A SCIENTIFIC PAPER ON MODIFICATION OF MASLOW THEORY FOR GENERATING A STANDARD REFERENCE TABLE OF TMHN

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Abstract: The classical theory of Maslow's Hierarchy of Needs (MHN) reveals five levels of human needs causing different behaving motivation in social activities, which has been frequently and widely applied in many fields, such as management in companies and analyzing daily human behaviors, in which, however, the work methods and processes were not sufficiently convenient or delicate in practice. To improve the MHN functioning effectively and intuitively, it is critical and important to make some modifications to the classical theory and make itself theoretically self-actualized. This paper tries to modify and reshape the MHN Pyramid into a right Trapezoid of MHN (TMHN), from which the formula of TMHN is, geometrically, inferred after identifying the key elements of the trinity independent variables "y," "i," and "h" and the dependent variable "V," with which a complete Standard Reference Table of TMHN is finally generated, which will facilitate acquisition of comprehensive recognition of MHN in an intuitive and concrete checking and comparing the results of some personal social behaviors, making the classical Theory of MHN widely closer to practical utilities, so that it can play greater guiding roles in education and other activities.

Keywords: Maslow Theory Trapezoid of Modified Hierarchy of Needs Standard Reference Table

Introduction

Maslow's theory, having played a positive role in many areas, results in higher expectations of the theory, especially its applications for solving social problems and guiding some social behaviors. Echoing this situation this pa academically works on creating a context in which it is reasonable to modify

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the pyramid of MHN into a right trapezoid of MHN. It is beneficial to generate a standard reference table (SRT). This SRT can help realize the above-mentioned higher expectations. Six main parts are covered in this paper, including introduction; research objective; related literature review, method of research; conclusion; suggestion, and references.

Research Objective

Based on academic study and needs of career development in educational administration, the objective of this research mainly covers: to facilitate Maslow theory in the application, and to promote a better guiding sense of psychological theory in social activities.

Literature Review

Four aspects are covered in this part, including the background of MHN, five hierarchies of needs in classical theory - definitions and elements, work principles of MHN, and significance of MHN.

Background of MHN. Abraham Maslow put forward his hierarchies of needs in A Theory of Human Motivation Psychological Review, published in 1943. He stated that human motivation is based on seeking fulfillment and change through personal growth. Human needs were classified into needs' categories physiology, safety, social, esteem and self-actualization, successively from the lower level to the higher level, as shown in Figure-1.

Five hierarchies of definitions and elements. Maslow's five Hierarchies of needs are defined with related basic elements briefly illustrated as follows: 1) Physiological needs refer to basic issues of survival such as salary and stable employment, including homeostasis, food, water, sleep, shelter and sex. 2) Safety needs are about keeping us safe from harm, emotional, financial security, hand well-being, free from accidents/illness and their adverse impacts. 3) Love/ Belonging needs involve emotional relationships of friends, family, and intimacy, belongingness, including friendship, intimacy, family. 4) Esteem needs include the LOWER esteem, the need for respect from others -- status,

Figure1. Maslow's Hierarchy of Needs Pyramid

recognition, fame, prestige, attention; the HIGHER esteem of self-respect--strength, competence, mastery, and freedom. 5) Self-actualization, self-confidence, independence, needs refer to a person's full potential, their realization of it, including mate acquisition, parenting, utilizing abilities, utilizing talents, pursuing a goal, seeking happiness. (Maslow, 1948)

Work principles of MHN. According to Maslow's theory, people have five different levels of potential needs, whose urgencies display differently in variousstages of life . The most urgent need is the most important factor and motivation to promote his actions. Human needs are the satisfactio n transformed from the external to the internal. Whenever the lower-level needs get satisfied ,the motivating effect gets lower, and its domination doesn't maintain. Therefore ,the higher level of needs will take the place of the lower ones to becomethe main factors promoting action . Once some needs are satisfied ,they can no longer be human behavior factors but be substituted by otherneeds . Needs of high level are more valuable than those of low level , and so enthusiasm is stimulated by the needs of high level. The great need of humans is self actualization in which is to express one's own potential in the-most efficient and most comprehensive way, and only in this way can acquire the peak experience. The five basic human needs are often unconscious in the average person. For individuals, unconscious motivation is more important than conscious motivation. For experienced people, with appropriate techniques, unconscious needs can be transformed into conscious needs. (https://tarotelements.com)

