Hindawi
Security and Communication Networks
Volume 2024, Article ID 9816081, 1 page
https://doi.org/10.1155/2024/9816081

Retraction

Retracted: Engineering Management Model Analysis Using Partial Differential Equation Hilbert Space

Security and Communication Networks

Received 8 January 2024; Accepted 8 January 2024; Published 9 January 2024

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] C. Han, "Engineering Management Model Analysis Using Partial Differential Equation Hilbert Space," *Security and Communication Networks*, vol. 2022, Article ID 5853721, 8 pages, 2022.

Hindawi
Security and Communication Networks
Volume 2022, Article ID 5853721, 8 pages
https://doi.org/10.1155/2022/5853721

Research Article

Engineering Management Model Analysis Using Partial Differential Equation Hilbert Space

Chen Han

College of Physical Education, Chengdu University, Chengdu, Sichuan, 610106, China

Correspondence should be addressed to Chen Han; hanchen@cdu.edu.cn

Received 10 April 2022; Accepted 12 May 2022; Published 3 June 2022

Academic Editor: Fang Liu

In the process of the rapid development of science and technology, people study many problems with the help of the independent variables, but the according descriptions have not been accurate enough. Therefore, many problems must be described by a function of more than one variable to more accurately get the results that people need to use the functions containing more than one variable and their partial derivatives to study the real problems of the method. Partial differential equations are closely and directly related to many problems in physics, mechanics, and engineering. It becomes an important bridge between mathematical theory and practical problems in physics, mechanics, and engineering. And the elements in Hilbert space, vectors, can represent vectors, functions, and phase quantities, while the special solutions of partial differential equations in solving physical problems can satisfy the common properties of Hilbert space. The analogy of functions and phase quantities to vectors can establish the function space and phase quantity space with geometric intuition. Based on Hilbert space theory, the key and difficult problems in engineering management can be explained by clear mathematical models by using the analogy method. The purpose of this study is to enrich the means of the building engineering management model, to broaden the horizon of managers, and to solve the problems in engineering management from a new dimension.

1. Introduction

In mathematics, Hilbert space is a generalization of Euclidean space, which is no longer limited to the case of finite dimensions. Similar to Euclidean space, Hilbert space is also an inner product space, on which there are concepts of distance and angle (and the concepts of orthogonality and perpendicularity by extension). In addition, the Hilbert space is also a complete space, and all the Cauchy sequences on it are equivalent to the convergent sequences so that most of the concepts in calculus can be extended to the Hilbert space without hindrance. Hilbert spaces provide an efficient representation of Fourier series and Fourier transforms based on polynomial representations on any orthogonal system, and this is one of the core concepts of functional analysis. Hilbert spaces are one of the key concepts in formulaic mathematics and quantum mechanics. Engineering project management will be the project management object; engineering project management concept is different from other types of management; there are differences and similarities; in addition, the project has one-time characteristics, which puts forward higher requirements for project management methods, the need for a more scientific and comprehensive, and more regular management methods, as shown in Figure 1. Engineering project management from the formulation, project planning, project design, and implementation until the project is completed and put into use has been involved. Project management plays a very important role in the entire project engineering; engineering construction surface is large, involving a wide range of effects. It involves a consulting unit, construction units and design units, administrative departments, and construction units and material and equipment supply units; these units do not seem to interfere with each other, because the main projects do not connect closely, and due to the different forms of project management organization, so each unit in different stages are undertaking different tasks. Engineering project management, as a prerequisite to ensure the quality

