THESIS OF DOCTORATE (Ph.D.)

DISSERTATION

SZENT ISTVÁN UNIVERSITY - KAPOSVAR CAMUPS

FACULTY OF ECONOMIC SCIENCE

DOCTORAL (PhD) SCHOOL FOR MANAGEMENT

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VARIABLE REMUNERATION FOR PROJECT MANAGERS

DEVELOPMENT OF A PERFORMANCE-RELATED REMUNERATION MODEL FOR PROJECT MANAGERS

DOI: 10.54598/000170

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Type of training:
PhD programme in cooperation with Hamburger Fernhochschule

KAPOSVÁR

2020

1. Research background and objectives

From March 2002 to October 2005, the doctoral student worked as project manager for a project-relevant construction supplier, Deutsche Doka Schalungstechnik GmbH, on the new construction of the Leibis/Lichte dam (Thuringia). The project objective of the overall project was to supply approximately 300,000 inhabitants of Thuringia with treated drinking water from 2005 onwards. The planning, including the resettlement measures, goes back to the 1980s. In the case of a prestige project such as this, probably the last new dam to be built in Germany in the foreseeable future, the companies involved are concerned not only with the monetary profit targets, but also with the media-effective marketing of such a construction measure. As a young civil engineer, the prospect of taking on such an exposed project management function offered a unique, irretrievable, highly motivating opportunity. A permanent presence on site was required. Even the separation from the family was gladly accepted due to the pride of the transferred responsibility. Such challenges do not often present themselves to a young civil engineer, which in retrospect further boosted his own motivation and enjoyment of the task.

Before the candidate agreed to take over the project management, staff interviews were held on the general conditions offered by the company. However, the urge to take over the project management completely ignored the question of a possible adjustment of the monthly remuneration. Only the will to take on the prestige project counted. According to our own observations, committed project managers develop a very similar passion for "their" project when managing prestigious major projects and thus a high degree of personal identification with their profession. A representation of this extraordinary commitment in the form of variable remuneration components would certainly offer far-reaching synergies for project owners and project managers. In itself, the idea that people enjoy their job and are committed to it is fundamentally correct; if you enjoy your job, you will achieve better results and lead a happier life. Famous researchers, world explorers and composers have spent and still spend their lives creating their works. They create works for themselves and for other life's works, the success of which can be measured not only in material terms but often also in terms of ideal and individual appreciation. This individual esteem can be understood in a figurative sense as "variable remuneration" for their work.

Superficially, the two disciplines of >project management< and >incentive system for motivation< do not seem to contradict each other at first glance, let alone multiply. However, a closer look reveals considerable contradictions with regard to the intended, intended and above all the unintended consequences generated by variable remuneration systems for the

motivation of project managers. Thus, wrongly set incentives can have counterproductive effects on the inner motivation of employees.

Variable remuneration for project managers must, on the one hand, take into ***account*** the specifics of project management > ***time*<,** > ***complexity*<, >** constellation of authority< and, on the other hand, ***close*** the identified research gap between > project success<, > ***incentive system*<** and > ***company interests.*** The variable remuneration system must withstand the interactions of different project interests and mediate between the resulting areas of tension. In principle, it can be assumed that the project client has a strong commercial interest in achieving the best possible operating result with the project. From this follows the employer's request to oblige the project managers to achieve all monetary and non-monetary project objectives and to give this obligation an additional motivating character with the support of an incentive system. It is also shown that different degrees of complexity can reinforce or minimise the interactions between the diverging fields of tension in project management.

Counterproductive behaviour induced by incentive factors can have profound effects on the company itself and on the market. In the theoretical extreme case, false incentives could influence the economic success of companies. The moment project managers place their project at the centre of their actions and ignore the serviceable framework conditions of the entire company, an individual project goal may be successfully achieved - but at the same time the company could be damaged from within by individual overmotivation. The question must therefore be answered;

- What behaviour should be provoked in the project manager by variable remuneration components (extrinsic motivation), what real consequences can this have on the intrinsic motivation and the actual actions of the project manager?

The aim of this dissertation is the constitution of theoretical and implementable basics of a variable remuneration system for project managers in the German construction industry and the German construction supply industry. According to the candidate's opinion, this can be attested a very high practical relevance.

2. Methods and data sources used

For this dissertation, the qualitative research method will be used first. Qualitative research examines connections and phenomena in the environment and the situation, it also describes the situations in which regular perceptions or their reproduction as a form of transferable observations and statements in the form of interviews in which the social actors are involved. The central concern of the qualitative studies is the question of "why", with the aim of understanding the underlying phenomena of those involved. In contrast to quantitative research, qualitative research is based on models established at the beginning of the research process. Models and hypotheses are analysed and conceptualised in order to evaluate the constructs and theories.

The applicability of the research procedure described in the literature under the term > mixed research methods < or mixed method research has long been discussed in professional circles. In 2007, the authors Johnson, Onwuegbuzie and Turner give a topical answer to the question: What can be expected under mixed research methods research and what advantages and disadvantages this research method offers. The authors argue that "mixed-method research is one of the three major "research paradigms" (quantitative research, qualitative research and mixed-method research). The article has been cited over 6000 times (source: https://scholar.google.de/) and should have contributed to the final recognition of this research method.

After the monograph the conclusion of a working hypothesis and the scientific illustration of the status quo results. In order to close the thematic gaps, empirical surveys of project managers from the construction industry and the construction supply industry are carried out, as well as the evaluation of models and schools of thought from the literature. The results will be combined into a variable remuneration system for project managers and compared with the working hypothesis. After the dependencies and the interrelationships between income and well-being have been discussed through qualitative studies, the questions are derived from this as the empirical basis of this work.