Significance of MHN. The significance of MHN can be discussed in two aspects covering positive factors of MHN and its deficiency, as follows: 1) Positive factors of MHN embody in philosophical perspectives: development and movement view of materialist; work methods of two-point theory in dealing with contradictions and focal point theory in dealing with a certain contradiction and employing conscious initiative of materialist dialectics. 2) Deficiencies of the MHN cover academically ethics and ethically academy are not equally related and cared in Maslow's theory: Norms of citizen's morals are not in Maslow's actualizers characteristics, nor did he equate self-actualization with perfection. The methodology employed in the MHN is lacking reliability or validity. "He looked at the biographies ... and identified as being self-actualized." which is just judged by the presumption of guilt (Huang, 2011), and the judgment must be insufficient of reliability and validity. Deficiencies of the MHN Theory briefly mentioned above have unceasingly pushed forward the studies on it, which has made Maslow's Hierarchy of Needs one of the evergreen topics in psychological researches

Method of Research

Academic study and mathematically formulating calculation are adopted, further illustrated as follows:

An academic study of modifying MHN -- Necessity and rational exploration. To be more adaptable and flexible and better respond to the higher expectation of the MHN, theoretical modification is inevitable for its better role-playing in aspect as follows: 1) Trinity of y, i, and h. No psychological occurring without needs elemental trinity: lifespan (y)--expectancy of lifespan, project cycles, item existing time; current item occurring (i)--the current starting point of time, cycle, period, etc.; and total needs hierarchy (h).

Therefore, it is necessary to modify the original MHN Pyramid into a Trapezoid OB "B'A in Figure-2 (see Figure 2, below), with element y (lower bottom line) as the abscissa and need h hierarchy (height of the trapezoid) as the ordinate, and current-item age (i) within the lifespan (y) relationship (y-i) as upper bottom line. 2) Significance of the Modification from Pyramid to a trapezoid. If the baseline and the height are equal, the area of the trapezoid is much larger than that of the triangle. In this way, there are more opportunities for various psychological motivations to occur in the trapezoid context.

In the trapezoid schema, the physiological needs of the first needs' level cover one's lifespan, requiring respect of life and lasting attention to physiological needs; The vertical line of the trapezoid indicates that all the Needs will end in the end of life.

The flexible position of point B on the upper bottom line of the trapezoid or the length of i (line segment): the farther to the left point B, the shorter (i)is, the longer the line segment BB1 on the right of point B, the more significant they will become for future life and development. The greater difference of (y-i) will be. This shows that in the shorter time can psychological needs be realized; the more significant they will become for one's future life and development.

Figure1 Maslow's Hierarchy of Needs Pyramid

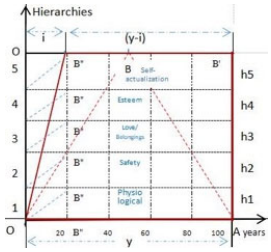

Figure 2 Trapezoid OB"B'A of TMHN

Modified MHN -- Necessity and Rational Exploration

Maslow's Hierarchy of Needs theory has been widely adopted for management in modern companies, especially in HR and staff proficiency training, personal career development predicting, etc. However, the test methodology is dull and lacks flexibility. Therefore, Maslow's Hierarchy of Needs must be changed and modified somewhere to play more roles and to meet more needs in more fields.

Trinity of "y," "i," and "h."

No psychological motivation occurring without needs' elemental trinity: lifespan (y)--expectancy of lifespan, project cycles, item existing time; current item occurring (i)--the current starting point of time, cycle, period, etc.; and total needs hierarchy (h). The referred y, i, and h are flexibly determined by the particular topics concerning the three elements in a specific context. Therefore, it is necessary for these 3 factors to be taken into account and added to modify the original MHN Pyramid into a trapezoidal figure on coordinates, with element y (lower bottom line) as the abscissa and need h hierarchy (height of the trapezoid) as the ordinate, and current-item age (i)within the lifespan (y) relationship (y - i) as the upper bottom line. (*Seen Figure-3 Trapezoid **O**B"B'A)*

Significance of the Modification from Pyramid to Trapezoid.

If the baseline and the height are equal, the area of the trapezoid is much larger than that of the triangle. In this way, there are more opportunities for various psychological motivations to occur in the trapezoid context. Meanwhile, it can be seen intuitively that the impact of motivation items on one's future is longer and more significant.

In the right-angle trapezoid schema, the "physiological needs" of the first needs' level run through the whole life process, which requires to respect life and pay lasting attention to physiological needs; The vertical line of the trapezoid, more scientifically, illustrates: all the Needs will end at the end of life, which warns to work hard for a dream before the "Sleeping Time."

The flexible position of point B on the upper bottom line of the trapezoid or the length of "i" (line segment): the farther to the left point B the smaller ("i") is, the longer the line segment BB1 on the right of point B the greater difference of (y-i) will be. This shows that the sooner various psychological needs are realized, the more significant they will become for future life and development.

