MANAGERS' PREFERENCES FOR QUALIFICATIONS OF NEW GRADUATES IN LOGISTICS

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ABSTRACT

The purpose of this paper is to address logisticians' qualifications compared to employers' preferences. The use of seven determinants in this study is based on Service Performance Units (SPU). The five domains are Reliability, Rates, Resources, Risk Avoidance, and Responsiveness. The support framework is based on the Thai Qualifications Framework (TQF). The TQF five key attributes are: 1) Development of Morals and Morality (Behavioral Ethics), 2) Knowledge and Ability Skill, 3) Ingenious and Intellectual Skill, 4) Interpersonal Relation with Task Responsibility, and 5) Analytical Decision Making and Communication (Information Technology Application Skill). Mixed methods are employed with both qualitative and quantitative methodologies. First, the attributes of qualified logisticians were reviewed. Second, the hired logisticians' attributes as perceived by employers' were obtained by face-to-face interviews and questionnaires, to investigate all related attributes of the new graduates. The research used exploratory and face-to-face interviews with 20 management level exhibitors at the Thailand Logistic Fair 2012 (TILOG2012) to verify the research tool. The research survey was conducted on 42 samples by the random sampling method, from 20 initial and 22 subsequent survey respondents through 60 questionnaires via the Thailand International Freight Forwarder Association (TIFFA) and responses received from its members. To prove the research tool was without acquiescence bias, the test of normality is presented in the demographic part of this report. Data was analyzed by means of standard deviation, correlation, and coefficients of regression. Findings are presented using four method facets (Mean, Alpha, Model Summary, and Predictors in Multiple Regressions) with results in two groups: all logisticians in all fields of service, and only 3rd party logistics (3PL) in transport.

This survey leads to confirmatory factors in building up an examined research tool in the new area of employers' preferences perspective in logistics service and transport sectors. This study contributes to academicians and lecturers consideration to redesigning the teaching-learning courses, as well as the managers' requirement of desirable attributes from new graduates as new trainees' qualifications.

Keywords: *Employers, International Transport, Logistician Attributes, New Graduates*

บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ในการศึกษาความสัมพันธ์ในคุณลักษณะพึงจำเป็นของนักโลจิสติกส์ในอุตสาหกรรมโลจิส-ติกส์และสาขาบริการขนส่งระหว่างประเทศในประเทศไทย จากมุมมองตามความเห็นของผู้ใช้บัณฑิต โดยใช้ 7 ปัจจัยเป็นส่วนขยายงานของ หน่วยวัดบริการประสิทธิภาพการทำงาน (5R's) ได้แก่ ความน่าเชื่อถือ อัตรา ทรัพยากร การปลอดความเสี่ยง และการตอบสนอง ภายใต้กรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาแห่งชาติ (Thai Qualifications Framework, TQF) ที่มีคุณลักษณะที่สำคัญ 5 ด้าน ได้แก่ 1) คุณธรรมและจริยธรรม (จริยธรรมพฤติกรรม) 2) ความรู้ความสามารถทักษะ 3) ไหวพริบและทักษะทางปัญญา 4) ความสัมพันธ์ระหว่างบุคคล และ 5) การตัดสินใจเชิงวิเคราะห์และการสื่อสาร (ทักษะการประยุกต์ใช้ข้อมูลและเทคโนโลยี) วิธีวิจัยใช้การผสมผสานเชิงคุณภาพและเชิงปริมาณประการแรกวิธีเชิงคุณภาพผ่านการทบทวนวรรณกรรมและงานวิจัยก่อนหน้า

วิธีที่สอง เชิงปริมาณใช้การสัมภาษณ์แบบเผชิญหน้า เพื่อทราบถึงคุณลักษณะที่นายจ้างต้องการ และทำการสำรวจด้วยแบบสอบถามที่ได้ไตร่ตรองถึงคุณสมบัติที่เกี่ยวข้องในการว่าจ้างบัณฑิตใหม่ การออกแบบเครื่องมือวิจัยที่ได้จากการสัมภาษณ์ระดับผู้บริหารจำนวน 20 รายที่เป็นผู้ร่วมแสดงงานไทยโลจิสติกแฟร์ 2012 (TILOG2012) สุ่มตัวอย่างจำนวน 42 รายใช้วิธีแบบแบ่งชั้น โดยผู้ตอบแบบสอบถาม 20 รายภายในงานและอีก 22 รายโดยการส่งแบบสอบถามผ่านทางสมาคมผู้ประกอบการขนส่งระหว่างประเทศ (TIFFA) ซึ่งเป็นสมาชิกที่ตอบแบบสอบถาม เพื่อการพิสูจน์ว่าแบบสอบถามนี้เป็นเครื่องมือที่ปราศจากอคติในการนำไปใช้จึงได้เสนอการแจกแจงปกติในส่วนประชากรศาสตร์ การวิเคราะห์ข้อมูลโดยใช้ค่าเฉลี่ยส่วนเบี่ยงเบนมาตรฐานของความสัมพันธ์และค่าสัมประสิทธิ์ภายใต้การถดถอยผลการวิจัยที่ถูกนำเสนอออกเป็นสี่วิธีการ (ค่าเฉลี่ย ค่าสัมประสิทธิ์ ค่าสรุปแบบจำลอง และการพยากรณ์ในสมการถดถอยพหุคูณ) ผลลัพธ์แบ่งออกเป็นสองกลุ่ม (ในทุกสาขาที่ให้บริการโลจิสติกส์ และกลุ่ม 3PL เฉพาะสาขาขนส่งระหว่างประเทศ) การวิจัยครั้งนี้เป็นการทดสอบนำร่องเพื่อยืนยันปัจจัยในการสร้าง เครื่องมือเพื่อการวิจัยในอนาคตเป็นงานนำในมิติใหม่ของมุมมองจากนายจ้างในสาขาการให้บริการโลจิสติกส์ งานวิจัยชิ้นนี้เป็นประโยชน์ต่อนักวิชาการและอาจารย์ในการในการออก แบบหลักสูตรการเรียนการสอน รวมถึงความต้องการของผู้ปฏิบัติงานในด้านคุณลักษณะที่พึงประสงค์จากนายจ้างสำหรับผู้สำเร็จการศึกษาใหม่เพื่อเป็นคุณสมบัติของผู้ฝึกงานรายใหม่

คำสำคัญ: นายจ้าง ธุรกิจขนส่งระหว่างประเทศ นักโลจิสติกส์ บัณฑิตจบใหม่

INTRODUCTION

Despite the fact that more than 15,000 logistics students have annually graduated in Thailand, a logistician shortage still exists. The need for high-level logistics employees has gradually increased. The Office of the National Economics and Social Development Board (NESDB, 2008) had forecasted the demand for the number of logistics employees for the years 2008-2011. The number of logisticians employed in the industry was 1,431,902 in the year 2008 although the forecasted figure was that 1,591,002 logisticians were needed. It means that the industry had a shortage of 159,100 logisticians.

