



Thailand Vietnam Socio Economic Panel

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# Personality traits in Southeast Asia – Evidence from rural Thailand and Vietnam

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## Abstract

The aim of this paper is twofold: First, we implement and validate the famous Big Five model on personality traits in a rural developing country setting. Second, we provide micro level evidence that examines personality traits of rural households in Thailand and Vietnam. Using new representative individual level data, our results show that the Big Five model can be applied in a rural setting. Moreover, we find substantial differences in personality traits between the rural populations of Thailand and Vietnam as well as persistent gender differences among both emerging societies.

**Keywords:** Personality traits, Big Five Factor Model, Southeast Asia, TVSEP

**JEL:** D91, O1, R2

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# 1. Introduction

What makes two individuals different? Why do different people react differently to opportunities, to challenges? It is impossible to answer these questions without understanding the individual – something acknowledged by Goldberg (1981), when he states, how “*any model for structuring individual differences will have to encompass at some level something like the Big Five*”. The Big Five measure fundamental dimensions of personality, which influence the interpersonal, emotional and motivational style of individuals (McCrae & Costa, 1992). These include Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness (McCrae, 2011).

After the fall of the classical rationality assumption of individual agents, personality traits have been included into microeconomic models of decision making and utility maximization. Empirical and experimental evidence (Jencks, 1979; Osborne, 2000) corroborate that in addition to cognitive skills, personality traits play an important role in determining individual decision making. They act as channels through which non-cognitive skills influence individual’s decision making behavior (Wichert and Pohlmeier, 2010), job performance (Barrick and Mount, 1991) and economic outcomes (Piatek and Pinger, 2010; Nyhus and Pons, 2005).

However, as most of these instruments were developed in the western world, the focus has been constricted to the US, Japan, South Korea, and European countries (Rammstedt, 2007; Rammstedt and John, 2006; Cobb-Clark and Schurer, 2012; McCrae and Costa, 1999). Hence, the general applicability of the results is questionable, especially in the context of developing countries. By 2030, 85 per cent of the world’s population would be based in these countries (UNCHS, 2001) and will form the backbone of the global economy. Therefore, it is pertinent to include them in the analyses to obtain comprehensive insights.

Against this background, we add to the literature in two ways: First, we validate the use of personality traits in a developing country setting. Second, we provide micro level empirical evidence that examines personality traits for the rural population of Southeast Asia. We use a data set for Thailand and Vietnam, collected under the Thailand Vietnam Socio Economic Panel (TVSEP) in 2017.<sup>1</sup> A section on measurement of personality traits was included for the first time in 2017, providing information on around 4000 individuals. As this is the first paper that utilizes the personality measures for this data, the first part elaborates on the measurement and construction of the Big Five for our sample population. We also examine the validity of the survey measure. In the second part of the analysis, we focus on personality patterns across the two countries, as well as gender differences. We compare our outcomes with existing literature to gain perspective on how far personality traits in rural emerging Asia differ from Western societies. Given that personality traits influence individual preferences and motivation, a better understanding of these aspects can aid to formulate efficient development policies.

Our results suggest that the survey measures were successfully implemented. Similar to the Big Five, we find five personality factors in the sample population. Our analytical results suggest that personality traits differ substantially between the rural populations of Thailand and Vietnam. Furthermore, in line with the existing literature (Schmitt et al., 2009; Costa and McCrae, 2001), we find that men are generally more open while women are more neurotic.

The rest of the paper is organized as follows: Section 2 provides an overview on personality traits and the Big Five factors. Section 3 introduces the study design and illustrates data collection, measurement of the traits and the econometric models used in our paper. Section 4 presents the results, which is followed by a conclusion in Section 5.

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<sup>1</sup> For more information please refer to the project webpage: <https://www.tvsep.de/overview-tvsep.html>.

## 2. Personality Traits

Individual preferences are a main feature in decision-making theories (Samuelson, 1948; Varian, 1982; Cherchye et al., 2011; Vermeulen, 2012). In standard economics, these theories make simplifying assumptions with respect to preferences, such that preferences are not explicitly formed within the model itself. However, empirical evidence has shown that individuals do not always act rationally and that preferences are not homothetic (Kahneman et al., 1982).