Formula ∑(V) of Modified TMHN

There are two aspects to be discussed in this part: single value of each need and formulas of the modified TMHN

Single value (V) of each level of needs

Single value (V) of each level of needs can be expressed by the very value of the area of the small trapezoid of each level needs0. (Seen: Figure 2)

V1 = S-trapezoidal-physiological= 1/2 [y1 + (y1- i1)] h ...
V4 = S-trapezoidal-esteem= 1/2 [y4 + (y4 - i4)] h
V5 = S-trapezoidal-self-actualization= 1/2 [y5 + (y5 - i5)] h

(PS: ① y -- average family lifespan, supposed the highest standard of 100 years. $0 < y \leq 100$
② i -- the age of the testee at which their motivation is generated or implemented realized $0< i \leq y$
③ h -- hierarchy or level of needs. h = 1 in single V-formula
④ V-- Value of test: importance, significance, usefulness, degree, necessity, correctness, creativity, etc.)

Formulas of Modified TMHN.

Two approaches to the formulas of Modifies TMHN Approach 1:

From the separate value of V1, V2, V3, V4, and V5, the total value (∑) of the five V-s can be expressed as follow (Seen: Figure-03 Trapezoid OB"B'A):

∑(V) = V-total = V1 + V2 + V3 + V4 + V5
∑ = V-total = 1 /2 [y1 + (y1 - i1)] h1
+ 1/2 [y2 + (y2 - i2)] h2
.....
+ 1/2 [y5 + (y5 - i5)] h5
(∵ y1 = y2 = y3 = y4 = y5 = y; h1 = h2 = h3 = h4 = h5 = h; i1 = i2 = i3 = i4 = i5 = i)

→ ∑(V) = V-total = 1/2 [yh +h (y - i)] ×5h =1/2 (2y - i) 5h

This is the first approach to the total value of one's 5 levels of needs.
Approach 2:

According to the modified MHN trapezoid-OB "B'A (S-trOB "B'A), (*Seen: Figure-03 Trapezoid OB "B'A), the* total value ∑(V) of modified MHN can be directly described as its area formula, therefore,

$$\sum(V) = \text{S-tr OB"B'A} = 1/2\ [\ y + (y - i)] \times 5\ h = 1/2\ (2y - i)\ 5h$$

Contrasted the two methods of working out the total value of the MHN, Method -2 is found more direct and convenient, and it is identified as a primary approach to the final formula to work out the MHN total value or **∑(V)** of modified MHN. There are two steps to go as follow:

Step one: Identifying the two extremes of the maximum and minimum value

of ∑ MHN:

1) Ranges of the trinity for the Maximum value of S-trapezoid. Suppose there is a man who can fulfill his self-actualization need and, of course, all other 4 levels of needs before his birth and he lives for 100 years, then it is clear that the shape of the "trapezoid" turns into a rectangle. In this way, the upper bottom line of the trapezoid is equal to the bottom line, and its area becomes maximum (area of the rectangle), that is (as shown in the figure below):

If, i = 0. y = 100, h = 5
Then, S-trapezoid = 1/2 [(y - i) + y] h (i = 0)
= y h = 500 (maximum)
and ∵ S-rectangle = y h (y = 100, h = 5) =500
∴ S-trapezoid = S-rectangle = 500 (maximum)

2) Ranges of the trinity for the Minimum value of S-trapezoid. Supposed there is the best loser in fulfilling all 5 levels of needs during his 100 years' life (in fact, this man should have passed away before his birth). It is known that the →shape of the trapezoid, without its upper bottom line (y-i = 0), will be changed into a single "line" of 100 (bottom line), and h-value lowering to "zero." Furthermore, the loss is so complete that the "line" will shrink into a dot and then nothingness. Therefore, if he cannot fulfill any level of needs, h will get a value of "zero," and then the area of trapezoid will become "zero," that's the minimum value of his MHN, as follow (as shown in the figure below)

If: i = 100 → (y - i) = 100 - 100 = 0, and h = 0
Then S-trapezoid = 1/2 [(y - i) + y] h
(i = 100, y = 100, h = o) = 0 (minimum)

The maximum value of MHN means completely fulfill the 5 levels of needs, especially self-actualizing needs; while the minimum value means absolute failure in fulfilling the MHN all life long, even the physiological needs. An average person's value of his MHN, either any single need, or two needs or 5 levels of needs, will stay some point between the two extreme values of maximum (500) and minimum (0).

Adjusting value ranges of the trinity: y, i, and h. for MHN purpose. Suppose one's total MHN value is ∑, then, according to the above calculating ∑, equal to S-rectangle [= 500 (maximum), when i = 0] and S-trapezoid [= o (minimum), when i = 100], can be expressed: $0 \leq \sum \leq 500$.

