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Discover the DNA of Thai Innovator

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Abstract

This paper empirically explores the antecedents of innovative capacity of an individual in Thailand to identify the essential characteristics of innovator by bridging the individual study theory from both western and eastern, and investigates the influence of both personalities' factor affected to the innovative capacity on employee. The results were confirmed with 9 Thai innovators interviewed and using survey data from 430 managers mostly in manufacturing sector. The analyses of descriptive statistics, correlation and factor analyses with SPSS revealed that innovative people consists of 4 main DNAs:

DNA-1: EI consists of Good Mental Health, Motivating emotion, Good Physical Health, Regulation of Emotion in the Self, Regulation of Emotion in others, Positive emotion and Leadership.

DNA-2: consists of Positive Thinking, Creativity, Adaptable, Excite Seeking, Lateral Thinking and Buddhi Carita.

DNA-3: consists of Achievement striving, self discipline and Deliberation.

DNA-4: consists of Experience, Knowledge, Entrepreneurship and Fantasy.

Keywords: Innovative capacity; Individual capacity; Potential innovative employee; Thai Innovator; Innovator DNA; Thailand

Introduction

The word "innovation" is widely used in Thailand recently; however, innovation and innovator are still a chaos in concept for Thai firms. Who they are, what are the characteristics of them, and how firms do develop their staff's competencies to do better at innovation? National Innovation Agency (NIA), Thailand and Chulalongkorn Business School (CBS) jointly conducted a survey research on "Situation of the demand of human resources for innovation project development of the private sector in Thailand". The researcher collected data from 300 companies and 73% of them are in manufacturing sectors. They found that Thai firms are highly paying their attention to the topic of innovation. Additionally, research stated that 72.01% of surveyed firms urgently required innovative employees. (NIA, 2011) [1] From this reason, this paper tries to provide an enhanced understanding the characteristics of innovative people to help Thai industry in human resource management.

Thus, the purpose of this study is to explore the characteristics of innovative people from personality or traits, behavior, values, knowledge and skills.

Theoretical background and hypothesises

Innovation: Innovation is a combination of invention and others process such as design, manufacturing, marketing, distribution and product support. Smith [2] Several scholars have a consensus that innovation is a sequential process consisting of several processes from idea generation, conversion and finally diffusion [2-4]. Innovations such as product, process or service comes from the human brain or an inspiration. Innovative people is the key individual in innovation system and they use their imagination and creativity to generate new idea, apply their knowledge and experience in business management with technology skill to develop new products, services, processes or services to cater to the market's need, to solve social problems and to increase economic values. Invention with failure in introducing to market or turning into practical use is not accepted as innovation [4]

Innovator: Innovation task is much more complicated than job done properly. It consists of mixtures of different types of tasks. In general, innovator is a person who generates new ideas that lead to newness or to the creation of more effective things as an examples of innovations mapped on to the 4Ps (Product, Process, Positioning and paradigm shift) [5].Thus, the one who called "Innovators" is the one who has ability in introducing new ideas, methods of turning this idea into real thing with creative and more effective ways. From the classical study of Kirton, he described an innovator that he/she who "Seen as undisciplined, thinking tangentially and Approaching tasks from unsuspected angles" Whilst, the latest study from "The Innovator's DNA, Hardvard Business Review" [6] pointed out that the five key discovery skills of innovator are Associating, Observing, Experimenting, Questioning and Networking. However, there is a consensus on concept of innovation; there is today no significant evidence from scholars to identify individual's characteristics [7]. Additionally, it is interesting that western scholars have been conducting the study on individual different and individual capacity for long decades. However, numerous researches of individual differences, individual study and innovation behaviour have been published, there is a lack of research based sample from eastern country as well as built upon eastern theory and philosophy [8].

Thus, this study finds out the answer from Thai Innovators (NIA Awarded) and managers in Thai firms for understanding innovative characteristics (knowledge and skills, and behaviour). Therefore, in this research, we address research question as following: to investigate the antecedents to predict an individual's innovative capacity focusing on

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Thai manufacturing firms and to find out factor that highly affected innovative capacity based on western and eastern theories.