While there are many factors that influence individuals' preferences, personality traits have been identified as one main determinant. The concept of personality traits goes back to the German psychologist Baumgarten (1933) who suggested that analyzing languages could lead to a better understanding of personality. His work encouraged Allport & Odbert (1936) to conduct the same analysis in English. This started a string of research that produced numerous scales and instruments. Based on scales from Cattell (1943) and Fiske (1949), Tupes and Christal (1961) developed the first replicable five factor model of personality. The development of scales continued further and other factors were established, but the number 'five' remained (Borgatta, 1964; Smith, 1969; Norman, 1967).

Out of the various versions, the model developed by McCrae & Costa (1997, 1992) has been used most extensively. They started with a questionnaire based on the three factors, namely, Neuroticism, Extraversion and Openness to experience, and, added Agreeableness and Conscientiousness on the suggestions of Digman (1990) and Goldberg (1993). This gave rise to the Big Five model.

### 2.1 The Big Five model

The Big Five model is the most cross-culturally validated model of personality traits (Streuetzer et al., 2017). The factors are relatively stable over an individual's lifetime (Heineck and Agner, 2010) and are considered heritable by Hofstede and McCrae, 2004. Table 1 illustrates the facets or adjectives associated with each factor of the Big Five model.

**Table 1: Example of adjectives defining the Big Five factors**

<b>Factor</b>	<b>Facets/Adjectives</b>
<i>Extraversion</i>	Active, Assertive, Energetic, Enthusiastic, Outgoing, Talkative
<i>Agreeableness</i>	Appreciative, Forgiving, Generous, Kind, Sympathetic, Trusting
<i>Conscientiousness</i>	Efficient, Organized, Planful, Reliable, Responsible, Thorough
<i>Neuroticism</i>	Anxious, Self-Pitying, Tense, Touchy, Unstable, Worrying
<i>Openness</i>	Artistic, Curious, Imaginative, Insightful, Original, Wide interests

Source: McCrae & Costa, 1992

Extraversion captures the individual's social relationship. A person with a high level of Extraversion seeks to establish contact with others, displays confidence and is positive (Schäfer, 2016; Rolland, 2002; Wichert and Pohlmeier, 2010). Agreeableness refers to the quality of interpersonal relationships of the individual. An agreeable person is caring and selfless. Conscientiousness depicts how an individual handles tasks. Persons displaying high levels of Conscientiousness are responsible, efficient and hardworking, in their own work and the work done for others (Wichert and Pohlmeier, 2010). Neuroticism captures how an individual behaves under stressful situations. Scoring high on this factor indicates that the individual is emotionally unstable and does not cope well with stress. Openness captures how individuals value new experiences and changes (Rolland, 2002). An open person is creative and enthusiastic about complex jobs.

Traits transcend cultures. Scores on different factors display similar patterns across cultures irrespective of the differences in histories of the countries (McCrae et al., 2004). While McCrae et al. (2004) find that younger people score higher on Extraversion, Agreeableness, Neuroticism, and Openness, Rammstedt (2007) on the other hand finds that scores on Agreeableness and Conscientiousness relate positively with age. Education is positively correlated with Openness but shows an unclear relationship with Conscientiousness (Cobb-Clark and Schruer, 2012; Rammstedt, 2007). Interestingly, gender differences in personality traits across cultures tend to be larger than those illustrated in cognitive ability, self-esteem and attributional style (Else-Quest et al., 2006). In general, females tend to score higher on

all factors except Openness (Costa et al., 2001; Rammstedt, 2007). In contrast to normal belief, the magnitude of gender differences is larger in modern societies such as America and Western Europe than traditional societies of Asia and Africa (Schmitt et al., 2009).

