

## An evaluation for meaning in life by DEMATEL method

Kh. Rahsepar Fard<sup>1</sup>, T. Jeirani<sup>2</sup>

**Abstract:** In this paper we consider the seven major sources of the importance of meaning and purpose in life proposed on the world, namely; cross-culturally, including: achievement, acceptance, relationship, intimacy, religion, self-transcendence and fairness. Here, the effect of seven major resources on each other is measured using the opinion of experts for adolescent girls in brilliant talent high schools in Qom. In this research measures of influence affect and effect on the life is expected. By applying DEMATEL method its concluded that factors of meaning and purpose in life is ordered. Finally, strategies for brilliant talent high schools are presented.

**Keywords:** DEMATEL; Meaning and purpose in life; Positive psychology  
**2020 Mathematics Subject Classification:** 91D10; 91E45

**Receive:** 17 September 2021, **Accepted:** 30 September 2021

### 1 Introduction

In today's world, society is facing completely hard challenges in the form of global warming, natural disasters, economic recession, unprecedented homelessness, terrorism and the draining continuation of war. By this sadness and horror, where in the world does a science based on testing happiness, wellbeing, personal growth and 'the good life' fit into the modern-day agenda? [7]

The goals of positive psychology are to understand, test, discover and promote the factors that let individuals and communities to thrive [14].

In this paper, first we focus on preliminaries of positive psychology and some topics that we employ in this research. Then we briefly explain the DEMATEL technique for measure the affected and effected of criteria. In the main result we consider seven major sources of the importance of meaning and purpose in life and weight of each factor have been computed. Finally, we proposed the useful strategies for doing each factor for education environment. In the next sections we decide to explain the preliminary tools for our aims.

### 2.1 Positive psychology

Positive psychology has challenged and rebalanced the deficit approach to living while connecting its finding to many different disciplines [7].

---

<sup>1</sup> Corresponding author: Department of Computer Engineering and Information Technology, University of Qom, Qom, Iran, rahsepar@qom.ac.ir

<sup>2</sup> Master of Science in positive psychology, tehereh1386@gmail.com

we know that some factors about inducing positive feelings, committing acts of kindness and enhancing social connections enable a state of positive mental health for individual and societal, show the usefulness of the discipline for individual, group and community wellbeing.

Positive psychology has traditionally conceptualized authentic happiness as a mix of hedonic and eudaimonic wellbeing [13]. Hedonic happiness encompasses high levels of positive affect and low levels of negative affect, in addition to high subjective life satisfaction [9]. Eudaimonic wellbeing focuses more on the creation of meaning and purpose in life [9].

The notion of authentic happiness has been further broken down by Seligman to indicate a life that is a combination of a pleasurable life, an engaged life and a meaningful life. The pleasurable life encompasses feelings of positive emotions (for example, joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe and love – Fredrickson, 2009), which are integral components to our success and wellbeing.

The engaged life focuses on flow, engagement, absorption and wellbeing, while the meaningful life encompasses service to something higher than the self. Thus, individuals can find happiness with the pursuit of all three lives. Today, the concept of authentic happiness is more a theory than a causal recipe for happiness [12].

In fact, eudaimonic wellbeing argues that wellbeing lies in the actualization of human potential. Researchers within the eudaimonic framework argue that happiness and the good life are not simply the experiences of feeling good. Eudaimonic wellbeing proposes that true happiness is found in the expression of virtue and doing what is worth doing. Thus, the realization of human potential is an ultimate goal (Aristotle).

Eudaimonia is defined as fulfilling or realizing one's daimon or true nature. This occurs when people's life activities are most congruent with their deep values (Waterman, 1993) such as developing one's true self [17], engaging in activities for their own sake [3] and belonging to and serving institutions larger than oneself [8].

Now, throughout several areas of research and practice, the issue surrounding the meaning of life and meaning within life is essential to fulfilled individuals [15, 19].

Researchers argue that when one is faced with meaninglessness, one can encounter several negative experiences. Thus, researchers would argue that the search for meaning and purpose is more relevant than the search for happiness [19]. Researchers also argue that not only should we be measuring meaning in life but the structural properties of personal meaning systems, such as differentiation elaboration (how people construct their own links and connections between events to give life purpose) and coherence (how well do all the features fit together) measures [11]. These measures enhance mental and physical health/wellbeing and predict life satisfaction [11].

A superb figurehead for both the positive psychology and existential areas, Frankl's work on meaning is still important today. His concept of will to meaning proposed three benefits of living a meaningful life, including: creative, experiential and attitudinal value. Since Frankl's contribution, researchers have identified seven major sources of meaning, found cross-culturally, including: achievement, acceptance, relationship, intimacy, religion, self-transcendence and fairness.

