

ATYPICAL EMPLOYMENT IN TAIWAN'S CONSTRUCTION INDUSTRY

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Abstract

Responding to the fierce market competition and trying to cut personnel costs, the construction industry in Taiwan is adopting atypical employment in human resource. To discover this trend, this study employed a questionnaire survey to investigate the current use of atypical employment by domestic contractors and its possible impacts on the industry. According to the 103 returned valid questionnaires, 40.8% of the respondent contractors have applied some atypical employment types in recent three years and most of them used fixed-term employment. The major reasons the contractors used atypical employees are to reduce personnel costs, to deal with business fluctuations and to streamline personnel. According to the respondents, there is no significant difference between the advantages and disadvantages of using a large number of atypical employees in the short term. However, in the long term, atypical employment is generally more disadvantageous than advantageous.

Keywords: atypical employment, fixed-term contract, contingent workforce, human resource management

1. Introduction

Increasing global competition and rapid technological change favor organizations that are lean, efficient, and flexible [1]. The usage of atypical or contingent employment is growing in many countries and prevailing worldwide because of increased global competition [2-6]. In Taiwan, this strategy is gradually adopted by many contractors in the construction industry, large ones in particular [7].

In construction, practical experiences are highly valued and construction engineers play a key role. In personnel costs, the application of atypical employment can achieve significant effects in reducing the pressures of enterprises to support a large number of employees. However, atypical employment might also cause many negative effects such as insecurity or dissatisfaction among employees, which might in turn cause negative results in the construction work, costs, quality and safety. A higher turnover rate might also damage the knowledge accumulation within an enterprise. For an enterprise or an industry of sustainable development, it is a major issue to see if the benefits of cost saving brought by atypical employment can exceed the damage caused by all its negative effects. However, there is currently still little related research for the construction industry. As more and more

contractors adopt atypical employment, how to effectively manage and use atypical employment has become an important issue in human resource management.

Based on the above-mentioned background and motivation, this study employed a large-scale questionnaire to investigate the factors for Taiwan's general contractors to use atypical employment and their actual operations. Through questionnaires and following interviews, this research is an attempt to provide a comprehensive and in-depth analysis of the use of atypical employment from the aspect of enterprises. There are currently around 10,000 general contractors in Taiwan and they are regulated to be divided into three grades according to their scale. Since most of the companies adopting atypical employment are large-sized ones, the subject in this study focuses on the 1,660 grade-A contractors in Taiwan by sending questionnaires to the human resource directors of these companies. There are totally 103 valid questionnaires returned. Moreover, after the questionnaire survey, five representative contractors are interviewed to further explore the statistical meanings behind.

In addition to the introduction and the conclusion, the remainder of this paper is divided into three sections, including (1) the background of atypical employment, which briefly introduces the major concepts and related research of atypical employment, (2) current use of atypical employment by Taiwan's general contractors and reasons, which provides understanding of the current status of atypical employment application by Taiwan's contractors and then analyzes the factors in their decision-making of using atypical employment, and (3) impacts of atypical employment and future development, which provides a general analysis of the tradeoff of atypical employment for the contractor and discusses the possible future trends of atypical employment.

The construction companies in Taiwan started to adopt atypical employment less than a decade ago. The research team of this study has focused on this topic for nearly five years, covering aspects of the industry, enterprises and individual employees. This research is a study from the aspect of enterprises. Among the current literature, there is little research on atypical employment in construction industry. It is sincerely hoped that this research will inspire some thoughts and receive some feedbacks.

2. The background of atypical employment

Facing the growing competition brought by globalization, most enterprises would appeal to the strategy of increasing their human resource flexibility in order to cut down costs. Organizational flexibility means the ability of an organization to take responding measures toward changes in the internal and external environments. Its core content focuses on the adaptability, pliability and responsiveness of an organization toward environmental changes. In an organization or enterprise, workers can be divided into two types, core workers and periphery workers, according to the characteristics of their production activities. Core workers are those who possess professional knowledge or skills required in the business operation. Not easily replaceable, they are directly involved in key operational activities. The major task of periphery workers is to assist core workers in achieving each operation procedure. Usually, the periphery/non-core does not possess skills or competences as professional as core workers. These two types of workers can complement each other and, by using both types of workers, enterprises can achieve the best combination of human resources.