Since, when either i = 100 (in this sample) or i = 0 (in this sample), ∑ can get its maximum or minimum values respectively. In practice, when i =0 and y = 0, it become meaningless. Therefore, the value range of variable "i" should be ： $0< i \leq 100$； and y: $0 < y \leq 100$. ∑ is, until now, expressed by the areas of S-trapezoid (or S-rectangle), which must be transferred somewhere to make the total value (∑) range between 0 and 100, instead of maths result.

Therefore, besides micro-adjustments of the trinity of y, i, and h, it is necessary and indispensable to introduce a correlated coefficient α), making the formula available for the purpose of the MHN use.

Step two: A correction coefficient to control the final value range of ∑ for MHN

To change the ∑ $0 < \sum \leq 500$), from maths perspective, into a ∑ $0 < \sum \leq 100$), in psychological needs standing, a correction coefficient, α value namely, is indispensable. α value can be observed in the maximum ∑ ≤ 100) samples as follow:

∑ = V = 1/2 [y h +h y - i)] h α =1/2 2y - i) × 5 α =100
→ 1/2 2y -i) 5 α = 100
→ α = 20 / y
α value is: α = 20 / y.

If: y = 100; h = 5
then: α = 0.5

Therefore, the formula ∑ for MHN:

1) $\sum = 10\ h\ (2y - i) / y\ (0 < y \leq 100,\ 0 < i \leq 100,\ 1 \leq h \leq 5)$
or 2) $h = 5,\ \alpha = 0.5$
$\sum = 1/2\ (2y - i)\ h\ \alpha$
$(0 < y \leq 100,\ 0 < i \leq 100,\ 1 \leq h \leq 5)$

A Standard Reference Table of TMHN
The Standard Reference Table of TMHN is a description of change regulation of the hierarchy of needs, which is total values figured out by the critical relationship of the trinity: y, i, and h. The value of the classic Theory of MHN can also be presented in the Table.

Designing the Table of TMHN.
Needs and motivation lead to one's action. Man's action takes place after one's full mind-estimating or mind-assessing and then tells out to what extent, what related action would be taken.

One's needs in a different stage of life, occurring in the different age in one's whole life long, can theoretically be estimated and appropriately, though not strictly, figured out, either qualitatively or quantitatively, or both. Qualitative studies have been widely carried out and applied in practice.

This study focuses on quantitative observation of TMHN and its application in some fields of practice. Here a comprehensively designed table of TMHN is made to present a reference of one's "TMHN-Value," the total value of the relationship of the three factors of y, i, and h. (*seen table-11, Attached)*

It is named "Table of TMHN: hierarchy of needs (h) - item year of motivational occurrence (i) - life expectancy (y) trinity total score," shortly, "TMHN Value Table."

The left-most column of the table has y values (100 to 1); The top line of the table has i values (1 to 100, but for brevity, integer multiples of 5,1,5,10, 15...100), the second row has h values (1 to 5 bits in a group, corresponding to an i value) (seen table 1, overleaf)

