# Thai Internet Users' Personality Traits and their Preferred Web Portal's Characteristics

Rattipon Tanya* · Uthai Tanlamai**

## Abstract

The objective of this research is to identify a web portal's specific functions and layouts that are aligned with personality trait of an individual internet user. This first stage of the overall research project intends to check whether the research instrument, namely the NEO Five Factors Inventory (NEO-FFI), is applicable to assess the personality traits of Thai internet users. Based on these personality traits, text-based description of functions/ layouts of a web portal was developed and given to professional designers to mock up example web portal pages. These web portal pages were in alignment with individual personality traits. Rating data on the functions/layouts corresponding to individual personality traits were collected from an online survey of 207 Thai internet users. Results showed that respondents gave more consistent rating to the functions/layouts close to their individual personality traits identified in the text-based descriptions than in the mocked-up web portal pages.

Keywords : Thai Internet Users, Personality Traits, NEO Five Factors Inventory, Web Portal's Characteristics

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* Technopreneurship and Innovation Management Program, Graduate School Chulalongkorn University, Bangkok 10330, Thailand e-mail : rattipon.t@gmail.com

** Corresponding Author, Department of Accountancy, Chulalongkorn Business School Chulalongkorn University, Bangkok 10330, Thailand, e-mail : uthai@acc.chula.ac.th

## 1. Introduction

How to mesmerize a website user has always been a challenge to system development community. One of the perhaps most sought after schemes is to attract web users to use, reuse, and stay longer on the viewing page. An effective website is the one that asks user for minimum amount of data but it can display the information that the user finds most relevant and useful. However, since different users need different information, the challenge is to come up with what user really wants to see. This is especially true for web portal development case because a single web portal is designed to address the needs and behaviors of many different users.

In analyzing web search behaviors, search engine specialists found that web users do not want to spend time browsing and searching to locate their needed information from too many complex, popular websites. That is because searching activities can be tedious and time consuming. The majority of users would rather go straight to particular page on the website that has the content they want. Some web users do their screening by reading blogs. However, most people use keywords to find their needed information from a search engine like Google. They might or might not get to the correct page right away but they rely on the networks of relevant links found by the search engine's algorithm to hopefully retrieve their needed information.

Although the use of search engine with keywords has become a habit by today's internet users, it is questionable whether this type of activity really fulfills user's overall desires. If the current way of searching experience can provide needed answers, why do users still jump and switch websites all the time? This hopping around phenomenon implies that the search result from such web search is not satisfactory enough to fulfill users' expectation. There is a chance that users may have personal preference that might subject to their individual personality traits. Therefore, in order to design a good website, two design strategies must be kept in mind, appealing display and well structure layout. These factors can influence users' satisfaction with their website experiences. The present research proposes that if a website can be constructed to fit individual user's personality trait, the level of user's satisfaction will increase during his or her information searching and selecting activities.

Web search activities include both searching and browsing. When users search or browse and find that the content does not match with their expectation, they usually leave those pages immediately. Therefore, an effective website shall be able to forecast the expectation of a user. The website should also have some kind of identity and features enticing users to make a longer stay on those pages [Minxiao and Fan, 2008].

### 1.1 Can a website have personality?

If websites could have different personality traits, individual users would inevitably have different web-consuming experiences. The emo-

tional involvement during website usage can also differ from one personality trait to another. Thus, the interface design of a website must consider not only nice-looking appearances but also emotional stimulated features as well [Hekkert and Schifferstein, 2008]. In order to successfully design a website, the designer should be able to identify behavior patterns of a user and is able to respond to them appropriately. To cater to individual user experiences, designer often incorporates different message displays and graphic user inferences within a single web page [Vila and Kuster, 2011]. The present research aims to develop web portals that can serve individuals with different personality traits. The web portal will be equipped with a tool that will evaluate user's personality trait prior to its actual use.

### 1.2 Where Personality Comes From?

Personality is an individual identity inherited from birth and influenced by socialization [Hamarta, 2004]. The development of personality is an accumulation of life activities. The accumulated activity leads to individual personality. Trait Theory portrays habitual patterns of a person's behavior, thought, and emotion. Personality traits are relatively stable over time, differ across individuals and influence behaviors. Overt behavior reflects a person's inner self or one's personality trait when he or she responds to external stimuli [Cattell, 1950]. Thus, personality trait defines a person's behaviors and differentiates one individual from another [Allport, 1956]. There are two types of personality traits, common and personal disposition. Common traits are common to people who are from the same culture, same tribe, and same value systems. Personal-Disposition traits are individual characteristics influencing a person's behavior.