There are many policies to increase organizational flexibility, such as human resource outsourcing, internal human resource adjustment, working hour adjustment, fixed-term

contract, part-time worker employment, labor dispatching and many others. Broadly speaking, all the employment relations other than full-time or continuous ones can be categorized into atypical employment. Kalleberg indicated atypical employment was different from the traditional one in forms [8]. The so-called typical employment refers to full-time employment, ensured employment continuity, completion of tasks within the employer's organization and acceptance of commands and monitoring from the employer. Anne pointed that atypical employment is different from traditional employment in four characteristics, including types of employment contract, locations, working hours, and regularity of working schedules [9].

Axel divides atypical employment into two types: (1) atypical workforce directly employed by the enterprise according to its own needs, and (2) atypical workforce obtained through human resource dispatching companies or manpower agents [10]. Workers of the first type can be subdivided into temporary workers of short-term assignments, on-call workers, part-time workers and independent workers. Those of the second type can be subdivided into temporary service workers and leased employees. There are several different categorizations of atypical employment. In this study, the discussion is limited to the three most frequently mentioned types of atypical employees, including fixed-term contract workers, part-timers and dispatched workers.

According to Segal & Sullivan [11], the reasons for enterprises to use contingent workers include temporary increases of business, manpower requirements for short-term projects, substitution for absent regular employees, reduction of labor costs, and lack of personnel with certain types of special competences, etc. In the survey by Huang and Chen (2005) on a BOT project of a large manufacturer in Taiwan, it is found that, among the 817 engineers in the project, 60% were fixed-term contract workers, accounting for a rather high ratio of contingent workforce [7]. In addition, as found in their research, fixed-term contract engineers are characterized by high turnover rates and low recognition of the organization, which might draw a negative influence on the enterprise's accumulation of know-how. They also found that these companies actually achieved the reduction of costs and operational pressure by adopting fixed-term contract employment. However, the fixed-term employees in their study indicated they did not work as contingent workforce out of their will and most of them were worried that the fixed-term contract employment would become a trend in the industry.

3. Current situation of atypical employment by Taiwan's contractors and reasons

3.1 Sample data analysis

The subjects in this study are directors or high-ranking managers of human resource departments of general contractors. In education background, 88.3% of them are graduates from colleges and above. 54% of them graduated from departments related to civil engineering or architecture, while 37.9% graduated from management-related departments. Only one of them has education background directly related to human resource management, which indicates the lack of professionalism in human resource management among the contractors in Taiwan.

As indicated in Table 1, among the 103 contractors, 10% are listed or OTC companies. According to related statistics [12], in 80% of the contractors in Taiwan, the employee size is less than 20, and there are less than 50 contractors with an employee size of more than

100. Among them, the one with the largest total sales is even excluded in the list of ENR Top 400 contractors, indicating that Taiwan's contractors are generally small in scale. Even though this study focuses on grade-A contractors in Taiwan already, 68.9% of them still have an employee size of less than 20 only. Seeing the large differences in company scale which might cause higher standard deviations, this study also includes the median of each item in addition to the average in Table 1.

Table 1. Analysis of Basic Information of the Investigated Contractors

Analysis Data		Sample Size	Ratio (%)	Range	Mean	Median	Standard Deviation
Company Scale (Employee Size)	□20	71	31.1	-	-	28	193.1
	< 20	32	68.9				
Total Revenue Last Year (in billion NT dollars)	□0.5	56	54.4				4.82
	0.6~1	20	19.4	0.35~30	2.14	0.41	
	> 1	27	26.2				
After-tax profit rate last year (%)		-	-	-3~20	4.3	3.1	4.0
Total Number of Employees	Typical Employment	-	-	3~1,100	71.1	21	146.6
	Atypical Employment	-	-	0~250	25.3	1.0	37.8
Employee Productivity (in NT\$1,000)		-	-	6,250~62,500	17,950	13,790	13,266

Note: Based on the exchange rate of US\$1 against NT\$32.82 on Nov. 30th, 2006

As indicated in Table 1, the median of total sales of these contractors is NT\$410 millions. 54.4% of the contractors each had total sales of less than NT\$500 millions last year. In employee productivity (total sales divided by the total employee number), most of the contractors have an employee productivity capacity of NT\$ 10 to 20 millions (per employee/per year). The employee productivity average of the contractors reaches NT\$17.95 millions per employee each year with the highest productive capacity of NT\$ 62.50 millions and the lowest of NT\$6.25 millions. In profitability, the highest after-tax profit rate of the contractors is 20% while the lowest is -3%. Last year, 87% of the contractors gained profits, 9% broke even and only 4% were in the red. Generally speaking, the profit rate of 70% of the contractors each is lower than 5%, indicating the contractor in Taiwan earns narrow margin of profit.