The problem became more severe when graduates with less intention to work in logistics fields were employed as trainees and did not pass probation. This leads to more unemployment and a shortage of labor. These problems are due to the differences in

employees' expectations and the actual quality of services employers get from the new trainees. The trainees were unable to achieve the employers' goal. The trainees were not fit to assume full time positions after probation.

This paper presents fundamental knowledge on strategic human resources regarding the ideal characteristics of logisticians in the international transport business. This study would contribute to the redesigning of teaching courses for current students, as well as the training course expectations of practitioners in the logistics field. The study contributes to the alignment of the measured attributes of the educational institutions' reports with the desirable needs of practitioners.

Research Questions

The research questions related to the objective were divided into three time periods (Past, As Is & Present, and Future). They are:

B1) Past: During Recruitment
Question 1) Are you having problems with shortages of employees? What is your recruitment tool and what are the main causes of your staff resignation?

B2) As Is: During Training
Question 2) Over the past four years, what is the overall outcome of your new trainees?
Question 2.1) Did most of the new trainees successfully go through the probation period?
Question 2.2) What is the most important problem of your new staff?
Question 2.3) What are your key desirable attributes when employing new staff?

B3) Present: During Hiring and Onwards
Question 3) What are the issues you require when hiring employees?
Question 4) What are the obstacles to service improvement and organization development?

B4) Future: During Managerial Plan for Staff Improvement
Question 5) What are your suggestions for employees' improvement in the logistics service industry?
Question 5.1) Requirement for redesigning logistics courses to be divided by modes of transportation, and/or by activities of operator's business type.
Question 5.2) Requirement for building concentration pay to their work.
Question 5.3) Requirement on equipment, tools, or utilization system technology.
Question 5.4) Other suggestions.

LITERATURE REVIEW

Logistics Education, Campuses, and Graduates

The report of the Department of Business Development (DBD, 2013) and the National Statistical Office (NSO, 2010) showed that in 2011, a total of 244,643 logisticians were employed in commercial trading fields. Forty-two percent, or 102,995 employees were engaged in warehouse operations, 68,255 were engaged as delivery staff, 38,409 were engaged as logisticians at management level, and the remaining 34,984 were employed in purchasing and procurement functions. A total of 937,300 were employed in logistics in the year 2011 and were engaged in the industrial sector (DBD, 2013, p. 2-15). Sittichai (2010) classified three types of colleges and universities offering logistics courses. There were 38 colleges offering College logistics courses; 40 universities offering Bachelor and Master degrees in logistics; and 4 universities offering Doctoral degrees in logistics. The

forecast showed 3,040 graduates from colleges, 4,200 graduates from universities with Bachelor and Master degrees, and 20 graduates from universities with Doctoral degrees. However, a Kbank Research Center (2013) study claimed that there would be a total of 7,868 logistics graduates by the year 2012 (approximately 4,828 for managerial level and 3,040 for operation level). Furthermore, the study of Kanchana (2012) predicted that there would be an oversupply of logistics labor in 2013-2014. This forecast contrasted with Kbank Research Center (2013) which showed an estimate of a possible shortage of 103,000 logistics staff in 2013. These contradictory forecasts must specify what kinds of logisticians were needed, or what types of sectors or activities or industries were in short supply .

Shortages of Employees in Logistics since 2005

Sittichai (2010) claimed that from 2005-2010, the requirement for logisticians was about 17,000 candidates in the logistics industry. Among these, the total requirement was employees at operation level. At the supervisory level, these are people with international commercial business knowledge, ability in English communication, ability in software applications, and I.T. His forecast reported a shortage of logistic labor of about 1,360 employees annually. On the other hand Kbank Research Center (2013) forecasted that Thailand would still continue to face a logisticians shortage problem, both at managerial and operation levels. They calculated that a total of 46,795 logisticians at a managerial level would be in short supply in 2012, and 31,071 logisticians at a managerial level would be in short supply in 2013. For the operation level, they forecasted a shortage of 86,378 employees for the year 2012, and a shortage of 71,877 in 2013.

Table 1: Forecast on Shortage of Logistics Candidates

Sittichai (2010)		**Institutions***	**Avg. Graduates***
1.College degree		38	3,040
2.-3. Bachelor and Master degree		40	4,200
4. Doctoral degree		4	20
Total Graduates (annual)			7,260
Employed Employees engaged in Logistics			8,380
Need for 17,000 employees in logistics market (per year)			
Shortage of logistic labor (per annum from 2010)			-1360
Kbank (2013)			
Forecast in Year 2012		**Institutions***	**Faculty***	**Avg. Students***
	Y2011	43	75	11,830
	Y2012	40	80	16,957
To be employed in Logistics		**Y2011**	**Y2012**	**Y2013**
College workers			3,040	4,828
Bachelor, Higher educated staff			3,040	4,828
Senior & Manager level staff		6,553	7,868	7,868
Shortage of Type of Employees*			**Y2012**	**Y2013**
Managerial level			46,795	31,071
Operation level			86,378	71,877
Total Shortage of Logisticians (persons)			133,173	102,948
Total Requirement for Logistics Vacancies (persons)				1,054,000
Engaged in Logistics Employment				951,000
Shortage of Logisticians (all sectors)				-103,000

* Related to Logistics and Supply Chain

TQF Domains

Almost everywhere at Asian educational institutions there is a standard quality performance index, adopted from well-known sources such as the National Qualifications Framework for Higher Education (NQF: HEd) and the Thai Qualifications Framework for Higher Education (TQF: HEd). All earlier studies employed the five key domains of TQF: 1) Development of Moral and Morality (Behavioral Ethics), 2) Knowledge and Ability Skill, 3) Ingenious and Intellectual Skill, 4) Interpersonal Relation with Task Responsibility, and 5) Analytical Decision Making and Communication (Information Technology Application skill). (OHEC, 2015, p.65)

The synthesis TQF of Most Employed Graduates' Attributes for Evaluation by Employers showed that seven of the most important attributes from respondents are: responsibility, interpersonal relationship with ability for modern technology, ethical behavior, altruistic, honesty, ability in communication, and morality. However, most employers' needs in their seven top expectations are: advanced technology ability, English language proficiency, honesty, responsibility, intellectual skill, propriety in personality, and job training.

