps determining whether a subcategory in the main variable is a potential influence on the BoP. Unrelated subcategories are either eliminated or relocated to the correct variable. All data is summarized in an Excel sheet according

to their color codes. This acts as the inputs for the next step in the analysis process, testing correlation.

In order to conduct correlation tests, the qualitative data is transferred into quantitative using dummy coding process. If the interviewees indicate that the subcategory is an influence, it is given a code of 1 or else a code of 0. All the dummy codes of the subcategories belonging to the variables are added to form the total score of the variables. For the usage behavior, two figures reveal about the level of usage, the length of adoption and the actual daily usage, which will be coded as below:

Length of adoption		Daily usage	
More than 4 years	3	More than 4 hours	3
2 – 3 years	2	2 – 3 hours	2
1 year or less	1	1 hour or less	1
Don't use	0	Don't use	0

Figure 6. Coding for usage behavior

The codes for length of adoption and daily usage are then again added to form the final code representing the level of usage. Correlation using Excel is carried out using the statistics for each independent variables and usage behavior; a correlation score between 0 and 1 means that the independent variables and the usage behavior are positively correlated.

However, it is important to note that the sample size is too small to make any generalization of the population. The results from the quantitative process only serves to suggest a potential relationship between the variables and to form initial theories. Further research with larger sample is needed to fully assure of the reliability of the results.

IV. Findings

In this section, the findings from the two-step analysis are demonstrated.

1. The usage of the Internet of the BoP in this research

The length of adoption, or how long the target BoP has been using the Internet, ranges significantly, with the longest time of 10 years to the shortest of 2 months. On average, the Internet has been adopted for a bit longer than four years. The daily amount of time dedicated for the Internet is averagely 2.6 hours per day. 38% report using it for around only 1 hour per day.

	Length of adoption	Daily usage
Person 1	5 years	5 hours
Person 2	10 years	4 hours
Person 3	9 years	1 hour
Person 4	2 months	4 hours
Person 5	1 years	1 hour
Person 6	3 years	3 hours
Person 7	4 years	2 hours
Person 8	2 years	1 hour

Figure 7. Length of adoption and daily usage by person

Figure 8. Daily usage by percentage
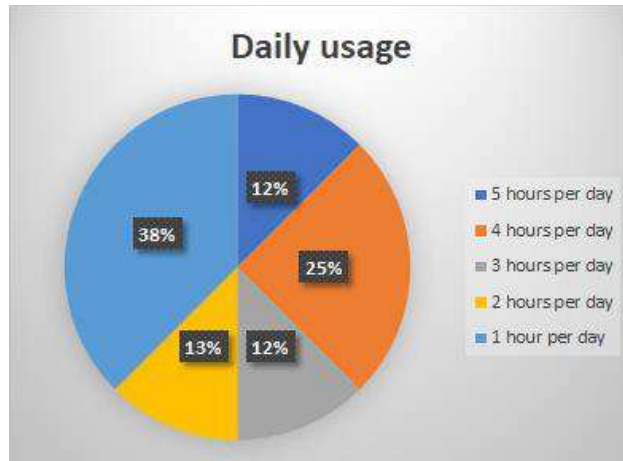
Combine the information in figure 5 and 6, we have the codes for usage behavior.

	Length of adoption	Daily usage	Usage Behavior
Person 1	3	3	6
Person 2	3	3	6
Person 3	3	1	4
Person 4	1	3	4
Person 5	1	1	2
Person 6	2	2	4
Person 7	3	2	5
Person 8	2	1	3

Figure 9. Usage Behavior

Regarding the physical device and the source of the Internet, seven out of eight respondents own a mobile phone, three people possess a laptop or computer and two have a television that can access the Internet. Five people have Internet at home in the form of Wi-Fi; five people have Internet at work, while only three people have mobile cellular.