Individual Study: Western Theory Approaches: Individual differences theory is widely used in individual study for many decades in western country. Generally individual study is composed of two variables; surface-level composition variables and deep-level composition variables. Surface-level composition variables are obvious characteristics that can be seen easily such as age, race, gender, tenure, and educational level. On the contrast, Deep-level composition variables are intrinsic characteristics such as traits, values, and attitudes. These characteristics are difficult to change and prior to the birth of such person [9]

In a study reported by Brandstätter [10], western scholars have been researching individual differences by using the psychometrics theory typically includes;

- Trait & dispositional perspectives on deep-level composition variables

- Cognitive perspectives on Surface-level composition variables

Trait Approach: The uses of trait approach are accepted by many scholars in the field of industrial and organizational psychology [11]. In 1992, Costa and McCrae introduced a model of the individual study system called "The Five-Factor Model (FFM)", it is based on trait theory and it is the predominant theory for studying individual different. According to this approach, traits are not changed, and influence behaviour [10,12-14]. The Big Five are Neuroticism (Emotional Stability), Extraversion (Introversion), and Openness to Experience (Closeness to experiences), Agreeableness (Disagreeableness) and Conscientiousness (Lack of conscientiousness). Each Super trait is measured by 6 facets (or subordinate traits). Many studies use FFM as a measurement based theory to define individual styles and potential behaviour such as; Furnham and Bachtiar [15] used it to prove relationship between intelligence and creativity. The resulted shown that intelligence is unable to use for predicting the creativity. Whilst, Brandstätter [10] did a meta-analysis on individual differences of entrepreneurship. He found that entrepreneurs *"would have higher scores on Conscientiousness, Openness to Experience, and Extraversion, but lower scores on Agreeableness and Neuroticism and achievement motivation is a main characteristic of entrepreneurs."*

Based on previous empirical evidences, FFM is significantly explained an individual different and job performance, thus we constructs FFM into our model for examination.

Cognitive Approach: This approach helps us understand an individual from observing their actions and problems solving or called behaviors. This theory believed that formation of an individual's behavior is related to the surrounding environment, stimuli of the outside world and external factors such as culture, organization structure, training and learning [16,17], leaded to the future individual differences. From innovation management studies in last decade, there are numerous characteristics that scholars tried to explain their linking to individual innovative capacity. For an example;

a) **Leadership:** Stenmark et al. [18] described the important of leadership behavior in innovation process that it will help leaders in generating vision, ideas and project management included helping in the preparation or project planning, benefit monitoring and evaluation of projects in the following sequence. This statement also supported by Tidd and Bessant [5] that the starting or turning round organization into innovation life cycle need leadership. As such, we construct leadership into our model for examination.

b) **Education and Tenure:** from current model of the antecedents of individual innovation by Farr, Sin, & Tesluk, 2003 cited in Hammond et al. [7], they created an assumption to investigate their influence to innovative performance. The result from meta-analysis showed that these factors had a weak relationship with innovation performance [7]. However, from their study reviews, they found that there is a vast research indicating that there is a relationship between educations, tenure with innovative performance. For example, Gumusluoglu and Ilsev [19] found that at the individual level, educational level and job tenure positively impact to innovation. This statement also supported by Von Stamm [20], and Adams [21] as well as from innovators interviewed that the knowledge from experience and tenure that accumulate from many years of working leads to innovative thinking. Thus, we construct education and tenure into our model for examination.

c) **Entrepreneurship:** From an interviewing with 9 innovators, most of them are entrepreneur, they are persons who lead the firm and also initiate the direction of company as well as select a team for innovative project. From a review by Hisrich et al. [22], they listed up the personality characteristics of entrepreneurs that related to innovation management such as a craftsmanship, Managerial, Need achiever, Pragmatic, Risk/challenge, Creative acquisitor, Opportunistic and Constrained. Thus, the study is interested to investigate the relationship between Entrepreneurship and individual innovative capacity.

d) **Emotional Intelligence:** recently EI is widely used in individual study [23]. They described that EI is an individual's ability or skill to express an emotions and a feeling, comprised *"Managing emotions so as to attain specific goals", "Understanding emotions, emotional language, and the signals conveyed by emotions", "Using emotions to facilitate thinking" and "Perceiving emotions accurately in oneself and others"*. They also stated that the ability of self control and self express lead to the success in work-life and social outcome. And they stated that EI is highly correlated to how individual is thinking and being everyday behavior. Several studied confirmed that EI is ability and skill that related to one's success in work's life and good at social relationship. For examples, Sy et al. [24] studied the correlation between EI and job satisfaction and Job performance. They found that EI is highly correlated to job satisfaction and job performance, the research describe that the high EI in individual shows the ability in coping with stress and pressure in work resulting in high job performance. Additionally, Antonakis et al. [25] agreed with Mayer and Salovey that EI is an important competency for leader to be aware of while they are dealing with work and an interaction colleagues. EI has become a general instrument in business appraisal and industrial psychology. It is used for a tool to predict work performance and work styles. For understanding the relationship between EI and individual innovative capacity, this study includes those variables for an exploration.

