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## Measuring Happiness in Academic Environment: A Case Study of the School Of Engineering at Taylor's University (Malaysia)

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### Abstract

Research on measuring the happiness and general wellbeing of both staff and students at Higher Learning Education Providers (HLEP) has become an important component for the management team at the School, Faculty and University when introducing new plans and future policies related to cultivating a positive teaching and learning environment. Therefore, an attempt has been undertaken to measure the general happiness at the School of Engineering (SoE) at Taylor's University through the development of Gross National Happiness Index (GIHI) which took into account nine key areas that fulfilled various criteria. Inspired by the Gross National Happiness Index (GNH) which was developed by the Centre for Bhutan Studies as an official national measure of happiness, an attempt was undertaken to conceptualize the idea from GNH and develop a happiness indicator for the SoE which gave birth to Gross Institutional Happiness Index (GIHI). This article details the methodology and stages undertaken towards the development and the subsequent implementation of GIHI within the SoE at Taylor's University Lakeside Campus (TULC) to compute the percentage of people who are happy and percentage of domains in which not-yet-happy people already enjoy sufficiency.

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## 1. Introduction

Most governments in the world emphasize on economic prosperity and growth as its central policy. Thus, the measure of gross domestic product (GDP) of a nation becomes the main objective and future policies of a nation are directed towards this. The rationale behind the choice of GDP is that with growing economic prosperity of a nation, disposable income of individuals will increase. In turn, it is presumed that people that with an increase in disposable income will have the ability to pursue their choice.

Frey and Stutzer (2002) in their research have proven that the relationship between individual happiness and social wellbeing towards economic growth has diminished or broken-down, especially in developed nations. An example of a developed nation which has experienced a steady growth over the last 30 years except after the 2007 financial crisis is the United Kingdom. The nations GDP has doubled over the last 30 years but over the same period of time, depression amongst its citizens has risen significantly as well (Shah and Marks, 2004).

The Centre for Bhutan Studies under the patronage of His Majesty the King had decided to adopt an alternative approach to GDP. The centre measures the Gross National Happiness (GNH) of the citizens through a Gross National Happiness Index which is a measure designed to fulfil various criteria needed to form an official national measure.

Inspired by the results from GNH, the School of Engineering (SoE), conceptualized the idea from GNH and developed its own happiness indicator called Gross Institutional Happiness Index (GIHI), which cuts across nine key areas which are discussed in detail in the methodology section, to measure the happiness of both staff and students.

Nell Nodings (2004) in his research has found that happiness and education are intimately connected. Educators often subscribe to the idea of lifelong learning, which incidentally is one of the components in Taylor's graduate Capabilities. However, in most cases, the focus is on grades and degree rather than ongoing learning. This in turn might create an ongoing tension for educators as traditionally educators simply accepted authority in lectures, but in reality, the goal is to encourage students to accept lifelong learning. This requires a transformation in taught, willingness to accept changes and a new paradigm in teaching and learning for both educators and learners. Selignan (2002) and Past (2005) have pointed out that happy people are more willing and able to give to others and accept new ideas, which follows that happy lecturers are more willing to accept changes, motivated in their goals and are able to teach and assist students better.

On the other hand, happy lecturers alone wouldn't constitute to an ideal learning environment. Students who are happy are more willing to engage and undertake difficult tasks, thinking deeply about issues and develop new solutions as happiness is an approach emotion which is important in learning.

Thus, GIHI which measures the overall happiness index, can be further broken down to several key indicators to identify areas or segments which need to be improved to ensure that both staff and students remain happy throughout the working and study periods respectively to achieve maximum possible results in teaching and learning. The main aim of the research is that results obtained may serve as an indicator at programme, school and University levels to design and develop future policies at administrative and education sections respectively taking into account all nine domains to ensure that the GIHI index is maintained at a high level to ensure that all staff and students are remain motivated in their goals and are able to teach and learn more effectively.

## 2. Methodology

The measure of GIHI constitutes many key areas which can be classified as traditional areas and less traditional areas. It is simply not a single psychological questions on happiness, such as "Are you happy?" or "How happy are you?" The traditional areas of social concern are identified as living standards, health and education while the less traditional areas are time use, psychological wellbeing, environmental diversity, cultural diversity and community vitality.

GIHI is generated to reflect the happiness of both staff and students from a holistic angle accurately to obtain the sufficiency levels in the areas mentioned and how these vary across gender, age, programme, education attainment, designation, marital status and nationality as well as for the respective areas or domains.

The key areas are reflected through nine core domains which are regarded as components of happiness under GIHI. These nine core domains are further divided into several indicators with respect to each domain. All nine core domains developed were equally weighted as all domains were considered to be equally important as a component of GIHI. All nine core domains were selected on normative as well as statistical grounds. Table 1 represents the nine core domains.