	Physical device			Source of Internet		
	Laptop / Computer	Phone	TV	Wi-Fi	Mobile cellular	Internet at work
Person 1	Yes	Yes	No	Yes	Yes	Yes
Person 2	No	Yes	No	No	No	Yes
Person 3	No	Yes	No	No	Yes	Yes
Person 4	Yes	Yes	No	Yes	No	Yes
Person 5	No	Yes	No	No	Yes	No
Person 6	No	No	Yes	Yes	No	No
Person 7	Yes	Yes	No	Yes	No	Yes
Person 8	No	Yes	Yes	Yes	No	No

Figure 10. Physical device and source of Internet

In addition, five out of eight people share the Internet with their household. The only three that did not share are either having Internet at work instead of at home (Person 2) or using mobile cellular on their own phones (Person 3 and 5).

2. Changes to the initial framework

The purpose of the research is to find a suitable model to study the influences behind the adoption and usage of the Internet on the BoP, hence, it is important to note that the conceptual framework and the coding scheme act as initial pathway for analyzing the interviews, not the final model. As a result, in this part, the subcategories of the variables

are refined, relocated if it is more suitable in another variable and eliminated if it is not at all an influence.

First of all, Performance Expectancy includes four figures: job attainments, communications, entertainment, and information search. The respondents generally use the Internet to communicate with either their colleagues and clients or with their family and friends. Because contacting family and friends can be related to the need for social connection while emailing with colleagues and clients is perhaps closer to performing jobs, the communication subcategory will be divided into two parts. The first part is keeping in contact with clients and colleagues, which will be under "Job Attainments". The other will be a new subcategory for Social Influence, representing the need for connection.

Second, Social Influence has five themes in total for the analysis process: recommendation, social boost, social inclusion, family purchase decision, and the need for connection. While the need for connection is added from the communications part explained above, social inclusion and family purchase decision emerge from the interviews themselves. These two subcategories will be explained further in upcoming part. Social boost is excluded from the framework because all of the respondents indicate that the Internet does not really make them feel better in the eyes of others. As person 8 has summed up quite explicitly:

> "Each household has the Internet of their own. It's like a personal and trivial matter that you just don't go bragging about."

Last, Facilitating Conditions has added a subcategory called Perceived Behavioral Control, which according to Taylor and Todd (1995a, 1995b cited by Venkatesh, 2003), refers to how an individual perceives internal and external control of the behaviors.

The following sections will discuss each variable in further details.

3. Performance Expectancy

All of the respondents confirm that information search is something they do very often and one of the main purposes of the Internet for them. The information they look for can either be job-related or not. As person 2, who uses the Internet for her work, says:

> "So, part of my job is to prepare documents and I need the Internet to look for information of the document such as requirements and formats".

However, besides job information, all interviewees read daily socio-economic or political news, which are outside their working field but mainly to raise their awareness. Another type of information search, which has been mentioned by six out of eight, is product information searching, particularly for clothing. These people tend to surf for fashion trends on certain online shops but withdraw from the actual shopping because they are cautious of frauds, overpricing and additional shipping fees. Person 7 explains:

> "I don't buy online because I can usually get the same designs with much cheaper price from close-by markets. I also doubt the quality and the shipping fee makes it even more expensive."

Job gain is another reason for their usage of the Internet. Two attainments mentioned in the interviews are increasing productivity and better market research. Some people also utilize the Internet as their sources of entertainment such as playing games, watching movies, or listening to music. There seem to be a pattern of distinction between people adopting the Internet for their jobs and people using it purely for entertainment. 75% of the people refer one of the two as the main reason for their adoption. Those who adopts the Internet for their jobs of course do use the Internet as an entertainment as well but it is not the initial reason for their usage, while for the ones who use it primarily for entertainment, their occupations does not require the use of the Internet (person 3, the housewife plus rancher, person 5, the construction worker, and person 8, the farmer).