Eastern approach: The purpose for using of Eastern theory approaches to individual innovative capacity is necessary to evaluate the validity of western study to oriental people especially for Thai who have different culture and the way of learning and thinking from

western. The primary of western studies is done by Freud, Jung, and Rogers [8]. The development of psychology in Western nations follows the way of *"focusing on salient objects or people, use attributes to assign them to categories, and apply rules of formal logic to understand their behavior"* as well as measured by the other with formulations of the self evidence [8]. Whereas, eastern psychology is based on the Vijnanavada and Zen Buddhist traditions, eastern way gives an important on "inner-self". Orientals way is to prefer to adapt to the environment, understand themselves from looking, listening and observation of ourselves. In addition to as discussed above, it shown that the doctrine of Buddhism uses term "Intrinsic nature of a person (Carita)" explaining the linkage of the process of thinking and behaviors. Additionally, Carita is also prior to birth according to Buddhism.

The 6 Types of Mind: Intrinsic natures of a person (Carita) [27] are;

(1) The lustful behavior: Raga Carita: describes a person whose habit is full of passion. He/she is much like beautiful things and places. A person who always has a nice dress in all occasional, he or she is a smart, attractive people and good personality. They prefer to deal someone with good personality. Most people belong to the Lustful Behavior.

(2)The hateful behavior: Dosa Carita: describes a person whose behavior is full of angry and hateful. They always behave with a manner, rude, untidy and undisciplined. They always dress unclean, eat fast food and use unpleasant sound.

(3)The ignorant behavior: Moha Carita: describes a person whose behavior whose habit is associated with ignorance, delusion and forgetfulness.

(4) The devout behavior: Saddha Carita: describes a person whose behavior is generous in nature, truthful and honest. ,

(5) The intellectual behavior: Buddhi Carita: describes a person whose behavior is clever, love to learn, amenable to good advice. They internally do everything.

(6) The discursive behavior: Vitakka Carita: describes a person whose behavior whose is indolent, immoral, discursive, uncertainty and skepticism. Thus, we propose that

From the doctrine of Buddhism, a person who has the Intellectual Behavior seems to be success in work, social life and meditation. Thus, the study is interested to investigate the relationship between Intrinsic nature of a person (Carita) and individual innovative capacity (Table 1).

Why we use both theories in investigation: There are numerous difficulties in using western way and tool to understanding oriental. First, Clapp et al. [28] proposed on their study that test items based on western variables and culture is incompatible with the Thai cultural and this variables may not able to use for Thai evaluation. Second, Barrett et al. 2003, cited in Rothstein and Goffin [11] proposed that the use of personality measures must base on relevant samples and appropriate tests' variables and performance criteria, and from the previous experiment and exploratory of western psychology, mostly samples are from western people. Moreover, Campos [29] found that Buddhist ideas is a powerful though and framework for gaining perspective human behaviour and helping people change.

Now the study shall propose theoretical model, represented in Figure 1.

Methodology

Research sample

Population for the survey were divided into 2 groups. The first group is the 9 innovators from NIA Awarded and the second group is an employee especially from manager level from manufacturing industry, which comprises 23.40 million people, (The National Statistical Office, Thailand) [41]. The targeted population is 400 according to sampling method by Yamane. The study started from gathering variables from literatures review and then reducing it by deeply interviewing with 9 innovators and the quantitative methodology by survey questionnaire from managers in large-scale manufacturing firms since it is often that larger firms have more resources, fund and innovation project when compared to SMEs (Table 2). Additionally,

Factors	Antecedents	Sub Characteristics	References
Personality	**-Traits (FFM)**	Neuroticism (Emotional Stability), Extraversion, Openness to Experience Agreeableness Conscientiousness	Hammond et al. [7]; Silvia [30];Woodruff [31]; Shalley et al. [32]; Costa & McCrae [13]
	Education		Hammond et al. [7]; Gumusluoglu &Ilsev [19]; Murovec & Prodan [33]; Fabrizio KR [34]; Von Stamm [20]; Adams [21]; Csikszentmihalyi [35];
	Tenure(Experience)		Hammond et al. [7]; Hisrich et al. [22]
Cognitive styles	**Leadership**	Analytic thinking, Teamwork/ Collaboration, Coaching, Active analysis, Aligning Performance for Success, Applied Learning, Building a Successful Team, Initiating structure, "Can synthesize(see the big picture) correctly", Coaching, Communications, Continuous Learning, creativity, Decision Making, Delegations, Evaluation, Facilitating Change, Providing Guidance, Monitoring, Motivating tactics,	Stenmark et al. [7]; Vinarski-Peretz et al. [36]; Oosterbeek et al. [37]; Tidd &Bessant [5]; Gumusluoglu & Ilsev [19] ; Von Stamm [20]; Hisrich et al. [22]; Smith D [2], Vecchio [38],
	Entrepreneurship	Risk taking, Result Orientation, Business Knowledge, craftsmanship, Managerial, Need achiever, Pragmatic, Risk/challenge, Creative acquisitor, Opportunistic and Constrained	Stenmark et al. [18]; Oosterbeek et al. [37]; Tidd & Bessant [5]; Gumusluoglu & Ilsev [19]; Tidd & Bessant [5]; Von Stamm [20]; Adams [21]; Vecchio [38]; McAdam &McClelland [39]; Konijn & Plantenga [40]; Csikszentmihalyi [35];
Emotional Intelligence			(Mayer and Salovey [23]; Sy et al. [24]; Antonakis et al. [25]
Intrinsic natures of a person (Carita)			(Venerable Narada Mahathera; Campos [27]