The candidate carried out an expert survey in cooperation with the University of Kaposvar (Hungary) in the period from 16.05.2018 to 17.07.2018. An interview guide was developed for this purpose. The aim of this survey was to identify possible negative effects on the intrinsic motivation of the test subjects and to eliminate these effects preventively in the variable compensation model to be developed. The advantage of quantitative expert surveys is not only the recording of objective conditions, but also the collection of direct opinions of the target persons. A disadvantage of expert surveys is the limited number of available persons.

The doctoral student conducted personal interviews with 17 project managers of the middle and upper management levels of medium-sized and large companies in the German construction industry and the German construction supply industry. In addition, personal interviews were conducted with 8 English-speaking project managers from international companies during the same period, which tended to produce similar results to the survey of project managers from Germany. However, the information provided by the English-speaking colleagues is not listed separately here, as the research area of this study is limited to the construction industry in Germany. The number of underlying interviews is therefore initially n=17 expert surveys.

In order to further increase the statistical significance of the 17 interviews, the core statements of the expert interviews were analysed and an online survey was created. The online survey was based on the expert interviews in order to obtain a uniform database. This online survey was made available to [1]1123 project managers of the German construction and construction supply industry in the period from 26.06.2019 to 17.12.2019 with the support of the online portal >surveymonkey< (access was sent by e-mail). The completion rate was only n=124[2] completed surveys. According to personal information from some of those concerned, the reasons for this low participation can be found in the fear of spam attacks and in the strong regulations of the basic data protection regulation, as well as internal company instructions regarding IT use and frequent internal regulations regarding the handling of incoming e-mails with links to the Internet.

[1] 398 invitations were sent out by e-mail on 22.11.2019 and a further 725 invitations were sent out on 03.12.2019.
[2] Not all questions were answered on each respondent, the sample sizes are shown separately in the analysis of the individual questions.

3. Results

The evaluation of variable remuneration for project managers is carried out as a Cartesian system. From the extracted findings the results could be derived and combined in a model for variable remuneration for project managers. The results obtained allow the conclusion that in project management the three components >project objective<, >complexity/project efficiency< and >brand strength< can be regarded as relevant criteria for evaluating a project management activity.

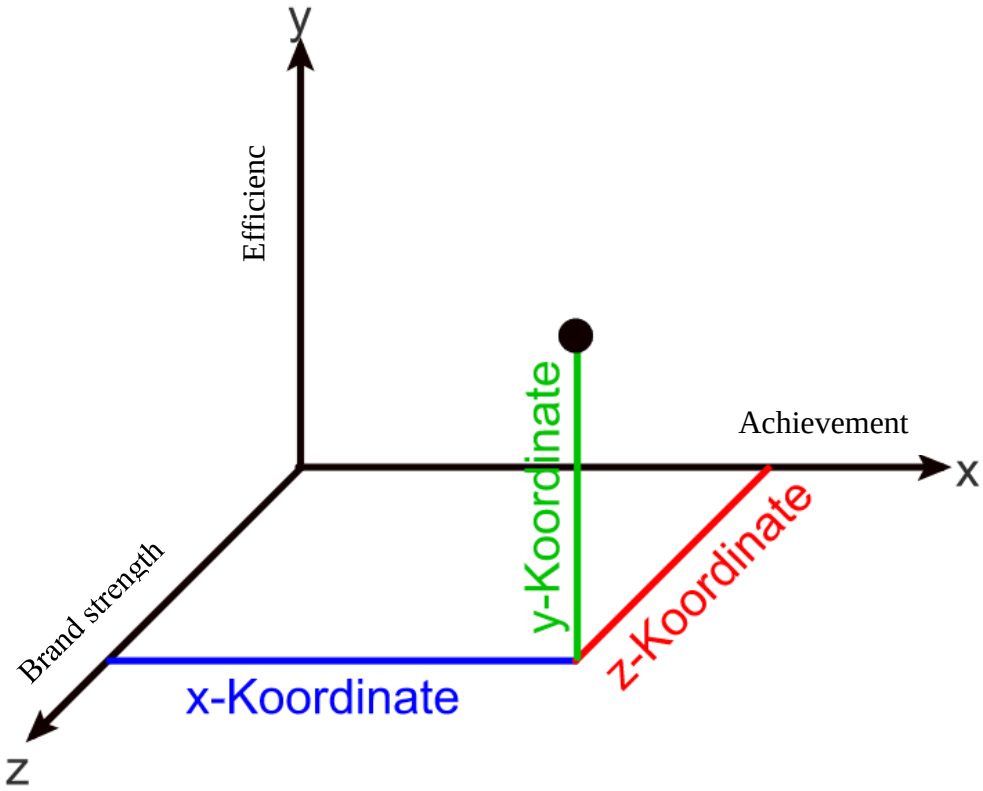
The model for determining a variable remuneration should therefore in principle consist of the three evaluation criteria > project objective<, > complexity / project efficiency< and > brand strength<. Each individual criterion requires its own perspective and consequently an individual validation. With regard to the measurability of the criteria, a conglomerate of clearly measurable variables (hard factors), project-specific conditions (structural factors) and empirical criteria (soft factors) is used. For further considerations, the achievement of the project objectives is treated as a hard criterion, the complexity/efficiency of a project as a structural criterion and the brand strength of a project as a soft criterion. The individual details of the characteristics and the measurement methodology are discussed later in this paragraph.

A range of 25% to 35% was validated as the percentage of the variable remuneration component in relation to the basic income as a percentage of total income. The candidate suggests an approach of 30% for the further considerations, which is slightly above, but in good correlation with the theoretical studies of the specialist literature and harmonises well with his own empirical work.

To determine the partial amounts of the 30% variable remuneration component, one third (10% each) of each evaluation criterion is applied. This approach was explicitly not derived scientifically and is based on purely practical considerations. A more detailed distribution key lacks any basis due to the calculation imperfections inherent in the system; moreover, the system must be comprehensible to those concerned.