Acknowledging these thoughts of the target BoP, the codes for Performance Expectancy is as follow:

	Job gains	Entertainment	Information search	Total PE
Person 1	1	1	1	3
Person 2	1	0	1	2
Person 3	0	1	1	2
Person 4	1	0	1	2
Person 5	0	1	1	2
Person 6	1	0	1	2
Person 7	1	1	1	3
Person 8	0	1	1	2

Figure 11. Performance Expectancy

4. Ease Expectancy

Of all the interviewees, 62.5% think that the Internet is affordable and cheaper than other tools for them. The price they pay ranges from zero, as person 2 only uses the Internet provided by her office, to 240,000 VND as follow:

	Price	% of salary
Person 1	240,000	4.62
Person 2	0	0
Person 3	60,000	1.50
Person 4	75,000	1.67
Person 5	30,000	1.00
Person 6	90,000	2.57
Person 7	80,000	1.78
Person 8	30,000	1.50

Figure 12. Price of the Internet in numbers and as percentage of salary

In general, people prefer the Internet over other equivalent methods because of their accessibility and minimum effort. All of the respondents have associated the Internet with high level of easiness; for them, this has always been a comfortable tool. Person 2 points out:

> "Absolutely no [effort]. It was very easy. The only IT course I took was for Microsoft Office, nothing related to the Internet. We were using the Internet to look for how to complete certain Microsoft tasks at the time already."

Moreover, the Internet has been perceived to be very accessible. For people using the Wi-Fi, they can access the Internet using any devices they want, while for those using the mobile cellular, they prefer the method because it allows them to use the Internet anywhere at any time. The only person states that the Internet is not very accessible is person 8, a farmer. She indicates that she can only use the Internet at home because she does not think that it is available out in the field, where she works.

The Internet is also believed to give people more independence in what they can do compared to other devices which people also possess such as radio, paper magazines or television.

> "While with the radio or television, you have the assigned program which sometimes you don't like to watch. I have a lot more independence of what I can do with the Internet than with other tools."

Concerning these information, Ease Expectancy is coded.

	Affordability	Learning Effort	Accessibility	Total EE
Person 1	0	1	1	2
Person 2	1	1	1	3
Person 3	0	1	1	2
Person 4	1	1	1	3
Person 5	1	1	1	3
Person 6	1	1	1	3
Person 7	1	1	1	3
Person 8	0	1	0	1

Figure 13. Ease Expectancy

5. Social Influence

In regard of recommendation aspect, seven out of eight (87.5%) refer to other people who are important to them as a factor in their usage of the Internet. These people can either provide advices in the early adoption stage or support during the usage as they are believed to be more of an expert with technology.

> "By that time, our family has some options, but we decide to go for this specific package because I live near an Internet kiosk and the operator there suggests this to us… Or in any case of problems, I can come over and ask."

For people who utilizes the Internet for their job, the influence of other people can be the perceived expectation that they should have access to the Internet. For example, person 4, who uses the Internet to send documents back and forth with his clients, believes that the clients expect him to use emails.

Social inclusion, which is a new factor emerging from the interviews, refers to the perception of the target BoP that the Internet is a social norm, which motivates them to catch it on. Social inclusion is different from Recommendation in the sense of the word social norm, where there is nobody specifically mentioned while Recommendation involves people that are important to the interviewee. 50% of the respondents use the term "Internet era" to refer to a reason they use it in the first place.

Family purchase decision is another novel finding. As mentioned above, five people (62.5%) share the Internet connection with their household. These people also made the decision with their family members or considered the effects of the Internet on other family members when making the usage decision. Person 4 justifies his late adoption of the Internet:

> "I did not install [the Internet] before because I have small kids and I don't think the wave is very beneficial for them."

The last subcategory belonging to Social Influence is the need for connection, which is the use of Internet to keep in touch with families and friends as explained in section 2 of Findings. Even though all of the interviewees use some social media sites, in this case mainly Facebook and Zalo, a local online messaging platform, only five associate it with the reason for their usage instead of a feature they pick up after adopting the Internet for some other reasons.