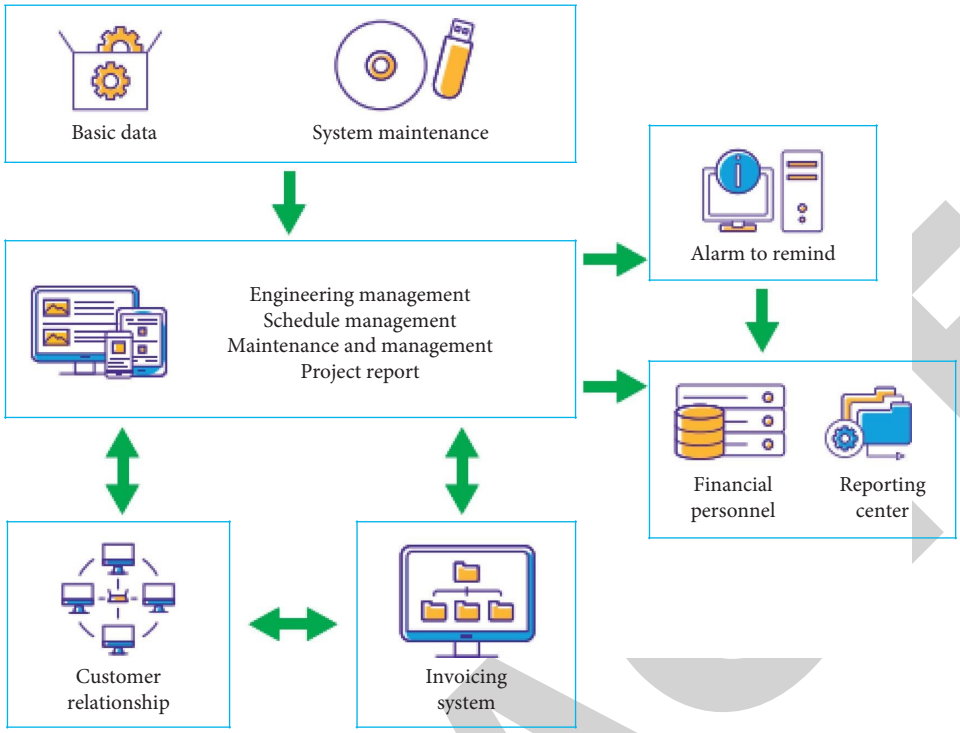

Figure 1: Conceptual diagram of Hilbert space.

and efficiency of the project, is related to the construction quality and construction efficiency of the whole project. Therefore, construction enterprises must change the traditional business model, strengthen enterprise management and technical innovation, actively explore new engineering project management mode, improve the overall level of enterprise project management, create more benefits, and lay a solid foundation for the long-term development of enterprises [1].

In engineering management, many aspects are involved. Therefore, when analyzing the management model, it is necessary to establish a number of qualitative and quantitative indicators from a systematic point of view. On the basis of the above analysis, an evaluation model is applied and the management model is evaluated. An attempt is made to establish a multidimensional Hilbert space of index space and an exponential model based on the excellent characteristics of the space vector paradigm; on this basis, the index analysis theory is established to make an evaluation of the overall impact of each index.

2. Overview

Betts and Lansley analyzed the literature of the journal CME (Journal of Construction Engineering and Management) during its first decade (from its inception in 1983 to 1992), providing information on the authors of the literature, the content of the literature, the sources of the literature, and the cited literature, and the general approach of CME research was counted. In particular, a research database was created to classify and analyze research content from four perspectives, research topics (7 categories), levels of analysis (6 categories), stages in the construction life cycle (7 categories), and sectors (6 categories), and to review research approaches to engineering management in terms of information sources (3 categories) and research contributions (5 levels). It was found that 70% of the CME literature at that time was based on cases or initial or near-initial data as empirical evidence and that research in engineering management lacked contributions and development of the theory and methods themselves [2]. Pietroforte et a1. conducted a literature review of the American Society of Civil Engineers (ASCE) journal CEM for the eighteen-year period 1983–2000 [3]. Pietroforte conducted a documentary analysis of the research trends in engineering management as reflected in the journal CEM from 1985 to 2002 from a historical perspective, including author information and research topics, and concluded that the main research findings included the following [3]. Abudayyek et a1. examined seven previous studies of project management trends in two journals, IJPM and PMJ, and concluded that the research collaboration between industry, government, and academia should be enhanced [4]. Keyword analysis of trends were carried out over the decade 1994–2003, comparing the similarities and differences in the topics covered by the two journals and their trends and further comparing previous studies to reveal a comprehensive trend in research in the field of project management [5].