Need Assessment on Attributes and Concepts

One of the most favored researches in the education field is the assessment of needs. The ground theory was the development of a basic hierarchy of needs. Gaber, (cited in Yurarach, 2011, p.37), utilized his study on needs assessment works to apply in human service agencies, comparing what is (existing) with future needs (expectation). The differences between the current situational appearance and the reliable result would be a gap identification, ranking and picking the most impactful item as an important key factor.

Previous Research

At present, the education sector is trying to fill the shortage gap in logistics employees by offering more logistics courses and training in many institutions. Logistics faculties are provided in abundance, making them available for all interested students. Furthermore, schools of managements are sending their senior students for practical experience via a joint training program. However, the number of graduates is still insufficient to match the increasing need for staff. About 5-10 percent of Bachelor degree graduates want to continue their higher studies. Some choose Logistics just because they follow their friends' recommendation while a few of them do not have any intention to pursue Logistics careers (Pisoot and Heesawat, 2015).

DESIGN & METHODOLOGY

Pisoot (2013) proposed a conceptual framework of 5R's Service Performance Units (SPU): reliability, rate, resources, risk avoidance, and responsiveness, based on modified ServQual to verify the servicing sector as suitable for subjective item measurement. Later, the model attributes were examined for employees' intention as job vacancy candidates in logistics careers (Pisoot and Heesawat, 2015). Hence, the theoretical construct of these five dimensions was adopted into this new study and used to interview the employers.

Examination of sources of problems was described as "The Past" experiences in hiring a new employee. TQF concepts with 5Rs SPU used workplace location, working attention,

fundamental knowledge, salary, tolerance, intention in logistics, transport career, and problems during trials with new staff on probation. Seven items were found: basic English, job knowledge, frequency in mistakes, work environment (teamwork and interpersonal relationship), late arrivals to workplace because of far home & work distance, absence from work, non- compliance of company rules, and skills in professional equipments. (Indoor workplaces use computers and other office equipment, and outdoor workplaces use forklift and other lifting equipment.) Verified by executive interviewees were seven employee problems, which are: "English ability" (X1), " Job knowledge" (X2), "Mistakes avoidance" (X3), "Working environment" (X4), "Late arrivals" (X5), "Absence from work" (X6), and "Skill in utilizing work equipment" (X7).

For current issues, the six main items were: "Salary", "Work attention", "Self-development" (in knowledge and skill), "Family and relatives", "Work environment" (teamwork and human relations). The researchers found eight frequent problems and obstacles for organization's development. They are: delay in delivery, damaged cargo, insufficient staff, transport laws, breakeven cost, investment funds and sources, responsibility and attention, and competency of staff.

The study was divided into three steps of research design and methodology.

1) Research studies and review for factors and attributes, and selected items loading into the research instrument.

2) The research was conducted as a field study on a try-out group. Data was collected from the Thailand International Logistics Fair: TILOG (September 19-22, 2012), organized by the Department of International Trade Promotion (DITP, 2012). Most of the exhibitors were international transport companies, with only a few traders for lifting equipment and warehouse system. The targets were asked for half an hour individual interviews (a face-to-face approach). They explained, reviewed, and identified the existing problems of the permanent workers and recruitment difficulties. Later, the respondents filled in forms for their selected items and described their problems. Management was free to give their written comments and suggestions to support and to construct a research tool. A total of 20 executives from 20 booths were interviewed (19-20 September, 2012). The instrument was a questionnaire with some wording amendments recommended by sophomores. The next day, 21 September, 2012, thirty sets of questionnaires were ready and distributed to each executive at their booths, and collected from all 20 respondents within the same day.

3) Another 60 sets of questionnaires were sent to the Thailand International Freight Forwarder Association (TIFFA). The association's administrator handled and distributed the questionnaires to their potential members. Since TIFFA knows its members well, this was a good alternative for the international transport operators. Finally, 22 questionnaires were received back from the respondents. The response rate was one-third or 36.66%.

DATA ANALYSIS

The demographic data was applied to identify the percentages, as descriptive analysis (The World Bank, 2012, p.53). Scale data applied multiple regressions to simulate the analyzed results of validated variables for the best models. The reliability tests used a hierarchy method for a diagnostic test (Pratana et al., 2015). This study used the simulated loading with if-deleted variables method to illustrate the best alpha outcome with the priority of need ranking index. The comparison was investigated for a better alpha value with more reliability. Other tools are for further research, on other samples or nationally. In this study, Cronbach's Alpha if-Item Deleted method was used to diagnose the most necessary attributes at the top hierarchy for the best alpha result.

FINDINGS

PART A: Demographic of respondents' profiles and related information.
Samples were tested by the Test of Normality. Group A contained several third-party logistics (3PL) and resulted in some significant differences. The study needs further analysis for the differences shown in the next part.