The system of variable remuneration is introduced as a Cartesian system and described in detail on the following pages:

x-Koordinate)	Achievement of the project objective	[10% share].	∑=30%
y-Koordinate)	Efficiency of a project	[10% share]	
z-Koordinate)	Brand strength of the project	[10% share]	



x-coordinate) - Fulfilment of project objectives [10% variable part].

The activity of a project manager must be understood as an integral part of the company on whose behalf the project manager is working. Project management activity therefore does not take place in a "vacuum" or for the purpose of the project itself, but must be subordinate to the strategic and operational goals (the profit goals) of the company. This argumentation should be indisputable in this respect, because German construction companies (including adjacent sectors) must be assumed to have the intention of making a profit, at least from the point of view of the German Commercial Code [3]and German tax law[4]. Further sources to substantiate the necessity of a profit-making intention of companies and projects

[3] § Section 1 (2) of the German Commercial Code - HGB
[4] § Section 15 (2) of the German Income Tax Act - EStG

will be omitted at this point. For the sake of completeness, it must be mentioned that a project objective is not only to be understood as monetary objectives, but also non-monetary objectives. Non-monetary project goals can be, for example, general customer satisfaction, flexibility of business partners in critical situations, the visual impact of a building or the cooperation in partnership.

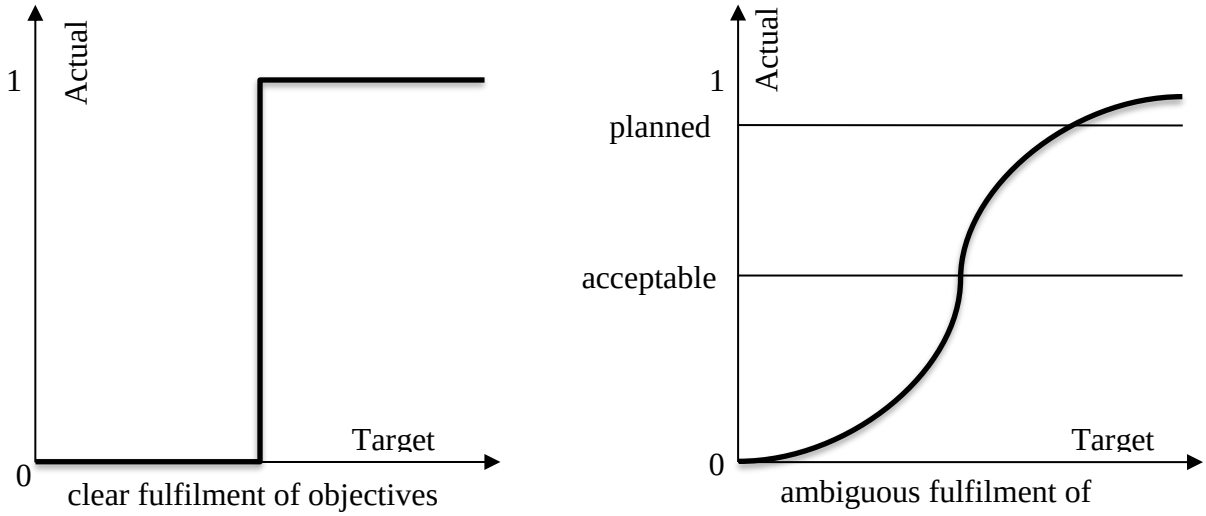
In order to follow the logic of a project objective as a hard criterion as described above, the following considerations focus primarily on profit targets as a hard criterion.

x-coordinate) - measurement of project objectives as a hard criterion

In classical business administration, goals are divided into complementary goals, neutral (indifferent) goals and competing goals in terms of their correlations with each other. Targets are called complementary if the target relationships are positively strengthened among themselves. As an example one can imagine the planning services of a technical office, which internally uses few resources of engineering services and at the same time aims at economically optimal technical solutions with low material input for the production. Neutral or indifferent targets are targets where there is no direct connection between the target values. As an example, one could imagine here that optimally used engineering hours have relatively little influence on the CO_2 footprint of a project, but both are goals of the project. Ultimately, competing goals are understood to be those where the individual target values counteract each other and thus lead to a conflict of goals. Here, for example, the striving to generate the greatest possible potential for additional costs could speak against the pursuit of the goal of maximum customer satisfaction.

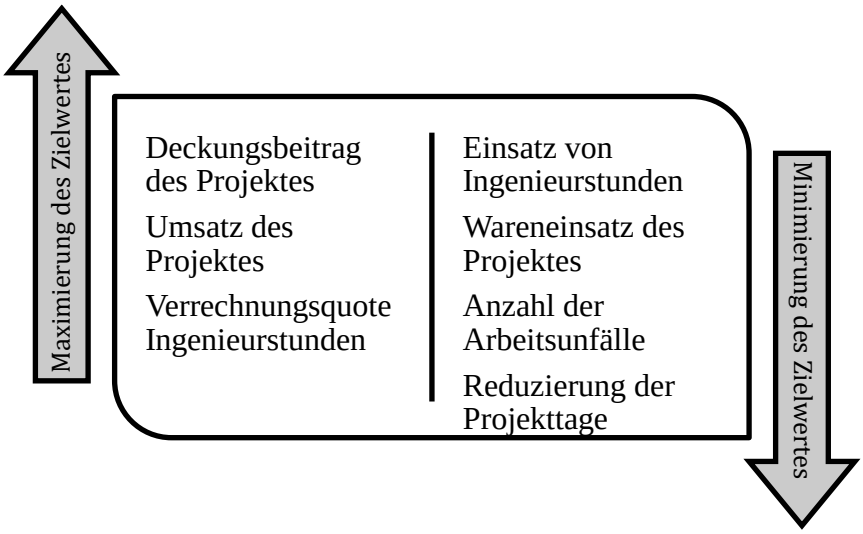
With regard to the pursuit and measurement of project objectives as a "hard criterion", the graduation of the achievement of objectives is also important in addition to the interrelationships of objectives described above. Thus, especially in the building industry, certain contractual properties can be considered acceptable within defined tolerances, provided the usability does not suffer significantly for the end user. A criterion frequently discussed in practice is, for example, the >flatness tolerances in building construction according to DIN 18202 <. Likewise, the determination of the realised fair-faced concrete quality to be contractually complied with according to the >DBV data sheet Fair-faced concrete and fair-faced concrete classes < [5]regularly leads to disputes between the project parties. The contractually relevant question; >Is the surface quality maintained or not?< can unfortunately only be answered unambiguously in a few exceptional cases. For these reasons it seems only logical to consider the different ways of achieving the objectives.