Michael's study concluded that the process of total project control is a process of system control, which requires the use of modern information technology as a basis for collecting and processing information related to project engineering, and elaborated on the process of system control, which served as a good guide for later studies [6]. Jorg

Becker et al. used the identification function and the control function to conduct a relevant project total control. Jorg Becker et al. conducted a study related to total project control using identification and control functions, and the results showed that the combination of identification and control can ensure further achievement of project goals [6]. Lee's study proposed that the working platform of the total control model needs a unified information structure model, and the decomposition of the project structure and process structure can produce a "tree structure," which can realize a unified information structure [7]. Sacks studied the relationship between engineering information technology and lean construction and concluded that it can bring a significant increase in productivity to the construction industry and can realize lean construction in the construction industry, which is the technical basis for the smooth implementation of the integrated product development model [8]. Lauri argued that the 3D visual modeling and browsing of construction information technology in the engineering delivery model and the 3D model adding schedule information and cost information can effectively integrate and manage engineering information in all phases to achieve lean construction of engineering projects [9]. Lee suggested that integrated product multiparty contracts, lean construction ideas, engineering information modeling technology, and risk-sharing benefit-sharing teams are essential factors for the success of the integrated product development model. Also, it was pointed out that the lack of relevant legal provisions, lack of contract specifications, and revenue sharing and risk-sharing issues are the main obstacles to the success of the model [10].

3. Establishment of Hilbert's Index Space

3.1. Hilbert Space

3.1.1. Inner Product Space. If any vectors x, y, and z and any number c in a vector space X satisfy the following axiom [11]:

(1) $\langle x, y\rangle = \langle y, x\rangle$

(2) $\langle x + y, z\rangle = \langle x, z\rangle + \langle y, z\rangle$

(3) $\langle cx, y\rangle = c\langle x, y\rangle$

(4) $\langle x, x\rangle \geq 0$, and $\langle x, x\rangle = 0$ when and only when $x = 0$

The vector space endowed with inner products is called the inner product space. If condition (4) is satisfied, we say that the inner product is strict, and on the basis of the strict inner product space, we define a norm $\|.\|$: $\|x\| = \sqrt{(x, x)}$, namely, $\|x\|^2 = (x, x)$.

The distance between two vectors can be measured using the norm. This space is also called the metric space.

3.1.2. Hilbert Space. Hilbert space is a strict inner product space, which must satisfy both completeness and separability [12]. It was first developed by David Hilbert in his study of integral equations. The completeness here means that the Cauchy columns in space converge. Separability refers to the existence of countable dense subsets in a space [13, 14].

3.2. Establishment of Index Space. In the of management mode, the traditional methods mainly include the analytic hierarchy process, fuzzy comprehensive evaluation method, and grey relational comprehensive evaluation method, and traditional methods have shortages in the treatment of the quantitative data, the layers of index correlation, and specific problems. These methods have more obvious effect, but the method has higher subjective and cannot see the indicators change on the influence of the final evaluation results. The evaluation model constructed based on Hilbert space has good data processing function, including quantitative and qualitative data, and Hilbert space has weak compactness of unit sphere, which can explain the contribution of a certain index to the overall evaluation, that is, the influence of the change of each index on the overall result [15].

The main content of this study is to select appropriate indicators and establish Hilbert index space on the basis of analyzing the factors affecting project management. Then, according to the relative weight of indicators calculated by partial differential equation, the weight operator is generated and then establishes a standard Hilbert index subspace.

3.2.1. Establishment of Hierarchical Structure. On the basis of in-depth analysis of the actual problem, each factor concerned is decomposed into several levels from top to bottom according to different attributes, and the factors in the same level are subordinate to the factors in the upper level or have influence on the factors in the upper level, whether dominate the factors in the lower level or influence the factors in the lower level on the other hand. The uppermost level is the target level, which usually has only one factor, the lowermost level is usually the solution or object level, and the middle can have one or several levels, usually the criterion or indicator level [16].

To facilitate the calculation of the model structure, the data and information related to the hierarchical analysis method used in this paper are directly quoted from the hierarchy of indicators established in [17, 17], which is divided into three layers. The first layer is the target layer, which is the selection of a suitable engineering management mode; the second layer is the indicator layer, which is the main indicator system for evaluation, i.e., the main factors affecting the selection of engineering project management mode: engineering characteristics, owner's demand, and owner's preference; the third layer is the subindicator layer, which is the refinement of the second-layer indicators.