Table 2: Demographic of Respondents

Core Business	Group A	Group B	Total	%	Occupation	Group A	Group B	Total	%
3PL	16	2	**18**	42.86%	Management	8	7	**15**	35.71%
Shipping Line	1	0	**1**	2.38%	Manager	4	10	**14**	33.33%
Customs Broker	1	2	**3**	7.14%	Supervisor	8	3	**11**	26.19%
Warehouse Operator	0	6	**6**	14.29%	Others	0	2	**2**	4.76%
Removal & Packing	0	2	**2**	4.76%	**Total**	**20**	**22**	**42**	**100%**
Export-Import Agency	1	4	**5**	11.90%	**Size of Company**	**Group A**	**Group B**	**Total**	**%**
Association	1	4	**5**	11.90%	1-25 staff	2	4	**6**	14.29%
Trucking	0	2	**2**	4.76%	26-50 staff	4	9	**13**	30.95%
					51-100 staff	7	1	**8**	19.05%
					101 staff up	7	8	**15**	35.71%
Total	**20**	**22**	**42**	**100%**	**Total**	**20**	**22**	**42**	**100%**

Table 3: Test of Normality

Samples Sources	Kolmogorov-Smirnov[a]			Shapiro-Wilk			Statistic	
	Statistic	df	Sig.	Statistic	df	Sig.	Mean	S.D.
Group A	0.226	20	0.008*	0.803	20	0.001	3.82	0.39
Group B	0.161	22	0.145*	0.924	22	0.094	3.73	0.42

a. Lilliefors Significance Correction

PART B1: (PAST: During Recruitment)

This section is to investigate the past to update the current situation for shortage status, a key channel for labor sources and recruitment. It is also to investigate the employers' experiences of undesirable staff and their resignations.

Question 1) Are you having problems with shortages of employees? What is your recruitment tool and what are the main causes of your staff resignations?

The shortage of logisticians was at a high rate of 73.81%, the top demand being for third party logistics businesses (3PL). People in the shipping industry still use newspapers, magazines, and web pages as their main media for recruitment. It is their standard practice to use advertisements.

The top reason for new employees' resignations was salary, followed by a problem of fundamental knowledge skill. There is high competition in salary offering in warehouse operator sectors.

Table 4: Status of Shortage; Recruitment Sources; Resignation of New Employees

Shortage of Logisticians	3PL	Liner	Cust	W/H	Pack	ExIm	Asso	Truck	**Total**	%
No Problem	3	0	0	0	0	2	4	2	**11**	26.19%
Facing Problem	15	1	3	6	2	3	1	0	**31**	73.81%
Total	18	1	3	6	2	5	5	2	**42**	100%
Recruitment Sources	3PL	Liner	Cust	W/H	Pack	ExIm	Asso	Truck	**Total**	%
Advertisement	10	1	0	4	2	3	4	2	**26**	61.90%
Recommendation	0	0	2	2	0	2	0	0	**6**	14.29%
Recruitment Agent	4	0	0	0	0	0	1	0	**5**	11.90%
Grad. Required Training	4	0	1	0	0	0	0	0	**5**	11.90%
Total	18	1	3	6	2	5	5	2	**42**	100%
Resignation Causes	3PL	Liner	Cust	W/H	Pack	ExIm	Asso	Truck	**Total**	%
Salary	5	1	1	6	2	0	2	2	**19**	45.24%
Fundamental	4	0	2	0	0	0	2	0	**8**	19.05%
Tolerance	3	0	0	0	0	2	1	0	**6**	14.29%
Learning Skill	3	0	0	0	0	1	0	0	**4**	9.52%
Less Attention	3	0	0	0	0	0	0	0	**3**	7.14%
Late by Location	0	0	0	0	0	2	0	0	**2**	4.76%
Total	**18**	**1**	**3**	**6**	**2**	**5**	**5**	**2**	**42**	100%

PART B2: (AS IS: During Training)

Respondents were asked about their logisticians and trainees over the last four years and the problems they faced in the probation period.

Question 2) Over the past four years, what is the overall outcome of your new trainees?
Question 2.1) Do most of them successfully go through the probation period?

Table 5: Probation Outcome

% by Group		**Passed**	**Quit**	**Total**
Shortage	Count	19	12	31
	%	61.29%	38.71%	100%
Not Short	Count	7	4	11
	%	63.64%	36.36%	100%
Total	Count	26	16	42
	%	61.90%	38.10%	100%

% by All Samples		**Passed**	**Quit**	**Total**
Shortage	Count	19	12	31
	%	45.24%	28.57%	73.81%
Not Short	Count	7	4	11
	%	16.67%	9.52%	26.19%
Total	Count	26	16	42
	%	61.90%	38.10%	100%

Chi-Square	Value	df	Asymptotic Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.019[a]	1	.891	1.000	.593

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.19.

The probation outcome showed that approximately 61% passed probation while problems with the shortage of staff had no related effects. The Pearson Chi-Square was applied to confirm that there were no significant differences between these two groups for retention after probation. Asymptotic Significance (2-sided) = .891; Exact Sig. (2-sided) = 1.000; Exact Sig. (1-sided) = .593 were all over 0.05.

Employers were asked to pick the most important of seven alternative critical issues facing the new graduates as fresh trainees. The seven issues were: basic English language, basic job knowledge, frequency of work mistakes, not following discipline such as late arrivals and frequency of absence without reason, late arrivals due to far distance travels, working environment regarding teamwork and human relationship, and ability to use work machines and equipment.

Question 2.2) What is the most important problem of your new staff?
None of the respondents chose "Work Environment" (Interpersonal relationship), and "Equipment and Tools".

Table 6: Main Issue with a New Trainee

Major Issues with a New Trainee		Probation Result		Total
		Passed	Quit	
Basic Knowldg.	Count	11	6	17
		42.31%	37.50%	40.48%
Basic English	Count	8	7	15
		30.77%	43.75%	35.71%
Brake Discipline	Count	3	1	4
		11.54%	6.25%	9.52%
Freq. Mistakes	Count	1	2	3
		3.85%	12.50%	7.14%
Late Arrivals	Count	3	0	3
		11.54%	0.00%	7.14%
Total	**Count**	**26**	**16**	**42**
		100%	**100%**	**100%**

The Pearson Chi-Square was employed to the test, and resulted in Asymptotic Significance (2-sided) value (0.448) or no significant difference. All these sources and problems are still the key issues without any effects from retention of probation result.

Question 2.3) What are your desirable attributes when employing new staff?
This section, applied a 5-point Likert scale to examine the level of preferences. The result is in Table 7.

The highest mean scores were: Knowledge skill, English language ability, Absence from work, and Skill in equipment and tools. The results from all respondents in logistics services were: "Knowledge skill", "English language", "Absenteeism", and "Equipment and Tools".

Pearson Chi-Square was employed to investigate whether any attributes were significantly affected by different sizes or types of organizations.