### 1.3 The Five-Factor Personality Trait

The five factor personality trait theory indicates that pattern of behavior is related to individual because inner forces push emotion to play role over actions and feeling [Bacanlı, İlhan, and Aslan, 2009]. The five-factor personality trait has been studied over 50 years in five dimensions. D.W. Fiske [1949] is the first pioneer in this field. The five-factor personality trait has been studied by several researches [Norman, 1967; Smith, 1967; Goldberg, 1981; McCrae and Costa, 1987]. Eksi and Otrar [2001] studied trait from the pattern of thinking behavior [DENİZ, 2011; Costa and McCrae, 2004]. McCrae and Costa's theory [1992] became a landmark study in personality evaluation [McCrae and Costa, 1997]. They classified people according to five dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness.

The categorization of trait can be conducted through observations. The more people do things regularly, the greater they are likely to have those traits. Gordon Allport [1956] suggested that trait might be changed when the perception changes. Therefore, the assessment of personality trait is active, dynamic and unsuitable for monitoring. The factor analytic theory, ini-

tiated by Raymond B Kettle in 1950, classifies trait into 16 groups. Myers-Briggs Type Indicator (MBTI) theory believes that trait is subject to the personal interest and motivation. <Table 1> compares four personality trait theories developed by Raymond Bernard Cattell in 1950, Hans Jurgen Eysenck in 1947, MBTI in 1962, and Five-factor Personality Trait in 1992 [Cattell, 1950; Eysenck, 1947; Myers and Myers, 1980, 1995].

〈Table 1〉 Comparison of Personality Trait Theories

| Type of Trait | Factor Analytic Theory (Raymond Bernard Cattell, 1950) | Three Dimensions of Personality (Hans Jurgen Eysenck, 1947) | Myers-Briggs Type Indicator (MBTI, 1962) | Five-factor Personality trait(1992) |
|---|---|---|---|---|
| 1 | (Emotional)<br>(Apprehensive)<br>(Tense) | Neuroticism | X | (Neuroticism)<br>High sensitive/nervous |
| 2 | (Stable)<br>(Placid)<br>(Relaxed) | Emotional Stability | X | (Neuroticism)<br>Low secure/confident |
| 3 | (Outgoing)<br>(Assertive)<br>(Happy-go-lucky)<br>(Venturesome)<br>(Group-dependency) | /Extroversion | Extroverts (E) | (Extraversion)<br>High outgoing/energetic |
| 4 | (Reserved)<br>(Humble)<br>(Sober)<br>(Shy)<br>(Self-sufficient) | /Introversion | Introverts (I) | (Extraversion)<br>Low solitary/reserved |
| 5 | (Imaginative)<br>(Experiment ion) | X | Intuitive (N) | (Openness)<br>High inventive/curious |
| 6 | (Practical)<br>(Conservative) | X | Sensor (S) | (Openness)<br>Low consistent/cautious |
| 7 | (Tough-minded)<br>(Trusting)<br>(Forthright) | X | Thinker (T) | (Agreeableness)<br>High friendly/compassionate |
| 8 | (Tender-minded)<br>(Suspicious)<br>(Shrewd) | X | Feeler (F) | (Agreeableness)<br>Low cold/unkind |
| 9 | (Conscientious)<br>(Controlled) | X | Judger (J) | (Conscientiousness)<br>High efficient/organized |
| 10 | (Expedient)<br>(Indiscipline Self-conflict) | X | Perceiver (P) | (Conscientiousness)<br>Low easy-going/careless |
| 11 | (Intelligent) | X | X | X |
| 12 | X | (Psychoticism) | X | X |

## 2. Methodology

The present study is part of a larger research inquiry to investigate and develop an innovative web portal according to individual user's personality trait. However, this first stage of the overall research project intends to check whether the research instrument, namely the NEO Five Factors Inventory (NEO-FFI), is applicable to assess the personality traits of Thai internet users. Also, from an operational standpoint, this unique web portal's characteristics are designed into the functions and layouts of web pages. Based on the five factor model of personality traits, a text-based description of functions/ layouts of a web portal was developed and given to professional designers to mock up example pages. These web pages were in alignment with individual personality traits. The topical contents of the mocked-up web portal are confined only to tourism destinations in Thailand.

The sampling frame of this study comprises internet-users whose ages are between 12-90 years old. The data were collected through snowballing technique. The sample size was originally planned for 150 persons but the actual number of responses was 207. As shown in <Table 2>, negative polar and positive polar of the five factor traits were included. As used in the original instrument, There are a total of ten personality traits used in this study.