Table 1. Nine core domains

No.	Domain
1	Psychological wellbeing
2	Health
3	Time use
4	Education
5	Cultural diversity
6	Good governance
7	Community vitality
8	Ecological diversity
9	Living standard

The numbers of indicators for each domain vary between two to four which were developed to measure the respective domain. The important factors considered when developing the indicators are that they were made informative across time, should have a high response rate, were uncorrelated between one another and easily measurable and interpreted.

In order to measure the indicators, each indicator was divided to several sub-indicators which were mapped to a question each. Each question addressed had a response range, and the accumulated value from the response range from each sub-indicator of the indicator will be compared to a threshold value for the respective indicator to identify if sufficiency was achieved for that particular indicator. Table 2 represents the indicators for the psychological wellbeing and health domains respectively while Table 3 represents the sub-indicators for the life satisfaction indicator under the psychological wellbeing domain.

Table 2: Psychological wellbeing and health domains, indicators and sub-indicators

No.	Domain	Indicator
1	Psychological wellbeing	Life satisfaction
		Positive emotions
		Negative emotions
2	Health	Self reported health status
		Healthy days
		Disability
		Mental health

Table 3. Life satisfaction indicator and sub-indicators

No.	Indicator	Sub-indicator
1	Life satisfaction	Satisfaction with health
		Satisfaction with standard of living
		Satisfaction with occupation
		Satisfaction with family relationship
		Satisfaction with work life balance

The total number of indicators which will be used to compute the sufficiency achieved for each domain as well as the overall happiness is thirty. Although all domains are equally weighted, the same cannot be said for the indicators. Self-reported indicators, subjective indicators and objective indicators are dedicated 10%, 20% and 30% weightage respectively with regards to the respective domain. Allocation of weightage under the domain of health is as presented in Table 4. The same approach is undertaken for all other indicators in each of the remaining domains.

Table 4. Weightage for indicators in the health domain

No.	Domain	Indicator	Weightage
1	Health	Self-reported health	10%
		Healthy days	30%
		Disability	30%
		Mental health	30%

### 2.1. Computation of GIHI

Survey forms developed through excel spread-sheet will be used to obtain the feedback from staff and students from the SoE. These values, when uploaded into the developed software will automatically compute the happiness index and present several other key sub-data.

### 2.2. Attainment of Threshold

This section will clearly indicate the methodology obtained to suggest whether an individual has achieved sufficiency for the particular indicator and domain overall and allotment of points based on the weightage for the indicator and sub-indicator.

An example of a sampled individual's response for the psychological wellbeing domain is presented in Table 5 accompanied by the computation.

From Table 5, two observations can be concluded. Firstly, the individual has achieved sufficiency in all three indicators of the domain, thus indicating the sample has achieved sufficiency for that particular domain. The second observation is that the individual has obtained a total point of 0.0975 from a possible 0.1111 which is the weightage allocated for each of the nine domains.

If the individual had achieved sufficiency in two indicators and failed in one, the individual is deemed as not achieving sufficiency for that particular domain. As for the points accumulated, only those indicators where the individual has achieved sufficiency will be taken into account.

Table 5: Threshold sufficiency computation

No.	Domain	Indicator	Individual indicator weightage		Response range from individual	Sufficiency threshold	Allotment of points
			Fraction form	Percentage form			
1	Psychological wellbeing	Life satisfaction	½	50%	22	20 – 25	$\frac{22}{25} \times \frac{1}{2} \times \frac{1}{9} = 0.0489$
		Positive emotion	¼	25%	16	15 – 20	$\frac{16}{20} \times \frac{1}{4} \times \frac{1}{9} = 0.0222$
		Negative emotion	¼	25%	19	15 – 20	$\frac{19}{20} \times \frac{1}{4} \times \frac{1}{9} = 0.0264$

2.3. Computation of GIHI

The GIHI index was designed to provide policy incentives to increase the happiness of people and also to increase the sufficiency levels of the not-yet happy-people. This will provide the headcount ratio of the happy people as well as the percentage of people who have yet to enjoy sufficiency.

The definition of a happy individual in GIHI is a person who has achieved sufficiency in 6 out of 9 domains (66.67% of the domains) or an individual who has accumulated points of 0.6670 from a possible 1.0000. The symbol used would be  $H_n$ . Those who do not meet any one of these criteria are deemed to be not-yet-happy people,  $H_n$ .

The percentage of not-yet-happy people who have achieved sufficiency can be concluded as individuals who do not meet the happiness criteria, but have achieved sufficiency in 1 or more domains but less than 6. This can be concluded as the percentage of domains of not-yet-happy people where sufficiency was achieved. The percentage of domains in which not-yet-happy people lack sufficiency is represented by the symbol  $A_n$ .

