Earning while Learning: Part-Time Work during Term-Time

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Abstract

The increase of tuition costs and the decrease of governmental and family supports, combined with the changes in student's lifestyle and consumption preferences have forced many full-time students not only to take parttime jobs, but also to work longer hours. Today, working while enrolled has become a fundamental responsibility for many undergraduate students, and it is thus important for higher education institutions to ensure that students work safely and meaningfully and to help them to benefit academically, financially, and socially. This research thus endeavored to determine the major determinant perceived by students for term-time employment selection, to calculate the relative importance of each determinant, and to examine the benefits and detriments of different types of term-time employments. A self-developed questionnaire was administered to 250 college students. The results were utilized as a guide for students' career selection and for educational policy development.

Keywords: part-time work, higher education, education finance

1 Introduction

The increase of tuition costs, the decrease of governmental and family supports, and the changes in students' lifestyle and consumption preferences have forced many full-time students to take part-time jobs (Beerkens, Magi, & Lill, 2011; Christou & Haliassos, 2006; Little, 2002; Moreau & Leathwood, 2006). Having quoted from National Center for Education Statistics, Perna (2010) lamented that 45% of the U.S. traditional undergraduates had full-time work while enrolled, and 85% of undergraduates engaged in paid work. In addition, compared to earlier decades, not only are there more students are engaged in term-time jobs, but they also work longer hours (Beerkens et al., 2011; Hall, 2010). Today, working seems to be a fundamental responsibility for many undergraduates, and therefore, it is of great importance for higher educational institutions to ensure that students work safely and meaningfully and to help them to gain greatly from their working experiences (Richardson, Evans, & Gbadamosi, 2009; Smith, Clegg, Lawrence, & Todd, 2007).

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Although Beerkens et al. (2011) suggest that term-time employment seem to have only a marginal negative effect on students' academic progress, most scholars hold nearly opposite opinions. Hakkinen (2006) asserts that working while enrolled in a university often impairs students' academic achievement, which in turn, leads to longer times to get degree. This finding is consistent with Salamonson, Everett, Koch, Andrew and Davidson's (2012) research results that the duration of term-time paid work engagement has a negative impact on students' academic outcomes. The research results of Callender (2008) and Richardson et al. (2009) also reveal that term-time employment had a detrimental effect on students' academic grades.

Cheng and Alcantara (2007) further assert that doing paid work when enrolled not only damages students' academic achievements, but also their free time, sleep and socialization with peers. Laberge et al. (2011) examine the work-related fatigue in students with school-year employment. The results indicate that higher exposure to physical work is associated with higher levels of acute fatigue, and holding multiple jobs with higher levels of chronic fatigue, which in turn damages students' school achievements. The interview results of Moreau and Leathwood (2006) also show that in order to work longer hours, students curtailed their social life at many stages, and thus, they do not get to know other students easily.

Moreover, Smith, Gorski, Hagmann, and Qakley (2002) lament that although part-time employment can have some benefits for the development of students, the potential for serious injury and illness must be recognized. Miller, Handelman, and Lewis (2007) argue that young workers are often exposed to the same occupational risks as adult workers. Since they are new to the work environment, and often have less cognitive abilities, physical coordination and maturity, they are at greater risk of injury than their adult counterparts. McCloskey (2008) and Schulte, Carol, Okun, Palassis, and Biddle (2005) confirm that young workers experience the highest rates of occupational injuries and fatality, especially for those who are currently

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studying at schools. Therefore, it is important for schools to incorporate occupational safety and health information into their curriculum to raise students' safety awareness, and by doing this, provide a mechanism for reducing occupational injuries among term-time workers.

However, some scholars believe that term-time employment is not all that detrimental. Derous and Ryan (2008) and Hodgson and Spours (2001) both point out that although out-of-school employment in general has negative impacts on undergraduates' academic outcomes, it may be beneficial to students' academic outcomes if the job is relevant for their academic study and if it is performed in a balanced, autonomous way. Light (2001) and Molitor and Leigh (2005) further suggest that work-study experiences are positively related to post school earnings. Their suggestions are consistent with Hakkinen's (2006) findings that term-time work experience increases earning greatly one year after graduation, but this effect becomes smaller in later years.

In addition to the aforementioned fiscal advantages, students may also gain higher self-confidence and understanding of the business world by engaging in paid works, and most importantly, they may learn practical skills from their hands-on working experiences (Salamonson et al., 2012).