### 2.1 Data collection Tool

In order to examine the functions and layouts of a web portal that a person with different personality trait would prefer, an online survey instrument was developed. The questionnaire comprises three parts :

***Part 1*** is to assess a person's personality trait using the "NEO Five-Factors Inventory (NEO FFI)" which was developed based on the Five-Factor Personality trait originated by Fiske [1949]. Later, the NEO™ Inventories : NEO™ Personality Inventory-3 (NEOTM- PI-3) : was developed and commercialized by Costa and McCrae [2004]. This inventory comprises 60 items of personality trait assessment. The inventory had been translated into Thai and was used in studies by a few Thai scholars. Using the Revised NEO Personality Inventory method, T-score were calculated in order to classify individuals into different personality traits.

〈Table 2〉 Classification of Personality Traits

| Personality Trait | Positive Trait | Negative Trait |
|---|---|---|
| Neuroticism (N) | N+ (Sensitive/Stable) | N- (Secure/Confident) |
| Extraversion (E) | E+ (Outgoing/Social Accretive) | E- (Private/Reserved) |
| Openness (O) | O+ (Inventive/Novelty) | O- (Traditional/Unchanged) |
| Agreeableness (A) | A+ (Friendly/Compassionate) | A- (Self-Centered/Impartial) |
| Conscientiousness (C) | C+ (Efficient/Organized) | C- (Easy going/Careless) |

Before applying these inventory items to the Thai internet users, a pilot study with 52 internet users (29 males and 23 females) was conducted using the original 0~4 points Likert scale measure (0 = Totally Disagree to 4 = Strongly Agree). Based on the standard T-scores, the Neuroticism+ personality trait represented the highest number of respondents (15.38%) and Extraversion+ and Conscientiousness+ equally lowest (5.77%). All ten-personality traits were found in the pilot study, confirming the applicability of the instrument for Thai internet users.

*Part 2* of the online questionnaire includes asking respondents to identify the functions and layouts that they would want or prefer to have in a web portal. User interface design principles are used to identify functions and layouts of a web portal. Also, existing web portal's functions and layouts were pinpointed, i.e., social media and social connectedness, automatic grouping and sequencing of contents, user's evaluation, wiki look alike content contribution, extraneous widget/icon presentation (horoscopes, IQ games, advertisements) and so on. These functions were included for the respondents to choose.

Also in this part, example web pages being designed for a web portal of tourist destination in Thailand were developed. The mocked-up web pages will later be called graphic-based in the result section. Each web page was designed using the behavioral implications of individuals with different personality traits. Respondents were asked to rate the pages using Likert scale of 1~5, where 1 is the least favorable and 5 the most favorable. To make sure the numbers of example pages were manageable, only one layout called "simple and clear" was employed. For this layout, different functions were specified. Results from the rating of mocked-up pages were triangulated with the scores received from the rating of text-based descriptions. From the triangulation, it is expected that the web portal's functions and layouts can be identified for different types of individual personality traits.

*Part 3* are demographic data which include gender, age, occupation, and the average number of hours per week as well as the number of times per week of respondent's internet use.

## 3. Results

A total of 207 internet users responded to the online survey. <Table 3> outlines the subject's characteristics. On the average the participants are 24 years old (77.78%), the maximum age is 60 and the minimum is 12. A little more than half are male participants (54%). In terms of occupation, the majority works in private companies (44.44%) and many indicated that they are still studying (31.88%). The largest number of participants received a bachelor degree (86.47%). In terms of the regularity of internet's and web portal's usages, over one third of the subjects, 37.68% and 34.30% respectively, had more than 40 hours per week on the internet and more than 30 times per week on web portals.

### 3.1 Thai Internet Users' Personality Traits

For each participant, his/her personality trait scores were calculated and classified according to the Five Factors Theory. <Table 4> shows the percentage of personality traits as manifested in Thai Internet users. Among all ten traits scoring as individual "Prime" trait, the highest percentage of respondents (16.91%) was found to be N-(Secure/Confident) and the lowest percentage (3.86%) to be A+ (Friendly/Compassionate). However, taking the same ten traits, 16.43% of respondents were found to be O-(Traditional/Unchanged) and 6.28% to be E-(Private/Reserved). For those who see themselves as being N-, the most dominating combined-pair trait is someone who is secure, confident, efficient and organized (N-C+). Likewise, for those with an O-minor trait, the most dominating mixed traits for them are traditional, unchanged, secure, and confident (O-N-).