Table 1 A Standard Reference Table of TMHN

y \ I	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
99.5	97.5	95	92.5	90	87.5	85	82.5	80	77.5	75	72.5	70	67.5	65	62.5	60	57.5	55	52.5	50
99.49	97.45	94.9	92.35	89.8	87.25	84.69	82.14	79.59	77.04	74.49	71.94	69.39	66.84	64.29	61.74	59.18	56.63	54.08	51.53	48.98
99.48	97.4	94.79	92.19	89.58	86.98	84.38	81.77	79.17	76.56	73.96	71.35	68.75	66.15	63.54	60.94	58.33	55.73	53.13	50.52	47.92
99.47	97.34	94.68	92.02	89.36	86.7	84.04	81.38	78.72	76.06	73.4	70.75	68.09	65.43	62.77	60.11	57.45	54.79	52.13	49.47	46.81
99.46	97.28	94.57	91.85	89.13	86.41	83.7	80.98	78.26	75.54	72.83	70.11	67.39	64.67	61.96	59.24	56.52	53.8	51.09	48.37	45.65
99.44	97.22	94.44	91.67	88.89	86.11	83.33	80.56	77.78	75	72.22	69.44	66.67	63.89	61.11	58.33	55.56	52.78	50	47.22	44.44
99.43	97.16	94.32	91.48	88.64	85.8	82.96	80.11	77.27	74.43	71.59	68.75	65.91	63.07	60.23	57.39	54.55	51.71	48.86	46.02	43.18
99.42	97.09	94.19	91.28	88.37	85.47	82.56	79.65	76.74	73.84	70.93	68.02	65.12	62.21	59.3	56.4	53.49	50.58	47.67	44.77	41.86
99.41	97.02	94.05	91.07	88.1	85.12	82.14	79.17	76.19	73.21	70.24	67.26	64.29	61.31	58.33	55.36	52.38	49.41	46.43	43.45	40.48
99.39	96.95	93.9	90.85	87.81	84.76	81.71	78.66	75.61	72.56	69.51	66.46	63.42	60.37	57.32	54.27	51.22	48.17	45.12	42.07	39.02
99.38	96.88	93.75	90.63	87.5	84.38	81.25	78.13	75	71.88	68.75	65.63	62.5	59.38	56.25	53.13	50	46.88	43.75	40.63	37.5
99.36	96.8	93.59	90.39	87.18	83.97	80.77	77.56	74.36	71.15	67.95	64.74	61.54	58.33	55.13	51.92	48.72	45.51	42.31	39.1	35.9
99.34	96.71	93.42	90.13	86.84	83.55	80.26	76.97	73.68	70.4	67.11	63.82	60.53	57.24	53.95	50.66	47.37	44.08	40.79	37.5	34.21
99.32	96.62	93.24	89.87	86.49	83.11	79.73	76.35	72.97	69.6	66.22	62.84	59.46	56.08	52.7	49.32	45.95	42.57	39.19	35.81	32.43
99.31	96.53	93.06	89.58	86.11	82.64	79.17	75.69	72.22	68.75	65.28	61.81	58.33	54.86	51.39	47.92	44.44	40.97	37.5	34.03	30.56
99.29	96.43	92.86	89.29	85.71	82.14	78.57	75	71.43	67.86	64.29	60.71	57.14	53.57	50	46.43	42.86	39.29	35.71	32.14	28.57
99.27	96.32	92.65	88.97	85.29	81.62	77.94	74.27	70.59	66.91	63.24	59.56	55.88	52.21	48.53	44.85	41.18	37.5	33.82	30.15	26.47
99.24	96.21	92.42	88.64	84.85	81.06	77.27	73.49	69.7	65.91	62.12	58.33	54.55	50.76	46.97	43.18	39.39	35.61	31.82	28.03	24.24
99.22	96.09	92.19	88.28	84.38	80.47	76.56	72.66	68.75	64.84	60.94	57.03	53.13	49.22	45.31	41.41	37.5	33.59	29.69	25.78	21.88
99.19	95.97	91.94	87.9	83.87	79.84	75.81	71.77	67.74	63.71	59.68	55.65	51.61	47.58	43.55	39.52	35.48	31.45	27.42	23.39	19.36
99.17	95.83	91.67	87.5	83.33	79.17	75	70.83	66.67	62.5	58.33	54.17	50	45.83	41.67	37.5	33.33	29.17	25	20.83	16.67
99.14	95.69	91.38	87.07	82.76	78.45	74.14	69.83	65.52	61.21	56.9	52.59	48.28	43.97	39.66	35.35	31.03	26.72	22.41	18.1	13.79
99.11	95.54	91.07	86.61	82.14	77.68	73.21	68.75	64.29	59.82	55.36	50.89	46.43	41.96	37.5	33.04	28.57	24.11	19.64	15.18	10.71
99.07	95.37	90.74	86.11	81.48	76.85	72.22	67.59	62.96	58.33	53.7	49.07	44.44	39.82	35.19	30.56	25.93	21.3	16.67	12.04	7.41
99.04	95.19	90.39	85.58	80.77	75.96	71.15	66.35	61.54	56.73	51.92	47.12	42.31	37.5	32.69	27.89	23.08	18.27	13.46	8.65	3.85
99	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
98.96	94.79	89.58	84.38	79.17	73.96	68.75	63.54	58.33	53.13	47.92	42.71	37.5	32.29	27.08	21.88	16.67	11.46	6.25	1.04	
98.91	94.57	89.13	83.7	78.26	72.83	67.39	61.96	56.52	51.09	45.65	40.22	34.78	29.35	23.91	18.48	13.04	7.61	2.17		
98.86	94.32	88.64	82.96	77.27	71.59	65.91	60.23	54.55	48.86	43.18	37.5	31.82	26.14	20.46	14.77	9.09	3.41			
98.81	94.05	88.1	82.14	76.19	70.24	64.29	58.33	52.38	46.43	40.48	34.52	28.57	22.62	16.67	10.71	4.76				
98.75	93.75	87.5	81.25	75	68.75	62.5	56.25	50	43.75	37.5	31.25	25	18.75	12.5	6.25	0				
98.68	93.42	86.84	80.26	73.68	67.11	60.53	53.95	47.37	40.79	34.21	27.63	21.05	14.47	7.9	1.32					
98.61	93.06	86.11	79.17	72.22	65.28	58.33	51.39	44.44	37.5	30.56	23.61	16.67	9.72	2.78						
98.53	92.65	85.29	77.94	70.59	63.24	55.88	48.53	41.18	33.82	26.47	19.12	11.77	4.41							
98.44	92.19	84.38	76.56	68.75	60.94	53.13	45.31	37.5	29.69	21.88	14.06	6.25								
98.33	91.67	83.33	75	66.67	58.33	50	41.67	33.33	25	16.67	8.33	0								
98.21	91.07	82.14	73.21	64.29	55.36	46.43	37.5	28.57	19.64	10.71	1.79									
98.08	90.39	80.77	71.15	61.54	51.92	42.31	32.69	23.08	13.46	3.85										
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87.5	37.5																			
75																				
1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Significance of the Table of TMHN and relationship between y, i, h and V or ∑