Table 1: A summary of the Antecedents from empirical studies concerning the effect to individual innovative capacity

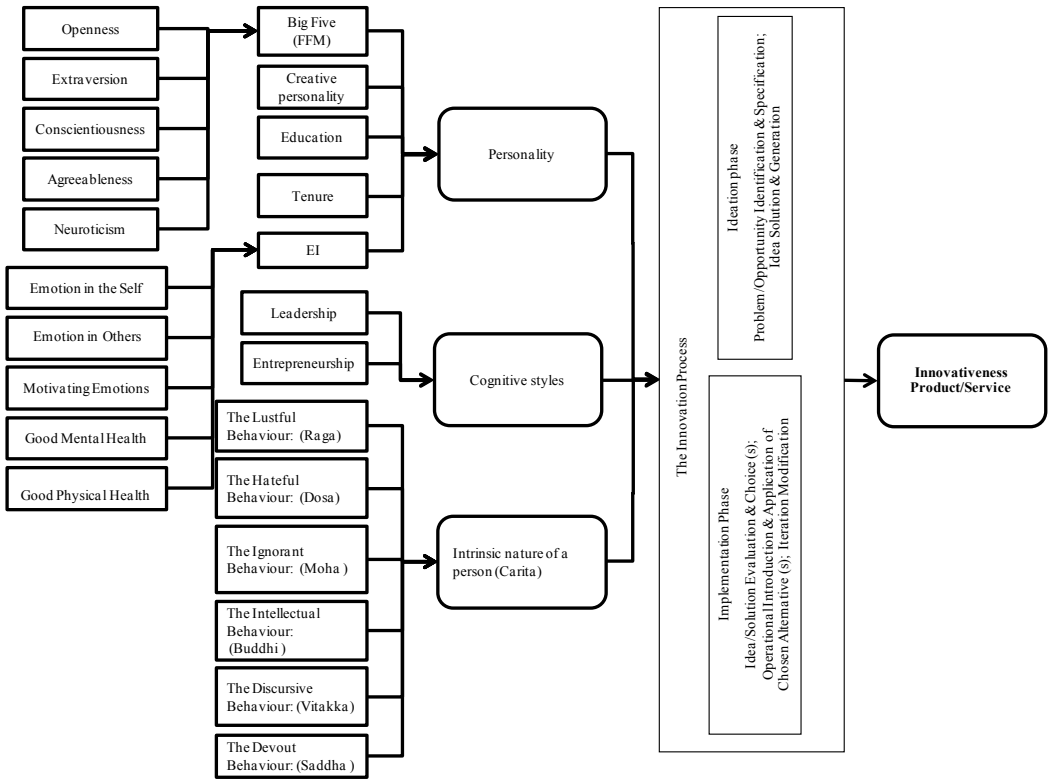

Figure 1: The theory model of the antecedents of individual innovative capacity (based on Farr, Sin, & Tesluk, 2003 cited in Hammond et al. [7].

managers are always targeted since they usually are mainly involved in the innovation process from the start and they also involved in various business activities from R&D, marketing, to customer support. Moreover, large-scale firms are mostly in matured stage, they are facing change that cannot be addressed with traditional method.

The study started collecting the survey from Mid-August 2011 after finalized variables with innovators and verifying the questionnaire by experts and Cronbach test. The questionnaires were se nt to the focused participants by hand and mail more than 1,000 letters. Moreover the researcher invited respondents via email and requested to take part in an online survey using the data pool of an industry association more than 5,000 emails.

The study received the returned and completed samples equal 452 by which 10% are from online survey. Then, we validated the data and verify the completed sample that equal 434 samples and then we used SPSS the statistic program to analyze the samples to estimate a parameter for answering the research questions.