3.2.2. Generation of Weighting Operator. The weights of the indicators can be determined by using the improved hierarchical analysis method based on the cloud model. In this study, we adopt the 1~9 scaling method to determine the relative importance between two indicators and construct the judgment matrix of two comparisons of indicators based on the cloud model scaling to determine the weights of the criterion layer first and then the weights of the indicator layer. The specific method is referred to [17], and the results of citing [17] are obtained as follows:

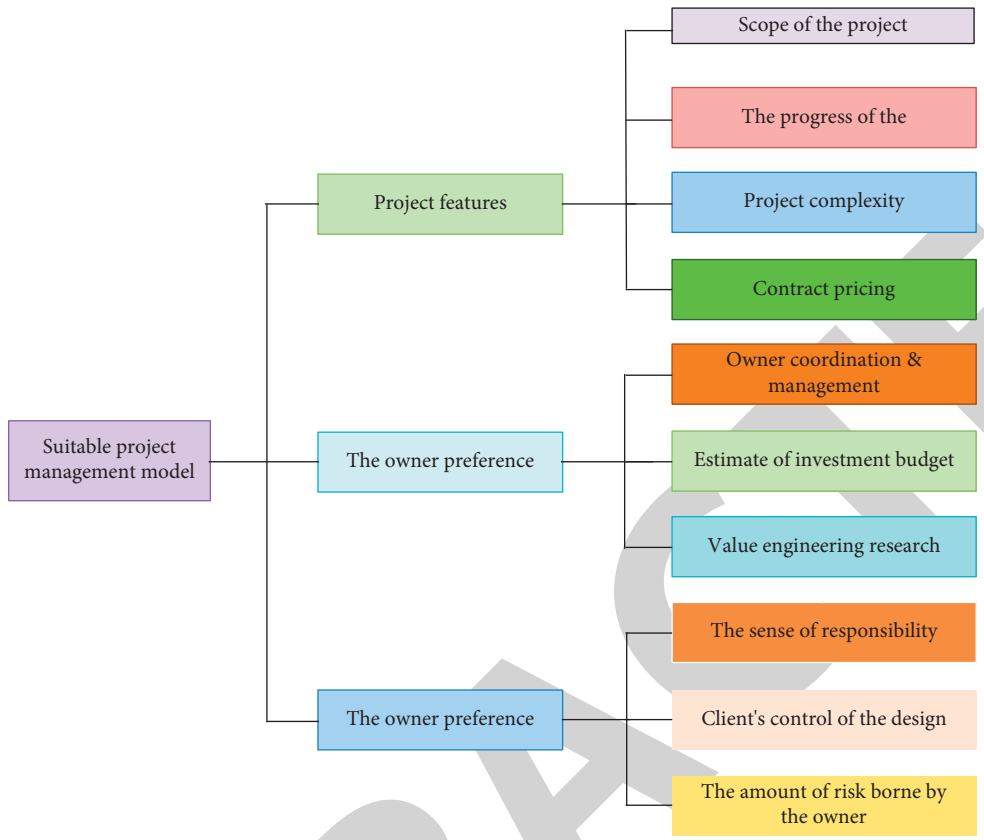

Figure 2: Influence index of project management mode.

$$\nabla_j = \frac{\sum_{i=1}^{k} w_{ij} + k/2 - 1}{k(k-1)}, i = 1, 2, \cdots, k. \quad (1)$$

3.3. Establishment of Standard Hilbert Index Subspaces. The factors that affect the project management mode mainly include the characteristics of the project, the needs of the owner, and the preference of the owner. The contents of each factor are shown in Figure 2.

The main influencing factors of project management mode include three categories and ten subcategories, and these indicators are irrelevant. Therefore, consider building a $n = 10$ dimension Hilbert index space (H^{10}), with each index representing one dimension of the index space, $e = \{e_1, e_2, ..., e_{10}\}$ is an orthonormal basis for H^{10}. Let N be a linear subspace of H^{10}, representing the spatial distribution of original index data. After the quantitative processing of indicators, y vector of each indicator element can be expressed as

$$y = \{\lambda_1 e_1, \lambda_2 e_2, \ldots, \lambda_{10} e_{10}\}, \quad \lambda_i \le 1. \quad (2)$$

Then, the coordinate of the element y vector in H^{10} is as follows:

$$y = (\lambda_1, \lambda_2, \ldots \lambda_{10}). \quad (3)$$

There is another linear subspace M of Hilbert space H^{10}, where M represents the standard subspace after considering the weight. Let the element of M be x; then, there exists mapping ∇ so that the expression for x is

$$x = \nabla \cdot y = (\nabla_1 y_1, \nabla_2 y_2, \ldots, \nabla_{10} y_{10}), \quad (i = 1, 2, j = 1, 2, \ldots 10). \quad (4)$$

Substitute (2) into (4)‘ x can also be expressed as

$$x = (\nabla_1 \lambda_1 e_1, \nabla_2 \lambda_2 e_2, \ldots, \nabla_{10} \lambda_{10} e_{10}). \quad (5)$$

The standard Hilbert linear index subspace M is obtained.