The following figure graphically illustrates the types of target fulfilment for the German construction industry.



Consequently, only complementary and neutral project objectives should be agreed as x-coordinates as input variables for the variable remuneration system in project management, which must also be unambiguous, fact-based and measurable without empirical surveys. A possible, but incomplete selection of such objectives can serve as a basis:

[5] DBV - German Concrete and Construction Technology Association



A concrete choice of which objectives are agreed upon always depends on the company policy and the project itself. The achievement of the project objectives as a hard criterion is calculated as the ratio of the fulfilment of objectives [ZE] in relation to the target [ZV] and thus proportionally provides the fulfilment factor of the x-coordinate [10% variable part].

$$x_{max} = \frac{Z_E}{Z_\mathrm{V}}; \quad x_{min} = \frac{Z_V}{Z_\mathrm{E}}$$

Formula: x-coordinate [min., max.] of the Cartesian system, project objective

y-coordinate) - complexity / project efficiency [10% variable part].

According to common opinion, project management is understood as the planning and control process of projects. In the context of these considerations, the term >effort minimised< is concentrated on, since a punctual course of action is generally assumed, or personnel sanctions would have to be taken in the event of schedule deviations caused by a project manager himself. The tasks of a project manager can be described by the term > coordination office for complexity management<. In this context, greater dynamic complexity can be seen as the greatest challenge for project management. For this reason, possible solutions for complexity reduction and the connections between >interfaces<, >capacities< and >competences< were analysed. Furthermore the approaches for calculating the complexity of projects and complexity reduction were derived.

It can be stated that a measure for the evaluation of project manager activity is the mastery of complexity and its reduction to be aimed at. Finally, the symbiosis of these dependencies can be described as project efficiency.

yC-coordinate) - calculation of complexity [C] as a structural criterion

The possibility of calculating the complexity of projects introduced with this thesis provides the basis for an individual assessment of the "difficulty" and effort of a project execution. In order to be able to evaluate the requirements for the quantity of project management activities, the following formula > complexity [C]< is continued as the basis of the y-axis of the Cartesian system.

$$C = y_C$$

$$y_C = f(i,c) = \sum_{n=1}^{N} (i_n + c_n)$$

C = complexity
i = interfaces
c = capacity
n = node number
N = number of knots

Formula : yC-coordinate of the Cartesian system, complexity [C]

yE-coordinate) - calculation of project efficiency [E] as a structural criterion

As an alternative to assessing the mastery of complexity [yC], it will also be necessary and possible in some projects to reduce complexity through a clever project approach. This can be done with the formula for calculating project efficiency [E] Formula 8. To implement the calculation of a complexity reduction, it is necessary to carry out a basic consideration at the start of the project and to control it over the course of the project; here, the project-specific basic complexity [*C0*] must be considered as the minimum boundary complexity.

This formula > project efficiency [E]< is introduced for this purpose.

$$E = y_E$$

$$y_E = 1 * \frac{C_0}{\sum_{n=1}^{N} (i_n + c_n)}$$

E = Project efficiency
C0 = basic complexity
N = number of knots
n = node number
i = interfaces
c = capacity

Formula : yE-coordinate of the Cartesian system, project efficiency [E]

y-coordinate) - complexity [C] versus project efficiency [E]

In the context of this work, it is possible to calculate the extent of a project management activity on the one hand on the basis of the necessary coordination effort, the complexity [yC] of the project as a kind of basic effort or with the help of project efficiency, as the difference between a specific initial efficiency [yE0] and an efficiency actually achieved [yEt] in the period under review.

z-coordinate) - brand strength of the project [10% variable part].

The theory of motivation and incentives in project management, the consideration of identification in project management and the topics of >values and sustainability in project management< provided the programme for developing the >theory of brand identity in project management<.

The question "What is to be understood as brand identity" was discussed in detail. Repeating from these chapters, Radtke describes >brand identity< with four constitutive characteristics: >Repeatability, individuality, continuity and consistency. These four, or similar, characteristics also express, according to other authors, the criteria that distinguish a brand from other brands and thus represent the real value of a brand. Brand identity thus describes the relationship between the brand as a thing to the understanding that individuals can also be a brand. Following this view one can come to the conclusion that a group of people can also be a brand.

The motivating goal of individuals to be part of an (elite) group (project team) follows the same mechanisms as the desire to belong to a famous football team or other successful association. This approach was compared and concluded with the theoretical brand explanation models according to Kapferer, Aaker and Burmann,

"A project can be a brand - must be a brand".

The project manager must become the brand ambassador of his project. The recommendation to use a marketing manager within a company goes back to de Mortanges and van Riel from 2003, among others. The explanatory model for organisational change in project management, "A project must be a brand", was supported by their own empirical research and again evaluated in good agreement with Herzberg's two-factor theory.

z-coordinate) - measuring the brand values of the project as a soft criterion

Measuring the strength of brand values is not initially an instrument of project management. Brand strengths are measured particularly in the case of listed companies in order to give investors a more differentiated view of possible investment objects in comparison to the product portfolio of potential competitors. The measured brand values usually differ from the accounting active and passive company values according to commercial law. Brand values in themselves manifest the subjective feeling of "friends of the brand" and are very volatile due to their subjective character, in contrast to physical company values.