As a result, we have the codes of Social Influence.

	Recommend ation	Social Inclusion	Family purchase decision	Need for connection	Total SI
Person 1	0	1	1	1	3
Person 2	1	1	0	0	2
Person 3	1	1	0	1	3
Person 4	1	0	1	0	2
Person 5	1	0	0	1	2
Person 6	1	0	1	0	2
Person 7	1	1	1	1	4
Person 8	1	0	1	1	3

Figure 14. Social Influence

6. Facilitating Conditions

The literature review shows Facilitating Conditions as the awareness of a technical infrastructure to support the use of the Internet. As mentioned previously that the farmer does not think that the Internet is available in the farming field, even though it is not factually correct, it illustrates that the perception of a lack of infrastructure for Internet influences her choice of usage. The technical infrastructure at their place provides the Internet itself and also solve problems. Six people recall contacting the service center of the Internet providers in case the Internet is slow or stops working. They trust this service and use it often as it is free and very easy to use.

> "[There are] Some problems, yes… We only need to call the service center… it was just like a normal call. There is not even a fee because it was included in the warranty, I believe."

35

Two people use solely mobile cellular instead of the Wifi show no need for the service call center in case of problems; instead they apply certain tricks such as restarting the phone or ask relatives for help.

An emerging aspect in Facilitating Conditions is the Perceived Behavioral Control. In the case of this study, the target BoP believes that they have the control over the use of the technology. When asked about the disadvantages of the Internet such as dark webs, Internet addiction and fake news, the respondents are fully aware of the drawbacks but they do not hesitate from using the Internet because they have a very high level of perceived behavioral control. Person 1 says:

> "… I have heard and also witnessed myself numerous stories of how students dropped out of school   due to Internet addiction. Of course, as I am using the Internet, I believe that I have the control over how my kids will use the Internet. I usually only allow them to use the Internet for two to three hours every day and check on what they are doing as well."

The code of Facilitating Conditions is presented based on the aforementioned information.

	Availability	Problem solving	Perceived Behavioral Control	Total EE
Person 1	1	1	1	3
Person 2	1	1	1	3
Person 3	1	0	1	2
Person 4	1	1	1	3
Person 5	1	0	0	1
Person 6	1	1	1	3
Person 7	1	1	1	3
Person 8	1	1	1	3

Figure 15. Facilitating Conditions.

7. Correlation tests

Based on Figure 9, 11, 13, 14, and 15 which demonstrate the codes for each variable, the author conducts correlation between the independent and the dependent variables. The results are:

	Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions
Usage behavior	0.56	0.14	0.24	0.66

Figure 16. Correlation results

Because all of the correlations are positive numbers, it can be suggested that the independent variables are perhaps positively influence the dependent variables, which also supports the four hypotheses.

Consequently, based on the findings presented in this study, a model for studying the Bottom of the Pyramid is as follow:
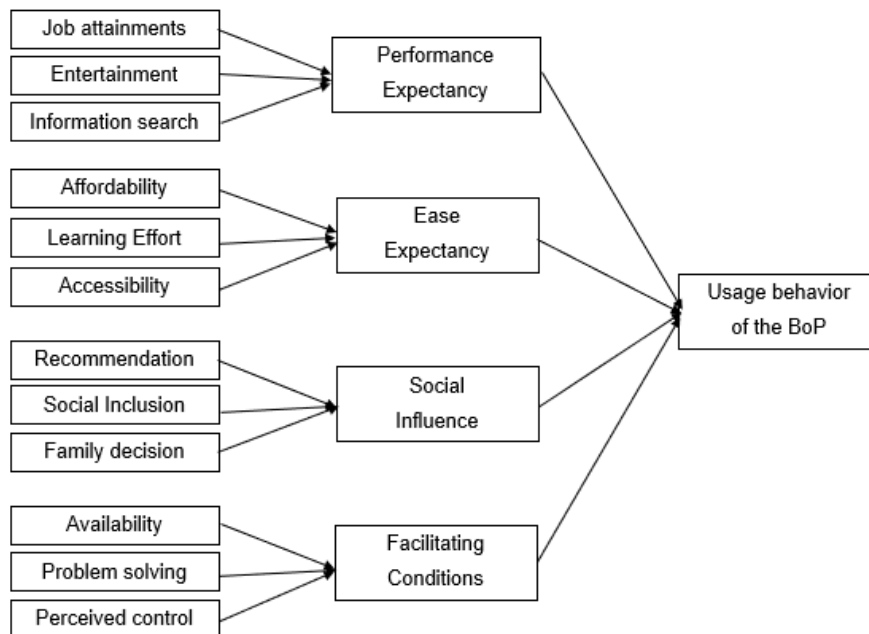
However, readers should note that the model is only suggestive due to the small sample size used to conduct the correlation test.