Benefits and detriments of term-time employment vary depending on the hours of work they do. The more hours they work, the greater the negative effect (Callender, 2008). Moreover, it is not only the number of hours but also the type of work that matters. Students who take off-campus jobs seem to be affected more negatively when compared to those taking on-campus jobs. On-campus employment may allow students to have more contacts with faculty and peers so as to enhance their integration into college life, while off-campus employment removes students physically from campus, and thus lead to negative impacts (Beerkens et al., 2011; Cheng & Alcantara, 2007; Ehrenberg, 1987). Economic returns to term-time work also vary by type of schools students go. Molitor and Leigh (2005) found that school and work are more complementary for twoyear community colleges than for four-year colleges. Finally, although McKechnie, Hobbs, Simpson, Anderson, Howieson, and Semple (2010) claim that students can learn employable and marketable skills from term-time employment, Howieson, McKenchnie, and Semple (2012) and Shepherd (1998) bear a contradictory opinion by arguing that most work experience is still largely about work, and that many working students do not have the opportunity to reflect on their acquisition of skills unless the work is autonomous and academic related. Hence, it is important to ensure that students select the "right" jobs.

Why do students work? Most students work mainly to

cover the costs of college, while some use employment as a way to explore career options (Hall, 2012; Little, 2002), and the others perceive work as a part of their identity (Perna, 2010). Cheng and Alcantara (2007) further suggest that students are motivated to work because they are provided with greater opportunities to interact and network with people in the workplace, which in turn enhance their opportunity to gain insights into the job market, and thus are more employable upon graduation. Wang, Kong, Shan, and Vong (2010) argue that the five most common incentives for term-time employment are financial necessity, peer influence, acquiring working experience, boredom, and sustaining a lifestyle, and their research results further suggest that incentives to work have the most significant effects on students' academic performance.

Building on the existing studies on college student term-time employment, this research was designed to answer the following research questions:

- 1. What are the major determinants perceived by students for term-time employment selection?
- 2. What are the relative degrees of importance of each determinant?
- 3. What are the major benefits and detriments of different types of term-time employment?

2 Methodology

2.1 The Analytic Hierarchy Process

The Analytic Hierarchy Process (AHP) was adopted in this research as the main instrument for measuring the relative importance of the determinants of term-time job selection. The fundamental mechanism of AHP is to break down a big problem into several smaller ones. These smaller problems are more easily solved, and also elucidate the subordinate relationships between each of the attributes being examined. The attributes are organized into a hierarchical structure with the primary goal at the highest level. The second level consists of all the secondary goals that together contribute to accomplishing the primary goal. In turn, each secondary goal is fabricated by the attributes on the next lower level, and so forth. The AHP permits several benefits: it helps to elicit opinions from experts; it allocates weights to each element; it validates the consistency of the ratings; and it can easily be combined with other techniques to perform further analysis (Saaty & Vargas, 1994). We selected AHP as the main research tool because it is the best method for calculating the relative weight (importance) of the determinants being studied in this research.

Thereafter, the relative weights of the attributes are obtained by comparing them in pairs of verbal judgments. A positive reciprocal matrix is utilized to calculate the relative weights of each attribute. The formula used in this research was as follows: where a_{ij} represents the element located in row i and column j of the positive reciprocal matrix, and a_{kj} represents the element located in row k of any normalized column j.

$$A = [a_{ij}] \begin{bmatrix} 1 & a_{12} & \dots & a_{1m} \\ a_{21} & 1 & \dots & a_{2m} \\ \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & 1 \end{bmatrix}$$
$$\begin{bmatrix} 1 & w_1/w_2 & \dots & w_1/w_n \\ w_2/w_1 & 1 & \dots & w_2/w_n \\ \vdots & & \ddots & \vdots \\ w_n/w_2 & w_n/w_2 & \dots & 1 \end{bmatrix}$$

The weight is: Wi = 1/m
$$\sum_{j=1}^{m} \frac{a_{ij}}{\sum_{k=1}^{m} a_{kj}}$$

Next, an eigenvector λ_{max} is used to assess the consistency of the structure. A CR < .1 indicates consistency of the AHP answers. The formula used in this research was as follows:

$$\mathbf{A} \times \mathbf{K} = \begin{bmatrix} 1 & a_{12} & \dots & a_{1m} \\ a_{21} & 1 & \dots & a_{2m} \\ \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & 1 \end{bmatrix} \times \begin{bmatrix} w_1 \\ w_2 \\ \vdots \\ w_m \end{bmatrix} = \begin{bmatrix} w'_1 \\ w'_2 \\ \vdots \\ w'_m \end{bmatrix}$$