McGregor and Little (1998) analyzed a diverse set of mental health indicators and concluded that the concept of wellbeing should be regarded as consisting of two elements: happiness (satisfaction with life, positive affect, negative affect) and meaning (connectedness, purpose and growth).

Avoidance coping strategies, when used in a healthy way, can be a positive approach to wellbeing. Thus, meaning and purpose in life are essential for wellbeing.

We know that meaning in life is one part of Personal Development intervention. Therefore, you don't need a therapist or counsellor to help you find meaning in your life. Try and align your behaviors with your values and regulate the following throughout your daily life: purpose and life goals, understanding the demands of each situation and life as a whole, responsible actions and reactions consistent with your purpose and understanding, and evaluation of your life in order to ensure authenticity and efficacy (PURE Model, adapted from Wong). Therefore, the model of meaning life depends on the four problems

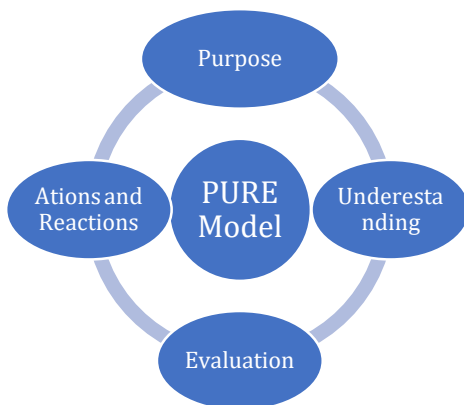


Figure 1: PURE Model

In this section applying positive psychology to education is discussed. one of the fastest growing directions in applied positive psychology is within the domain of positive educational curricula.

The reasons for the focus on the development of wellbeing in children are twofold. For instance, Western countries are facing an unprecedented increase in childhood and adolescent depression. All the time, approximately 2 percent of children aged 11–15 and 11 percent of youth aged 16–24 in the UK suffer a major depressive disorder [6].

Children and adolescents who suffer from high levels of depressive symptoms or depressive disorders are more likely to have academic and interpersonal difficulties [2].

Positive education aims to develop the skills of wellbeing, flourishing and optimal functioning in children, teenagers and students, as well as parents and educational institutions. In doing that it adopts both the preventative and enabling developmental functions. Importantly, positive education is related by the principles and methods of empirical validation, which is what differentiates positive psychology from self-help initiatives [7].

Schools in the US, UK, Australia and across the world have, for some time, included work on social and emotional issues in the curriculum (for example, personal, social and health education, service learning, citizenship) and helped pupils reflect on the importance of good social and emotional skills. Although much has been done to promote such learning through stand-alone programs and/or the whole-school environment, relatively few such programs have been evaluated empirically through randomized controlled studies [7].

## 2.2 DEMATEL Method

The Decision-Making Trial and Evaluation Laboratory (DEMATEL) method, developed by the Science and Human Affairs Program of the Battelle Memorial Institute of Geneva between 1972 and 1976, was used for researching and solving the complicated and intertwined problem group (Fontela and Gabus 1974, 1976; Warfield 1976) [16].

DEMATEL was developed in the belief that pioneering and appropriate use of scientific research methods could improve understanding of the specific problem, the cluster of intertwined problems, and contribute to identification of workable solutions by a hierarchical structure.

Using the DEMATEL method to size and process individual subjective perceptions, brief and impressionistic human insights into problem complexity can be gained. Following the DEMATEL process, the end product of the analysis is a visual representation, an individual map of the mind, according to which the respondent organizes his/her own action in the world, if he/she is to remain internally coherent to respect his/her implicit priorities and to reach his/her secret goals.

The steps of the DEMATEL method can be described as follows:

**Step 1:** Calculate the Average Matrix.

**Step 2:** Calculate the Initial Direct Influence Matrix.

**Step 3:** *Derive the Full Direct/Indirect Influence Matrix.*

**Step 4:** *Set the Threshold Value and Obtain the Impact-Digraph-Map.*

Setting a threshold value,  $p$ , to filter the obvious effects denoted by the elements of matrix  $F$ , is necessary to explain the structure of factors. Based on the matrix  $F$ , each element,  $f_{ij}$ , of matrix  $F$  provides the information about a factor  $i$  that dispatches influence to factor  $j$ , or, in words, factor  $j$  receives influence from factor  $i$ . After a threshold value and relative impact-digraph-map are decided, the final influence result can be shown [16].