3.2 Analysis of current use of atypical employment by Taiwan's contractors

In Taiwan, as in most developed countries, subcontracting is prevalent, which is to say that it is the role of general contractors to manage the project, rather than execute the assembly of a variety of work items. The core project team members of the general contractor are mainly composed of engineers and some clerical staff. Technical workers are not included in this survey since most of Taiwan's contractors acquire resource by subcontracting. Based on the questionnaire survey in this study, 40.8% of the contractors once used atypical employment within the past three years while 59.2% never used it. Among the respondents, 33% has ever used fixed-term contract engineers, which is the most common means among Taiwan's contractors to enhance their workforce flexibility. 14.6% and 13.6% of the contractors used dispatched workers and part-timers respectively to achieve higher human resource flexibility.

This study also analyzes the major positions within the contractors in order to know the use of atypical employees or outsourced workers for each position (see Table 2). The study finds that the contractors had used atypical employment workers, mostly fixed-term contract workers, for all the positions analyzed in this study. The position for which atypical employment is most frequently used is administration and general affair personnel (24.1%), followed by plotting personnel (23.5%), and field superintendent (16.5%). The ratio of using dispatched workers is relatively low currently. However, according to the interviews with five contractors, some of them have started to use dispatched workers for positions of plotting, E&M engineering, and safety engineering. Part-timers are mostly used for positions of administration and general affairs, plotting and E&M engineering. Outsourced workers or teams are mostly used for positions of plotting, estimation, and E&M engineering.

From the general analysis, it is found that the contractors would use atypical employees the least for such positions as site managers, engineering managers, financial and accounting personnel, cashier analysis personnel, and procurement. This finding is in accord with that of Axel's study [10] which indicates atypical employment workers tend to take non-core positions. This finding also indicates that, in order to maintain their competitiveness, the contractor tends to place typical-employment workers for core positions.

Table 2. Ratios of Atypical Employees or Outsourced Activities for Different Positions of the Contractor

Work/Position	Fixed-term Contract Employee (%)	Dispatched Worker (%)	Part-time Worker (%)	Outsourced Worker (%)
Plotting personnel	23.5	5.3	5.2	27.8
Procurement personnel	1.0	0	0	8.1
Estimator	7.5	2.1	1.0	25.7
Field superintendent	16.5	4.1	0	2.1
E&M engineer	9.3	4.5	3.1	23.7
Safety engineer	14.3	4.3	1.0	2.1
QC engineer	10.3	4.4	1.0	2.1
Construction site manager	8.5	1.0	0	1.0
Manager in Engineering Dep.	4.5	2.3	0	0
Administration and general affairs personnel	24.1	0	6.1	0
Salesperson	7.2	1.0	2.1	4.1
Financial and accounting personnel	1.0	0	1.0	5.3
Cashier analysis personnel	2.1	0	0	2.1

3.3 Factors for the contractors to use atypical employment

To further understand the factors the contractors have considered in deciding whether or not to use atypical employment, this study also inquires the contractors of the major reasons or factors for them to adopt atypical employment. As showed in Table 3, the three major factors for the contractors to use atypical employment are reduction of total personnel costs, manpower demands of temporary or seasonal business expansions, and

streamlining of personnel. This finding is consistent with that of Segal & Sullivan[11]. The fourth major factor is acquisition of professional techniques, accounting for 30.1%, followed by difficulty in hiring regular employees, no need for regular employees for certain assignments, finding regular employee candidates, substitution for on-leave regular employees.