$$\lambda_{\text{max}} = \left(\frac{1}{m}\right) \times \left(\frac{\mathbf{w'}_{1}}{\mathbf{w}_{1}} + \frac{\mathbf{w'}_{2}}{\mathbf{w}_{2}} + \frac{\mathbf{w'}_{m}}{\mathbf{w}_{m}}\right)$$

$$CI = \frac{\lambda_{\text{max}} - m}{m - 1} \qquad CR = \frac{CI}{RI}$$

Then, we categorize determinant factors into two broad categories: Benefits Pursuit and Detriment Avoidance. These two categories formed the basis of the questionnaire for this study. In Figure 1, the main *goal*, located at the topmost level (on the far left), is to select the best termtime job; the second level of the hierarchy consists of the two major dimensions: Benefit Pursuit and Detriment Avoidance; and the third level consists of the eight determinants of term-time employment selection.

2.2 Correspondence Analysis

Correspondence analysis (CA) is a highly useful descriptive statistical technique to visualize categorical data which displays relationships among the attributes of variables. CA technique commonly transforms a table of numerical information into a two-dimensional graphical display or perceptual map, in which each roll and each column is shown as a point. The use of correspondence analysis and perceptual mapping techniques can identify patterns of results and can reveal possible options for policy decisions (Allen, Thom, & Buckner, 2010; Greenacire & Blasius, 1994). Chi-square statistic is a measure of the discrepancy between the observed and expected frequencies. CA uses the chi-square statistic to measure

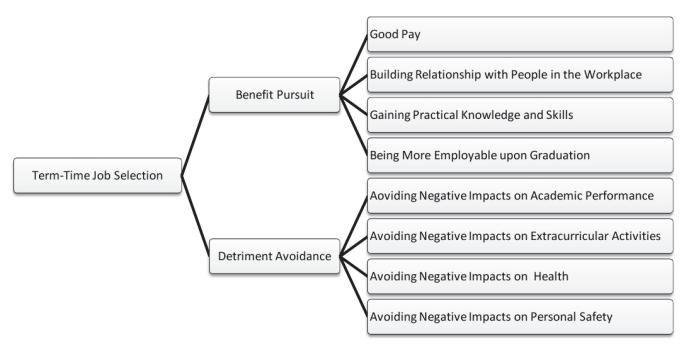


Figure 1 hierarchy structure

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the distance between points on the perceptual map, and a *p*-value smaller than .05 indicates that the total inertia is significantly different from zero, and thus the hypothesis is plausible (Habib, Etesam, Ghoddusifar, & Mohajeri, 2012). To perform the correspondence analysis in this research, we created a cross-table with row corresponds to the eight determinants of term-time employment selection, and the column corresponds to the 7 types of term-time employment.

2.3 Design of the Questionnaire

A self-developed questionnaire was used to explore college students' motivations for term-time employment, perceptions regarding relative importance of determinants of job selection, and benefits and detriments of different job types. The questionnaire contained four parts. The first part consisted of questions about the participant's demographical information; the second 13 pairs of questions for AHP analysis; the third 8 questions with answers on a five-point Likert scale, and was designed to measure the impacts of term-time jobs. The fourth part consisted of a cross table of the eight types of employment and the eight determinant factors. The participants were asked to place a check mark next to each type of employment.

2.4 Research Participants

College students were targeted as the research participants for this study. The sampling method employed was mainly purposive. As suggested by Tudd, Smith and Kidder (1991), probability sampling may be more representative, but the advantages of non-probability sampling, convenience and economy, may outweigh those of probability sampling due to practical constrains. Hence, purposive sampling was adopted in this research because of the expected low return rate and the similarity of student bodies among different universities. Moreover, the purposive sampling can identify students with ideal characteristics for this study. A self-administered questionnaire was sent to 250 college students at National Chiayi University in Taiwan. A total of 246 questionnaires were returned. Of which, 159 (64.6%) reported to have term-time work experiences. We decided to use only those with term-time work experiences for the forthcoming analyses. Of the 159 questionnaires, 137 were valid and hence used to carry out the AHP and Correspondence Analyses.

3 Research Results

3.1 Participants' Demographic Characteristics

The sample consisted of 137 students, 56 (41%) male and 81 (59%) female. 54 (39%) students came from social science field, 25 (18%) engineering, 47 (34%) agricultural, and 11 (8%) business. 24 (19%) students came from financially disadvantaged families, 103 (74%) moderate prosperity families, and 10 (6%) richer families.