Table 7: Desirable Employee Attributes (Mean / S.D. / Level)

Preference Attributes	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Mean	S.D.	Preference Level
2) Knowledge Skill	14	18	9	1	0	4.07	0.81	High
1) English Skill	8	29	4	1	0	4.05	0.62	High
6) Absence	7	24	8	3	0	3.83	0.79	High
7) Equipment Skill	2	28	11	1	0	3.74	0.59	High
3) Mistakes avoid.	7	15	17	3	0	3.62	0.85	High
5) Late Attendance	3	23	13	3	0	3.62	0.73	High
4) Working Environ	4	16	19	3	0	3.50	0.77	Moderate
Total 7 Desirable Attributes with N=42						3.78	0.40	High

Table 8: Chi-Square Tests via Asymptotic Significance (2 sides)

Pearson Chi-Square Tests	By Size of Organization			By Type of Organization		
Attributes for New Staff	Value	df	Asymptotic Sig.(2s)	Value	df	Asymptotic Sig.(2s)
1) English Skill	19.777[a]	9	0.019*	22.008[a]	21	0.399
2) Knowledge Skill	17.738[a]	9	0.038*	50.874[a]	21	0.000*
3) Avoiding Mistakes	28.379[a]	9	0.001*	32.703[a]	21	0.050*
4) Working Environment	12.041[a]	9	0.211	64.512[a]	21	0.000*
5) Late Attendance	12.832[a]	9	0.170	59.624[a]	21	0.000*
6) Absenteeism	16.415[a]	9	0.059	41.578[a]	21	0.005*
7) Equipment Skill	19.968[a]	9	0.018*	31.836[a]	21	0.061

Lower than 0.05 means to reject the null hypothesis. The attributes affected by firms' sizes were "English Skill", "Knowledge", "Mistakes Avoidance", and "Equipment Skill". By types of firms, all were affected significantly, except "English Skill" and "Equipment Skill".

Levene's test (Table 9) showed that "Working Environment" (0.655) and "Late Attendance" (0.679) were not affected by the size of the organizations.

Table 9: Levene's Test of Equality of Error Variances and Between-Subjects Effects

1) English Skill						2) Knowledge Skill					
F1	**df1**	**df2**	**Sig.**	**R2**	**Adj.R2**	**F2**	**df1**	**df2**	**Sig.**	**R2**	**Adj.R2**
8.096	13	28	0.000	0.715	0.583	13.618	13	28	0.000	0.675	0.524
Source	**Type.III**	**df**	**Mean2**	**F**	**Sig.**	**Source**	**Type.III**	**df**	**Mean2**	**F**	**Sig.**
BizType	3.936	7	0.562	3.473	0.008	BizType	12.758	7	1.823	5.866	0.000
Biz Size	2.878	3	0.959	5.926	0.003	Biz Size	6.770	3	2.257	7.263	0.001
Both	3.043	3	1.014	6.266	0.002	Both	4.739	3	1.580	5.084	0.006

3) Mistakes & Errors Avoidance					
F3	df1	df2	Sig.	R2	Adj.R2
8.712	13	28	0.000	0.709	0.574
Source	Type.III	df	Mean2	F	Sig.
BizType	12.195	7	1.742	5.607	0.000
Biz Size	9.158	3	3.053	9.825	0.000
Both	2.829	3	0.943	3.035	0.046

4) Working Environment					
F4	df1	df2	Sig.	R2	Adj.R2
32.306	13	28	0.000	0.687	0.542
Source	Type.III	df	Mean2	F	Sig.
BizType	14.159	7	2.023	7.387	0.000
Biz Size	0.448	3	0.149	0.545	.655*
Both	1.483	3	0.494	1.805	0.169*

5) Late Attendance					
F5	df1	df2	Sig.	R2	Adj.R2
15.354	13	28	0.000	0.598	0.412
Source	Type.III	df	Mean2	F	Sig.
BizType	9.518	7	1.360	4.327	0.002
Biz Size	0.480	3	0.160	0.509	0.679*
Both	1.476	3	0.492	1.565	0.220*

6) Absence					
F6	df1	df2	Sig.	R2	Adj.R2
2.688	13	28	0.014	0.652	0.490
Source	Type.III	df	Mean2	F	Sig.
BizType	10.627	7	1.518	4.723	0.001
Biz Size	2.769	3	0.923	2.872	0.054*
Both	1.288	3	0.429	1.336	0.283*

7) Equipment & Tooling Skill					
F7	df1	df2	Sig.	R2	Adj.R2
20.779	13	28	0.000	0.665	0.509
Source	Type.III	df	Mean2	F	Sig.
BizType	2.600	7	0.371	2.197	0.065*
Biz Size	5.882	3	1.961	11.598	0.000
Both	3.650	3	1.217	7.196	0.001

Remarks

- Level of confidence 95%
- F1 to F6 were F value of Levene's Test
- Mean2 was Mean Square
- Biz means Business (Firms)
- Both means Type and Size together
- All 7 attributes were Sig. to New Graduates

The asterisks were the level of confidence >0.05 which accept the null hypothesis. There were no significant differences of attributes by size, type, or by both organizations.

Types of the organization were only "Equipment" (0.065), and "Late Attendance". The result showed the bosses' needs were different (sizes and types of firms in logistics service providers) and they do not give significance to attributes of "Late Attendance" which is valued at 0.220 in both size & type.

Relationships among Attributes

The study analyzed correlations and effect in separate context. Table 10 shows the inter-item relationships for all samples (N=42) with separated only 3PL (N=18). For all logisticians, "Late Attendance" was the most correlated to "Absence" (0.645), followed by "Absence" and "Equipment Skill" in the same positive directions.

For 3PL, the highest correlation was "Work Environment" and "Absence" in the negative direction (-0.640) followed by "Work Environment" and "Equipment" (-0.434). The meaning is that both "Absence" and "Equipment" had affected the working environment. For a positive value, the most important are "English Ability" and "Knowledge Skill" (0.590).