### 3 Main Results

In this section we focus on the seven major sources of the importance of meaning and purpose in life, namely; cross-culturally, including: achievement, acceptance, relationship, intimacy, religion, self-transcendence and fairness.

The following conceptual model illustrates the relationship between meaning and purpose in life with the fundamental factors.

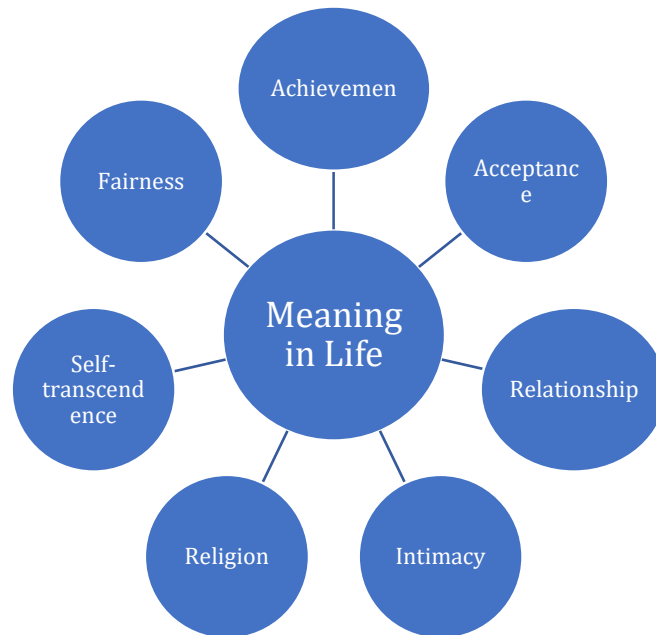


Figure 2: Conceptual model

Now using DEMATEL model one can measure affected and effected of the above criteria for the purpose in life. For this reason, by five experts who works in adolescent girls in brilliant talent high schools in Qom city in Iran. The questioner measures using median quantity are as follows:

$$\hat{M} = \begin{pmatrix} 0 & 2 & 2 & 2 & 2 & 3 & 2 \\ 2 & 0 & 2 & 3 & 2 & 2 & 2 \\ 2 & 3 & 0 & 3 & 2 & 2 & 2 \\ 2 & 3 & 3 & 0 & 2 & 3 & 2 \\ 1 & 2 & 2 & 2 & 0 & 3 & 3 \\ 3 & 2 & 3 & 2 & 3 & 0 & 3 \\ 2 & 2 & 3 & 2 & 3 & 2 & 0 \end{pmatrix} \quad (3.1)$$

In the matrix we have points of the questioner about comparing factors. By DEMATEL steps the normalized of matrix is

$$M = \frac{1}{16} \hat{M} = \begin{pmatrix} 0 & \frac{2}{16} & \frac{2}{16} & \frac{2}{16} & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} \\ \frac{2}{16} & 0 & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} & \frac{2}{16} & \frac{2}{16} \\ \frac{2}{16} & \frac{3}{16} & 0 & \frac{3}{16} & \frac{2}{16} & \frac{2}{16} & \frac{2}{16} \\ \frac{2}{16} & \frac{3}{16} & \frac{3}{16} & 0 & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} \\ \frac{1}{16} & \frac{2}{16} & \frac{2}{16} & \frac{2}{16} & 0 & \frac{3}{16} & \frac{3}{16} \\ \frac{3}{16} & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} & \frac{3}{16} & 0 & \frac{3}{16} \\ \frac{2}{16} & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} & \frac{3}{16} & \frac{2}{16} & 0 \end{pmatrix}. \quad (3.2)$$

Thus, we have

$$I - M = \begin{pmatrix} 1 & -\frac{2}{16} & -\frac{2}{16} & -\frac{2}{16} & -\frac{2}{16} & -\frac{3}{16} & -\frac{2}{16} \\ -\frac{2}{16} & 1 & -\frac{2}{16} & -\frac{3}{16} & -\frac{2}{16} & -\frac{2}{16} & -\frac{2}{16} \\ \frac{2}{16} & -\frac{3}{16} & 1 & -\frac{3}{16} & -\frac{2}{16} & -\frac{2}{16} & -\frac{2}{16} \\ -\frac{2}{16} & -\frac{3}{16} & \frac{3}{16} & 1 & -\frac{2}{16} & -\frac{3}{16} & -\frac{2}{16} \\ \frac{1}{16} & -\frac{2}{16} & -\frac{2}{16} & -\frac{2}{16} & 1 & -\frac{3}{16} & -\frac{3}{16} \\ -\frac{3}{16} & \frac{2}{16} & \frac{3}{16} & -\frac{2}{16} & -\frac{3}{16} & 1 & -\frac{3}{16} \\ -\frac{2}{16} & -\frac{2}{16} & -\frac{3}{16} & -\frac{2}{16} & -\frac{3}{16} & -\frac{2}{16} & 1 \end{pmatrix} \quad (3.3)$$