### 3. Study design

#### 3.1 Data

We use micro data originating from the Thailand Vietnam Socio Economic Panel (TVSEP). Since 2007, the TVSEP regularly administers surveys among rural households in Thailand and Vietnam. Until now, six additional waves have been conducted, in 2008, 2010, 2011, 2013, 2016 and 2017. The Thai data were collected in the provinces Buriram, Nakhon Panom and Ubon Ratchathani and the Vietnamese data in the provinces Thua Thien Hue, Ha Tinh and Dak Lak. Figure A. 1 in the Appendix exhibits an overview of the survey region. The survey covers 4,000 rural households in 440 villages. For the purpose of this study, we use data on 3,170 individual respondents who answered the subsection on personality traits.<sup>2</sup>

The household sample in each province was randomly drawn based on a stratification process considering the heterogeneous agro-ecological conditions within the regions.<sup>3</sup> In Thailand, each household in the survey region had an equal probability of being included in the survey, while poor households were oversampled in Vietnam (Hardeweg et al., 2013). We correct for this by applying sampling weights throughout our analysis. The data is representative for rural households in both countries (Liebenehm et al., 2018). All monetary variables were converted to 2005 Purchasing Power Parity USD (PPP USD) equivalents.

In both countries, an almost identical household survey is applied. It consists of nine sections covering individual information on household members (e.g. age, education, health, and employment) as well as household-level information on expenditures, shocks, risks, income earning activities such as farming, livestock raising and fishing, household financial situation, housing conditions, transfers received, and assets owned. In addition to the household survey, a village-level survey is administered to the village chief collecting information on the village location, population, infrastructure, employment, agriculture, and economic conditions.

In the 2017 panel wave of the TVSEP, an additional module was included which asks for the established psychological personality inventories. These questions allow to study personality traits and their consequences on a large, representative sample of rural households in Thailand and Vietnam and to relate them to a rich set of socio-economic variables.

In addition to the survey data from the TVSEP, we use data from a TVSEP Add-on project that was conducted in Thailand in November 2017 amongst the same households. The Add-on project is about *Behavioral insights into over-indebtedness within a vulnerable population* and collected data on households in Ubon Rathathani.<sup>4</sup> The Add-on questionnaire includes the exact same question on personality traits as TVSEP household survey from summer 2017. This gives us the unique opportunity to compare the answers from one individual at two different points in time. Hence, we can verify if the answers are consistent over time. Within this short time horizon of just four month, the answers should not vary too much. The Add-on project interviewed 760 households. Within the household, the respondent in the summer and in November may vary. We identified 505 cases where the respondent in

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<sup>2</sup> The sample is not exactly identical to the household sample due to three reasons: First, common survey attrition; Second, we have to exclude households that did not answer the survey items; Third, we apply an age restriction and only include respondents aged between 20 to 70 years because our analysis focuses on working-age individuals.

<sup>3</sup> See Hardeweg et al., 2013 for a detailed overview of the sampling strategy

<sup>4</sup> For more details on the Add-on project, see Klühs et al. 2019.

the summer and in November are the same person. For these 505 cases, we compare the answers given in the summer with those given in November. The results are discussed in Section 4.1.

### 3.2 Measurement of personality traits

We follow the Big Five model developed by Costa and McCrae (1992, 1997) which has become the standard personality measurement in psychology. The model defines personality along the five following factors: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

The survey questions are based on the Big Five personality inventory questions used in the German Socio Economic Panel (SOEP).<sup>5</sup> Similar questions are used in the British micro panel survey and World Bank surveys across different countries (Guerra et al., 2016). In the respective questionnaire section in the TVSEP survey, respondents are asked how much they agree with different statements about themselves. They rank their answers on a 7 point Likert scale ranging from 1 to 7, where 1 means "Does not apply to me at all" and 7 means "Applies to me perfectly". In total respondents are presented with 15 survey questions. Figure A. 2 in the Appendix exhibits an overview of the survey questions.

An identical set of questions was administered to individuals who participated in the Add-on project. However, the answer modalities differed slightly. Although, the items are measured on the same scale (7 point Likert scale), each number on the scale was explicitly labelled (each answer option is associated with a specific phrase, e.g. 1 means "Disagree fully", 3 means "Disagree a little", 6 means "Agree strongly"). Figure A. 3 and Figure A. 4 in the Appendix display both scales. Despite these differences, we rely on the comparison of the TVSEP data with the Add-on data to reveal, if the measures are reliable or not.