In the business sense, brand equity is understood as the monetary added value that a "branded product" can achieve with the consumer compared to a supposedly equivalent product (e.g. the own product of a private label). From this point of view, brand equity represents the value for which the consumer is prepared to pay a premium over any retail product. The most common measurement of brand strength therefore also takes place in the B2C area[6] and is shaped by brand management.

The candidate defines brand identity as a central factor for the rapid formation of a competent and performance-oriented project team and the successful completion of a project. As mentioned above, the following four characteristics are used as indicators to determine the brand identity of projects; > reciprocity<, > *individuality*<, > continuity< *and* > consistency<. These indicators correlate very well with our own empirical data, especially with the analysis of the question of reasons for staying in a company. The empirically diagnosed motivators were described very vividly in the practical entry example >Leibis/Lichte dam<.

[6] B2C means Business-to-Consumer and stands for the business relations of a company (a legal entity) with its non-commercial end customers, i.e. with natural persons.

As a measurable criterion in the sense of a project manager's performance assessment, individual brand values must be defined for each project. These should be based on the brand values of the company, but should be individually adapted to the project-specific conditions, customer needs and the performance of the project team. To define the brand values of a project, the process according to Jones, the > stakeholder-brand value model< is suggested. The brand definition process is adapted for project management in the following figure.

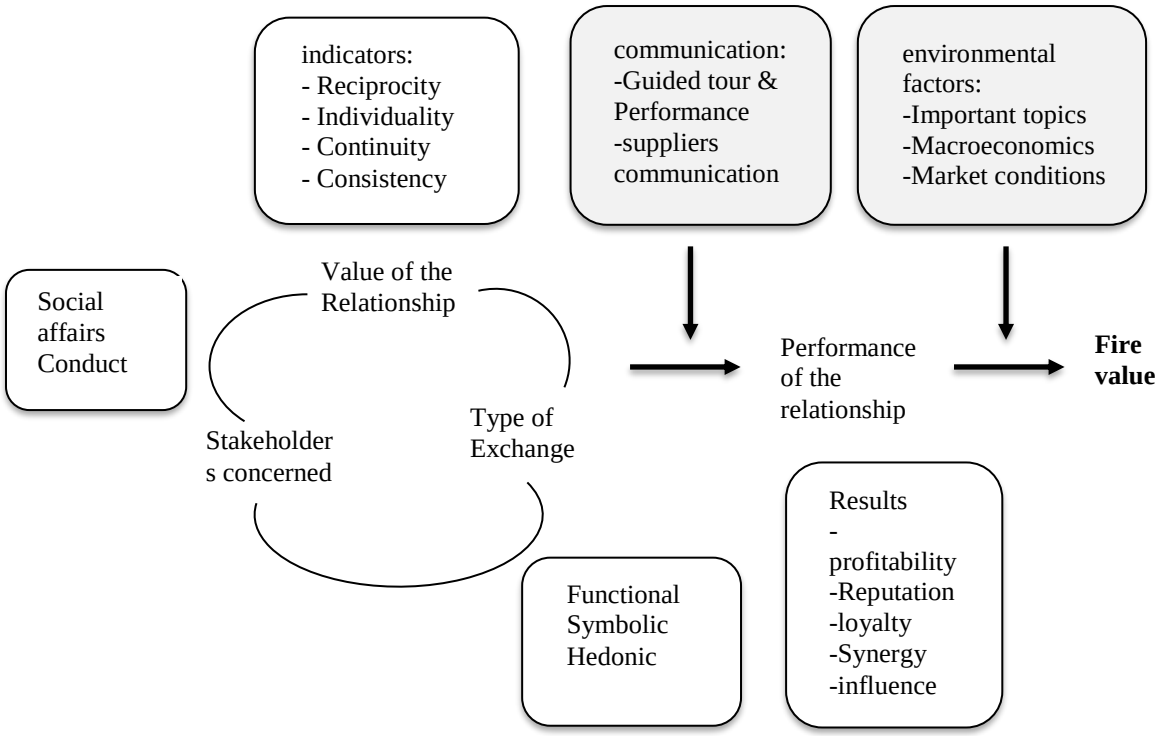


Figure: The stakeholder-brand value model according to Jones, own presentation

After the brand values have been defined with the Jones process of a project, the fulfilment of these values from the perspective of self-perception and external perception serves the performance evaluation of the project manager. A selection of relevant methods was subjected to an in-depth theoretical analysis. Based on these results and the candidate's own experience in project management, the >Customer multiplier effect model< (CME model) is considered a suitable tool for measuring brand equity. The CME model can be used in all projects where a partnership between contractor and client is the focus of mutual corporate philosophies. A partnership-based approach between the parties is assumed to be elementary for further considerations.

As an analysis system, the CME model is characterised by the fact that it can be applied across the various project phases. In order to weight the individual brand values, the two factors >importance< and >satisfaction< must be defined in the CME model. The monitoring can be carried out periodically at the end of relevant project phases, according to milestone parts or depending on the company and project constellation. Depending on the use of suitable software, the display of a characteristic curve for the course of the period is also conceivable and possible.

Project - Brand values	Importance: In my view, these project brand values are ...					Satisfaction: With the implementation of the project brand values I was ...				
	very important				totally unimportant	very satisfied				totally dissatisfied
Weighting	5	4	3	2	1	5	4	3	2	1
Reliable										
Inspiring										
Powerful										
Total	∑S					∑L				

Table: CME model; measurement of project brand values

The brand strength of a project is calculated from the sum of the significance [S] of the individual project brand values [B] in relation to the implementation level [L] of the respective project brand values.

$$B = \frac{\sum L}{\sum S} \quad ; \quad B = z$$

$$z = \frac{\sum L}{\sum S}$$

B = Project Brand Value
S = importance (Significance)
L = satisfaction (level)

Formula 1: z-coordinate of the Cartesian system, project mark value [B]

With the CME system, the project owner is given the opportunity to assess the brand values developed together with the project manager as a benchmark for his activities. The inclusion of other stakeholders (internal stakeholders, external stakeholders, customers) in the valuation process is mandatory.