By applying calculator

Table 1. Inverse of (3.3)

	$B_1$	$B_2$	$B_3$	$B_4$	$B_5$	$B_6$	$B_7$
1	180200/102989	99504/102989	105264/102989	99504/102989	99736/102989	109208/102989	99736/102989
2	1675008/1956791	3630128/1956791	1994512/1956791	1982304/1956791	1884384/1956791	1977696/1956791	1884384/1956791
3	93056/102989	110128/102989	202352/102989	110128/102989	104688/102989	109872/102989	104688/102989
4	1875712/1956791	2208496/1956791	2324416/1956791	3856320/1956791	2110176/1956791	2300800/1956791	2110176/1956791
5	1591856/1956791	1896080/1956791	2010608/1956791	1896080/1956791	3644640/1956791	2075296/1956791	1996816/1956791
6	107648/102989	116064/102989	127552/102989	116064/102989	121104/102989	213232/102989	121104/102989
7	1757464/1956791	1989648/1956791	2190672/1956791	1989648/1956791	2080136/1956791	2081144/1956791	3727960/1956791

Now, the final matrix is

$$H = M(I - M)^{-1} =$$

Table 2. The value of H

0.74970142	0.96616143	1.02208974	0.96616143	0.96841410	1.0603851	0.96841410
0.85599740	0.85514345	1.01927697	1.01303818	0.96299707	1.0106833	0.96299707
0.90355281	1.0693181	0.96479236	1.06931808	1.01649691	1.0668324	1.01649691
0.95856532	1.1286315	1.1878714	0.97073678	1.07838599	1.1758026	1.07838599
0.81350333	0.96897420	1.0275027	0.96897420	0.86255967	1.0605609	1.02045441
1.04523784	1.1269553	1.2385012	1.1269553	1.1758926	1.0704347	1.17589257
0.89813577	1.0167913	1.1195228	1.0167913	1.0630343	1.063549	0.90513959

Therefore, affected and effected of factors is shown, namely

Table 3. The end step of DEMATEL technique

	R	J	R+J	R-J
achievement	6.701327	6.224694	12.926021	0.476633
acceptance	6.680133	7.131975	13.81211	-0.45184
relationship	7.106808	7.579557	14.68637	-0.47275
intimacy	7.57838	7.131975	14.71036	0.446405
religion	6.722529	7.127781	13.85031	-0.40525
self-transcendence	7.95987	7.508248	15.46812	0.451622
fairness	7.082964	7.127781	14.21075	-0.04482

Here, according to the above table, the factors that accept the relationship between religion and justice are influential, as well as the factors that promote intimacy and self-transcendence are absolutely influential. Talented high schools should be on this factor because this factor is effective for both School executive agents and students, so schools based on careful planning and development of self-transcendence indicators. Since, the authors think that self-transcendence is an ability that connects with the larger universe and creates meaning in life, so the axes of self-transcendence are the forces that link to the superior world, which include the characteristics of acknowledging beauty and wonder, gratitude, hope of humor, and religiosity.

In addition, some people introduced self-transcendence factors such as credibility, reputation, expectation and hope, competence, adaptation to time and place, work and environment and its continuity. (azgoli, m 2013)

Therefore, these factors should be considered at this age. Due to the fact that the fairness index is absolutely effective, it is recommended to the school agents to work on its practical promotion in order to build trust in the adolescent and as a result, the acceptance of their programs by the student will increase. This also leads to the growth and self-transcendence of adolescents.

Considering the issue of intimacy in adolescents and the importance of strengthening it for this age group and also the output of the above research, based on the absolute effectiveness of this index, there should be serious and codified planning to increase intimacy between students based on the characteristics of this course. Hadiths

as well as verses such as the verse of Anma al-Mu'minin Akhwa should all have a close relationship away from moral vices, which is effective in increasing their self-transcendence.

The goal is to increase hopeful thinking. School officials need to motivate students to achieve their goals. In other words, instead of negative self-talk, promote positive self-talk and focus on processes instead of focusing on results and returns.