Table 10: Correlation between Seven Attributes

(All)	Eng	Know	Mist	Env.	Late	Abs	Eqp.
Eng	1.00	.381	.218	.253	.094	.164	.168
Knw	.381	1.00	.146	.254	-.077	-.019	.349
Mist	.218	.146	1.00	.406	-.160	.048	-.253
Env.	.253	.254	.406	1.00	.388	.099	-.081
Late	.094	-.077	-.160	.388	1.00	.645	.387
Abs.	.164	-.019	.048	.099	.645	1.00	.480
Eqp.	.168	.349	-.253	-.081	.387	.480	1.00

(3PL)	Eng	Know	Mist	Env.	Late	Abs	Eqp.
Eng	1.00	.590	.227	.180	-.373	-.202	.262
Knw	.590	1.00	.169	.306	-.395	-.229	.060
Mist	.227	.169	1.00	.283	-.107	.202	.282
Env.	.180	.306	0.283	1.00	.060	-.640	-.434
Late	-.373	-395	-.107	.060	1.00	.111	.472
Abs.	-.202	-.229	.202	-.640	.111	1.00	.527
Eqp.	.262	.060	.282	-.434	.472	.527	1.00

Eng = English skill; Know = Knowledge and Fundamental basic; Mist = Mistake and Errors avoidance (Accuracy); Late = Late in Attendance to work; Abs. = Absence from work (on leave); Eqp. = Ability in Equipment and Tools.

PART B3: (PRESENT: During Hiring and Onwards)
This section represents the major issues of existing employers regarding hired staff. Employers were asked for the problems faced by undesirable staff and dissatisfied staff during the probation period. The outcome is that the company did not hire the trainees as full-time employees.

Question 3) What are the issues you experience when hiring employees?
From six choices of losing intention to work with the company, only four reasons were chosen. (No respondents chose problem of family or relatives, problem among rivals, and vulnerable friendship relations in the workplace.) A McNemar-Bowker's test showed a significant value of issues affected by the sizes of organizations. It means some variables of these four attributes would be substantial within roles depending on the size of business.

*** Issues were significantly affected by different Sizes of business than Types ***
(Table 11a and Table 11b)

Table 11a: Main Issues on Unqualified Employees (by Business Types)

Main Issues	3PL	Liner	Cust	W/H	Pack	Ex/Im	Asso	Truck	Total	%
Responsibility/Improve	8	1	2	2	2	2	4	2	**23**	54.76%
Payroll (Satisfied Salary)	5	0	1	2	0	3	0	0	**11**	26.19%
Error/Omission	5	0	0	0	0	0	0	0	**5**	11.90%
Attention at Work	0	0	0	2	0	0	1	0	**3**	7.14%
Total	18	1	3	6	2	5	5	2	**42**	100%

3PL (Third party logistics); Liner (Shipping line); Cust (Customs broker); W/H (Warehouse operators); Pack (Packing & Removal service); Ex/Im (Export/Import trading firms); Asso (Association in transport); Truck (Trucks firm)

Table 11b: Main Issues on Unqualified Employees (by Business Sizes)

	Business Sizes (No. of Staff)				
Main Issues	1-25	26-50	51-100	101 & up	Total
Responsibility	2	11	4	6	**23**
Payroll	2	0	4	5	**11**
Error/Omission	2	2	0	1	**5**
Attention	0	0	0	3	**3**
Total	6	13	8	15	**42**

Business Types	Value	df	Asymptotic
Pearson Chi-Square	24.374[a1]	21	0.275
McNemar-Bowker	.	.	.[b]
Business Sizes	**Value**	**df**	**Asymptotic**
Pearson Chi-Square	17.939[a2]	9	0.036*
McNemar-Bowker	19.152	5	0.002*
N of Valid Cases	42		

a1. 31 cells (96.9%) have expected count less than 5. The minimum expected count is .07.
a2. 14 cells (87.5%) have expected count less than 5. The minimum expected count is .43.
b. Computed only for a PxP table, where P must be greater than 1.

Obstacles in Organization Operation and Development
The development of employee improvement is reflected in the organization's development and firm's competitiveness. The management's perspectives and vision face obstacles in their human resources improvement and organization development. Support in the section above highlighted the problem of shortage in logistics labor, operation, and managerial levels. Therefore, one key choice was acknowledged in quantity more than quality in staff as the main aspect of their freedom in selection.

Question 4) What are your obstacles to service improvement and organization development?

Table 12: Obstacles in Organization Development & Improvement (by Mean & S.D.)

All Samples (N=42)	Sum	%	Mean	S.D.
Quantity of Staff	34	39.5%	0.81	0.40
Employees' Attention	16	18.6%	0.38	0.49
Breakeven Cost	10	11.6%	0.24	0.43
Employees' Knowledge	8	9.3%	0.19	0.40
Delay Delivery	8	9.3%	0.19	0.40
Cargo Damages	5	5.8%	0 12	0.33
Other Factors	3	3.5%	0.07	0.26
Transport Laws & Reg.	2	2.3%	0.05	0.22
Investment, Resources	0	0%	0	0

3PL only (N=18)	Sum	%	Mean	S.D.
Quantity of Staff	17	44.7%	0.94	0.24
Breakeven Cost	5	13.2%	0.28	0.46
Employees' Knowledge	4	10.5%	0.22	0.43
Employees' Attention	3	7.9%	0.17	0.38
Delay Delivery	3	7.9%	0.17	0.38
Cargo Damages	3	7.9%	0.17	0.38
Other Factors	3	7.9%	0.17	0.38
Transport Laws & Reg.	0	0%	0	0
Investment, Resources	0	0%	0	0

Results in Table 12 were retest outcomes to reconfirm the same direction as in the previous section. The employers' perceptions had confirmed that the greatest obstacle in the firm's and services development was the shortage of staff. The top four issues were highlighted by total samples in all types of logistics business. 3PL also has these same four main problems.

PART B4: (FUTURE: During Managerial Plan for Staff Improvement)

Question 5) Suggestion for employee improvement in logistics service industry
The research tool was designed to let respondents consider the three top areas with open-ended suggestions into two questions. Teaching and courses were separated into types of operators for learning. Moreover, attention was given to work and responsibility improvement, and technology skill in equipment and tools.

