An Exploratory Study of the Relationship between Logistics Driver Competency and Work Performance by Using Occupational Competency Standard

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ABSTRACT

The positive relationship between competency and work performance were revealed theoretically and practically. However, few studies demonstrated how to use or transform a competency model or job description to investigate the relationship. This study took a document called occupational competency standard of logistics drivers issued by Taiwan government as reference to develop the measurement of competency and work performance, and conducted a survey to investigate the relationship between competency and work performance as well. 399 questionnaires sent to the logistics drivers of a famous logistics/express company in Taiwan were collected from Mach to April 2021. The research results supported the positive relationship between competency and work performance and identify a vital competency dimension. The managerial suggestions were proposed as well.

Keywords: Competency, work performance, occupational competency standard

1. INTRODUCTION

After the epidemic outbreak of COVID-19 in Taiwan in 2020, online consumer behaviour quickly increased. Therefore, expanding online sales has not only become an important mission for the retail industry, but with the related support service industry, e-commerce is rapidly developing into the vital pillar of Taiwan's retail industry. However, the influx of online orders in a short period of time has caused the retail industry to often fall into a situation of capacity overload, which reflects the long-term high dependence of the e-commerce market on logistics and distribution services. It also means the rapidly expanding demand of logistics service to e-commerce in Taiwan.

How to provide great logistics service? How to increase logistics capacity? Numerous studies discussed this issue from macro perspectives, such as national level [8], industry level [7], and company level [2]. This study intended to discuss this issue from the individual level of professional competency.

Meanwhile, Taiwan government established Occupational Competency Standard (OCS) which refers to the combinations of main work tasks, behaviour indicators, work output, related knowledge, skill and other competencies of the specific occupation (or type of job). It means that the contents of OCS are likely to be used to investigate the relationship between individual competency and work performance.

Consequently, the main purposes of this study are:
1. Use OCS to establish indicators to measure the professional competencies and work performance of logistics driver.
2. Investigate the relationship between competency and work performance of logistics driver.

2. LITERATURE REVIEW

2.1. Work Performance and Competency

Work performance is an individual or formalized role demand played by memberships of an organization, in order to efficiently complete the organization's performance of its goals [3]. In other words, work performance is a goal that can be achieved by a person or a group of people. Moreover, it is achieved in an organization in accordance with the authority and responsibility of a person. Without violating any committed rules and regulations, the organization's goals and ethics are achieved in a legal manner [1]. In general, outstanding employees will help leaders achieve successful organization missions [12]. Therefore, hiring the right people to do the right job is directly related to excellent performance [4].

Regarding the dimensions of work performance, some general categories were usually mentioned such as productivity quantity and quality, accuracy, attendance, ability to cooperate, and loyalty [5, 11, 13]. Most of them

were generally measured by specific performance figures or academic questionnaires related to theoretical framework. It is easier to classify the work that needs to be done in a general description. However, this research wanted to understand more detailed practical work activities or observable behaviours related to work task. Consequently, it would be better to refer to different types of documents besides academic research results.

As mentioned before, qualified employees are positively related to better work performance. Concerning to the arguments of competency, McClelland [9] advocated the use of the "job competency assessment method" (JCAM) to study the behavioural differences between outstanding workers and middle-performing workers in organizations. The research found that the job performance is determined not only by intelligence, but should also by attitude, cognition, traits, etc. which called "competency". Spencer and Spencer [14] also proposed the idea of competency evaluation to assess talents, and this idea began to be widely used in human resource management practices. This also makes the concept of competency gradually paid more attention。Spencer and Spencer [14] also used the iceberg model of competency to discuss the five characteristics of competencies. Above the sea level of the iceberg, skills and knowledge are explicit and account for 20% of the entire iceberg. Professional competencies are the easiest to be evaluated, and they are more reliable. Meanwhile, training programmes are more likely to develop and change skills and knowledge. The iceberg which below the sea level accounts for 80% of the entire iceberg. It is related to management competencies. It is also difficult to evaluate and observe because it represents a person's potential characteristics including attitudes, self-images, values, personal traits, and work motivation etc. The Workforce Development Agency of the Ministry of Labor of Taiwan [15] also divides the competencies into three dimensions: knowledge, technology, and attitude. Meanwhile, the concept of the iceberg model was cited to define the first two as the observable and obvious parts of the upper half of the iceberg, and attitude is as the hidden part under the iceberg. Knowledge refers to the principles and facts that can be applied to the domains required to perform a task. Skills refers to the cognitive or technical operational skills needed to perform a task that can help the task (commonly referred to as hard skills), as well as personal-related social, communication, and self-management capabilities (commonly referred to as soft skills). Attitude refers to an individual's views on a certain thing and the corresponding actions taken as a result, including intrinsic motivation and behavioural tendencies.