V. Discussion

Based on the findings above, the author next looks at the emerged patterns and the outliers and seeks explainations.

1. General Usage of the Internet of the BoP

A study by Global Web Index (cited by Bauer, 2016) shows that Vietnamese on the average spends 4.6 hours on the Internet. Compared to this number, it is clear that the BoP has been using the Internet much less, at only 2.6 hours. Additionally, regarding the method of access, there seems to be a preference for Wi-Fi and mobile phone. Even though the literature has emphasized the use of Internet kiosks, none of the respondents accesses the Internet via this method, which can be explained by the fact that most of them own a personal connection. Wi-Fi allows access for the whole family, which is quite desirable considering most of them utilize a family purchase decision process and everyone in the household gets a fair share of the benefits. Mobile phone is likely to be favored because of higher mobility and cheaper price as also indicated in the research of Angoitia et al (2009). The literature review also suggests a drawback of using mobile connection which is unoptimization of web pages on mobile phones; however, this does not seem to be a real problem for the interviewees.

Despite remaining in the 4 billion poorest people in the world as suggested by World Economic Forum, the target BoP in this research is still able to purchase certain products like computers, phones and televisions. However, the products they use are neither new nor expensive. Mostly, they repurchase old computers from Internet kiosks, thus, the hardware quality is not ideal but just enough for them to access necessary software such

as Microsoft Office and the Internet. They do not have to pay for the software due to the high level of piracy in Vietnam. Usually they would ask a skillful IT friend to install the software for free. The same applies for mobile phones. Most are old or fake phones, which sells at much less than 1 million Vietnam dongs. Sometimes they received old phones from more wealthy relatives living in the urban areas. Person 6, who owns a television set, agrees: "I also have some loans from my family members in the city without any interest. And also, we can pay by installments." As well as person 8, another television owner, "It was a second-hand television that we bought from a relative, so we get much cheaper price."

2. The impact of the Internet on the BoP

As discussed in the literature review using Bartel's theory of market separations, it was supposed that the Internet would bridge spatial, temporal, informational and financial gaps; which is also proven to be true in this research but in slightly different ways from the description in the literature review.

Regarding informational and financial disconnection, the target BoP has been utilizing the Internet frequently for information search and job gains. Nevertheless, the farmer and rancher in the study do not primarily obtain market information from the Internet as the e-Choupal example used in numerous studies. Instead, they refer to gaining the skills from family and acquiring information from the public radio in the farming field which was specifically designed for agricultural purposes or from words of mouth. For them, the Internet is mainly a source of entertainment, communication with family members and non-job information search. On the other hand, the small business owner implies using the Internet to obtain market information regarding different beverages. The different need for gathering market information via the Internet can be explained by two factors: whether the BoP believes that the job requires extensive update of the market and what information resources are readily available.

Another point regarding information search besides market information is the skill advancement. Indeed, as suggested in the literature review, the BoP has been utilizing the Internet as a source of education. For example, for respondents who make family purchase decisions, a reason for them to take on the technology is for their children to learn more. Person 1 testifies:

"[The Internet] is helpful, especially for my kids as they can look for answers to their exercises and gain more knowledge very easily."