Research design

The survey questionnaire consisted of 45 items and utilized five-point Likert rating scale which ranges from strongly agrees (5) to strongly disagree (1) for the measurement of variables. The respondents are asked to give score for each item to identify the skill, knowledge and behaviours traits needed for an individual innovativeness.

The following table 3 show the summary of proposition and hypotheses

Results and Discussion

Data analysis involves constructing a frequency distribution, recording of the number of scores that fall within each response level of Likert scale done in SPSS. Correlation analysis was also applied to determine the relationships between the observed variables. Factor analysis was used to describe variability among the observed determinants to identify the potentially lower number of the unobserved determinants.

Descriptive and EFA analysis evidence

From 452 surveyed received, the study undertook frequency analysis to see the mean value from the survey as well as standard error of the mean as shown in table 4.

This table 4 demonstrate means, standard deviations and pair-wise correlations. The mean value from frequency test shows that from 452 returned surveys, the variables highly affected to innovative capacity are the Positive thinking (4.31) and with standard deviation of 0.805 and Creativity (4.29) with standard deviation of 0.846, follows by Adaptable, Excite seeking, Achievement striving, Lateral Thinking, The intellectual behaviour (Buddhi carita), Good mental Health, Self Discipline and Motivating emotion respectively.

For correlation analysis, some variables had high positive relationships (Pearson Correlation > 0.5) as showing in table 5.

The coefficient of multiplication between factors are for example Positive Thinking and Adaptable with the value 0.617, Excite Seeking and Adaptable with the value 0.560, Lateral Thinking and Excite Seeking with the value 0.604, Good physical health and Good mental

Sex	Age	Experience	Education	Occupation
Male: = (59.1%)	25-34 (50%)	5-10 (42%)	High school and below (5.7%)	Private (78.8%)
	35-44 (30.2%)	>10 years (58%)	Vocational (12.0%)	Government sector (11.4%)
Female= (40.9%)	45-54 (18.6%)		Bachelor (58.5%)	Entrepreneur (6.9%)
	>55 (1.2%)		Master (20.9%)	others (3.0%)
			Phd. (2.9%)	

Table 2: Demography of empirical data (N =434)

Hypothesis	Factors	*Observed Independent variable	Dependent variable	Relation
H_1	FFM	Openness(positive thinking, adaptable,	Individual Innovative Capacity	+
		lateral thinking, aesthetics, Fantasy)		
		Extraversion(positive emotion, excite seeking, Gregariousness)		
		Conscientiousness(self discipline, deliberation, achievement striving)		
		Agreeableness(modesty)		
H_2	EI	Good mental health, Good physical health, Motivating emotion,		+
		Regulation of Emotion in the Self,		
		Regulation of Emotion in others		
H_3	Leadership	Leadership		+
H_4	Education	Knowledge		+
H_5	Tenure	Experience		+
H_6	Entrepreneurship	Entrepreneurship		+
H_7	Intrinsic nature of a person (Carita)	Raga Carita, Dosa Carita, Moha Carita, Saddha Carita, Buddhi Carita, Vitakka Carita		+

P : An antecedents affected the individual innovative capacity in Thai firm

Table 3: Proposition and hypotheses

health with the value 0.752 and Leadership and Regulation of Emotion in the Self with the value 0.543 as shown in Table 5.

It shown that the observed variables have highly correlated with each other. As the result, factor analysis need to be done to categorize factors for later analysis. The data set were also confirmed by KMO and Bartlett's Test that Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.912 that means factor analysis is required to be done in this research.

Eigen value that greater than 1 determines that only 4 factors should be used to explain variance (Table 6).

Extraction Method: Principal Component Analysis. Rotation Method: Equamax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

From table 7, after several testing by statistic, the findings of research emphasize four groups of variable predictors:

- Factor 1 should consist of Good Mental Health (4.10), Motivating emotion (4.02), Good Physical Health (4.02), Regulation of Emotion in the Self (4.00), Regulation of Emotion in others (3.96), Positive emotion (3.83) and Leadership (3.82).
- Factor 2 should consist of Positive Thinking (4.31), Creativity (4.29), Adaptable, Excite Seeking (4.26), Lateral Thinking (4.23) and Buddhi Carita (4.13).
- Factor 3 should consist of Achievement striving (4.26), self discipline (4.06) and Deliberation (4.02).
- Factor 4 should consist of Experience (3.87), Knowledge (3.70), Entrepreneurship (3.63) and Fantasy (3.63).

Based on these findings, this study found that variables in group 2 are of highest value from accumulation of mean counted and some variable such as creativity is clearly perceived as one of the very important characteristics of innovator at the beginning of the innovation process (Figure 2).