Concerning to the relationship between competency and work performance, many studies provided positive evidence. For example, Martini, Rahyuda, Sintaasih, and Piartrini [10] found that employee competency, and organizational commitment dimensions showed a significant positive effect on employee performance. By taking knowledge employees in e-commerce enterprises as samples, Hu [6] pointed out that personal characteristics

and cooperation ability mainly affect relationship performance, while intellectual equipment and professional ability mainly affect task performance.

2.2. Occupational Competency Standard

In Taiwan, occupational competency standard (OCS) refers to a job-related document combining the main work tasks, task outcome, corresponding behavior indicators, and competencies (knowledge, skill and attitude) [15]. These documents focus on the specific occupation or category. Therefore, OCS can clearly describe the competencies and specifications required by the key talents in the industry, which will help labor talents develop and connect with specific industry needs. It can also reduce the gap between training and work requirements. OCSs are developed by the central government divisions in charge of the related industry or business. They can also be developed by government authorized organizations. These documents are demonstrated in Integrated Competency and Application Platform (iCAP, https://icap.wda.gov.tw). Till October 2021, there are 943 OCSs were developed.

Ideally, OCS can be used for HR practices such as recruitment, selection, training. Taiwan government delivered some guidebooks and workshops to introduce the procedure and method of OCS application. However, only few empirical studies to investigate the effectiveness of OCS usage in real business environment, and to test the connection of work performance and corresponding competencies demonstrated in OCS. Consequently, this study used OCS of Logistics Driver (Code: RTO8322-001v2) to establish the measurements of work performance and competency. Furthermore, the relationship of work performance and competency was investigated to verify the connection of work performance and corresponding competencies listed in OCS as well.

3. RESEARCH METHOD

3.1. Sampling

The research samples are X logistics company's logistics drivers at the southern business districts in Taiwan. X company is a home delivery company owned by a famous food/grocery related group. It was established in 2000 and got operational support by a Japanese home delivery company. The questionnaire was distributed to 17 business districts, and the district managers distributed it to the logistics drivers by the convenience sampling method Finally, 399 questionnaires were collected from Mach to April 2021.

3.2. Research Instrument of Work Performance and Competency

In the OCS of Logistics Driver, there are 9 job duties, 29 corresponding work tasks and 87 behaviour indicators. Meanwhile, 27 items of knowledge and 24 items of skill

were listed as well. Based on Spencer & Spencer's arguments [14], work duties and tasks can be achieved if the employees can conduct the corresponding behaviours. Therefore, this study takes behaviour indicators as the measurement of work performance. With respect to the competency, 6 district managers of X company pointed out that the items of knowledge and skill are highly related. Therefore, this study focuses on the part of knowledge as the measurement of competency. After interviewing and discussing with 2 HR experts and 6 district managers of X company during February and March 2021, 23 behaviour indicators and 22 items of knowledge are included in the research questionnaire. In order to test the validity and reliability of measurement, the factor analysis and reliability test were conducted.

Considering the variable of work performance, the behaviour indicators were grouped to fit job duties and tasks of OCS, then the factor analysis was conducted to test the validity. The variable of work performance was divided to Driving and Maintaining Vehicle (WO1, KMO=0.737, Eignvalue=2.872, α =0.801), Complying Safety and Security SOP (WO2, KMO=0.723, Eignvalue=2.338, α =0.856), Loading and Unloading Parcels and Cargo (WO3, KMO=0.679, Eignvalue=2.054, α=0.769), Keeping Parcels and Cargo Whole and Undamaged (WO4, KMO=0.701, Eignvalue=2.112, α =0.782), Using Suitable IT Devices (WO5, KMO=0.804, Eignvalue=3.010, α =0.890), and Carrying out Express or Cash Delivery (WO6, KMO=0.804, Eignvalue=3.010, α=0.890).