The **evaluation intervals of** the variable remuneration should be carried out promptly in accordance with the deficiency described by Klausing in the study >Salary and Career in Project Management 2017< in order to effectively counteract a lack of coincidence of performance and reward. By a temporal coincidence of high commitment of the project manager and extrinsic reward by the employer, a stronger, "more tangible" - intrinsic commitment of the project manager to his goals and the achievement of the same is achieved. This coupling additionally increases the intrinsic motivation of the project manager.

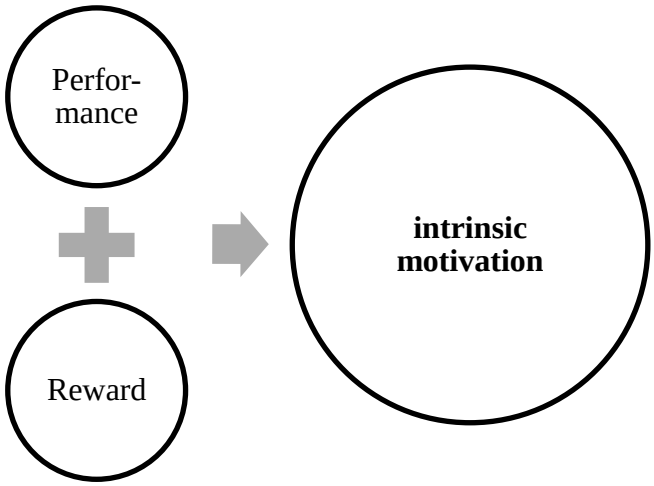


Figure : Relationship between performance/reward and intrinsic motivation

An **extension of** the variable remuneration system could be achieved by clustering the results into quadrants based on the magic cube (**Rubik's Cube** [7]) and categorising them in

- >fulfilled< ,
- > well fulfilled< and
- >very well fulfilled<

take place. This would also enable an easily understandable visualisation of the performance of a project manager. The clustered results analysis would be a useful instrument in feedback discussions between project owner and project manager.

[7] Ernő Rubik (13 July 1944): Famous Hungarian architect (designer and sculptor). He taught at the College of Industrial Art in Budapest. Rubik is the inventor of the world famous magic cube.

For a summary overview, the coordinates of the Cartesian remuneration system **are** summarised in the following figure and the most important process contents are summarised in the final table.

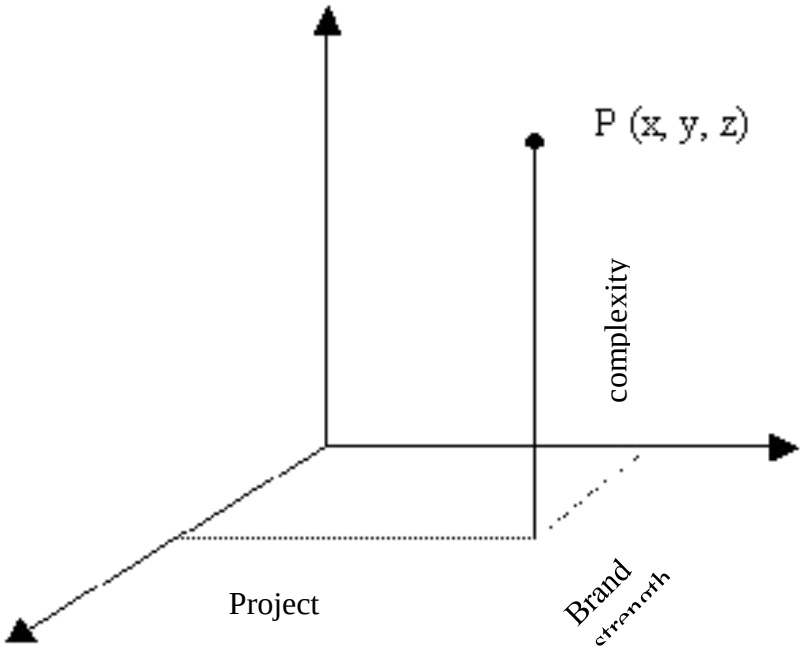


Figure : variable remuneration as a Cartesian system [8]

Coordinates	**Target figure**	**Survey**	**Formula**	**Variables**
x-coordinate 10% variable portion].	Target value maximisation	Analysis of key business figures	$x_{max} = \frac{Z_E}{Z_V}$	ZE = target fulfilment ZV = target
	Target value minimisation		$x_{min} = \frac{Z_V}{Z_E}$	
y-coordinate 10% variable portion].	complexity	Calculation of the project structure	$y_C = f(i,c) = \sum_{n=1}^{N}(i_n + c_n)$	C = complexity E = efficiency i = interfaces c = capacity n = node number N = number of knots
	Efficiency	Calculation of the structural improvement	$y_E = 1 * \frac{C_0}{\sum_{n=1}^{N}(i_n + c_n)}$	
z-coordinate 10% variable portion].	Brand strength	stakeholder brand value model CME model	$z = B = \frac{\sum L}{\sum S}$	B = Brand value S = importance L = satisfaction

Table : Components of the Cartesian remuneration system

[8] Picture source: https://help.scia.net/16.0/de/rb/basics/cartesian_co_ordinate_system.htm

4. Conclusions and recommendations

Revenue as a mandatory target for every company must be a project objective and thus an evaluation criterion for project management activities. The activity of a project manager must be oriented towards the company's objective and the generation of profit. This line of argumentation must at least from the point of view of the German Commercial Code, German tax law and German jurisdiction, a profit-making intention must be assessed accordingly. It remains questionable what is understood by a project objective and how strategic and operational project objectives manifest themselves in the respective project. It can be concluded that project objectives are not only to be understood as monetary objectives, but that there can also be a multitude of non-monetary project objectives in the entrepreneurial context. Ambition, perseverance, a sense of responsibility and "a healthy degree of self-confidence" are elementary personality traits of a project manager. A participation of the project manager in the success of the project, or the prospect of such participation, should be seen as an incentive to increase the motivation and commitment of the project manager to his project.

