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Effects of public hospitals' autonomy on the 3P compensation in Vietnam's public hospitals

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Abstract

This study analysed the effects of public hospitals' autonomy on the 3P compensation in Vietnam's public hospitals. The synthesis and analysis of research results from the survey results of 155 public hospitals distributed according to level, including central hospitals, provincial hospitals and district hospitals. The results of the research model show that: (i) The effect of the supplemental income fund from the hospital's revenue on the 3P compensation in

the hospital is most powerful; followed by (ii) The degree of autonomy of the hospital public and (iii) The determination of hospital's leaders. In the article, the influence of the hospital's payroll staff on the 3P compensation in the hospital cannot be found. Based on these results, the study also proposes some recommendations to implement the 3P compensation in public hospitals in Vietnam under autonomous conditions.

Keywords: Autonomy, 3P Compensation, Income, Public Hospital, Doctor

JEL classification: E64, P46, J48

1. Introduction

Financial autonomy has created opportunities for public hospitals in Vietnam to increase their revenue, leading to an increase in the salary and income of medical staff in the hospital. There are changes in the calculation of salaries for medical staff in hospitals. In addition to salary payment based on the payroll system and allowances prescribed by the State, hospitals have also gradually approached the compensation methods of the market economy. The payment associated with the job position, the capacity and the performance of each doctor is also gradually applied in the calculation of additional income in public hospitals. The combination of all three methods in salary payment (called the 3P compensation) has been implemented by some public hospitals. It has generated fairness in payment, trust and enthusiasm to motivate medical staff to work hard. However, the application of the 3P compensation in public hospitals is encountering the hospital's regulations of autonomy such as regulations on financial autonomy, the rate of deduction of supplementary income funds, regulations on staffing. Therefore, research on the influence of autonomous public hospitals on the 3P compensation in hospitals is essential and meaningful.

2. Research overview and hypothesis

2.1 The 3P compensation in hospitals

Investigating the 3P compensation, Brown (1990, 1992) [3, 4] indicated that it was considered by enterprises as a basement for employee compensation. Tuoi (2015) [20] believed that this method could measure the amount of money in employee payment in accordance with proposed targets. It was technical steps and processes to calculate salary for employees. Salary payment can be measured based on job position (pay for position), or the capacity of the employee (pay for person), or the work performance of the employee (pay for performance), or a combination of these criteria with a view to achieving proposed targets. The combination of three salary payment methods, namely position-based compensation, person-based compensation, and performance-based compensation is known as the 3P compensation.

The position-based pay pays attention to the assessment of job values to pay employees. With this approach, the job is the foundation to determine the compensation of the employee. This method of payment does not concentrate on the person who does the job or his qualifications, but how the value of his job is evaluated in job evaluation systems in the firm. Studies show that the essence of job evaluation is to measure the value and importance of each position in the whole system to determine the

salary and the differential pay (Armstrong, 2014) ^[1]. Employee's compensation in hospitals is determined by his position, value and importance of each position in the hospital.

Person-based pay signifies that employee compensation is paid on the basis of the knowledge, skills, and talents that employees have. Factors such as qualifications, expertise, skills, prior work experience and employees' other factors are evaluated to determine the appropriate compensation. (Brown, 1990; Salter, 2002; Hallock & Olson, 2009; Christian & Costas, 2005) ^[3, 14, 9, 5]. These are the criteria showing both the value of individuals and the organizations that employ those individuals. For hospitals applying this method in salary payment, the salary is based on doctor's specialist knowledge and skills, which can be expressed in terms of qualifications, level, academic title, academic degree, professional seniority. For a long time, payment approaches of public hospitals in Vietnam have been applied according to the pay-slip system developed by the State based on professional qualifications and seniority. Additionally, to attract highly qualified medical personnel, some public hospitals also form a qualification coefficient for increasing salary. However, the extent of the increase and the way in which the level coefficient is determined may vary from one hospital to another, depending on the hospital's sources.

Performance-based pay is a method designed to pay salaries based on merit and performance of a particular individual or a collective group. The salary of each employee depends on the output and productivity of himself or a collective group. Researchers working on the salary sector consider this method as the manufacturing process's output-based pay. The output can be products, service, avenue, profit. This method of paying is based on Victor Vroom's Expectancy theory, which demonstrates a direct link among three factors related to labourers in the labour market: Effort - Achievement - Received salary. According to Brown (1990, 1992) ^[3, 4] and Ewing (1996) ^[6], the salary is intricately connected to performance-based compensation and together, they could considerably motivate labourers. The method of paying has been applied to pay doctors and medical staff in some financially autonomous public hospitals and it has brought about certain changes. That doctors are paid for each health examination, surgery, operation and test; motivates doctors to do their best to attract, better look after and change their communicative behaviours with patients and their relatives. However, according to Tuan (2022) ^[19], hospitals had better take this method into consideration as it might result in long-term consequences. They can be unfair competitiveness, system disruption, code breaking and the lack of experience, knowledge, information sharing.