Since some knowledge items were listed across several job duties or tasks, all items were used for the factor analysis simultaneously. The knowledge items were divided into Safety Driving Knowledge (CO1, Eignvalue=1.976, α =0.908), Vehicle Related Knowledge (CO2, Eignvalue=4.070, α =0.908), Express Operation and Related Device Knowledge (CO3, Eignvalue=2.736, α

=0.779), and Process Monitoring and Emergency Situation Handling Knowledge (CO4, Eignvalue=5.780, α=0.941) with KMO value is 0.941 (p<0.001).

3.3. Research Hypothesis

The main research hypothesis of this study is that work performance is positively affected by competency. Base on the literature review and the factor analysis results, this study proposed the following hypothesis:

H1: The performance of driving and maintaining vehicle is positively affected by competency.

H2: The performance of complying safety and security SOP is positively affected by competency.

H3: The performance of loading and unloading parcels and cargo is positively affected by competency.

H4: The performance of keeping parcels and cargo whole and undamaged is positively affected by competency.

H5: The performance of using suitable IT devices is positively affected by competency.

H6: The performance of carrying out express or cash delivery is positively affected by competency.

4. DATA ANALYSIS

4.1. Descriptive Analysis and Corelation Analysis

In Table 1, the mean and standard deviation values of research dimensions pointed out that the respondents have higher mean of express operation and related device knowledge (m= 4.140) among dimensions of competency. Meanwhile, all level of work performance dimensions are a litter higher (m>3.900). With regard to the results of correlation analysis, all research dimensions are related at certain level (0.406 ≤ r ≤ 0.757, p < 0.01).

Table 1 The Results of Descriptive Analysis and Corelation Analysis

Variable & Dimension		Mean	SD	Competency				Work Performance					
				CO1	CO2	CO3	CO4	WO1	WO2	WO3	WO4	WO5	WO6
Competency	CO1	3.914	0.554	1									
	CO2	3.925	0.531	.612**	1								
	CO3	4.140	0.495	.476**	.509**	1							
	CO4	3.815	0.557	.636**	.568**	.699**	1						
Work Performance	WO1	4.011	0.460	.498**	.464**	.414**	.504**	1					
	WO2	3.936	0.523	.498**	.414**	.404**	.543**	.685**	1				
	WO3	4.250	0.530	.426**	.487**	.497**	.482**	.568**	.641**	1			
	WO4	4.137	0.484	.462**	.449**	.428**	.524**	.623**	.662**	.757**	1		
	WO5	3.974	0.486	.457**	.446**	.401**	.523**	.593**	.678**	.573**	.668**	1	
	WO6	3.998	0.467	.441**	.406**	.480**	.541**	.626**	.734**	.679**	.695**	.705**	1

#WO1: Driving and Maintaining Vehicle, WO2: Complying Safety and Security SOP, WO3: Loading and Unloading Parcels and Cargo, WO4: Keeping Parcels and Cargo Whole and Undamaged, WO5: Using Suitable IT Devices, WO6: Carrying out Express or Cash Delivery, CO1: Safety Driving Knowledge, CO2: Vehicle Related Knowledge, CO3: Express Operation and Related Device Knowledge, CO4: Process Monitoring and Emergency Situation Handling Knowledge

4.2. Regression Analysis

In Table 2 to Table 4, the results of regression analysis were demonstrated. All equations with the dimensions of work performance as dependent variable were significant since F values were significant (p < 0.001). Meanwhile, demographic variables and dimensions of competency were independent variables in all regression equations. Because of the page limitation, the β values of demographic variables were not presented in the following tables.