1. Maslow's hierarchy of needs can be observed and compared clearly in the Table according to the trinity primary variables: y, i, and h (*α, determined by y, is not an original variable);
2. Dependent variable V (or ∑) can be explicitly checked
3. Relationship between V (or ∑) and the three factors of "y," "i," and "h" is: V is the dependent variable, which has a positive relationship with y and h, and a negative relationship with i, according to which the left group of figures is more active than the right ones
4. "α" has a negative relationship with "y," which ranging: $0 \leq \alpha \leq 0.5$
5. Weigh the relation between y, i, and h to have an optimal V
6. The primary trinity variables: y, i, and h, can abstractly indicate any properly referred objects in discussion rather than the time of "year" only

The table of TMHN and its application

Before discussing the use of the Standard Reference Table of TMHN and its application, it is necessary to recognize the trinity: y, i, and h, and meaning of ∑ or V.

The implication of the trinity: y, i, and h, and meaning of ∑ or V

1) Implication of the trinity: y, i, and h, and their use

In the *Standard Reference Table of TMHN, it is set that y=100, h=5, i* is the only variable that determines the result of ∑ or V. For example, Jenny's parents hesitate whether Jenny should go to kindergarten at 3 or 5 because of his unconsciousness of the importance of preschool education and the inconvenient traffic condition. In this context, i (current-item-age--the age of attending kindergarten: 3? or 5?) is the more critical element. And it is only for ordinary use for making a decision. Therefore, just check the result (V) in the Standard Table *(seen table 1, overleaf)*:

If i = 3, you can find a group of values (∑ or V). the parent wants to know what Value is when Jenny is 7, 12, 15, 18, or maybe 22. In this way, y = 7, 12, 15, 18, or maybe 22. of course, remember h = 5 in the Standard Table. And so two different groups of the result as listed in Table 2. （ seeTable2， overleaf)

With the related results checked and compared, when Jenny should be sent to the kindergarten, her parents should easily decide.

Meaning of ∑ or V in the Standard Table.

First, in a single sample with only one result, this result is the very Value (V)being calculated. If it is a sum of results, ∑ it is more popular. Second, this result, ∑ or V, is purely the outcome of a certain calculation, with no color of good or bad, roughly foreseeing the development in some way. In the example of when Jenny should attend kindergarten - at 3 or at 5? In the comparison of the V-s of attending at 3 and 5 for education, it is obvious that the V-s are about the good Jenny will benefit in the kindergarten. Therefore, ∑ or V, in the Standard Table, stand for a certain indicating points of needs' development. Third, the pure quality of ∑ or V implies more to be objective and just rather than to be harmful in moral ethic.

Table 2. Check and Comparison V from *Standard Reference Table of TMHN Value*)

If: →			then:	Comparison	then	← If:		
h	I	y	Σ or V	←→	Σ or V	y	i	h
5	3	7	78.571	←→	64.286	7	5	5
5	3	12	87.500	←→	79.167	12	5	5
5	3	15	90.000	←→	83.333	15	5	5
5	3	18	91.167	←→	86.111	18	5	5
5	3	22	93.182	←→	88.636	22	5	5

1) Traditional applications of Maslow's Hierarchy of Needs
According to the theory of human needs, managers constantly create conditions to meet all kinds of human needs and establish and improve the management system to stimulate employees' working enthusiasm. The

demand structure of employees will change in different periods, and managers need to make targeted changes to motivate and induce employees. (https://www.lunwendata.com)