The Internet has also sharpened skills for the adults. Person 7, a math teacher, remarks:

"Also I need to exercise myself regularly as well in order to maintain the skills and in any case, I can provide my students with appropriate answers."

Concerning the spatial and temporal separations, the Internet has aided the BoP producer in reaching for clients from far-away. For example, person 4 has been able to communicate to his clients without the need for either of them to travel. However, for BoP consumers, the Internet may not have been as successful in disrupting the poor man's penalty. As mentioned previously in Performance Expectancy part, the interviewees are very cautious to purchase anything online due to frauds and additional costs of transportation.

Looking at the disadvantages of the Internet, while the literature mainly points to Internet addiction and dark webs, the interviews discover that the BoP also worries about the abundance of fake news and the harmful effects of Wi-Fi waves. While the first one is believed to be controllable, the second one is not and actually drives one interviewee from using the Internet (person 4 with a previous quote). However, this threat is not permanent, thus, the BoP will eventually adopt the Internet when the effect is considered to be durable and the benefits outweigh the cost. Person 4 reasons: "... I don't think it has

any tremendous effects on grown-up health. Thus, I am still using it now and definitely has made my job a lot easier."

3. Job gains and the cost of the Internet

Complimenting with the literature review, the BoP does maximize the benefits they can get from the Internet, which shows in the fact that all of the interviewees use various features of the Internet regarding entertainment, information search, and communication and that they prefer the Wi-Fi so everyone in the household can obtain the advantages as well. On the other hand, a pattern seems to emerge that the BoP initially adopt the Internet for one particular reason either job-related purpose or entertainment. In addition, those who use the Internet for their work tend to spend more on the Internet than those using it just for entertainment or need for connection. For example, person 3, 5, and 8 spends only 1% to 1.5% of their salary to the Internet while the others might spend as much as 4.62%.

It is definitely true that the BoP are price-sensitive customers who would carefully consider their financial capability before making any decision. Yet, in the research, they are also very wise consumers who would implement price-reducing strategies in order to obtain what they need. Looking at the price paid for the Internet by the BoP, only person 1 pays 240,000 VND while all the other pays less than 100,000 VND, which is not because the other choose cheaper packages. Rather they use multiple-socket Wi-Fi router and a bit more wire, which allow them to link the connection to the neighbors and share the Internet costs with other households. Usually they share it with one or two other, which should keep the cost below 100,000 VND while the quality of the Internet does not go down immensely due to multiple users. This finding is supported by a research of Angoitia et al (2009) who studies the cost-reduction strategies of the BoP in mobile phone usage.

In addition, regarding the cost, the BoP in this research has been able to ripe the benefits of the Internet at a reasonable price partly should be credited to the Internet service providers who create numerous Internet packages to suit the different needs of the users. Person 5 mentions buying one of the cheapest packages which is specifically catered for her need of reading news and contacting family members. This shows the importance of the Facilitating Conditions in showing the BoP an established infrastructure to support their usage.

4. Some social factors

In general, what has been discussed for social influence in the literature review has been proven to be correct in this research as well. What is more interesting is that the finding complements the point made on collectivism. The BoP does not consider using the Internet as enhancing their social image because they believe the Internet to be a social norm that should be taken on. DeParle (2004) and LeBlanc (2004) cited by Bertrand et al (2006) support this finding. They indicated that the poor tends to be aware of the social norms and attempts to abide to those to feel equal regardless of their lower economic status. Nevertheless, in this study, there are people who does not refer to the need of catching up with the Internet era, which could be attributed to the financial incapability, unrealized benefits or high risks associated with the Internet.