### 3.3 Specification of econometric models

In the analysis, we use different methodologies to address our research questions. First, we assess the internal validity of the survey measure for personality traits in our sample. Second, we use descriptive statistics to analyze differences between subgroups in our sample population.

We address the internal validity of the Big Five model for our sample population in three steps: (i) we compute the Cronbach's itemized alpha coefficient to test for internal consistency of the scales, (ii) we conduct a PCA based on the survey questions, and (iii) we test the stability of the personality traits over time. The Cronbach's itemized alpha coefficient (Cronbach, 1951) is widely used in the psychological literature and tests the internal consistency of the scales across the survey questions and across the five personality traits (Schäfer, 2016; Yomaboot and Cooper, 2016).

In addition, we conduct a principal component analysis (PCA) based on the 15 questions administered to respondents in the household questionnaire to validate the structure of the personality factors (Schmitt et al., 2007). Conducting a PCA is advantageous when datasets contain a large number of variables that must be accounted for. Since we have fifteen variables which capture personality traits, this approach is useful to create groups which are homogeneous within themselves and heterogeneous between each other (Backhaus et al., 2011). The PCA analysis is used to reduce the dimensionality of the input variables and identify major trait factors in our survey population. In order to compare our measures with other studies, we also construct simple averages for the respective Big Five traits to produce comparable measures of the personality traits for our sample population (see Appendix for relation between personality traits and survey questions). For the PCA, the 15 observed variables (see Table 1) representing individual's personality traits were included. The Kaiser criterion (K1) (Ford et al., 1986) which retains all factors with eigenvalues greater or equal to one, was used to determine the number of factors to be retained, resulting in five factors which explain a total of 56% of the variance. Following

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<sup>5</sup> See survey page for details: <https://data.soep.de/soep-core/topics/>.

Hair et al. (2009), only the factors with loadings greater than 0.30, i.e. meeting the minimum practical significance level, are interpreted.

To validate the stability of the personality traits in our sample, we use data from an Add-on project conducted in Ubon Ratchathani. Given that the same individuals were asked the same type of questions, this allows us to compare the responses from the same person at two different points in time. A two-sided ttest is executed to compare the results.

In the second part of the analysis, we use ttests to detect differences between different subgroups in our sample. Specifically, we test whether there are significant differences between Thai and Vietnamese respondents, and, males and females.

## 4. Results

### 4.1 Validity of the survey measure

The Cronbach's itemized alpha coefficient ranges between 0.42 and 0.60 across the Big Five factors. The overall reliability lays at 0.64 for the whole sample and at 0.67 for the subsample (see Table A. 1 in the Appendix). Our results are similar to those of Rammstedt and John (2006).

The PCA reveals five factors (see Table A. 2 and Figure A. 5 in the Appendix). In order to avoid confusion with the five factors from the Big Five model we name our factors: (i) Creativeness, (ii) Diligence, (iii) Skepticism, (iv) Approachability, and (v) Amiableness. Individuals who are creative consider themselves as artistic, have new ideas and an active imagination. They work thoroughly and efficiently, are sociable, and kind to others. People who are diligent are very determined to work (i.e. not lazy at all) and are always considerate and kind to others (i.e. never rude). The factor skepticism combines the items worrying and nervousness. Approachability combines new ideas, talkative, outgoing (i.e. not reserved) and stressed easily (i.e. not relaxed). Finally, Amiableness is a combination of talkative and sociable but also forgiving and kind.

Table 2 shows the correlation between the Big Five factors and the factors derived from the conducted PCA. The results suggest that our factors are relatively close to the Big Five factors. Our factor Creativeness is significantly correlated to the factor Openness from the Big Five model. Similarly, our factor Skepticism can be clearly mapped to the factor Neuroticism, and, our factor Approachability to the Big Five factor Extraversion. For the remaining two factors, Diligence and Amiableness we see correlations with more than one factor or with none of the factors from the Big Five model. Overall, we conclude that it is suitable to use the Big Five factors for our survey population as the results suggest a strong correlation between our factors and the Big Five factors. The same validation technique has been followed by Rammstedt and John (2006) to establish the equivalence of the BFI-S to the BFI-44.