Table 13: Improving Requirement and Needs of Development

ALL	n	Divided Act.		Attent & Resp		Tech & Eqp.		Suggestion	
	Total	Yes	No	Yes	No	Yes	No	Yes	No
Frequency	18	40	2	36	6	38	4	11	31
Percent	100%	95%	4.8%	85.7%	14.3%	91%	9.5%	26.2%	73.8%
3PL	n	Divided Act.		Attent & Resp		Tech & Eqp.		Suggestion	
	Total	Yes	No	Yes	No	Yes	No	Yes	No
Frequency	18	18	0	15	3	18	0	6	12
Percent	100%	100%	0%	83.3%	16.7%	100%	0.0%	33.3%	66.7%

Question 5.1) Requirements in redesigning logistics teaching and learning to be divided by modes of transportation, and by activities of operator's business type
Ninety-five percent of total respondents agreed that education institutions have to modify their teaching course curriculums, separately adapted for each internal field of logistics, such as airlines. There are many activities defined by the word "logistics" and broad meaning of logistics functions (a flight pilot, steward or stewardess). However, there is no separate study of freight forwarding from warehouse operators and local trucking businesses. From the above, all respondents agreed on this need.

Question 5.2) Requirements in building concentration/ attention paid to their work

The attributes of "Attention Paid to the Work" include the responsibility in work assignment, and desirable graduates are needed to be responsible in their knowledge development to be ready to work with improved abilities.

Question 5.3) Practical requirement in equipment, tools, or utilization system technology
Technology in work tools and equipment, system, and business applications are required for more learning. All respondents agreed that logistics as forwarders are needed.

Question 5.4) Other suggestions
Some respondents gave suggestion and comments. Most suggestions were about tolerance and concentration in the working skills. Respondents did not write self-knowledge, less concentration at work, or chatting on their mobile phones.

Reliability Test on Generality of Attributes and Model Summary

The survey's purpose is to verify and develop the research tool. The reliability tests were divided into two: Total population as logisticians in all fields (N=42) and 3PL (Third Party Logistics) only N=18. Reliability of trial statistic results (Cronbach's Alpha If-Item Deleted Method) is shown in Table 14.

Table 14: Reliability of Attributes (If-Item Deleted Method)

Attributes of Logisticians in all Fields							Attributes of Logisticians in 3PL						
Cronbach's	**0.602**	**0.636**	**0.642**	**0.667**	**0.755**	**0.782**	Cronbach's	**0.298**	**0.446**	**0.560**	**0.602**	**0.597**	**0.707**
Stdz.Items	0.614	0.645	0.637	0.656	0.753	0.784	Stdz.Items	0.325	0.414	0.544	0.623	0.627	0.742
N of Items	**7**	**6**	**5**	**4**	**3**	**2**	**N of Items**	**7**	**6**	**5**	**4**	**3**	**2**
Mistakes	0.636						Knowldg.	0.198	0.329	0.426	0.471	0.304	.
Knowldg.	0.580	0.642					Eng Skill	0.177	0.305	0.382	0.492	0.456	.
Environ	0.524	0.619	0.667				Environ	0.385	0.405	0.580	0.564	0.707	
Eng. Skill	0.545	0.600	0.652	0.755			Mistakes	-.025[a]	0.310	0.469	0.597		
Eqp. Skill	0.573	0.575	0.608	0.586	0.782		Eqp. Skill	0.126	0.409	0.602			
Late Attd.	0.549	0.547	0.458	0.525	0.629	.	Late Attd.	0.381	0.560				
Absence	0.535	0.567	0.509	0.449	0.549	.	Absence	0.446					
Mean	**26.43**	**22.81**	**18.74**	**15.24**	**11.19**	**7.45**	**Mean**	**27.67**	**23.72**	**20.06**	**16.28**	**12.39**	**8.67**
S.D.	2.83	2.59	2.26	1.95	1.74	1.38	**S.D.**	1.94	1.90	1.92	1.84	1.46	1.14
F	4.475	5.430	5.011	4.371	1.949	4.632	**F**	4.434	6.002	6.349	6.956	10.92	9.379
Sig.	0.000	0.000	0.001	0.006	0.149	0.037	**Sig.**	0.001	0.000	0.000	0.001	0.000	0.007

Reliability: (Alpha Method)

The reliability 0.602 at the beginning of the research tool with seven attributes was examined by "*if- items deleted*" method. Recommendation to delete items was made one by one from 1st-5th attributes (Mistakes, up to Equipment Skill). Overall, the seven dominant attributes for logisticians in all fields required only the three most important attributes: "Equipment Skill", "Late Attendance", and "Absence" to reach the alpha value at 0.755. Moreover, if variable "Equipment Skill" was deleted, then only the last two attributes "Late Attendance" and "Absence" are the most important key drivers to reach

the maximum Cronbach's value with the highest alpha at 0.782. For only 3PL business, the last three attributes were deleted differently: "Absence", "Late Attendance", and "Equipment Skill", with alpha value that reached 60.2% (0.602). Two primary variables "English Skill" and "Knowledge Skill", had the highest alpha yield of 70.7% (0.707). The contrast shows that in general logistics business, the most important attributes in their qualified staff are not "Absence", "Late Attendance", or "Equipment Skill". The 3PL always need their employee to have "English Ability" and "Knowledge Ability".

Frequencies: (Mean Method)

Ranking the top four most important attributes by Mean method (in 3PL business) shows that the most important are: "Knowledge Skill", "English Skill", "Absence", and "Mistake Avoidance".

Table 15: Key Desirable Employed Staff Attributes (Only 3PL)

Preference Attributes	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Mean	S.D.	Preference Level
2) Knowledge Skill	10	8	0	0	0	4.56	0.51	Very High
1) English Skill	5	11	1	1	0	4.11	0.76	High
6) Absence	3	12	2	1	0	3.94	0.73	High
3) Mistakes Avoid.	3	11	3	1	0	3.89	0.76	High
7) Equipment Skill	0	14	4	0	0	3.78	0.43	High
4) Working Environ	2	9	7	0	0	3.72	0.67	High
5) Late Attendance	0	12	6	0	0	3.67	0.49	High
Total 7 Desirable Attributes with N=18						3.95	0.28	High

To verify which of these top two attributes (Knowledge and English skills) is important, tests among these two attributes were analyzed.