In addition, when looking at the family purchase decision, researchers tend to analyze the roles of different family members in the decision-making process. As of this study, the males of the family are perhaps the decision maker. Person 4 and 7, mothers in the family, answer: "I don't know [what is the root when the Internet has some problems]. Maybe my husband or brother knows or if not, they would contact the service center." and "I would call my husband and he probably finds the solutions online." This phenomenon is perhaps due to the nature of the product, a technological product, where men seems to be more knowledgeable of.

VI. Conclusion

1. Main findings

At the beginning of the research, two questions have been set out, which are how the BoP integrated the Internet in their daily lives and what influences the BoP in adopting and using the Internet. Through an examination of the literature and an empiral study, answers have been partly achieved. First, the BoP uses the Internet for their jobs including looking for information and contacting clients, for entertainment such as watching movies and listening to music, for information search like reading news and for connecting with family members and friends. Second, they mainly use mobile phones and Wi-Fi connection, which have been very easy to use and accessible for them. Third, they pay an affordable price for the Internet, which has been achieved by price-reduction strategies and also, people who adopt the Internet for their jobs tend to be willing to pay more than those who use it for entertainment. Forth, the BoP does consider reference groups' opinions in their adoption. The study also reveals that the BoP perceives the Internet as a social norm that they need to abide to. Fifth, purchasing Internet connection, as many other decisions, is made with a consideration for the whole family, or in other word, it is a family purchase decision. The decision maker tend to be the father and the effects on the child largely influence the adoption. Last, in order for the BoP to start using the Internet, they need to know of a technical infrastructure that supports their usage.

The objective of the research to establish a model to study the Bottom of the Pyramid and to better understand the psychology of this market, which has been accomplished throughout the Findings and Discussion. A model has been presented for future research:
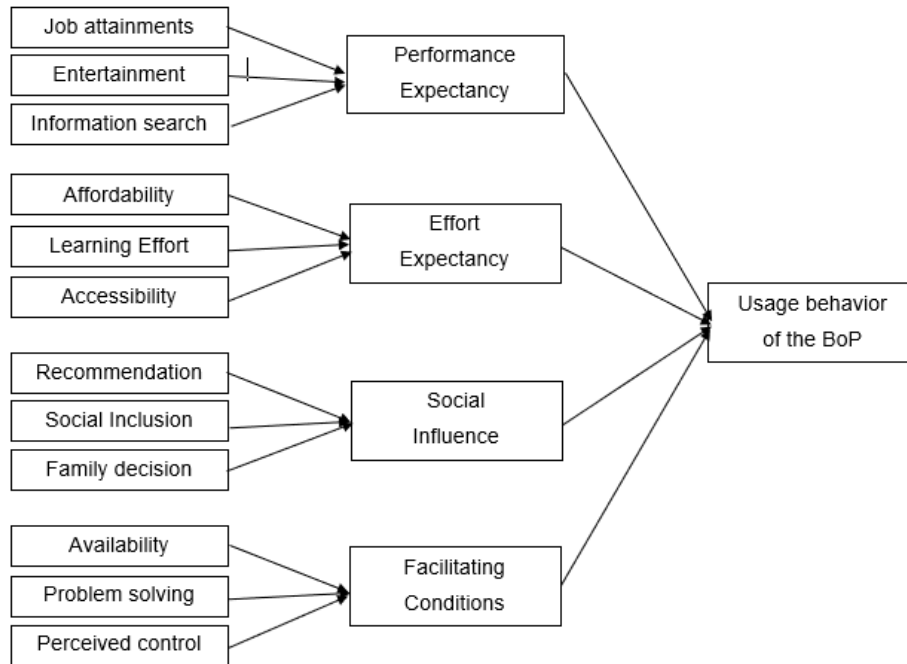
2. Implications for business