The variables in Factor 1 are mostly from of EI's variables and a big characteristic that is Leaderships. Factor 2's variables are mixing from FFM; Openness to experience (Positive Thinking, Lateral Thinking, Adaptable) Extraversion; Excite Seeking and a big characteristic that are The Intellectual Behaviour: (Buddhi Carita) and creative. Factor 3's variables are FFM- Conscientiousness. Factor 4 is mixing from big character of Entrepreneurship, Openness to experience (Fantasy), Knowledge and experience.

For the development of effective behaviours, it is necessary to understand the innovation process. Consequently, we can set appropriated characteristics required for each stage, for example, idea generation stage requires high creativity. Conversion stage requires leadership whilst at the diffusion stage it requires entrepreneurship.

We can interpret from this empirical data that factor 1's variables share common value on "Emotion Intelligence and Leadership". They are significantly associated with potential innovator. One who can manage his/her own emotions effectively is potentially achieving innovations' goals. This finding surprisingly similar to the study by Antonakis et al. [25] that leaders with higher emotional intelligence may be become a successful leader.

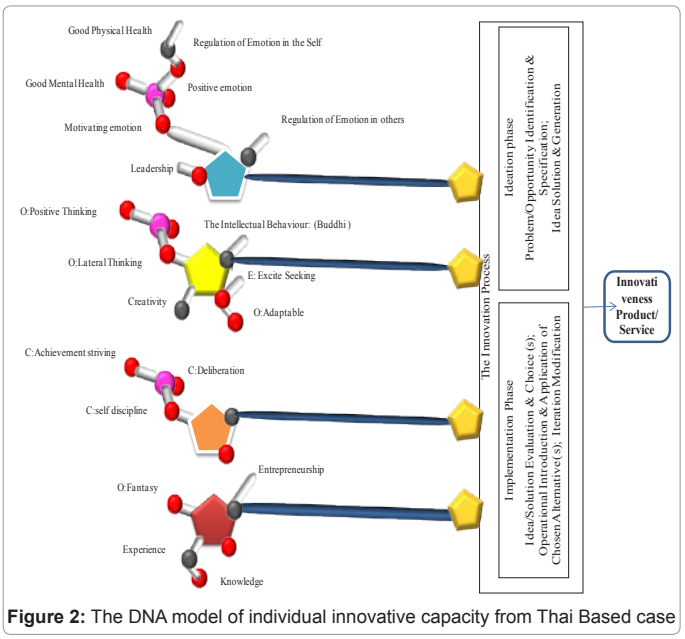

Figure 2: The DNA model of individual innovative capacity from Thai Based case

Variable	Factor		Std. Dev	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Positive Thinking	FFM (Openness)	4.31	.805	1.000																			
2. Creativity	Individual creativity	4.29	.846	.493	1.000																		
3. Adaptable	FFM (Openness)	4.27	.835	.617*	.436	1.000																	
4. Excite Seeking	FFM (Extraversion)	4.26	.912	.570*	.495	.560*	1.000																
5. Achievement striving	FFM (Conscientiousness)	4.26	.821	.319	.263	.334	.442	1.000															
6. Lateral Thinking	FFM (Openness)	4.23	.878	.558*	.510*	.567*	.604*	.338	1.000														
7. Buddhi Carita	Intrinsic nature of a person (Carita)	4.13	.801	.391	.535*	.401	.402	.351	.428	1.000													
8. Good mental health	EI	4.10	.888	.273	.367	.183	.324	.327	.185	.411	1.000												
9. Self discipline	FFM (Conscientiousness)	4.06	.883	.362	.235	.348	.387	.439	.283	.324	.419	1.000											
10. Motivating emotion	EI	4.02	.806	.282	.420	.246	.326	.261	.275	.403	.518*	.337	1.000										
11. Good physical health	EI	4.02	.903	.233	.255	.171	.265	.378	.157	.304	.752*	.392	.501*	1.000									
12. Deliberation	FFM (Conscientiousness)	4.02	.843	.296	.199	.315	.370	.542*	.265	.355	.433	.508*	.300	.425	1.000								
13. Regulation of Emotion in the Self	EI	4.00	.868	.290	.332	.216	.254	.259	.171	.333	.571*	.370	.571*	.573*	.383	1.000							
14. Regulation of Emotion in others	EI	3.96	.893	.274	.377	.217	.273	.230	.172	.387	.564*	.325	.484	.518*	.353	.625*	1.000						
15. Experience	Experience	3.87	.862	.241	.343	.192	.316	.284	.200	.319	.382	.251	.364	.441	.344	.378	.399	1.000					
16. Positive emotion	FFM (Extraversion)	3.83	.890	.356	.224	.289	.289	.196	.256	.242	.368	.368	.265	.310	.363	.383	.357	.228	1.000				
17. Leadership	Leadership	3.82	.856	.244	.401	.239	.204	.289	.202	.349	.463	.336	.460	.508*	.340	.543*	.521*	.404	.320	1.000			
18. Knowledge	Knowledge	3.70	.879	.266	.416	.231	.298	.246	.348	.389	.228	.161	.309	.180	.271	.276	.292	.381	.208	.307	1.000		
19. Entrepreneurship	Entrepreneurship	3.63	1.062	.140	.180	.091	.126	.188	.127	.204	.236	.233	.322	.340	.151	.294	.249	.370	.136	.346	.360	1.000	
20. Fantasy	FFM(Openness)	3.63	1.015	.206	.302	.137	.287	.157	.348	.227	.050	.071	.115	.032	.093	-.004	.062	.161	.099	.073	.264	.204	1.000