**Table 2: Correlation between Big Five and Factors from PCA**

	<b>Openness</b>	<b>Conscientiousness</b>	<b>Extraversion</b>	<b>Agreeableness</b>	<b>Neuroticism</b>
Creativeness	<b>0.76</b>	<b>0.63</b>	0.38	0.50	-0.23
Diligence	-0.37	<b>0.51</b>	0.12	<b>0.64</b>	-0.12
Skepticism	-0.02	0.13	-0.06	0.09	<b>0.92</b>
Approachability	0.22	0.08	<b>0.75</b>	-0.24	0.11
Amiableness	-0.21	-0.42	0.46	0.32	0.07

Note: correlation higher than absolute 0.50 are shown in bold.

**Table 3: Comparison of sample means**

	<b>Mean TVSEP</b>	<b>Mean Add-on</b>	<b>Mean Difference</b>
Openness	4.601	4.922	-0.321***
Conscientiousness	5.549	5.743	-0.195***
Extraversion	4.484	4.505	-0.021
Agreeableness	5.593	5.589	0.004
Neuroticism	3.399	3.264	0.135

Table 3 depicts the average score for each of the Big Five factors for those individuals included in the TVSEP and the Add-on project. The results reveal that on average the factors differ only slightly between the answers given in the TVSEP data and the Add-on project. The factors Extraversion, Agreeableness and Neuroticism are not statistically different from each other. Although, the factors Openness and Conscientiousness are statistically different from each other, the mean values are still very close together and do not contradict each other. Some of this variation might also be the result of the different answer framing in the Add-on questionnaire. Due to this alteration the answers are not 100 percent comparable. Moreover, questions were posed by enumerators and not self-reported. This might have added some additional variation to the answers. The findings show that the answers are consistent over time, which lets us to believe that overall the 15 survey questions were posed in the correct way and that respondents understood them.

Overall, the results from the Cronbach's alpha and the PCA indicate that the personality factors in our sample population are similar to the Big Five factors. Furthermore, the comparison between the TVSEP data and the Add-on project shows that individuals answer consistent across the two surveys. Thus, we conclude that the personality trait questions can be utilized to form the Big Five factors for our study population. For comparability, we use the average score of the original Big Five factors for the remainder of the study.

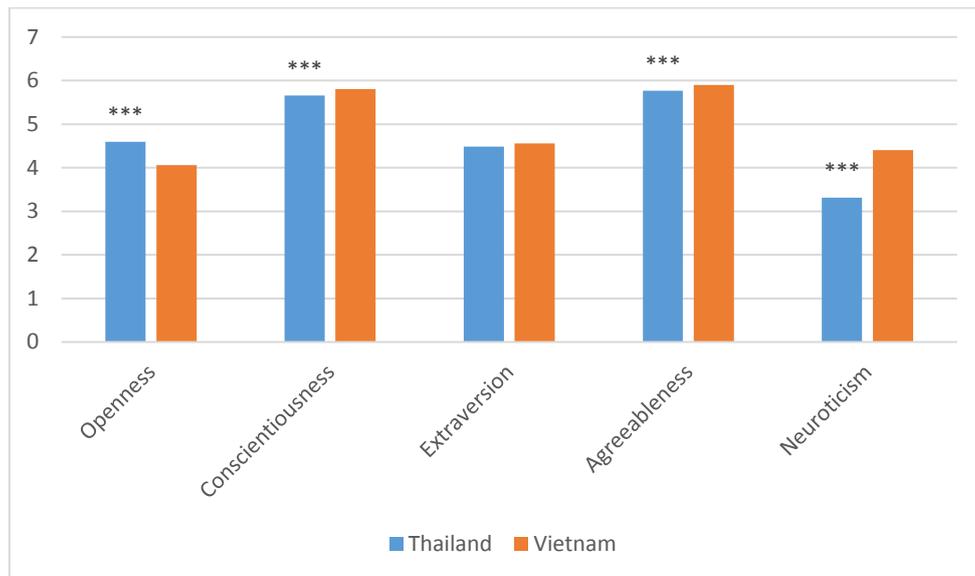
## 4.2 Country differences

According to Hofstede and McCrae (2004), national levels of personality traits are not random but reflect national value systems. Thailand and Vietnam differ substantially in terms of culture, religion, history, and forms of governance. Therefore, we expect differences in personality traits across the countries.