Table 3. Factors for the Contractor to Use Atypical Employment

Ranking	Factor	Selected Times	Ratio (%)
1	Reduction of total personnel costs	48	48.2
2	Manpower demands of temporary or seasonal business expansion	47	45.8
3	Personnel streamlining	42	42.2
4	Acquisition of professional techniques	31	30.1
5	Difficulty in hiring regular employees	24	23.3
6	No need for regular employees for certain assignments	17	16.5
7	Finding candidates for regular employees	15	14.6
8	Substitution for on-leave regular employees	4	3.9

[Note: The respondents were allowed to choose more than one options.]

4. Impacts of atypical employment in construction and future development

4.1 Impacts of atypical employment on Taiwan's contractors

Based on past research, the questionnaire survey is designed to analyze the impacts of atypical employment on the industry. Table 4 lists the positive and negative influences of atypical employment perceived by the contractors. Table 5 indicates the advantages and disadvantages of atypical employment for the contractors in the short term and long term.

Table 4. Analysis of the Influences of Atypical Employment for the Contractor

	Ranking	Influences	Mean	Standard Deviation
Positive Influences	1	Enhancing human resource flexibility	3.85	0.578
	2	Reducing labor costs	3.73	0.670
	3	Increasing employment opportunities	3.56	0.639
	4	Stimulating regular employees to improve their competences	3.30	0.837
	5	Enhancing productivity	3.22	0.772
Negative Influences	1	Difficulty in the accumulation of know-how and experiences	3.83	0.578
	2	Low recognition of the company among atypical employees	3.78	0.772
	3	Lack of loyalty among atypical employees	3.74	0.683
	4	Higher possibility of business secret leakage	3.70	0.805
	5	Possible negative influences on corporate competences by a high ratio of contract workers	3.61	0.733
	6	Increasing the turnover rate	3.37	0.831
	7	Reducing loyalty among regular employees	3.21	0.961

Table 4 lists the questionnaire results using the five-point Likert-type scale. When answering the questionnaire, the respondents are required to choose one out of five options from “strongly disagree” (one point) to “strongly agree” (five points) to the statement in each question. Higher points indicate more agreement of the respondents with the statement. Table 4 only lists the statements with which the respondents generally agree, i.e. statements with an average score of more than three. The respondent contractors generally agree that the major positive influences of atypical employment are enhancing human resource flexibility, reducing labor costs, and increasing employment opportunities. These influences are all economic-oriented. The first two can help ease operational pressure of the contractors while the last one can achieve contributions to the society by reducing the unemployment population. In fact, there are several contractors who select candidates for regular employment out of atypical employees. In these cases, atypical employment is regarded as an alternative source of manpower. In addition, atypical employment can provide stimulating competition for typical employment workers and may help boost the employee productivity as a whole in the end.

The possible negative influences are also ranked in Table 4. Even though the respondent contractors generally agree that atypical employment can bring some economic benefits, they also agree this employment model can cause negative influences such as low recognition of the company among atypical employees, lack of loyalty and high turnover rates. These problems might impair the accumulation of experiences and know-how of the contractor.

Table 5. Influences of Atypical Employment for the Contractors in the Short Term and Long Term

Short-term (within 3 years)		Long-term (over five years)	
Overall Influence	Ratio (%)	Overall Influence	Ratio (%)
Significantly more good than bad (>10%)	3.0	Significantly more good than bad (>10%)	4.9
Fairly more good than bad (5~10%)	19.8	Fairly more good than bad (5~10%)	11.9
Slightly more good than bad (<5%)	13.9	Slightly more good than bad (<5%)	11.9
No difference	27.7	No difference	17.8
Slightly more bad than good (<5%)	20.8	Slightly more bad than good (<5%)	22.8
Fairly more bad than good (5~10%)	6.9	Fairly more bad than good (5~10%)	21.8
Significantly more bad than good (>10%)	7.9	Significantly more bad than good (>10%)	8.9

For a company or an industry of sustainable development, it is worthy of further exploration on the tradeoff between the advantages and disadvantages of atypical employment in different stages of development. Therefore, this study further inquires the contractors of the advantages and disadvantages of atypical employment in both short term and long term. According to Table 5 which lists the results, the contractor generally thinks there is no significant difference between the advantages and disadvantages of atypical employment in the short term (within three years, approximately the length of a mid-sized or large-sized construction project). Totally 35.6% of them think atypical employment can bring more advantages than disadvantages, 36.7% think the opposite while 27.7% think

atypical employment can bring equal advantages and disadvantages. However, in the long term (over five years), there is a significant difference in their opinions. Totally 28.7% of the contractors think atypical employment is more advantageous than disadvantageous in the long term while as many as 53.5% of them hold the opposite opinion. This finding indicates many of the contractors remain doubtful about atypical employment for long-term development.