〈Table 3〉 Subject's Characteristics (N = 207)

| Characteristics | Dimension | Subjects(%) |
|---|---|---|
| Age (Years) | < 20 | 4.35% |
| | 20~25 | 77.78% |
| | > 25 | 17.87% |
| Gender | Male | 54.00% |
| | Female | 46.00% |
| Occupation | Student | 31.88% |
| | Government Officer | 2.90% |
| | Private Company | 44.44% |
| | Others | 20.77% |
| Education | Below undergraduate | 5.31% |
| | Undergraduate degree | 86.47% |
| | Master degree | 7.25% |
| | Beyond Master degree | 0.97% |
| Experience Average number of hours per week on Internet (Hours) | < 10 | 12.08% |
| | 10~20 | 18.84% |
| | 21~30 | 17.87% |
| | 31~40 | 13.53% |
| | > 40 | 37.68% |
| Weekly Usage of Web Portals (Number of time) | < 5 | 12.56% |
| | 5~10 | 17.87% |
| | 11~20 | 23.67% |
| | 21~30 | 11.59% |
| | > 30 | 34.30% |

〈Table 4〉 Percentage of Personality Traits for Thai Internet Users

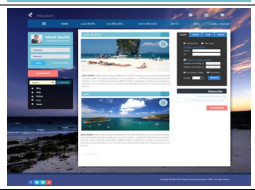
| Personality Trait | Respondents with "Prime" trait (%) | Respondents with "Minor" trait (%) | Dominating Mixed Traits |
|---|---|---|---|
| (1) Neuroticism + | 23(11.11%) | 22(10.63%) | N+O-(Sensitive/Stable; Traditional/Unchanged) |
| (2) Neuroticism - | 35(16.91%) | 18(8.70%) | N-C+(Secure/Confident; Efficient/Organized) |
| (3) Extraversion + | 20(9.66%) | 16(7.73%) | E+O+(Outgoing/Social Accretive; Inventive/Novelty) |
| (4) Extraversion - | 16(7.73%) | 13(6.28%) | E-A-(Private/Reserved; Self-centered/Impartial) |
| (5) Openness + | 19(9.18%) | 25(12.08%) | O+C+(Inventive/Novelty; Efficient/Organized) |
| (6) Openness - | 20(9.66%) | 34(16.43%) | O-N-(Traditional/Unchanged; Secure/Confident) |
| (7) Agreeableness + | 8(3.86%) | 20(9.66%) | A+E+(Friendly/Compassionate; Outgoing/Social Accretive) |
| (8) Agreeableness - | 27(13.04%) | 17(8.21%) | A-O-(Self-centered/Impartial; Traditional/Unchanged) |
| (9) Conscientiousness + | 22(10.63%) | 27(13.04%) | C+E-(Efficient/Organized; Private/Reserved) |
| (10) Conscientiousness - | 17(8.21%) | 15(7.25%) | C-A-(Easy going/Careless; Self-centered/Impartial) |
| **Total** | **207(100%)** | **207(100%)** | |

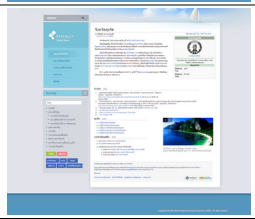
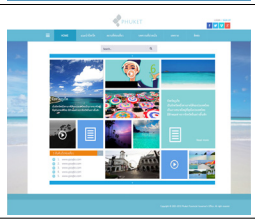
### 3.2 Preferred Web Portal's Characteristics

In an attempt to come up with personality traits of a web portal, its characteristics, specifically the functions and layouts of web page were identified. Using keywords from the personality traits theory, "text-based description" as well as "graphic-based illustration." of a hypothetical design for a web portal's function and layout were developed and tested in this study. As shown in <Table 5>, more than or equal half of the respondents whose "Prime" personality trait are E+, O+, and A+ gave the highest rank to the "text-based description," of layout and function that fit to their own personality trait, 60%, 58%, and 50% respectively. For A-individuals, only 22% gave highest rank to the "text-based description" that corresponded to their own personality trait.