Figure 1 illustrates that on average, Vietnamese tend to report a higher score on all factors, except Openness. The magnitude of difference is also significant in case of Openness, Conscientiousness, Agreeableness and Neuroticism. A further breakdown of the factors by specific questions is presented in Table 4. Country differences are highly significant for almost all of the 15 survey items.

In general, the Thai population appears to be more homogenous with respect to personality traits. This is not surprising given the ethnic homogeneity in Thailand and the fact that Buddhism has a strong influence on all aspects of life in Thailand. 97% of our sample population are Thai and 99% follow Buddhism. In contrast, rural Vietnam is more diverse in terms of both religion and ethnicity. 78% of the sample population belongs to the majority ethnicity Kinh and 70% consider themselves as Atheists. The results show that the rural Thai population scores higher in the questions related to Openness. Thus, they are more artistic and have a more active imagination compared to the Vietnamese population. They also score higher on efficiency and being talkative. In contrast, the Vietnamese are less reserved and less rude but score significantly higher on the questions related to Neuroticism.

**Figure 1: Average score on personality traits by country**



**Table 4: Personality traits by country**

Trait	Variables	Thailand	Vietnam	Diff.
Openness	Artistic	5.04	3.76	***
	New ideas	4.59	4.46	*
	Active imagination	4.37	3.97	***
Conscientiousness	Work thoroughly	5.55	5.72	***
	Efficient	5.86	5.47	***
	Lazy (reversed)	5.61	6.23	***
Extraversion	Talkative	4.98	4.57	***
	Sociable	5.06	4.99	
	Reserved (reversed)	3.39	4.10	***
Agreeableness	Forgiving	5.80	5.81	
	Kind	5.96	5.88	*
	Rude (reversed)	5.49	5.96	***
Neuroticism	Worries	3.86	5.59	***
	Nervous	3.51	4.46	***
	Relaxed (reversed)	2.66	3.27	***
	N	1575	1595	

To lend more perspective to these results, a comparison between the survey countries with other regions of the world is useful. In general, Southeast Asians score lower on Extraversion and Conscientiousness, and higher on Agreeableness, compared to their Western counterparts. The scores reported are very similar in case of Openness and Neuroticism (Schmitt et al., 2007). As we use the BFI-S, which is also employed by the German SOEP, it is possible to make a more specific comparison between the German and rural Southeast Asian population. Results are shown in Table 5.

**Table 5: Comparison with data from Germany**

<b>Trait</b>	<b>Germany*</b>	<b>Thailand (rural)**</b>	<b>Vietnam (rural)**</b>
Openness	4.490	4.66	4.06
Conscientiousness	5.92	5.67	5.80
Extraversion	4.82	4.47	4.55
Agreeableness	5.34	5.75	5.88
Neuroticism	***	3.34	4.44

\*Taken from Schäfer, 2017. Based on German SOEP 2005, 2009 and 2013 (N = 17,025)

\*\* Calculated by authors. Based on TVSEP 2017 (N<sub>TH</sub> = 1,913, N<sub>VN</sub> = 1,898)

\*\*\*Schäfer, 2017 used a different factor, called Emotional Stability and did not calculate Neuroticism.

The rural population in Thailand reports higher Openness than Germans and the Vietnamese rural population. However, Germans score higher on Conscientiousness. On average, Thai and Vietnamese tend to be less extraverted than Germans. Further, Vietnamese score highest on Agreeableness, with 0.54 points higher than Germans.

Comparing mean levels of personality traits at national levels is appropriate and aids to understand the link between culture and psychology (Levine, 2001; Saucier & Goldberg, 2001). Overall, it reveals that countries and regions differ with regards to the Big Five. Different cultures, political systems, religion, history etc. are also reflected in people's personalities.