Nowadays, there is also a combination of different compensation methods in self-financing public hospitals. Position-based pay and performance-based pay together come into use along with a pay-slip system developed by the State. Nevertheless, how applicable the combination of such methods is depended on different conditions of public hospitals.

2.2 Autonomous public hospitals and their effects on 3P compensation

Public hospitals are organisations established by Competent authorities of the state. Its duty is to provide public service

or state management support in medical examination and treatment.

Policy of autonomous public hospitals is researched and analysed by many researchers (Preker & Harding, 2003 and Saltman *et al.*, 2011) ^[13, 15]. According to Hongqiao Fu *et al.* (2017) ^[10], it is supposed that in low and middle incomes countries, changes in management mechanisms and autonomous rights of public hospitals have helped increase the salary of doctors and medical staff. Meanwhile, salary-calculation techniques were not referred to. Researches about autonomous public hospitals all showed that autonomy increased revenue of hospitals, thereby increasing financial source for compensation. Zinghem and Schuster (2007) ^[21] stated that if an organisation had a strong financial capacity, it would carry out compensation plans in a more positive way.

Public hospitals' degree of autonomy

In Vietnam, among studies about public hospitals' autonomous policy, including financial autonomy from 2002 to 2006, London (2013) ^[12] concluded that autonomy was tantamount to an increase in revenue, income of staff and investment in equipment. However, these researches did not mention changes in compensation methods in the process of increasing salary

According to the study of Kien (2019) ^[11], in the period from 2006 to 2016, when implementing financial autonomy, public hospitals raised staff's income, hence their increased productivity. The increase in the establishment of provisions (reward-and-welfare fund, income stabilization fund, professional development fund, financial preventive fund) also contributes to stabilising and raising medical staff's income. All these variables are in proportion with the public hospitals' level of financial autonomy.

According to Article 9 of Decree 60/2021/ND-CP (Government, 2021) ^[7], current public hospitals are divided into: (i) public hospitals ensuring the recurrent and investment expenditure, a health service provider using no state budget, determining service prices according to the regime field, with sufficient calculation of production costs and accumulation reserved for investment; (ii) public hospitals ensuring the recurrent expenditure, a unit providing medical services on the list of services funded by the state budget, either for ordering or tendering for professional services according to full-cost price (excluding depreciation of fixed assets); (iii) public hospitals ensuring a portion of the recurrent expenditure (from 10% to less than 100%), a unit providing services to the State either for ordering or bidding for professional services at insufficient expenses and; (iv) public hospital with recurrent expenditure fully funded by the State, a public hospital with a guaranteed operating cost of less than 10%, or having no non-business revenue.

Based on this division, in order to conveniently research and find out the relationship between degree of autonomy and compensation method in Vietnam' public hospitals, the author classifies degree of autonomy following financial autonomy levels. Applying the five-level Likert scale, public hospitals' degree of autonomy is classified as follows: 1 is super low degree of autonomy, representing public hospitals that are self-sufficient in costs below 30%; 2 is a low degree of autonomy, indicating public hospitals that cover their recurrent expenditure from 30% to less than 70%; 3 is medium degree of autonomy, referring to public hospitals

which ensure their recurrent expenditure from 70% to less than 100%; 4 is a high degree of autonomy in which public hospitals cover their own recurrent expenditure; 5 is a super high degree of autonomy as they can self-finance their recurrent and investment expenditure.

The H1 Hypothesis: autonomy level of public hospitals has an influence 3P compensation in the hospital

Supplemental income fund from the hospital's revenue

The hospital's revenue derives from the operating efficiency of the public hospital. According to Zingheim and Schuster (2007) [21], the salary of employees depends greatly on the performance of the organization. An organization with strong financial capacity has favourable conditions and is a strong point to implement plans to pay employees salary in a more positive direction.

According to the regulations, every year, after accounting for expenses, taxes and amounts payable to the State budget, public hospitals, depending on the degree of autonomy, are entitled to set aside different funds (professional development fund, supplementary income fund, reward fund, welfare fund, income stabilization fund). Among which, the supplementary income fund, also known as the additional income fund, is allocated to pay the additional salary for the hospital's medical staff.