Business owners can use Maslow's findings to develop a style of leadership that suits the needs of their employees. The result will be an organization that fosters personal development and inspires workers to be their best. Maslow's hierarchy of needs can help leaders hone their styles to suit the needs of their followers. In most situations, business leaders don't have to worry about the most basic needs like hunger and thirst unless employee wages are so low or their individual financial situation so precarious that those concerns are paramount in the minds of your workforce. But on the next level up, helping improve worker safety, for example, fulfills important needs. On the level above that, promoting cooperation fulfills social needs, as does letting an employee know she is integral to the company's mission. Then, when a leader has done all she can to meet the needs of the lower levels, she can commit to fostering personal development. Career guidance, e.g., helps employees meet their potential, empowering them by offering increased responsibility and authority. (https://smallbusiness.chron.com)

2) Applications of the Standard Reference Table of TMHN

Maslow's Hierarchy of Needs has been widely used in many fields, such as internal management system and leadership style development and reform, regional economic plan and industrial transformational reform and ladder development, personal education and academic improvement, etc., in which application of Standard Reference Table of TMHN Value can do more to help make the management, leadership, ladder development and personal academic improvement etc. more intuitive and efficient, one of which is it can offer an intuitive theoretical priority in industrial structure transformation and human resources(HR) management.

Industrial structure adjustment policy is a win-win practice of industrial transformation policy for companies of the old, backward and low productive with high energy consumption, in which both the current local place, out of which the Old company (GSM) is adjusted and are transferred, can reduce both pollution and high energy consumption and furthermore, have a chance to make a friendly-environmental plan for a better future, and the new location, to which the "old," and "experienced" company with " market advantage" will have substantially turned out to be brand new and modernization in fashion, and has equipped with the latest technology and originality, and with mastery of ICT in the globalization marketing process.

This win-win result can be clearly and explicitly seen in the Standard Reference Table of TMHN. Take the example of the industrial structure adjustment and transfer case of "Guangzhou Steel Mill (GSM)," which was founded in 1958 in Guangzhou, has a glorious history that is rare among Chinese steel mills. (https://cn.nytimes.com)

In August 2011, China implemented industrial transformation and development. By October 2013, Guangzhou Iron and Steel Group has completely shut down the iron and steel enterprises in Guangzhou, entering the new development stage of building new Guangzhou iron and steel. (https://zh.wikipedia.org)

In May 2012, Bao-Steel Zhanjiang Steel Base project into one of whose branches named Bao-Steel Company that (DSM was combined) in Guangdong was approved by the National Development and Reform Commission, with a total investment of 58 billion yuan, and was fully put into operation in November 2016. Bao-Steel's Zhanjiang Project, which came into full operation in 2016, has turned a profit and is expected to make a net profit of nearly 2 billion yuan this year (2017), which is called "a miracle in the history of world steel." (http://news.southcn.com)

To make the interpretation of the win-win result in the case of industrial transformational reform and concept of *"Corner Overtaking,"* which is originally a common term in motorsport, it means to take advantage of corners to overtake an opponent. Compared to the straight, the curve is more difficult. When crossing a corner, the original leading driver may fall behind because of the corner, the lagging driver may lead because of the corner. The term has been given other connotations, and "detour" is often interpreted as some change in the social process or some key point on the path of life. This special stage is full of various change factors, extremely risky and challenging, full of opportunities to surpass rivals and surpass oneself. (https://baike.baidu.com)

With the term " corner overtaking" borrowed from sports into economic reform practice, some successful cases of which have turned out in the industrial structure adjustment reform in some key and important state-owned traditional industrial companies, which have a long history, are critical and indispensable to the state, exactly the boat that DSM was in), but are old in equipment and technology, low productive efficiency and capacity with high energy consumption and heavy pollution, especially most of this kind of companies are located in the urban center of central cities. These companies are ranged to be reformed, not removed, and transferred instead of deserted.

Corner overtaking practice focuses on how to control the overtaking practice. There are several steps to follow with the help of *the Standard Reference Table of TMHN Table 2)*

Procedure 1 Set and ascertain the value of y, i, h, and V in the Old company Guangzhou Steel Mill (GSM), and the new company Baoshan Steel Company, BSC) respectively:

Step-1 The Old company (GSM) was originally designed for existing for 100 productive cycles; now it has just finished 25 cycles; therefore: y=100; i'=25; h = 5

Step-2 Make an assessment of the old company (GSM), figure out a total result. Supposed V=50

V'-old = 50 is the last capacity of a wealth of the Old company (GSM), i.e.
V'-new = 50 is the start point of the New company (BSC) transformed from the Old one

Step-3 Corner of overtaking Device:
New Vision, Mission, Strategies, and Tasks.
Conditions: Investment and New Technology, New Marketing Policy and other supports, etc.
The trinity y, i, and h in the new company (BSC transformed from the Old one)

Step-4 Suppose y = 100; i = -10 *(meaning: productive force advanced 10 cycles than the average in designing plan, determine i being transferred in the left direction of the origin one to the tenth location unit)*

i" = i' - i = 25-10 = 15
h = 5

V'-new = 50 (the start points of the New company (BSC) transformed from the Old one)

Procedure 2 Try to examine the "Corner Overtaking Device" being effective or not.