### 4.3 Gender related differences

Table 6 depicts the descriptive analysis of personality traits across gender. We find that average scores for respective personality traits questions differ significantly by gender. In the combined sample, men are more open to new ideas and have a more active imagination. This is largely in line with findings of Schmitt et al. (2009) who establish that Openness reported by individuals can vary greatly by culture. Women tend to be more open to feelings while men are open to new ideas. In case of Conscientiousness, men report themselves to be more efficient than women. In the Extraversion factor, women are more talkative but men rate themselves as being more sociable and less reserved. We also find no statistically significant difference along the factor of Agreeableness. However, as expected, women score higher on all questions capturing Neuroticism. Our results for Openness and Neuroticism are in line with previous findings (Costa and McCrae, 2001). As the sample belongs to rural Southeast Asia, the self-reporting could suffer from 'societal desirability bias', which makes an individual answer in expected gender relevant norms (Schmitt et al., 2009).

The country specific results reveal that gender differences are stronger in Vietnam compared to Thailand. This is not surprising, as Thailand is known to be a rather traditional society for which gender differences in personality traits are less common (Knodel & Nguyen, 2015). Among the Thai population we find no significant differences among the factors Openness, Conscientiousness and Agreeableness. However, females are more talkative, and score higher in all questions related to Neuroticism. For the Vietnamese sample, the results show that men score higher for all questions pertaining to Openness. They also report higher on Conscientiousness and Extraversion. Under Agreeableness, females tend to be more forgiving and score significantly on all items of Neuroticism.

Overall, our descriptive statistics confirm that personality traits differ across gender. In line with previous findings, men in our sample population score higher on Openness and females score higher on Neuroticism. While the evidence on other factors differs across countries, we conclude that cultural gender norms either play a role in how people perceive the questions or are decisive for the formation of personality traits as such.

**Table 6: Personality traits by Gender and country**

Trait	Variables	Overall			Thailand			Vietnam		
		male	female	Diff.	male	female	Diff.	male	female	Diff.
Openness	Artistic	4.34	4.42		4.92	5.10		3.90	3.65	**
	New ideas	4.66	4.44	***	4.68	4.55		4.65	4.32	***
	Active imagination	4.26	4.12	*	4.45	4.34		4.12	3.86	**
Conscientiousness	Work thoroughly	5.68	5.61		5.53	5.56		5.79	5.67	**
	Efficient	5.73	5.63	*	5.92	5.83		5.58	5.39	**
	Lazy (reversed)	5.98	5.89		5.66	5.59		6.21	6.24	
Extraversion	Talkative	4.60	4.88	***	4.74	5.09	***	4.50	4.63	
	Sociable	5.15	4.95	***	5.15	5.01		5.15	4.87	***
	Reserved (reversed)	3.90	3.66	***	3.56	3.31	*	4.16	4.05	
Agreeableness	Forgiving	5.80	5.81		5.90	5.75		5.73	5.88	*
	Kind	5.92	5.92		5.96	5.96		5.88	5.88	
	Rude (reversed)	5.74	5.72		5.49	5.48		5.93	5.99	
Neuroticism	Worries	4.52	4.86	***	3.60	3.99	***	5.22	5.86	***
	Nervous	3.65	4.19	***	3.27	3.63	***	3.93	4.84	***
	Relaxed (reversed)	2.81	3.06	***	2.54	2.71	*	3.02	3.46	***
	N	1188	1982		513	1062		675	920	

## 5. Conclusion

In this paper, we validate the Big Five factor model for a representative household sample from Thailand and Vietnam. Moreover, we show differences in character traits between those countries and compare them with data from the SOEP. We analyze the factors in terms of differences between men and women. To achieve this, we employ data on 4000 individuals from Thailand and Vietnam collected under the Thailand Vietnam Socio Economic Panel. As this is the first paper that uses the personality questions from this dataset, our first research question examines the validity of the Big five model for our sample. The results from the Cronbach's alpha and the PCA confirm the validity of the survey measurement tool applied. An additional robustness test is executed by comparing the results of the complete sample with a sub sample that was interviewed under an Add-on project. The answers of the respondents illustrate consistency over time.