4. Impact Index Vector Norm Evaluation Model and Impact Index Analysis Based on *M*

4.1. Establishment of the Econometric Model. The evaluation index selected above is relatively independent, so the standard Hilbert space vector has excellent number multiplication characteristics. Based on the above consideration, the unit sphere is established, corresponding to the safety index vector. According to the weak compactness of unit sphere in Hilbert space, the norm of influence factor vector ||M|| can be used to represent the size of influence factor F of engineering management mode. So, the exponential function is

$$F = \|M\|. \quad (6)$$

The modeling process is shown in Figure 3.

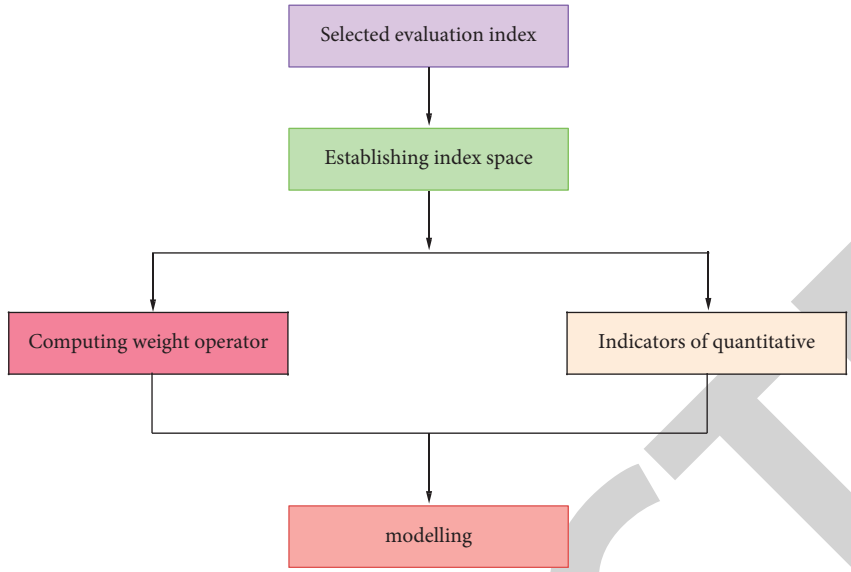

Figure 3: Modeling process.

||M|| is a function of the standard index subspace, which can be expressed as follows:

$$\|M\| = \sqrt{\nabla_1\lambda_1 e_1^2 + (\nabla_2\lambda_2 e_2)^2 + \ldots + (\nabla_{10}\lambda_{10}e_{10})^2}. \quad (7)$$

Therefore, the index influence function can be expressed as follows:

$$\|F\| = \sqrt{\nabla_1\lambda_1 e_1^2 + (\nabla_2\lambda_2 e_2)^2 + \ldots + (\nabla_{10}\lambda_{10}e_{10})^2}. \quad (8)$$

The influencing factors calculated by the above model can be used to measure the project management mode comprehensively and relatively simply. We can see at a glance whether this management mode is standard and provide a scientific and quantifiable basis for horizontal comparison and vertical comparison.

After calculation and research, the project management mode can be divided into grades, as shown in Table 1:

4.2. Index Analysis of Influencing Factors. Fundamental factor analysis is a method to analyze the factors that have an impact on management mode. As can be seen from the above, the influencing factor model can measure whether this management mode is optimal, but it cannot be used to solve practical problems because we do not know which specific factor causes this situation. Therefore, you need to apply the principle of indicator analysis to analyze each indicator in the indicator space to obtain the impact of each indicator on management indicators, that is, the contribution rate. In this study, partial differential equations are established to solve problems [18].

Partial differential equations are one of the largest and most widely used branches of mathematics. Because of its strong physical background, it is also called mathematical equation. A mathematical physical equation is a mathematical description of the laws of natural or social phenomena. After the establishment of calculus in the seventeenth century, the theory of ordinary differential equations is developed immediately. At that time, ordinary differential equations were applied to solve new problems in geometry and physics [19].