With respect to the influence of competency to work performance, all β values are significant (p<0.001) and positive. It means that each competency dimension is more likely to increase level of each work performance dimension respectively. In other words, logistics drivers may have better performance of WO1, WO2, WO3, WO4, WO5 and W06 if they enhance competency of CO1, CO2, CO3 and CO4. That also means all hypothesis are accepted. In addition, the β value of process monitoring and emergency situation handling knowledge (CO4) in each regression equation is the highest one. It pointed out that logistics drivers really need to know how to monitor all operation process and how to deal with contingent working environment.

Table 2 The results of regression analysis (dependent variable are WO1 and WO2)

	WO1				WO2			
CO1	0.458***				0.460***			
CO2		0.444***				0.399***		
CO3			0.387***				0.369***	
CO4				0.479***				0.536***
F	17.518***	18.767***	14.953***	17.518***	18.121***	18.121***	13.129***	19.862***
R^2	0.288	0.303	0.257	0.288	0.295	0.295	0.233	0.315
Adj. R^2	0.272	0.287	0.240	0.272	0.279	0.279	0.215	0.299

#WO1: Driving and Maintaining Vehicle, WO2: Complying Safety and Security SOP, CO1: Safety Driving Knowledge, CO2: Vehicle Related Knowledge, CO3: Express Operation and Related Device Knowledge, CO4: Process Monitoring and Emergency Situation Handling Knowledge

Table 3 The results of regression analysis (dependent variable are WO3 and WO4)

	WO3				WO4			
CO1	0.386***				0.404***			
CO2		0.401***				0.382***		
CO3			0.401***				0.345***	
CO4				0.466***				0.482***
F	19.608***	21.056***	20.639***	21.890***	16.757***	15.997***	13.872***	18.721***
R^2	0.312	0.328	0.323	0.336	0.279	0.270	0.243	0.302
Adj. R^2	0.296	0.312	0.308	0.321	0.263	0.253	0.225	0.286

WO3: Loading and Unloading Parcels and Cargo, WO4: Keeping Parcels and Cargo Whole and Undamaged, CO1: Safety Driving Knowledge, CO2: Vehicle Related Knowledge, CO3: Express Operation and Related Device Knowledge, CO4: Process Monitoring and Emergency Situation Handling Knowledge

Table 4 The results of regression analysis (dependent variable are WO5 and WO6)

	WO5				WO6			
CO1	0.406***				0.384***			
CO2		0.430***				0.363***		
CO3			0.361***				0.439***	
CO4				0.495***				0.515***
F	16.831***	18.831***	14.579***	19.430***	14.328***	13.673***	17.524***	19.184***
R^2	0.280	0.303	0.252	0.310	0.249	0.240	0.272	0.291
Adj. R^2	0.264	0.287	0.235	0.294	0.232	0.223	0.399	0.393

WO5: Using Suitable IT Devices, WO6: Carrying out Express or Cash Delivery, CO1: Safety Driving Knowledge, CO2: Vehicle Related Knowledge, CO3: Express Operation and Related Device Knowledge, CO4: Process Monitoring and Emergency Situation Handling Knowledge

5. CONCLUSION AND DISCUSSION

The theoretical model and many empirical studies pointed out that competency has positive influence on work performance. However, the foundation of competency-

performance relationship in HR area could be presented in job description (JD) since the content of JD includes job duty, work task/activity, and required qualification such as knowledge and skill evidence. If the establishment of JD follow the standards or procedures of competency analysis, the linkage between work performance and competency will increase as well. Therefore, the investigation of competency-performance relationship from a competency analysis document will be interesting and valuable not only for research but also for real business operation. This study used the document called OCS which issued by Taiwan government as a benchmark to development the measurement instruments of logistics drivers' competency and work performance. Basically, the analysis results mainly support the positive relationship between competency and work performance as most studies. Meanwhile, the combination of work performance and competency mainly fit the content of OCS of logistics drivers. Consequently, this study demonstrated a possibility that a well-developed competency model or JD is likely to be used to increase work performance if employees can enhance the competency shown in JD.