* Significant at the 0.05 level (2-tailed).
* The value illustrates a number of cases with significant correlation among the independent variables and factor analysis need to be done.

Table 4: Variable Ranking by Mean from Frequency Test and Correlation (n =452)

Follow this study; we can say that one who has high emotional intelligence. He/She could have ability to

(1) Develop innovative strategy; goals and objectives.

(2) Motivate and instil others to participate in innovation project.

(3) Manage innovation process such as NPD, NSD project.

(4) Lead change to organization process.

(5) Diffuse the innovation project.

Factor 2 explains the capacity needed for does everything with mindfulness and wisdom and influences other people to think differently, to do more, or to find a new way on task achieving. The capacity for generating an idea which achieves outcomes that was previously not attainable.

Factor 3 explains the capacity of individuals who work hard, desire

The coefficient of multiplication between	Pearson Correlation	with statistically significance difference relationship at level;	
Positive Thinking	Adaptable	.617*	.000
Positive Thinking	Excite Seeking	.570*	.000
Positive Thinking	Lateral Thinking	558*	.000
Excite Seeking	Adaptable	.560*	.000
Lateral Thinking	Creativity	.510*	.000
Lateral Thinking	Adaptable	.567*	.000
Lateral Thinking	Excite Seeking	.604*	.000
Buddhi Carita	Creativity	535*	.000
Motivating emotion	Good mental health	.518*	.000
Good physical health	Good mental health	.752*	.000
Good physical health	Motivating emotion	.501*	.000
Deliberation	Self discipline	.508*	.000
Regulation of Emotion in the Self	Good mental health	.564*	.000
Regulation of Emotion in the Self	Motivating emotion	.571*	.000
Regulation of Emotion in the Self	Good physical health	.573*	.000
Regulation of Emotion in others	Good physical health	.518*	.000
Regulation of Emotion in others	Good mental health	.564*	.000
Regulation of Emotion in others	Regulation of Emotion in the Self	.625*	.000
Leadership	Good physical health	.508*	.000
Leadership	Regulation of Emotion in the Self	.543*	.000
Leadership	Regulation of Emotion in others	521*	.000

Table 5: The Coefficient of Multiplication between Factors

Total Variance Explained									
Components	Initial Eigenvalues			Extraction sums of Squared Loadings			Rotation Sums of Squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.226	36.130	36.130	7.226	36.130	36.130	3.782	18.910	18.910
2	2.266	11.332	47.461	2.266	11.332	47.461	3.399	16.995	35.905
3	1.418	7.089	54.551	1.418	7.089	54.551	2.593	12.967	48.872
4	1.106	5.531	60.082	1.106	5.531	60.082	2.242	11.210	60.082
5	.846	4.228	64.310						
6	.781	3.904	68.214						
7	.748	3.742	71.956						
8	.664	3.322	75.278						
9	.575	2.876	78.153						
10	.549	2.744	80.897						
11	.516	2.580	83.477						
12	.479	2.393	85.870						
13	.458	2.290	88.160						
14	.424	2.121	90.282						
15	.400	2.002	94.283						
16	.358	1.788	94.071						
17	.347	1.734	95. 805						
18	.323	1.613	97.417						
19	.316	1.580	98.997						
20	.201	1.003	100.000						

Extraction Method: Principal Component Analysis

Table 6: the Total Variance Explained by Factor Analysis

to succeed, spontaneous decision to be successful and commitment to be successful in innovation process.

Factor 4 explains the capacity of people who manage work with the high risk-taker personality that is entrepreneurship characteristic, and go the extra mile to achieve better things and do their own work with standard which need knowledge and experience.