In the relevant literature, many authors describe the counterproductive effect of variable salary components on the motivation of employees with complex tasks to which project managers can be clearly assigned. This crowding out effect is achieved by reducing the overall complexity of all target facets to the bonus-relevant targets. As a result of the present investigations, a model for measuring the fulfilment of project objectives could be created with a variable remuneration as a Cartesian system, which takes up the concerns of the scientific colleagues described above and, with the help of a calibration approach based on partnership, sustainably considers the needs of the contractor and the needs of the client in the focus of mutual corporate philosophies.

By considering the other components >project complexity / project efficiency< and the >brand strength of a project<, the displacement effects are effectively counteracted. The risk of the described mutual cannibalisation of project managers according to available resources of a company is also effectively countered by the factor of the brand strength of a project.

Due to the individuality of projects and their impossible reproducibility, the complexity of a project remains for the assessment of the project manager's skills. Through a skilful project structure, the project manager can achieve a reduction in complexity and thus considerably facilitate project management. Projects often fail because of the dynamic complexity, which turns out to be the big challenge for project management. The candidate

makes it clear that this applies in unison to project management in the German construction industry.

It has been shown that different degrees of complexity reinforce or minimise the interactions between the diverging fields of tension in project management. On the one hand, this thesis introduced the possibility to calculate the complexity of projects and thus to make an individual assessment of the "difficulty" and the effort of project management. On the other hand, in some project-specific cases it will also be necessary and possible to reduce complexity by means of a skilful project essay. In this case, too, a formula for calculating project efficiency has been introduced, thus creating the basis for calculating a variable remuneration for project managers.

A project has to establish itself as an own brand in the company in order to facilitate the employees' identification with the project and team building. The project manager must take on the role of brand ambassador of his project within the company and outside the company.

Project managers do not carry out the causal work for the project on their own, but rely on the support of their project team and its smooth and creative solution orientation. The work in a project team could be ordered by sending personnel. However, belonging to a project team follows the same mechanisms as the desire to belong to a famous football team or another successful association. In order to arouse this desire to belong among the potential employees of a project, the challenge for the project manager remains to build a sophisticated, identity-creating image of his project.

The initial example >Leibis/Lichte dam< was used to describe the desire to belong to a group, even after the end of the project, in the growing number of participants at the annual >Leibis meeting<. In addition to a solid technical implementation, the way the project is carried out, the "spirit" of the project and stakeholder management are apparently of particular importance.

Our own empirical studies analysed the motivation of project managers and compared it with theoretical brand explanation models. It can be concluded that "A project must be a brand" and the project manager must become an ambassador of the brand of his project.

This thesis provides the scientific basis of a variable remuneration system for project managers in the German construction industry and recommends approaches for its assessment.

As a result of our own empirical work, a recommendable proportion of variable remuneration of 30% in relation to the basic salary could be extracted. Based on his own empiricism, the candidate considers the level of the variable component to be justified, as a low variable component would not adequately motivate the project managers. On the other hand, the German jurisdiction describes that variable salary components must also not be too high, as this would otherwise represent too high an income risk for the respective employee. Kieser mentions a share of 25% - 30% as the upper limit, following the German labour courts. Only in the case of commercial agents, which does not include salaried project managers, does the German Commercial Code provide for deviating regulations in the seventh section (§ 84 - § 92c) for permissible levels of variable remuneration. Further relevant regulations can be found in the co-determination right of the Works Constitution Act, with regard to the necessary involvement of the works council in the modification of remuneration models. Likewise, collective agreements and regional collective agreements of the respective branches of the building industry must be taken into account.

In any case, if the proposed system is implemented in the respective company, a broad-based discourse on the opportunities and risks of implementation should be conducted with all those involved. On the one hand, the benefits of the system must be communicated in order to create acceptance of the system, also for the process-related costs of monitoring, and on the other hand, all those involved in the process must be made aware of their individual responsibility which they bear when using the system.

In any case, companies in the German construction industry are dependent on highly motivated project managers. Through committed handling of their projects, project managers (especially in critical economic times with tight margins and volatile resources) contribute significantly to the success of the projects and thus to the success of the companies.

➔ ***With the creation of a suitable tool for the variable rewarding of individual contributions to project success, project managers will profit from the success of their projects in the future.***

5. New scientific results

As a result of this research, the following new scientific findings can be made available to the professional community.

- Variable remuneration systems are suitable for use as an individually motivating personnel development system for project management.
- As a prerequisite for the suitability of a variable remuneration system in project management, a multi-dimensional target direction (Cartesian system) must be certified.
- The quality of project management activities can be measured individually and person-specifically.
- The complexity of projects describes the amount of project management work involved and can be used as a measure for its assessment.
- Project efficiency is defined as the measure of the reduction of complexity through a skilful project structure and can also be used as a measure of the quality of project management activity.
- A project can establish itself as a brand within and outside a company.
- The stronger the project acts as a brand, the more motivated employees can be bound to the project.
- The project manager accompanies the function of the brand ambassador of his project.
- The derived brand strength of a project can be used as a measure to assess the quality of project management activities.
- Our own empirical research indicates that 25-35% variable remuneration in project management is conceivable from the perspective of the respondents.