Graphic-based illustration received a totally different ranking preference. As shown below, the layout and function of graphic illustration which corresponded to N+ personality trait received almost 70% of top rank. One possible explanation to this finding is that the N+ graphic was the first web page illustration being shown in the online questionnaire. Thus, primary effect or what came first are likely to receive greater attention by this group of respondents. Also, it might be the static nature

〈Table 5〉 Percentage of Respondents with the Highest Ranking on the Layout and Function of Web Portal with Different Personality Traits

| Personality Trait | "Text-based Description" | % | "Graphic-based Illustration" | % |
|---|---|---|---|---|
| (1) Neuroticism + | Automatic classification of contents by display only the predefined topics | 39.13% |  | 69.57% |
| (2) Neuroticism - | Display variety of contents that allow users to rearrange the layout and encompass social network links with recommendation system | 42.86% |  | 17.14% |
| (3) Extraversion + | Emphasize links to social networks with friends and outsiders blog management and recommendation systems | 60.00% |  | 25.00% |
| (4) Extraversion - | Draw search content with keywords by topic; Display variety of information with online reservation support | 43.75% |  | 37.50% |

| | | | | |
|---|---|---|---|---|
| (5) Openness + | Having assessment systems that summarize critiques and with rank ordering of related contents with links to outside sources of data | 57.89% |  | 31.58% |
| (6) Openness - | Diary and personalized web management capability with history tracking and in-depth and complete, relevant data display | 45.00% |  | 20.00% |
| (7) Agreeableness + | Wiki-liked capability for content sharing and recommendation system with variation and continual changes in the content and presentation formats | 50.00% |  | 37.50% |
| (8) Agreeableness - | Compare and assess needed contents from various sources with previously retrieved data | 22.22% |  | 14.81% |
| (9) Conscientiousness + | Flexible and independent content management with fixed layout based on the type of content | 36.36% |  | 18.18% |
| (10) Conscientiousness - | Randomly display variety of contents from the recommendation system by topic only and mainly using picture and video at the starting point | 35.29% |  | 29.41% |

of these example web pages that did not give any perceptual difference from the eyes of respondents.

To further analyze the difference between female and male participants, <Table 6> shows that female participants ranked the text-based description to be more consistent with their personality traits than the male counterparts. However, no gender different was found with respect to graphic-based illustrations.

〈Table 6〉 Gender Difference and Consistency Ranking

| Personality Trait | Text-based Description | | Graphic-based Illustration | |
|---|---|---|---|---|
| | Female | Male | Female | Male |
| (1) Neuroticism + | 1 | 4 | 1 | 1 |
| (2) Neuroticism - | 2 | 3 | 1 | 1 |
| (3) Extraversion + | 3 | 3 | 1 | 1 |
| (4) Extraversion - | 4 | 1 | 1 | 4 |
| (5) Openness + | 5 | 5 | 1 | 1 |
| (6) Openness - | 6 | 6 | 1 | 1 |
| (7) Agreeableness + | 5 | 3 | 7 | 1 |
| (8) Agreeableness - | 2 | 4 | 1 | 1 |
| (9) Conscientiousness + | 9 | 1 | 1 | 4 |
| (10)Conscientiousness - | 10 | 10 | 10 | 1 |

## 4. Discussion and Conclusion

The result shows that the Five Factor Personality Traits theory is applicable to this setting since all ten traits were spread out across the Thai Internet users in this study [McCrae and Costa, 1997]. Majority of these users saw themselves as being Secure/Confident (N-). Very few view themselves as being Friendly/ Compassionate (A+). Note that the average age of respondents in this study is 24 years old. These avid internet users seemed to live their life as a "couch-potato" at very young age.

Not too surprising that traditional/unchanged (O-) was found to be the minor trait maintained by many respondents. Their refusal to comply to other ideas was reflected in the inconsistency rating/raking found between personality traits and their corresponding function/ layout designs in both text-based description and graphic-based illustration.The hypothetical design of web portal's layout and function by using text-based description shows more consistent to personality trait than by graphic-based illustration. This is perhaps caused by the static nature of the mocked-up web pages. In subsequent study, the authors plan to develop an interactive version of the web portal that dynamically varies by the personality trait of each idividual user.

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## Author Profile

### Uthai Tanlamai

Uthai Tanlamai is a professor of information systems at Chulalongkorn University. She received her Ph.D. in Management Information Systems from the University of Illinois at Urbana-Champaign. Prior to joining Chulalongkorn Business School, she was a tenured faculty member at California State University at Fresno and taught at Bentley College in Waltham, Massachusetts for a year. Most of her research interests deal with the behavior aspects of information systems implementation. Her current research interests include risk management, ERP implementation, visualization of business reports, augmented reality of financial data.

### Hyo-Jae Joun

Lieutenant Colonel Rattipon Tanya is a Ph.D. candidate in the Technopreneurship and Innovation Management program at Chulalongkorn University in Thailand. He earned a bachelor degree in Electrical engineering from Chulachomklao Royal Military Academy, and a master degree in Business Administration from Chulalongkorn University. Currently, he works at the Army Research and Development Office.