About 70% of students with working experiences engaged in off-campus laboring jobs (30%), followed by private tutoring or serving as cram school teachers (26%), on-campus laborers (14%), on-campus administrative workers (13%), and the rest 13% students worked for off-campus community services, off-campus administrative jobs, as on-campus teaching assistants and/or professors' research assistants.

Most students worked less than 10 hours per week: 47 (34%) 1-5 hours, 45 (33%) 6-10 hours, 7 (5%) 11-15 hours, and 38 (28%) more than 16 hours. The average monthly income earned was NT\$8,545 (US\$285), slightly higher than their monthly expenditure of NT\$5,815 (US\$194). The biggest amount of their income went to basic living expenditures (36.9%), followed by savings and investments (24.1%), and entertainment activities (23.0%).

3.2 The Relative Weight of the Factors

AHP was adopted as the main method for calculating relative weights of each determinant of job selection. The results for the second level of the AHP analysis (Table 1) showed that the participants deemed the dimension of Benefits Pursuit (.638) to be more important than the dimension of Risk Avoidance (.362).

The results for the third level (Table 2) showed that Gaining Practical Knowledge and Skills (.222) was considered to be the most important factor. It was followed by, in descending order, Beneficial to Future Employment (.178); Avoiding Health Detriment (.139); Earning Money (.130); Building Good Relationships (.109); Avoiding Safety Detriment (.095); Avoiding Academic Outcome Detriment (.086); and Avoiding Leisure Time Detriment (.041).

3.3 Students' Perceptions of the Effects of Term-Time Employment

What do students think about their employment

Table 1 Weights of the Two Dimensions

Major Goal	Dimension	Weight	Order
Chaiga of Employment	Benefits Pursuit	.638	(1)
Choice of Employment	Detriment Avoidance	.362	(2)

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Table 2 Weights of the Eight Determinant Factors

Major Goal	Dim.	CR	Determinant Factor	Weight	Order
Choice of Employment	Benefit Pursuit		Good Pay	.130	(4)
		002	Building Relationships	.109	(5)
		.003	Gain Practical Knowledge and Skills	.222	(1)
			Beneficial to Future Employment	.178	(2)
	Risk Avoiding .		Avoiding Academic Outcome Detriment	.086	(7)
		005	Avoiding extracurricular Activity Detriment	.041	(8)
		.005	Avoiding Health Detriment	.139	(3)
			Avoiding Safety Detriment	.095	(6)

experiences? Students revealed that they learned a great deal of practical knowledge and skills (4.04), and they also believed that their working experience was beneficial to future employment (3.55), and by engaging in term-time works, they successfully expanded their relationships with people in the workplace(3.49). Moreover, while they admitted that their term-time work was detrimental to their extracurricular activities (3.01), they tended to ignore or paid less attention to the other possible detriments being examined in this study, and this was especially true for their work-related safety concerns (1.99). see Table 3.

3.4 Results of the Correspondence Analysis

The next step was to use correspondence analysis (CA) to produce a perceptual map displaying the relative positioning of each of the employment type. The data obtained from the fourth part of the questionnaire was used to calculate each employment's total score for each determinant (each check counts for one point). Then CA was applied to these scores to create the perceptual map (Figure 2).

The x^2 of 415.332 and the p value of .000 indicated that the perceptual map created by CA was feasible. In the perceptual map it can be seen that the determinant factors

and employment types roughly form into four groups. The map shows that On-campus RA and TA, On-campus Administrative Job, Cooperative Educational Work, and Off-campus Tutoring had the highest rating on Employment Preparation and Learning Practical Skills. The Off-campus Labor had the most bearing on Health Detriment, Safety Detriment, and Academic Detriment. Off-campus Administrative Job, On-Campus Labor were closer to Activity Detriment. Community Service was very different from all the other jobs, and was highly rated for Expanding Relationships with People in the Workplace. Finally, On-Campus Laboring Jobs, and Off-Campus Administrative Jobs did not show strong relationships with any of the eight determinants.

4 Conclusion

This research endeavored to determine the major determinants perceived by students for term-time employment selection, to calculate the relative importance of each determinant, and to investigate the benefits and detriments of different types of term-time employments.