With public hospitals self-ensuring the recurrent and investment expenditure, supplementary income fund for salary expenditures, the hospital can decide on its own the amount of fund deduction as the State does not control the deduction rate. For a public hospital that can ensure its own recurrent expenditure, the maximum amount of fund deduction is not allowed to exceed doubled salary fund of scale, rank, position and allowances prescribed by the State. With public hospitals self-ensuring a part of recurrent expenditures, the reserve of the supplementary income fund is also regulated in the same way as public hospitals self-ensuring recurrent expenditure. For a public hospital with recurrent expenditure guaranteed by the State, the maximum expenditure must not exceed 0.3 times the basic salary fund of the officials and employees of the unit according to the principle of efficiency and final outputs.

Thus, the salaries of medical doctors in public hospital include: (i) salary based on the scale, rank, and position, salary-based contributions and allowances prescribed by the State for service delivery units and (ii) the additional compensation extracted from the supplementary income fund shall comply with the principle of being associated with the quantity, quality and efficiency of each person according to the hospital's internal spending regulations. Accordingly, autonomous public hospitals can decide for themselves on the method of paying salaries in the part of the increased salary or the part of the salary that is spent from the supplementary income fund. The size or scale of the fund also has some certain impacts on the combination of compensation methods.

Hypothesis H2: The supplementary income fund from the hospital's revenue has an influence on 3P compensation in the hospital

The determination of hospital's managers

The will and opinion of hospital heads are based on research, Bol (2011) [2] argued that the salary of employees was affected by the head of the organization there. Tuoi (2015) [20] also proved that the viewpoint of business leaders

would determine the policy, compensation mechanism, compensation plan of the enterprise. The determination of hospital leaders will instil enthusiasm to all medical staff in the hospital and be a solid support for the salaried staff to perform the professions of 3P compensation. Building the 3P compensation requires drastic and close supervision of the leaders, especially the hospital director. Therefore, the determination and persistence of the hospital's leaders has an influence on the selection and development of the 3P compensation.

Hypothesis H3: The hospital leadership's will and determination have an influence on the 3P compensation in the hospital

Hospital's payroll staff

These are the people who advise and concretize the views of hospital's leaders into methods of calculating salaries in the hospital. Tiep and Ha (2011) [17] said that the payroll staff sufficient in quantity, well-qualified (trained in the professional environment, capable of performing well) would pave the way for the effectiveness of the compensation policy. They are not only the people who design and build the compensation method, but also the people who maintain and implement these methods in the firm. Developing and implementing the 3P compensation requires the payroll staff to have a thorough and profound understanding of the system, methods and techniques of implementation, especially working value evaluation, capacity assessment or achievement assessment in order to build accurate assessment tools, ensure fairness, focus on the subject and achieve the goals of the entire system. Therefore, they must be knowledgeable about the 3P compensation, and must be flexible when applying the method in reality and under specific conditions of each hospital.

Hypothesis H4: The hospital payroll team has an influence on the 3P compensation in the hospital.

3. Methodology

3.1 Research model

Based on previous studies and from the above analysis; The research model is shown below.

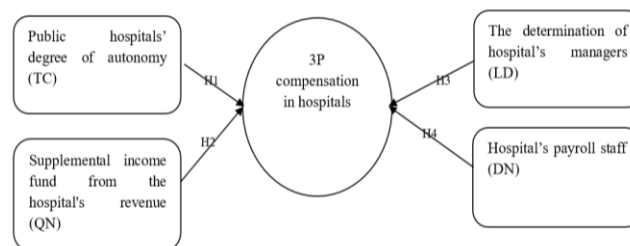


Fig 1: Research model

Dependent variable: 3P compensation in hospitals (3P)
 Independent variables: (i) Public hospitals' degree of autonomy (TC); (ii) Supplemental income fund from the hospital's revenue (QN); (iii) The determination of hospital's managers (LD); (iv) Hospital's payroll staff.

3.2 Research methods

The author used quantitative research methods based on collecting secondary and primary data for research purposes. Primary data was collected via questionnaire and the author

used SPSS 22 to analyse the data with descriptive statistics, Cronbach's Alpha analysis and regression analysis.

3.2 Research samples

This study is conducted based on the data collected from 155 public hospitals, including 8 central hospitals, 52 provincial hospitals and 95 district hospitals. Each hospital was given a survey note and the respondents are people holding the position of middle-level leader or above, currently working in these hospitals.