The Internet is definitely of great benefits to the poorest people in the world. The findings of the research hopefully aid businessmen, the governments and non-governmental organizations who aim to bring digital inclusion to the BoP. From the study, the author makes the following suggestion regarding practical business practices. Internet service providers should identify the perceived threats and whether the BoP believes it is insignificant and controllable. If certain perceptions are scientifically wrong, correction action should be taken to avoid unnecessary withdrawal from usage of such a beneficial tool. Marketing and sales strategy should also be applied to reach the Bottom of the Pyramid, which emphasizes on its availability, accessibility and affordability over other

alternatives. Salesmen or salespoint in different neighborhood can be helpful but they should hold certain credibility in the area themselves so that factors regarding Social Influence are maximized. Additionally, even though the Internet is very easy to use, businesses can aid the BoP realize certain benefits by providing them with sources of information or tools that would be helpful in their jobs. It is also important to educate the BoP of an ethical use of the Internet in order to prevent the threats of Internet addiction or dark webs.

3. Limitations and suggestion for future research

Due to the limited number of respondents, the findings from this research should be taken without any generalization. In addition, the relationships between the variables are only tested using correlation; a more reliable method cannot be utilized because of the small sample size.

The model only looks at the independent variables and ignores the probable effects of the moderating variables such as voluntariness of use, age, and education. The relationships between the independent variables are also circumvented in this research. Moreover, this research has mainly targeted older people, who are the heads in their families, which may have overlooked how the younger generation view the Internet.

Concerning the limitations above, future research can statistically test the proposed model to be able to make generalization regarding the BoP population. Researchers should also consider the impacts of some moderating variables and include children of the family who also use the Internet to understand how they might affect their parents' choice in using the Internet.

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Appendices

Appendix 1. Structure of general usage questions

General questions

1. What is your name?

2. How old are you?

3. What is your gender?

4. What is your income level?

5. What is your occupation? Can you tell me a little bit about your job?

6. How long have you been using the Internet?

7. Is it voluntary?

8. What is your attitude towards the Internet? Can you name some advantages or disadvantages that you have experienced while using the Internet?

9. Have you heard of Internet addictions or dark webs? Despite knowing these harms, why do you still decide to use the Internet?

Appendix 2. Structure of questions related to Performance Expectancy

Questions related to Performance Expectancy

9. What do you usually do on the Internet?

10. Please indicate the amount of time you allocate for each following features:
   - Playing games
   - Listening to music/watching movies
   - Reading news → are the news related to your job or your interests/hobbies?
   - Using social media
   - Online messaging/calling
   - Emailing
   - Online shopping
   - Information searching → is the information related to your job or your interests/hobbies?

11. Why do you adopt the Internet in the first place? For which purpose/usage?

12. How do you think about the Internet help you in job performance?

Appendix 3. Structure of questions related to Ease Expectancy

Questions related to Ease Expectancy

Questions related to access

13. How did you access the Internet?
    - Home computers? Laptops?
    - Mobile?
    - Internet kiosk?

14. Which one is the most used method? Why do you use that method the most?

15. Do you find accessing the Internet quick and easy?

16. With the same goals of information acquiring, you can either use the Internet or newspaper or TV, why did you choose the Internet over other methods?

Questions related to affordability

17. How much do you pay for the Internet per month?

18. Do you find it cheap/affordable?

Questions related to learning effort

19. Do you have any knowledge of Internet usage prior?

20. How do you learn to use the Internet?

21. Do you attend any kinds of courses/education to use the Internet?

22. Do you spend a lot of time/effort to study how to use the Internet?

23. Do you find the Internet easy to use?

Appendix 4. Structure of questions related to Social Influence

Questions related to Social Influence

24. How do you think your relatives, family members or reference groups affect your adoption and usage of the Internet?

25. Do you think using the Internet would escalate your social standing? Why and how?

26. Are there any other external factors from the society that can influence your decisions? Why and how?

Appendix 5. Structure of questions related to Facilitating conditions

Questions related to Facilitating Conditions

27. In any case you encounter a problem with the Internet, which source would you turn for help?

28. How do you get help with using the Internet if you encounter a problem?

29. If there is no technical infrastructure to support your usage, would you still adopt the Internet?