In addition, this study found that process monitoring and emergency situation handling knowledge may be the most powerful competency to work performance. It leads to some interesting issues. Firstly, in a rapid changing business environment, professional competency cannot deal with all situations. It is possible to take the competency of identifying cause of critical issues and proposing feasible solutions as core competency, then take other professional competencies as supporting competency. In detail, the training program of identifying cause of critical issues and proposing feasible solutions can be arranged to every employee. The depth and breadth of program can be different for different hierarchical positions in organization, of course. Then, the programs of professional competency training are delivered to required positions. Therefore, even though employees are not qualified to deal with problems, they at least clarify the problem as soon as possible at the first place. Secondly, continuous learning is important factor if the employees want to keep level of process monitoring and emergency situation handling competency high frequently. Therefore, how to motivate employees learning and how to establish a learning organization need further discussions. Thirdly, the training related to process monitoring and emergency situation handling in Taiwan usually link to attitude change since theoretical model, framework and analytical tool are generally introduced. It means many managers believe that this kind of training program can not directly increase specific work performance. Therefore, more case-oriented training contents can be arranged in these training programs.

REFERENCES

[1] H. M. Arifin, The influence of competence, motivation, and organisational culture to high school teacher job satisfaction and performance, International Education Studies 8(1) (2015) 38-45. DOI: 10.5539/ies.v1p38

[2] P. K. Bagchi, V. Helge, Logistics competence in small and medium-sized enterprises: the Norwegian experience, Supply Chain Forum: An International Journal 1(1) (2000) 46-55. DOI: 10.1080/16258312.2000.11517071

[3] J. P. Campbell, Modelling the Performance Prediction Problem in Industrial and Organizational Psychology, Consulting Psychologists Press. 1990.

[4] J. R. Edwards, (1991). Person-job fit: a conceptual integration, literature review, and methodological critique, in C. L. Cooper, I. T. Robertson (Eds.), International Review of Industrial and Organizational Psychology, John Wiley & Sons, 1991, 6, pp. 283–357. DOI:

[5] Hertina, D., Zahirsyah, M. F., & Kusramdani, D. (2021). The Effects of Motivation, Compensation and Communication on Employee Performance Productivity. Review of International Geographical Education 11(3), 1504-1513. DOI: 10.48047/rigeo.11.3.143

[6] Q. Hu, Analysis on the impact of knowledge-based employees' competency on performance in e-commerce enterprises. Advances in Economics, Business and Management Research 68 (2019) 550-557. DOI: 10.2991/ssmi-18.2019.91

[7] N. Karia, M. H. A. H. Asaari , N. Mohamad, S. Kamaruddin, Assessing Halal logistics competence: An Islamic-based and resource-based view, in Proceeding of the 2015 International Conference on Industrial Engineering and Operations Management (IEOM), IEEE, 2015, pp. 1-6.

[8] C. S. Lu, C. C. Lin, Assessment of national logistics competence in Taiwan, Vietnam, and Malaysia. The Asian Journal of Shipping and Logistics 28(2) (2012) 255-274. DOI: 10.1016/j.ajsl.2012.08.006

[9] D. C. McClelland, Testing for competence rather than for" intelligence", American Psychologist 28(1) (1973) 1-14. DOI: 10.1037/h0034092

[10] I. A. Martini, I. K. Rahyuda, D. K. Sintaasih, P. S. Piartrini, The influence of competency on employee performance through organizational commitment dimension. IOSR Journal of Business and Management 20(2) (2018) 29-37. DOI: 10.9790/487X-2002082937

[11] T. W. Ng, D. C. Feldman, The relationship of age to ten dimensions of job performance, Journal of

Applied Psychology 93(2) (2008) 392-423. DOI: 10.1037/0021-9010.93.2.392

[12] A. S. B. Shmailan, The relationship between job satisfaction, job performance and employee engagement: an explorative study, Issues in Business Management and Economics 4(1) (2016) 1-8. DOI: 10.15739/IBME.16.001

[13] J. Singh, Performance productivity and quality of frontline employees in service organizations, Journal of Marketing 64(2) (2000) 15-34. DOI:10.1509/jmkg. 64.2.15.17998

[14] L. M. Spencer, S. M. Spencer, Competence at Work: Model for Superior Performance, John Wiley & Sons, 1993.

[15] Workforce Development Agency, Ministry of Labor, Taiwan. The introduction of competency analysis methods, Retrieved from https://icap.wda.gov.tw/Knowledge/knowledge_method .aspx