6. Summary

The results of the research project are presented in keywords for the subject areas investigated to provide a better overview of the core statements:

Marginal utility of variable remuneration systems:

- A moderate increase in the income of project managers has only a minor effect on the motivation and behavioural changes of a project manager, whereas countercyclical (project-dependent) variable remuneration components can have a motivating effect on the project manager.
- Variable compensation systems can have counterproductive effects. Previously established variable remuneration systems are not suitable for the professional group of project managers due to the risk involved.

Performance incentives to increase motivation:

- A distinction between extrinsic and intrinsic motivation makes sense sequentially, if not without overlap. Project managers must be able to motivate their team and themselves.

Potentials of meaningful activities:

- Different personality types come together in project teams and must be formed into an efficient project team as quickly as possible by the project manager. A prerequisite for rapid team formation is identification with the project goal and acceptance of the project.
- The formation of acceptance in project management can be achieved through values and sustainability. The project manager's task is to convey values.

Motivation of the project team through brand identity:

- The necessity of creating brand identity in project management is derived from the task of conveying values to the project manager. A project can be a brand - must be a brand.

Complexity in project management:

- The degree of complexity of a project has a significant influence on the effort of the project management activity as such, but also on the efforts of the project manager to create motivation, identification, values and brand identity. The more complex a project is, the more complex the interpersonal communications of the project manager become. The creation of efficiency in the project essay can counteract the development of complexity.

Adaptability of existing incentive systems:

- In the technical literature examined, there are no existing incentive systems that could be adapted without reservation for project management. The CME model can be used to determine the brand identity in the Cartesian system.

Analysis of existing empirical studies:

- The proportion of variable remuneration from the basic income for employees without management responsibility is 13%-16%, which correlates relatively well with the GPM Study 2017 analysed above. The more specific GPM Study 2017 validates a lower proportion of variable remuneration for project managers of 10%-12% and must be regarded as a more suitable data basis due to the survey environment in the context of this dissertation. According to research report 507, managers are higher than project managers with 18% variable component.
- A coupling of the degree of target achievement of target agreements, as described in the Research Monitor, is used by approx. 50% of all companies surveyed to calculate variable remuneration components. The analyses of the Kienbaum study > Distributing money or developing performance? Trend Study Performance Management 2017< describes a similar development.
- According to the Research Monitor, the sole focus of variable remuneration on individual performance leads to a decline in job satisfaction and willingness to cooperate. This statement is a good analogy to the concerns expressed by Frey and Osterloh about the unlimited use of variable remuneration systems.
- Team and company success as a basis for assessing variable remuneration has a positive effect on job satisfaction. This approach, if calibrated accordingly, could help to accelerate the team-building process according to Tuckmann and the associated increase in the efficiency of teams.

Analysis of own empiricism:

- A systematic application of direct and indirect pecuniary reward instruments is only >rarely< or >never< used in project management.
- Companies motivate their project managers primarily with interesting activities and a wide scope of action.
- In analogy to Herzberg's two-factor theory, significant factors in the search for employers are the "hard" hygiene factors such as >high salary<.

- In analogy to Herzberg's two-factor theory, significant factors for not leaving your employer are the "soft" motivators such as a good working atmosphere and interesting activities.
- The quantitative analysis of the percentage of variable remuneration in relation to the basic income provides a median value of 25% and an average value of around 35% variable remuneration.
- Further training of a project manager promotes the career, which in turn leads to the project manager being given more responsibility and the independent handling of projects. Personal responsibility in turn leads to a higher personal well-being and again to more professional experience. Finally, work experience tends to postulate a higher remuneration.
- Project managers like to solve problems, understand the field they are working in, like to organise their working time independently and like to take responsibility.

Finally, all results of this scientific work were aggregated in a variable remuneration system as a Cartesian system. For project management, the three components >project objective<, >complexity/project efficiency< and >brand strength< can be regarded as relevant criteria for evaluating a project management activity.

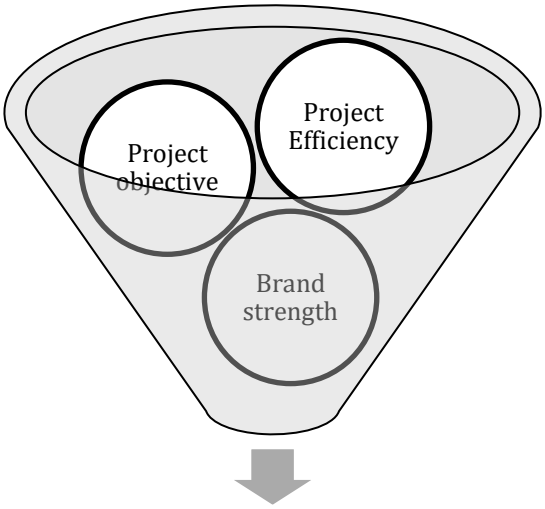


Figure: Criteria of the Cartesian system

In order to be able to capture a balanced mix of directly measurable, effort describing and social components of a project, different levels of observation were integrated into the system. Project goals are measured directly, complexity is calculated and brand strength is determined empirically.

Based on existing empirical studies and our own empirical evidence, a monetary share of variable remuneration in the basic income of 30% was preferred for the variable part of the system. For pragmatic reasons, this approach is divided into one third each of the above three components at 10% each.

x-Koordinate)	Achievement of the project objective	[10% share].
y-Koordinate)	Efficiency of a project	[10% share].
z-Koordinate)	Brand strength of the project	[10% share]

∑=30%

The x-coordinate describes the fulfilment of the project objectives and thus takes into account the business responsibility of a project manager.

The y-coordinate describes the complexity of the project and thus represents the effort a project manager has to invest in order to achieve the project goals on the one hand and to be able to provide leadership for his team on the other hand.

In the z-coordinate the work of the project manager as brand ambassador of his project manifests itself and thus the inner view of the project team on itself and the outer view of all stakeholders on the project and the project team. A prerequisite for the application of this component is the project-specific development of project brand values based on the >stakeholder-brand value model< according to Jones.

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