Table 1: Management mode scoring levels.

Grade	Tiny	Small	Medium	Larger	Great
Score	Under the 85	85–88	88–92	92–95	More than 95

Taking the calculation of the contribution rate of indicator $y_j\,(j = 1, 2, \ldots, 10)$ to influencing factors as an example, the natural logarithm of both sides of the influencing factor function is obtained as [20]

$$LnF = \frac{1}{2}Ln\left[(\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \ldots + (\nabla_{10}y_{10})^2\right]. \quad (9)$$

The partial derivative of both sides with respect to y_i yields as

$$\begin{aligned}\frac{1}{F}\times\frac{\partial F}{\partial y_j} &= \frac{1}{2}\times\frac{1}{(\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \ldots + (\nabla_{10}y_{10})^2}\times\partial\left(\nabla_j y_j\right)^2\\ &= \frac{1}{2}\times\frac{1}{(\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \ldots + (\nabla_{10}y_{10})^2}\\ &\quad\times 2\left(\nabla_j y_j\right)\times\nabla_j y_j'\\ &= \frac{\nabla_j y_j\times\nabla_j y_j'}{(\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \ldots + (\nabla_{10}y_{10})^2}.\end{aligned} \quad (10)$$

The symbol Δ is introduced to represent the change, and the formula above is simplified as follows:

$$\Delta F = \frac{F\times\nabla_j y_j\times\nabla_j}{(\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \ldots + (\nabla_{10}y_{10})^2}\Delta y_j\,(j = 1, 2, \ldots, 10). \quad (11)$$

Table 2: Index of an engineering project.

Index	Project scope	Progress of works	Project complexity	Contract pricing	Coordination and management of owners	Estimate of investment budget	Value engineering research	Responsibility	Client's control of the design	The amount of risk taken by the owner
1-λj(%)	4	6	3	10	12	1	5	9	7	8
λj	96	94	97	90	88	99	95	91	93	92

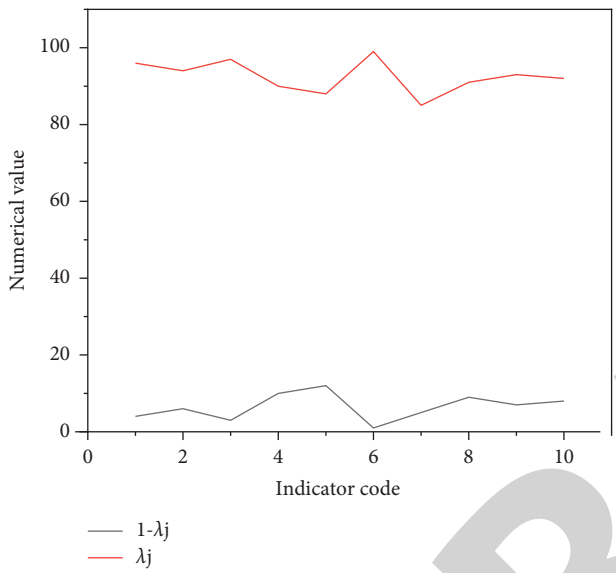

Figure 4: Line chart of engineering project indicators.

$F \times \nabla_j y_j \times \nabla_j / (\nabla_1 y_1)^2 + (\nabla_2 y_2)^2 + \cdots + (\nabla_{10} y_{10})^2$ in the above formula is defined as the index elastic operator and use $\alpha_j (j = 1, 2, \ldots, 10)$; then, the above equation can be expressed as

$$\Delta F = \alpha_j \Delta_{y_j} \quad (j = 1, 2, \ldots, 10). \tag{12}$$

Through the above methods, the contribution rate of each index change to the project management model can be quantitatively evaluated. When further applied to project management, it can guide the site to find out which specific factor has the greatest influence and does not reach the optimal and take targeted measures to ensure the maximum benefit of the project.

5. The Numerical Example

5.1. Calculate Whether the Management Mode Is Optimal. The data indicators of the influence of a company are as follows. Through the calculation of each indicator, we can get F, which is the current mode level. Index of an engineering project is shown in Table 2 and Figure 4.