4.2 Future trends of atypical employment

To further explore the future trends of atypical employment application in Taiwan's construction industry, this study inquires the contractors about their future use of atypical employment in the coming three years. Table 6 lists results of the respondents who are further divided into those who once used atypical employment and those who never used it. Generally, nearly half of the contractors indicate they will maintain their adoption of atypical employment in the near three years. As indicated in Table 6, the contractors will tend to use more fixed-term contract workers and dispatched workers and use less part-time workers. The use of fixed-term contract workers is rather popular among Taiwan's contractors. For example, 33% of the answering contractors in this study have used this type of atypical workforce. It has become an option of human resource strategies in Taiwan's construction industry.

Table 6. Use of Atypical Employment of Contractors in the Coming Three Years

Future use of atypical employment		Total respondents (n=103)		Contractors who have used atypical employment (n=42)		Contractors who have never used atypical employment (n=61)	
		Sample Size	Ratio (%)	Sample Size	Ratio (%)	Sample Size	Ratio (%)
Fixed-term contract workers	The same as present	55	53.4	20	47.6	35	57.4
	Increase	33	32.0	14	33.3	19	31.1
	Decrease	15	14.6	8	19.1	7	11.5
Part-time workers	The same as present	53	51.5	22	52.4	31	50.8
	Increase	22	21.4	8	19.0	14	23.0
	Decrease	28	27.1	12	28.6	16	26.2
Dispatched Workers	The same as present	56	54.4	20	47.6	36	59.0
	Increase	28	27.2	13	30.9	15	24.6
	Decrease	19	18.4	9	21.5	10	16.4

When winning tenders for large construction projects, the generally small-scale contractors in Taiwan tend to appeal to this strategy in response to the fluctuation of manpower

demand. Therefore, more than 30% of the 103 contractors are considering using more contract workers in the coming three years. Human resource dispatching has also become rather popular in many industries in Taiwan for the past years. There are also relevant legal regulations being made currently. Some of the large-sized contractors have started to use dispatched workers in present and the development of labor dispatching market still requires further observations. The use of part-time workers might cause difficulties in task handover between new and leaving workers; therefore, the contractors are less likely to use part-time workers.

5. Conclusion and suggestion

In this study, it is found that, facing pressure from fierce competition, 40.8% of the contractors in this study have already attempted to enhance their human resource flexibility by adopting atypical employees, particularly fixed-term contract workers. In addition, the use of atypical employment is gaining popularity among general contractors and may become a common practice in the future. This study also finds that, in the short term, atypical employment can bring benefits of reducing labor costs and preventing the necessity of handling a large number of redundant employees after the end of a construction project. Therefore, most of the contractors in this study find atypical employment more advantageous in short terms. However, in the long term, if an enterprise is over dependent on atypical workforce, its know-how accumulation and corporate culture development will be impaired to a certain degree.

If atypical employment has become an irreversible trend, it is suggested that enterprises should regard it as a human resource management strategy and then develop a set of suitable management policies in order to ensure sustainable operation. These policies should at least cover issues such as which positions are suitable for atypical employees, how many atypical employees should be hired to achieve higher efficiency, and how to manage different forms of atypical employment.

If the trend of atypical continues, it will possibly become a kind of 'typical' employment in the future. Facing this possible development, employees should think more about how to acquire or enhance their competences which will make them qualified for long-term employment. Workers with stronger competences can take core positions or become well-paid atypical employees. Those with weaker competences may have to change jobs frequently with unstable and comparatively low salaries. In addition, as they become older, they are more likely to become unemployed. "People are the most important asset of enterprises." is a concept repeatedly highlighted in human resource management textbooks. To be more precise, this saying should be rephrased into "People with competences are the most important asset of enterprise." In the current era full of changes and competition, enterprise closure, layoff and atypical employment have become something common and frequent. To ensure survival, employees should focus more on how to develop and enhance their own competences.

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