2-1 Work Principle:
If the Corner Overtaking Device works properly, there will be either result as follow:

If V"-old = V"-new, then i-old > i-new
If i-old = i-new, then V"-new > V"-old

2-2 Work out:
V"-old =? and V"-new =? in the conditions that both the old company (GSM) and the new company (BSC) are now working in their own way, respectively, for 10 cycles.

2-3 Check: According to the known items in Procedure 1, use the Table of TMHN:

In the Old company: y = 100; i-old = 25 + 10 = 35
Checked: V"-old = 61.111
In the New company: y = 100; i-new = (25 - 10) + 10 = 25
Checked: V"-new = 75.000

2-4 Compare: V"-old = 61.111 and V"-new = 75.000
→ V"-new > V"-old

2-5 Judgement:
According to *the Work Principle: If i-old = i-new, then V"-new > V"-old,*
Therefore, *the Corner Overtaking Device works properly in the industrial structure transformational reform of GSM-BSC project. This case is successful.*

In this situation, the old company (GSM) is willing to accept the transformation reform planning and transfer itself to a new location for better development. At the same time, the place left by the Old company (GSM) is also to have been redesigned for better development in the city construction planning. A successful industrial structure transformational reform case can lead to a win-win economic-social effect.

With the help of the Standard Reference Table of TMHN (Table 2), the designing and planning of industrial structure transformational reform can explicitly and clearly be estimated and adjusted accordingly in advance, as well as assessment for improvement of the appropriateness and the effectiveness of the reform policy can conveniently and practically be monitored.

Conclusion
Modification of TMHN.
By discussing and exploring the classical theory of Maslow's Hierarchy of Needs and its Pyramid hierarchy structure, this paper raises a hypothesis of

modifying the structure of its Pyramid into a right Trapezoid of Maslow's Hierarchy of Needs, i.e., THMN. This is mainly because human needs, whichever hierarchy one may eventually reach, are bound to accompany along with all one's life long. The two ending points of one's needs and one's life is exactly located on and equally the same height and overlaps with the line h, which is the first key and important step in mind-mapping the modification trial.

Generation of the standard Table of TMHN with formula of TMHN. With help of mathematical methods, especially the geometrical method, the general formula for the right Trapezoid was developed, then combined with concrete studying item such as human development, industry, education, etc., the Formula of the right Trapezoid of Maslow's Hierarchy of Needs was finally figured out, and in which the trinity of y, i, and h and even a coefficient (α) and V or ∑ indicated any things on current study rather than only the time of "years".

Application of the Standard Reference Table of TMHN. Application of the Standard Reference Table of TMHN, set up according to the Formula of TMHN, constructed with carefully designing each element of y, i, h, and V or ∑, which can be widely applied in many fields, including both the traditional scope of management, leadership, education plan, etc., like those of the classical Maslow's Hierarchy of Needs, does, and the new scope of predicating modern industrial reform and personal education and academic development, and investment and HR training and management.

Further development of the Table of TMHN. Positive evaluation and criticism are very important to academic study. However, the more valuable and significant is a positive ethic attitude toward academy and academic activity. What has to be mentioned and stressed at the end of this paper is that, with sincere gratefulness for those devoted to all previous studies on this theme, both the Formula and the Standard Table of TMHN are just trial studies for the good and benefit of improving the prediction of the satisfaction of social behaviors out of some motivations. Any suggestive opinions and criticisms helpful for improvement in the further study are honestly welcome.

Discussion and Future Study

Making flexible use of the Table of TMHN can be greatly helpful in guiding and adjusting the direction of management, taking education and training, for instance. Reading the same line of the Table, one is of higher degree of satisfaction in the left column than one in the right column, which implies that: one should be an early and earlier starter, more possible to win-win

cooperation, and transforming or changing perspective or position may lead to quick catching-up in, education and other fields, for example, all of which are accordingly supportive in flexibly operating the Table. While reading the same column, the one in the upper line has a higher degree of satisfaction than that in the lower line. This observation can tell that experience and long development background, in education and other industries, for example, are unique and important for some organizational management, in education and other industries for example, further development, and competition. All these mentioned can be further discussed and studied with specific context.

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