By using the index space established above and substituting the values in Table 2 into formula (5), the index vector of the standard Hilbert index subspace can be obtained:

$$x = (96\nabla_1 e_1, 94\nabla_2 e_2, 97\nabla_3 e_3, 90\nabla_4 e_4, 88\nabla_5 e_5, 99\nabla_6 e_6, 95\nabla_7 e_7, 91\nabla_8 e_8, 93\nabla_9 e_9, 92\nabla_{10} e_{10}). \tag{13}$$

Then, based on the calculation results of [17], the weight operator is

$$\nabla = (0.266, 0.217, 0.327, 0.2, 0.384, 0.333, 0.283, 0.267, 0.4, 0.333). \tag{14}$$

By substituting x and ∇ into (8), it can be obtained that the influence index of the engineering factor is

$$F = 90.895. \tag{15}$$

5.2. Index Analysis. It can be seen that the score of this management mode is of medium grade and has not achieved the optimal effect, but the specific reasons are caused by the calculation of α to know which indicator has the greatest influence. The greater α is, the greater the influence on the whole management mode is. Then, according to this index, choose the appropriate management mode, in order to achieve the maximum benefit.

According to the definition of indicator elastic operator and the above calculation results, the indicator elastic operator can be obtained as

$$\alpha = (0.075, 0.049, 0.093, 0.04, 0.1427, 0.121, 0.084, 0.0714, 0.1637, 0.1122). \tag{16}$$

And $\Delta y_j = 1 (j = 1, 2, \ldots, 10)$; the above results are substituted into (12), and the contribution rate of each indicator to the total impact indicator is

$$\alpha = (0.075, 0.049, 0.093, 0.04, 0.1427, 0.121, 0.084, 0.0714, 0.1637, 0.1122). \tag{17}$$

5.3. Summary. From Table 2, it can be seen that the owner's control over the design is the most important factor affecting the management mode. Therefore, the owner's control over

the design should be strengthened. If the economic management personnel of the enterprise fail to analyze the economic situation in the design stage in time, the construction drawing is found to exceed the budget after the construction drawing budget is completed. In this case, in order to guarantee the project, carry on smoothly; some owners will be in the design; request a change to construction drawing design unit, although this will control the project cost, but it will seriously affect the speed of engineering construction and also can lead to a rise in the cost of construction design and the economic losses brought to the owner.

The design-build management mode is selected [21]. After the project is approved, the owner will contract the design, construction, material and equipment procurement, and other tasks of the project to a general contractor, who will be responsible for all the organization and management of the project construction and finally hand over the construction results to the project owner. Adopting this mode can make the design and construction combine organically, which is beneficial to the contractor to control the progress and cost. Due to the simple contractual relationship between the owner and the contractor, the owner has less organization and coordination, so he has less control over the project. At the time of signing the general contract both contract terms and contract price are difficult to be accurately determined. The increase of uncertainty makes the contractor demand higher risk compensation and leads to higher contract price or cause more contract disputes in the future. The implementation of design-construction mode has higher quality requirements for general contracting units, which are generally rich in capital, strong in technology and coordination, and have greater benefits and risks.

6. Conclusion

In the analysis of the engineering management model, this study makes full use of rough set theory, simplifies the evaluation index, increases the objectivity of weight calculation, and provides a useful reference for the analysis of management model evaluation research. On the basis of analyzing the defects of traditional evaluation methods, a project management model based on Hilbert space vector norm is proposed, and a new evaluation method is established. It can help organizations to normalize project management activities that are difficult to quantify according to a series of criteria and identify weak links, thus helping organizations to improve management capacity and level. This model is a characteristic evaluation model constructed according to the actual situation of big science engineering, which is mainly applicable to the evaluation of similar project management ability.

Compared with traditional evaluation methods, this model has the following advantages:

(1) It has good data processing function, including qualitative data and nonqualitative data, and has a strong promotion prospect

(2) Through index analysis, the evaluation objects can be compared horizontally and vertically

(3) Through index analysis, the contribution rate of each index to the total index can be obtained, problems and gaps can be found, and the management environment can be improved with a targeted approach, which has strong applicability

However, the evaluation system of engineering management mode in this study has few index samples and limited reduction of index samples. Therefore, in the future research, we should constantly improve the evaluation index, deeply study the reduction function of rough set theory on evaluation index, improve the evaluation index of engineering management model, and promote the accuracy of evaluation results.

Data Availability

The labeled dataset used to support the findings of this study are available from the author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

References

[1] X. Chen, "Content analysis and optimization measures of civil engineering project management," *Management and Technology of Small and Medium-sized Enterprises (Mid-day)*, vol. 09, pp. 25–27, 2021.