Table 16: Means of English Skill and Knowledge Skill (Only 3PL)

English	N	Mean	S.D.	Variance	Total %	% of N	Level
Strongly Agree	5	5.00	0.00	0	32.10%	27.80%	Very High
Agree	11	4.23	0.26	0.068	59.60%	61.10%	High
Moderate	1	3.50	.	.	4.50%	5.60%	Moderate
Disagree	1	3.00	.	.	3.80%	5.60%	Moderate
Total	18	4.33	0.57	0.324	100%	100%	High
Knowledge	**N**	**Mean**	**S.D.**	**Variance**	**Total %**	**% of N**	**Level**
Strongly Agree	10	4.75	0.26	0.069	60.90%	55.60%	Very High
Agree	8	3.81	0.37	0.138	39.10%	44.40%	High
Total	18	4.33	0.57	0.324	100%	100%	High

Levels of preferences follow all the previous studies in TQF's average mean results. The scales were average mean value, 1.0-1.5 means = must be improved; 1.51-2.5 = Low; 2.51-3.5 = Moderate; 3.51-4.5 = High; and 4.51-5.00 = Very high. However, the total mean was equal at 4.33.

Regression: (Model Summary & Predictors)
The model was examined with only the3PL group. It found that significant F value rejected the null hypothesis, having no differences at 95% level of confidence. Also in the coefficients table by t-Sig. the value produced significant scores. "Late Attendance" (X5) *was unloaded as an excluded variable.*

Table 17: Model Summary Tested on all Seven Attributes (3PL only)

Model	R	R2	Adj. R2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square	F Change	df1	df2	Sig. F	
1	1.0	1.000	1.000	.0000057	1.000	6587227812.5	6	11	.000	1.287

a. Dependent Variable: Y
b. Predictors: (Constant), X7, X2, X3, X6, X1, X4 (Excluded: X5) Eqp.Skill, Know Skill, Mistake, Absence, Eng, Wk.Environ, (Excluded: Late Attendance).

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.048	.000		1886.353	.000
X1) English	.095	.000	.260	37788.217	.000
X2) Knowledge	.095	.000	.176	27273.484	.000
X3) Mistake avoid.	.095	.000	.261	39200.254	.000
X4) Environment	.238	.000	.575	68197.795	.000
X6) Absence	.143	.000	.374	45503.546	.000
X7) Eqp.Skill	.333	.000	.515	73810.273	.000

a. Dependent Variable: Y

The most impact resulted as "X5" or "Late Attendance" was excluded. Regression by SPSS, resulted by adjusting R2 by 0.994 which Y = "Shortage of Staff" only in 3PL. Hence, in 3PL business, most of the employers were not paying attention to their employee's "Late Attendance". The most impact by regression analysis were "Working Environment" and "English Language Skill" with positive values of beta = 0.19 and 0.18 respectively.

Retest was done through ANOVA, to purify for the same result. The output showed the significant value at 0.000. ANOVA has significant F value (less than F-Statistic). The outcome showed X7, X6, and X4 were the most important attributes. These were "Equipment Skill" and "Absence" in negative coefficients while "Working Environment" was only a positive predictor.

For the dependent variable tested Y= "business sizes", the most impact was "English Language Skill", followed by "Absence". The ability to predict was high at 75% (R2 = 0.750). Adjusted R2 produced different value. The adjusted R2 value was 0.614. X7 was unable to be calculated. The value of adjusted R2 dropped down to 0.523. Finally, individual investigation on each attribute resulted that the most important attribute was only "English Language Skill". For dependent variable Y, it was tested in "Probation" or "Business Type", and they do not have any significant effect in all the model tests.

DISCUSSION AND CONCLUSION

The study focused on the logistics group, specified into service operators in logistics services. This sector needs accuracy and manpower with skill while facing the shortage in quantity of staff. The four core requirements for overall employers in the field related to all other activities in logistics services in the same area are: mistakes and error avoidance, knowledge and fundamental skill, working environment (interpersonal relationship with their colleagues and participation with their colleagues), and English language skill. For the most critical of a third-party logistics, service provider needs are not only English and Knowledge. The critical differences from other units in the same sector are Absence and Accuracy. None of the previous studies, either in undergraduates or employer's satisfactions were ever discovered in this field.

Results were shown by means of averages method. The most important attribute was "Knowledge Skill" from all areas, with "Ability in Equipment" from 3PL. The second method by alpha value (if-deleted items) was "Mistakes Avoidance" while 3PL was "Absence from Work". The third method by Model summary shows the most important factor was "Skill in Equipment" with similar congruent to 3PL. The fourth method, by predictors in multiple regressions, suggested that logistics in all fields and 3PL had similar variables with "Absence from Work" as the most critical. Previous research by Pisoot & Heesawat, 2015, examined the employees' intention. The main issue in seeking for new logistics candidates required a high salary. This is congruent with the work of Wiley, (1995). He synthesized in his 40-year studies that motivating employees was about "Good Wages". In this study, "Salary" is also the most selected choice as obstacles and issues from both existing hired staff and new trial employees in the logistics industry. Today the logistics industry is facing the same problem in shortage of logisticians. Surprisingly, most of the new graduate candidates and senior students in logistics fields, have an intentions to work in retail warehouses, more than any job preference in logistics service operations (Pisoot & Heesawat, 2015).

CONTRIBUTIONS AND RECOMMENDATIONS

There are differences from previous studies among college graduates and undergraduates up to master degree level. Various studies and surveys with employers' primary preferences have limited choices under TQF only (honesty and responsibility). No details and explanations were mentioned by the different bosses. For example, knowledge, skill, and ability are different issues. This paper guides the lecturers and institutions to carefully design and modify their curriculum to supply their graduates to appropriate vacancies with a specific career.

The research results explained many dimensions in the qualification of attributes. This study was conducted to understand the issue of the shortage of staff, new graduate's qualification to cope with employers' need, the bosses' concerns in probation retention and desires among hired staff. This new perspective studied the qualification of logisticians in transport service which contributed to the new area of graduates' quality assurance reports. All proposed and well-selected attributes were modified by sophomores, specialists in the logistics & transport field. The well-developed research tool with these related attributes

were real practical domains for any future survey and research. Future research has to be conducted with more configurations to fit the different cultures. Attributes of physical distribution in human resources were rare, especially in 3PL. Researchers should conduct more research studies for the expansion of these areas. The study is enriching, by offering new literature to the entire body in logisticians development.

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