The GIHI index uses shortfalls so that the GIHI index varies when the percentage of happy people increases or when not-yet-happy people have sufficiency in more domains. The GIHI index formula is:

- $GIHI = 1 - (H_n \cdot A_n)$

The GIHI index can be used to identify the percentage of happy people and how they are happy. At the same time, the index can also be used to tabulate the percentage of not-yet-happy people and where do they lack happiness.

In addition, the same index can be computed based on gender,  $GIHI_{male}$  and  $GIHI_{female}$ , age, education attainment, nationality, marital status, designation as well as programme enrolled (*students*).

The findings can be further decomposed to identify the indicators which lack sufficiency overall as well as based on gender, age, education attainment, nationality, marital status, designation and programme enrolled.

3. Preliminary results

A preliminary study was undertaken at the SoE for a sample size of 29 staff for the psychological wellbeing and health domains respectively. A total of 70 outputs were generated based on gender, age, education attainment, nationality, marital status and designation. The overall GIHI results encompassing both domains and overall GIHI results for the psychological wellbeing and health domains respectively are presented in Figure 1. Similarly, another 67 graphs were generated based on the break down mentioned earlier. This will enable policy makers at programme, school and University level to identify key areas that need to be addressed through future policies.

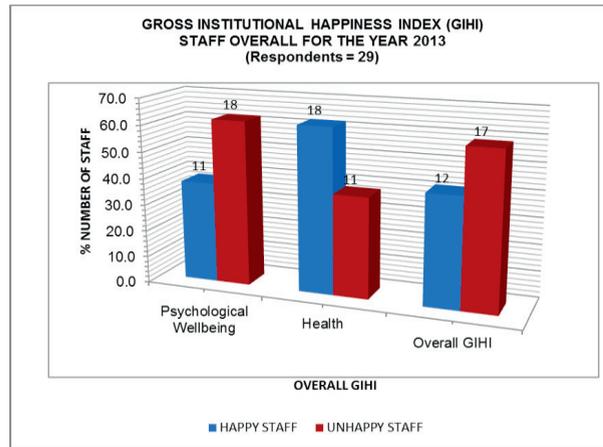


Fig. 1. Overall GIHI result

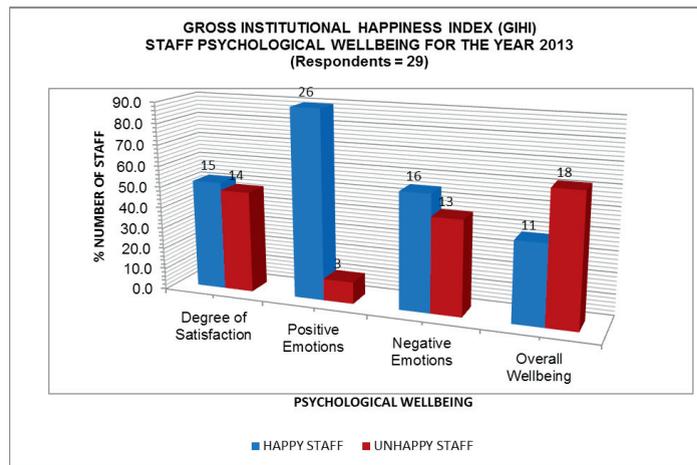


Fig. 2. Psychological wellbeing GIHI result

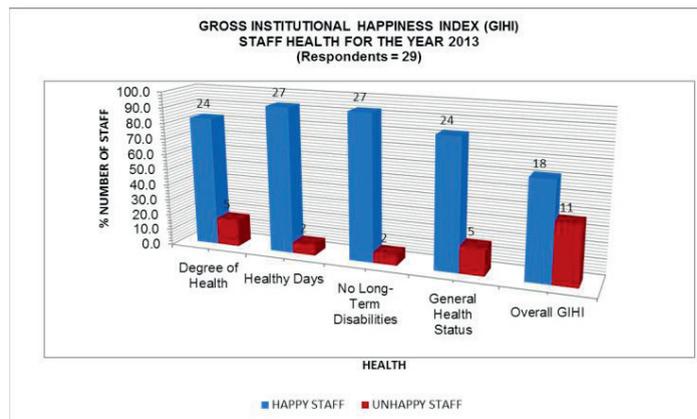


Fig.3. Health GIHI result

#### 4. Summary and future works

GIHI was developed with an aim of identifying the key areas where staff and students are not happy, in other words lack sufficiency and to track changes over time based on the domains, indicators and other criteria. The objective is for future policies that would be implemented at programme, school as well as University levels would take into account the human wellbeing as a strong relationship between happiness and education has been identified by researches. As happiness and education are intimately connected, an ideal learning environment will only become a reality with the coexistence of both happy staff and students at learning institutions.

In future, GIHI will focus on gradually becoming independent of GNH and slowly evolving into a more robust system which is specifically developed for the Higher Learning Education Providers.

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