Regarding sample size, according to Tabachnick and Fidell (2007) [16] the minimum sample size is calculated by the formula: $50 + 8 * m$ (m is the number of independent variables). In this study, there are 4 independent variables, therefore the minimum sample size is: $50 + 8 * 4 = 82$ observations. According to statistics, in 2021 Vietnam had 1,150 public hospitals, including 47 central hospitals (accounting for 4.1%), 419 provincial hospitals (accounting for 36.4%) and 684 district hospitals (accounting for 59.4%). Since one hospital can only fill in one survey note, in order to meet the prescribed number of votes, the author distributed 170 votes to 170 hospitals, accounting for about 15% of the total ($15% * 1,150 = 172.5$).

There were 155 responses, approximately 91.2%, that were of good quality and could be used for analysis and ensure the representativeness of the sample size. In detail, the central public hospital 8/155 accounted for 5.2%; the provincial public hospital 52/155 took up 33.5% and the rest (61.3%) were from district public hospital 95/155.

4. Result

4.1 Descriptive statistical result

Regarding the 3P compensation variable, the average score of the assessment levels is 3.48 points. As for independent variables, the "Supplemental income fund from the hospital's revenue (QN)" variable, considered as the highest level of evaluation, has an average score of 3.50 points, followed up by "Public hospitals' degree of autonomy (TC)" variable with an average score of 3.35 points. Noticeably, the two variables: "The determination of hospital's leaders (LD)" and "Hospital's payroll staff" (DN)" have low average scores, which are 3.06 and 3.05 points, respectively.

Table 1: Descriptive Analysis of dependent variable and independent variables

Observed variables	N	Minimum	Maximum	Mean	Std. Deviation
3P	155	1	5	3.48	.956
QN	155	1	5	3.50	1.041
LD	155	1	5	3.06	.944
TC	155	1	5	3.35	.931
DN	155	1	5	3.05	1.015
Valid N (listwise)	155				

4.2 Cronbach's Alpha

Results of testing Cronbach's alpha of Observed variables are presented in Table 2 below.

Table 2: Results of Cronbach's Alpha Testing

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
QN	9.46	4.900	.583	.646
LD	9.90	5.322	.563	.660
TC	9.61	5.537	.517	.686
DN	9.92	5.449	.462	.718

The results also show that the dependent variables have Cronbach's Alpha coefficients that are greater than 0.6; and the correlation coefficients of all attributes are greater than 0.3. So, all the dependent variables are statistically significant (Hair *et al.*, 2010; Trong & Ngoc, 2008) [8, 18].

4.3 Correlation and regression analysis of the research model

The results of the first run reveals that the Sig. of the "Hospital payroll staff (DN)" variable) is 0.29, greater than 0.05. Therefore, it is not possible to affirm the influences of the staff in charge of salary-related processing on the selection of 3P compensation in the hospital, leading to its exclusion from the model. The final result of the model after the exclusion are as follows:

The results of the analysis show that the correlation coefficient of this model is 0.770, which explains 77% of the variation of the dependent variable as a result of the 3P compensation in autonomous public hospitals. The obtained Durbin Watson value is 1.967 which satisfies the criterion between 1 and 3, hence no first-order sequence autocorrelation. Thus, the multiple regression model meets the criteria of the evaluation and suitability test for the drawing of research results.

Table 3: Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.880 ^a	.774	.770	.458	1.967
a. Predictors: (Constant), TC, LD, QN					
b. Dependent Variable: 3P					

Table 4: ANOVA ^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	108.967	3	36.322	172.787	.000 ^b
	Residual	31.742	151	.210		
	Total	140.710	154			
a. Dependent Variable: 3P						
b. Predictors: (Constant), TC, LD, QN						

Table 5: Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	.189	.163		1.155	.250		
	QN	.584	.049	.636	11.937	.000	.526	1.901
	LD	.126	.043	.124	2.932	.004	.830	1.205
	TC	.257	.052	.250	4.898	.000	.573	1.746
a. Dependent Variable: 3P								

Thus, the regression model reflecting the influence of public hospitals' autonomy on the 3P compensation in Vietnam's public hospitals according to the unstandardized regression coefficient B is: $3P = 0.189 + 0.584QN + 0.126LD + 0.257TC$.

Written according to the standardized Beta coefficient: $3P = 0.636QN + 0.124LD + 0.250TC$

In the model, the independent variables are all positively correlated, which is, the effect is positive. The variable "Supplemental income fund from the hospital's revenue (QN)" has the strongest impact on the 3P compensation in Vietnam's public hospitals, because it has the highest standardized regression coefficient that is 0.636. Next, "Public hospitals' degree of autonomy (TC)" has the second strongest impact with a standardized regression coefficient of 0.250. The lowest in the model is "The determination of hospital's managers (LD)" which has an impact with a standardized regression coefficient of 0.124.