The demographic results of this research indicated that approximately 64% of college students engaged in

Table 3 Term-Time Work Related Benefits and Detriment Perceived by Students

Benefits or Detriment	Average	STD
1. Good Pay	3.05	.84
2. Expand Relationships with People in Workplace	3.49	.78
3. Gain Practical Knowledge and Skills	4.04	.62
4. Beneficial to Future Employment	3.55	.83
5. Negative Impacts on Academic Outcomes	2.38	.96
6. Negative Impacts on Extracurricular Activities	3.01	.95
7. Negative Impacts on Health	2.35	.86
8. Negative Impacts on Occupational Safety	1.99	.84

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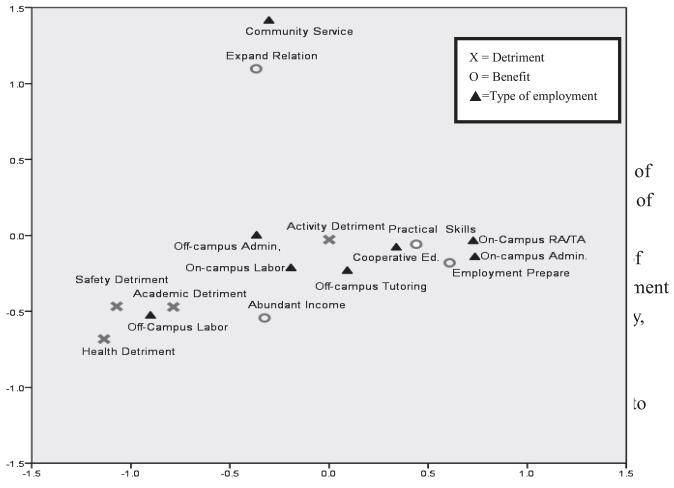


Figure 2 Positioning Map of Determinant Factors and Employment Types

term-time employments. Although term-time employment may inhibit detriments, they can be beneficial to students financially, academically, and socially if performed adequately. Since more students than ever engage in term-time employment, higher education institutions should consider term-time employment an educational purposeful activity, and to develop adequate policies to help students benefit from their working experiences.

The AHP results of this research revealed that students, when selecting jobs,

Thought mainly of gaining more benefits while they often failed to pay a commensurate consideration to the possible detriments. This is especially true for the occupation safety issues. However, the common young worker fatalities in diverse employments show that there are obvious risks and dangers, and students should thus recognize that safety is of utmost importance when performing their works. Since students are often unaware whether a job is dangerous or not, higher education institutions have to take the lead in protecting their student from work-related injuries and fatalities. Schools should try their best to remind students of their personal safety

issues, and they may also co-operate with off-campus employers to create a safer working environments to protect their students from occupational accidents. Moreover, incorporating occupational safety and health information into their curriculum may thus help to raise safety awareness among the students of job selection.

Another important result drawn from the AHP analyses was that students, when selecting their term-time jobs, paid highest attention to Learning Practical Knowledge and Skills, with less to Avoiding Academic Achievement Detriments. Some might blame students for not studying hard or ignoring their academic responsibilities, and make a prompt conclusion that higher education institutions should have strict regulations in place to force students to study harder. Nevertheless, it is much more important that we reflect this problem in the curriculum. The absence of practical courses could be the main factors pushing individual students to make the decision to gain skills off-campus. To address this problem, universities are required to add hands-on skills to their curriculum.

Finally, the perceptual map generated by the results of CA provides students with specific research-based

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guidelines for choosing a term-time job in a timely manner and can be used by universities to develop a sound termtime employment policy. According to the perceptual map, students perceived the On-campus Administrative Jobs, On-campus RA/TA Jobs, School Directed Cooperative Educational Jobs, and Off-Campus Tutoring Jobs to be strongly associated with the benefits of Learning Practical Skills and Future Employment Prospects, while Off-campus Laboring Jobs was relatively closer to Academic Detriment, Safety Detriment, and Health Detriment. Given the aforementioned results, it is obvious that the four former term-time jobs are strongly related with a variety of benefits and are much more preferred than Off-Campus Laboring Jobs. Unfortunately, the demographic characteristics results of this study showed that the majority of the students were engaged in less preferred off-campus laboring jobs, while only a few students employed in on-campus jobs.

This miserable reality may be attributed to the severe shortages of on-campus job opportunities across most of the universities in Taiwan, which have forced students to take off-campus work with low levels of skills. Hence, universities may consider creating more on-campus work opportunities to accommodate more students. In addition, strengthening university's career counseling platform not only can help establish links between prospective employers and students who seek term-time works, but ensure students working in an employment that makes use of their education and skills.

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