In addition, we show that there are substantial country differences in terms of personality traits between Thailand and Vietnam, but also between these two countries and Germany. We also examine if established gender differences in personality traits hold in our country context. In line with literature, we find that men tend to score higher on openness and women report higher neuroticism. However, men also report higher levels of Extraversion and Conscientiousness. We attribute this anomaly to the presence of 'societal desirability bias' (Schmitt et al., 2009) amongst respondents; culturally established gender norms can influence the perception of questions and how they answer

Our study contributes to the literature by providing empirical evidence not only in the context of developing countries but also in reference to rural populations in Southeast Asia. The results emphasize the important role of personality traits in understanding cross country differences as well as differences among the same population (e.g. between men and women). From a policy perspective, a better understanding of personality traits would aid in efficient policy making. The need to rethink development policy to account for human factors has been widely identified (e.g. WDR, 2015 p. 5). Success of most development policies is contingent on an individual's participation, which again depends on the individual's personality.

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Appendix

Figure A. 1: Overview Survey Region



**Figure A. 2: Overview of survey questions**

Do you see yourself as someone who....

...is sometimes a bit rude to others?

...works thoroughly?

...is talkative?

...worries a lot?

...is original, comes up with new ideas?

...has a forgiving nature?

...tends to be lazy?

...is outgoing, sociable?

...gets nervous easily?

...values artistic, aesthetic experiences?

...is considerate and kind to almost everyone?

...does tasks efficiently?

...is reserved?

...is relaxed, handles stress well?

...has an active imagination?

**Figure A. 3: Item scale TVSEP questionnaire**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
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**1 = Does not apply to me at all** **7 = Applies to me perfectly**

**Figure A. 4: Item scale November Add-On questionnaire**

**Code A**

- 1 Disagree fully
- 2 Disagree strongly
- 3 Disagree a little
- Neither agree nor
- 4 disagree
- 5 Agree a little
- 6 Agree strongly
- 7 Agree fully

1	2	3	4	5	6	7
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**1= Disagree fully** **7 = Agree fully**

**Table A. 1: Cronbach's alpha**

Personality Trait	Cronbach's alpha	No. of items
Openness	0.60	3
Conscientiousness	0.55	3
Extraversion	0.42	3
Agreeableness	0.58	3
Neuroticism	0.56	3
All Traits	0.67	15

**Table A. 2: Factor Loadings**

BFI Items	Factor 1 Creativeness	Factor 2 Diligence	Factor 3 Skepticism	Factor 4 Approachability	Factor 5 Amiability
artistic	<b>0.30</b>	-0.24	-0.17	0.04	0.02
new_ideas	<b>0.30</b>	-0.15	0.13	<b>0.33</b>	<b>-0.31</b>
active imagination	<b>0.33</b>	-0.28	0.02	0.12	-0.22
work thoroughly	<b>0.30</b>	0.19	0.15	0.07	-0.29
efficient	<b>0.36</b>	0.10	-0.05	-0.02	-0.27
lazy_r	0.09	<b>0.54</b>	0.08	0.09	<b>-0.33</b>
talkative	0.25	-0.08	-0.06	<b>0.40</b>	<b>0.36</b>
sociable	<b>0.32</b>	-0.01	0.00	0.23	<b>0.34</b>
reserved_r	-0.15	0.25	-0.04	<b>0.66</b>	0.18
forgiving	0.27	0.26	0.10	-0.26	<b>0.44</b>
kind	<b>0.35</b>	0.23	0.04	-0.22	<b>0.31</b>
rude_r	-0.01	<b>0.53</b>	-0.01	-0.02	-0.05
worries	0.01	-0.03	<b>0.68</b>	0.02	-0.02
nervous	0.00	-0.16	<b>0.63</b>	-0.08	0.12
relaxed_r	-0.32	0.05	0.20	<b>0.31</b>	0.07

Note: Loadings higher than absolute 0.30 are shown in bold.

Figure A. 5: Scree plot of eigenvalues after PCA