5. In conclusions and proposed solutions

Through the results of quantitative research, it is shown that the variables in the model have a positive impact and are positively correlated with 3P compensation in Vietnam's public hospitals in autonomous. With the proposed hypotheses, only " Hypothesis H4: The hospital payroll team has an influence on the 3P compensation in the hospital" is not accepted. In fact, for public hospitals in Vietnam, the calculation of salary payment is mainly based on the payroll system and allowance regimes issued by the State. It is kept stable for a long time so there is little or no change; The salary calculation methods are simple, so the role of the salary officer has not been promoted. The remaining 3 hypotheses are accepted because all have Sig. < 0.05. Specifically:

The "Hypothesis H2: The supplementary income fund from the hospital's revenue has an influence on 3P compensation in the hospital" has a regression coefficient of 0.584 which means that if other factors remain unchanged, 1% change in the supplementary income fund from the hospital's revenue will affect 58.4% change in 3P compensation in the hospital. This result is also consistent with the results of a number of previous studies on the extent to which hospital autonomy affects the salary because it increases hospital revenues. However, the result of this study also clearly shows that the size and scale of the supplementary income fund extracted from the hospital's revenue also affects the calculation technique and the method of calculating the additional salary to pay the staff in the hospital in association with the job position, or with the capacity and performance of each doctor. By doing this, they will be motivated to work in hospital.

The "Hypothesis H1: Autonomy level of public hospitals has an influence 3P compensation in the hospital" has a regression coefficient of 0.257, which means that if other factors remain unchanged, 1 change in the autonomy level of public hospitals will result in a 25.7% change in the 3P compensation in the hospital. This shows that, through the 5-level scale of financial autonomy that the author mentioned above in the overview section, it is true that financial autonomy will allow the hospital to increase self-determined rights and to decide on the salary calculation

technique for the hospital staff. Therefore, fairness in salary payment is ensured. A high degree of financial autonomy will help public hospitals to be more self-determined in making decisions about salary calculation, especially increasing salary, and not depending on the State's payroll system. It is very appropriate, even if the State has not yet implemented a new salary policy transformation, it is advisable to let public hospitals have a high degree of autonomy (level 4: for public hospitals that can cover their own recurrent expenditures) and public hospitals with a high degree of autonomy (level 5: for public hospitals that can self-finance recurrent and investment expenditures) are allowed to build their own payroll calculation system like an enterprise and are not obliged to apply the current state payroll system.

The "Hypothesis H3: The hospital leadership's will and determination have an influence on the 3P compensation in the hospital" has a regression coefficient of 0.126, which means that if other factors unchanged, 1 % change in the will of the determination of hospital's managers will change 12.6% of the 3P compensation in the hospital. This shows that hospitals with a low degree of autonomy, or with a low incomes supplement fund because they have not been able to increase the hospital's revenue, can still change the way they calculate salaries for staff when the hospital leaders have the will to be determined to implement the 3P salary method. As analyzed, the 3P salary payment method brings many benefits to the hospital, because it is the integration of salary methods based on the job position, ability and work performance. It also makes use of the advantages of these payment methods. It is the application of this 3P salary method that will have a positive impact on the attitude, consciousness, results of performing the medical examination and treatment tasks and improve the service quality of the hospital. As a result, it can make the hospital increase the revenue and the salary for the staff. Therefore, public hospital leaders should not wait until they have a high degree of autonomy or have a lot of money to apply the 3P salary method in their hospitals.

The "Hypothesis H4: The hospital payroll team has an influence on the 3P compensation in the hospital" is not accepted in this model. This can also be understood in another way that public hospitals have not yet realized the role of this team in the hospital's payroll, this may be because hospitals still mainly use the State salary system to calculate salary. However, when implementing the wage innovation policy, public hospitals that self-finance their own recurrent and investment expenditures are entitled to an autonomous salary-based mechanism according to their performance like a class I state-owned enterprise; while public hospitals that self-finance their own recurrent expenditures are allowed to implement the self-employment mechanism of salary according to performance like class II state-owned enterprises. At that time, these hospitals no longer have to apply the payroll system issued by the State, but have full authority to decide on salary payment methods and salaries for hospital staff. Therefore, from now on, those who do work related to the salary in public hospitals need to train themselves and improve their professional qualifications to meet the hospital's requirements in terms of autonomy and competition between hospitals about providing medical services to the people.

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