According to the finding from descriptive analysis and factor analysis we can summarize the hypotheses as following table 8;

This finding subsequently is interpreted in terms of desired behaviors and skills needed to provide to implement an innovative strategy succeed. The model provides strategic alignment for innovative competencies and it will be more useful for being innovative organization to transit to competencies.

Another outcome of this study is a comprehensive list of competencies for innovator, providing the foundation for recruiting, development, competencies management, and performance appraisal to help firms create and manage the "Innopreneur" and "Intrapreneurship".

However, the weak point of the exploratory factor analysis sometimes does not give the result for explanation of relationship of some variables in their group and is rather difficult to explain the research findings. Thus, this study tried to explain by showing the correlation of each factor group to the frequency test.

Conclusion and Future Research

The results of this exploratory research are not decision-making process by itself, but it provides substantial insight into an innovative capacity of Thai firms from individual's traits, behaviour, and skill. Although the results of quantitative research can give some indication as to the «why» and «how» innovative capacity possesses by each individual, cannot be measured as «how often» or «how many».

In order to address the "how often» or the «how many" issues, a similar research can be carried out in Thai firms to measure individual's innovative capacity in the aspect of testing the linkage between innovative capacity and job performance as well as the number of new ideas generated and the exploitation of ideas.

We can use these variables for testing and measuring individual innovative capacity in Thai firms and mapping the results with innovation stages. The comparison of different industry is also needed.

One of the limitations of this paper is that this study considered only the highly affected variables to innovative capacity. Detailed explanation of each variables and the itemization of them are needed for better understanding in the conducting of the next research such as how they align with innovation process. Moreover, the study did not investigate the linkage between these factors with firm's innovative performance.

This research wishes to contribute its finding in raising the awareness of characteristics of individual's innovative capacity in association with innovative performance of Thai firms. And how individual's innovative capacity can be developed and nurtured by the HR development program to enable success in innovation management?

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
1. Positive Thinking	.165	.757	.223	.060
2. Creativity	.346	.655	-.074	.366
3. Adaptable	.078	.764	.262	.003
4. Excite Seeking	.075	.692	.366	.191
5. Achievement striving	.023	.210	.751	.241
6. Lateral Thinking	-.016	.768	.176	.259
7. Buddhi Carita	.320	.493	.167	.332
8. Good mental health	.716	.114	.365	.108
9. Self discipline	.254	.228	.689	.028
10. Motivating emotion	.645	.228	.117	.275
11. Good physical health	.680	-.018	.439	.169
12. Deliberation	.217	.145	.775	.124
13. Regulation of Emotion in the Self	.784	.126	.213	.115
14. Regulation of Emotion in others	.752	.171	.139	.156
15. Experience	.376	.060	.256	.533
16. Positive emotion	.391	.307	.322	-.054
17. Leadership	.646	.116	.183	.289
18. Knowledge	.167	.255	.055	.674
19. Entrepreneurship	.236	-.126	.165	.680
20. Fantasy	-.203	.286	.019	.613

Table 7: Rotated Component Matrix

	Hypothesis	Variables	Means	Sig.	Factor group	Predictable
1	FFM is predictable to an individual innovative capacity	Extraversion : -Excite Seeking Openness to Experience -Positive Thinking -Lateral Thinking - Adaptable - Fantasy Conscientiousness - Achievement striving - Deliberation - self discipline	 4.26 4.31 (highest) 4.23 4.27 3.63 4.26 4.02 4.06	 .912 .805 .878 .835 1.015 .821 .843 .883	 2 2 2 2 4 3 3 3	Yes
2	Individual Creativity is predictable to an individual innovative capacity	Creativity	4.29 (2nd highest)	.846	2	Yes
3	EI is predictable to an individual innovative capacity.	Good Mental Health, Motivating emotion, Good Physical Health, Regulation of Emotion in the Self, Regulation of Emotion in others	4.10 4.02 4.02 4.00 3.96	.888 .806 .903 .868 .893	1	Yes
4	Leadership behavior is predictable to an individual innovative capacity.	Leadership	3.82	.856	1	Yes
5	Educational level is predictable to an individual	Knowledge	3.70	.879	4	Yes
6	Tenure is predictable to an individual innovative capacity.	Experience	3.87	.862	4	Yes
7	Entrepreneurship is predictable to an individual innovative capacity.	Entrepreneurship	3.63	1.062	4	Yes
8	Intrinsic nature of a person (Carita) is predictable to an individual innovative capacity.	The Intellectual Behaviour: (Buddhi Carita)	4.13	.801	3	Yes

Table 8: Confirmed hypotheses

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