Finally, in the field of education, each training requires the establishment of a relationship, and each member must experience activity in different groups with different members. Because the relationship has a longitudinal relationship with its self-transcendence, it means that its self-transcendence must be strengthened in order to form the right relationship. In this case it can be used information and communication technology for example smart board to establishment of a relationship. This make is useful to communicate between students or both teacher and students. This can be researched in the future work.

## 4 Conclusion

In this research, first, meaning and purpose factors in life were extracted from a positive psychological point of view.

Using the experts of adolescent girls in brilliant talent high schools in Qom, the questionnaire was designed and provided to 5 experts. Using Dematel method, the effect and effectiveness of the indicators on each other were measured. Using the output of Dematel method, appropriate solutions that should be considered by school agents in order to improve the factors of intimacy, relationship, hope and fairness that increase self-transcendence for students were presented.

## Acknowledgement

The authors gratefully thank to the Referees for the constructive comments and recommendations which definitely help to improve the readability and quality of the paper. All the comments are addressed accordingly and have been incorporated to the revised manuscript.

## References

- [1] M. Azgoli, An Introduction to the Typology and Definition of Trancedence Concept in Some Humanistic Schools, *Journal of Research in Human Resources Management*, 4(2) 2013.
- [2] L.S. Covey, A.H. Glassman, F. Stetner, Cigarette smoking and major depression, *Journal of addictive diseases*, 17(1) 1998, 35-46.
- [3] M. Csikszentmihalyi, *Flow: The Classic Work on How to Achieve Happiness*, New York: Harper & Row, 2000.
- [4] E. Diener, E.M. Suh, R.E. Lucas, H.L. Smith, Subjective wellbeing: three decades of progress. *Psychological Bulletin*, 125(2) 1999, 276.
- [5] B. Fredrickson, *Positivity: Groundbreaking Research Reveals how to Embrace the Hidden Strength of Positive Emotions, Overcome Negativity, and Thrive*, New York: Crown, 2009.
- [6] H. Green, A. McGinnity, H. Meltzer, T. Ford, R. Goodman, *Mental Health of Children and Young People in Great Britain 2004*. London: Office for National Statistics, 2005.
- [7] K. Hafferon, BoniwellI, *Positive Psychology Theory, Research and Applications*, Mc Graw Hill, 2011.
- [8] V. Huta, N. Park, C. Peterson, M. E. P. Seligman, pursuing pleasure versus eudaimonia: which leads to greater satisfaction? Poster presented at the International Positive Psychology Summit, Washington, DC, 2003.
- [9] T.B. Kashdan, R. Biswas-Diener, L.A. King, Reconsidering happiness: the costs of distinguishing between hedonics and eudaimonia, *The Journal of Positive Psychology*, 3(4) 2008, 219-233.
- [10] I. McGregor, B. R. Little, Personal projects, happiness, and meaning: on doing well and being yourself, *Journal of Personality and Social Psychology*, 74(2) 1998, 494-512.
- [11] K. Pöhlmann, B. Gruss, P. Joraschky, Structural properties of personal meaning systems: a new approach to

- measuring meaning of life, *Journal of Positive Psychology*, 1(3) 2006, 109–17.
- [12] T. Rashid, Authentic happiness. *Authentic Happiness*. In S.J. Lopez, (Ed.), *Encyclopedia of positive psychology*, UK: Wiley-Blackwell, 2009, 71-75
- [13] M. Seligman, M. Csikszentmihalyi, Positive psychology – an introduction. *American Psychologist*, 55(1) 2000, 5–14.
- [14] K. Sheldon, B. Fredrickson, K. Rathunde, M. Csikszentmihalyi, J. Haidt, *Positive Psychology Manifesto*, revised at the Akumal 2 meeting, Mexico, January, 2000.
- [15] M.F. Steger, Meaning in life. In S. J. Lopez (Ed.), *Oxford handbook of positive psychology* (2nd ed.). Oxford: Oxford University Press. 2009. 679-687
- [16] G.H. Tzeng, J. J. Huang, *Multiple Attribute Decision Making Method and Applications*, CRC press, 2011.
- [17] J. Vitterso, Subjective wellbeing versus self-actualization: using the flow-simplex to promote a conceptual clarification of subjective quality of life, *Social Indicators Research*, 65(3) 2004, 299–331.
- [18] A.S. Waterman, Two conceptions of happiness: contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment, *Journal of Personality and Social Psychology*, 64(4) 1993, 678–691.
- [19] P.T.P. Wong, Existential positive psychology. In S. J. Lopez (Ed.), *Encyclopedia of positive psychology*, Oxford, UK: Wiley Blackwell. 1 2009, 361–368.