[2] M. Betts and P. Lansley, "Construction Management and Economics: A review of the first ten years," *Construction Management & Economics*, vol. 11, no. 4, pp. 221–245, 1993.

[3] R. Pietroforte and T. P. Stefani, "ASCE journal of construction engineering and management: Review of the years 1983-2000," *Journal of Construction Engineering and Management*, vol. 130, no. 3, pp. 440–448, 2004.

[4] O. Abudayyek, A. Dibert-DeYoung, and E. Jaselskis, "Analysis of trends in construction research: 1985-2002," *Jouranl of Comtruction Engineering and Management*, vol. 130, no. 3, pp. 433–439, 2004.

[5] L. Crawford, J. Pollack, and D. England, "Uncovering the trends in project management: Journal emphases over the last 10 years," *International Journal of Project Management*, vol. 24, no. 2, pp. 175–184, 2006.

[6] M. Hough, "Computing trends for civil Engineers," *Journal of Computing in Civil Engineering*, vol. 10, pp. 45–47, l997.

[7] J. Becker, M. Kugeler, and M. Rosemann, "Process management," *Journal of Computing in Civil Engineering*, vol. 10, pp. 27–32, 2003.

[8] R. Sacks, B. A. Dave, and L. Koskela, "Analysis framework for the interaction between lean construction and building information modelling," *Proceedings for the 17th Annual Conference of the International Group for Lean Construction*, vol. 7, pp. 90–93, 2009.

[9] R. Sacks and L. Koskela, "Interaction of lean and building information modeling in construction," *Construction Engineering And Management*, vol. 136, no. 9, pp. 968–980, 2010.

[10] S. L. Christopher, "Implementation of integrated project delivery on Department of Navy Military construction

projects," vol. 8, pp. 1–8, University of Nevada, Las Vegas, 2013, Dissertation.
[11] B. Gao, "Research on ideological and political teaching of linear algebra course," *Coal higher education*, vol. 39, no. 06, pp. 123–127, 2021.
[12] Z. Wu and C. Zhu, "The infiltration of mathematical culture into the teaching of real variable function and functional analysis," *Journal of Mathematics Education*, vol. 28, no. 01, pp. 89–91, 2019.
[13] X. Wang, C. Deng, and J. Zhu, "Sampling theorems in Hilbert Spaces with regenerated nuclei," *Journal of Harbin University of Science and Technology*, vol. 13, no. 06, pp. 66–68, 2008.
[14] L. Gu, C. Deng, and L. Yao, "An interpolation method in regenerated kernel Hilbert Spaces," *Journal of Harbin University of Science and Technology*, vol. 03, pp. 120–122, 2007.
[15] J. Quan and S.-s Chang, "Multiple-set split feasibility problems for x-asymptotically strictly pseudo-non spreading mapping in Hilbert space," *Journal of Inequalities and Applications*, vol. 69, no. 2014, pp. 78–80, 2014.
[16] I. M. Mahdi and K. Alreshaid, "Decision support system for selecting the proper project delivery method using analytical hierarchy process," *International Journal of Project Management*, vol. 23, no. 7, pp. 67–72, 2005.
[17] Jingwei, "Fuzzy analytic hierarchy process is used to select suitable project management mode," *Industrial technical economy*, vol. 02, pp. 73–75, 2004.
[18] V. V. Vlasov and N. A. Rautian, "Spectral analysis of hyperbolic Volterra integro-differential equations," *Doklady Mathematics*, vol. 92, no. 2, pp. 1–8, 2015.
[19] V. V. Vlasov, N. A. Rautian, and A. S. Shamaev, "Spectral analysis and well-posed solvability of abstract integro-differential equations that arise in thermophysics and acoustics," *Sovrem. Mat. Fundam. Napravl.*vol. 39, pp. 36–65, 2011.
[20] Z. Wu, *A Class of Deep Learning Methods for Solving Partial Differential Equations*, vol. 15, pp. 1–8, East China Normal University, Shanghai, China, 2021.
[21] F. Y. Y. Ling, S. L. Chan, E. Chong, and L. P. Ee, "Predicting performance of design-build and design-bid-build projects," *Journal of Construction Engineering and Management*, vol. 130, no. 1, pp. 75–83, 2004.