

An Exploratory Study of Purchasing and Supply Management in Hong Kong Industries

Antonio K.W. Lau^{1*}, Susan To², Richard C.M. Yam²

¹Institute of Supply Management Hong Kong, Hong Kong

²Department of Industrial Engineering & Engineering Management, City University of Hong Kong, Hong Kong, China
(antonio_lau2000@hotmail.com, mery@cityu.edu.hk)

*Corresponding author

Abstract – The importance of Purchasing and Supply Management (PSM) for business performance has received considerable attention in recent years. However, academic research on PSM training and education is inadequate. This paper presents initial findings from PSM practitioners in Hong Kong about current PSM training and education needs. The study identifies top five trends, skills and knowledge areas for PSM professionals. The results show that the trends of PSM focus on purchasing cost reduction, the skills focus on negotiation and communication, and the knowledge on supply analysis and relationship management. The study also finds that companies tend to adopt on-the-job training for PSM staff but lack a systematic PSM training approach. This paper provides empirical evidence on the recent PSM environment and training needs.

Keywords – Purchasing, Supply Management, Hong Kong, Training

I. INTRODUCTION

In the face of mounting economic uncertainty and a volatile business environment, Purchasing and Supply Management (PSM) is now regarded as a key source of competitive advantage [1][2]. Great expectations are placed on PSM professionals to source the best business solutions from their supply chain partners, to achieve the innovation, value and services that their customers are looking for. Literature suggests that PSM may improve company performance by enhancing the quality of management practices, supplier participation and selection [3], e-procurement [4], and supplier development [5]. However, there is little research on PSM education and training needs. To understand how to shape and build a competent PSM team, the Hong Kong Institute for Supply Management (ISMHK), City University of Hong Kong and the Hong Kong Institute of Vocational Education (Sha Tin) conducted a joint survey to identify the education and training needs of PSM professionals in Hong Kong. By surveying PSM practitioners in 2009, the study aimed to understand the current trends, skills and knowledge areas that call for resource investment, how organizations administer the training and development of PSM staff, and the perceived effectiveness of the training programs. This article will report the study findings, giving significant managerial

implications, leading to further research opportunities in the field of supply chain management.

II. LITERATURE REVIEW

Recent literature has reported the importance of PSM for business performance. Reference [5] found that supplier performance and buyer competitive advantage can be enhanced by supplier development, effective communication and trust-building. Reference [3] found that quality management practices help effective supplier participation and selection, which in turn improves organizational performance. Reference [4] argues that e-procurement assures flexible and responsive products and services in a cost-effective manner. Its successful adoption requires business processing re-engineering, top management involvement, IT training and purchasing organizational change. Reference [6] proposes PSM strategies and processes for sustainable competitive advantage. They include development of future talent supply, vision and plan, e-procurement, category strategy development, cross-functional teaming, collaborative and improved working relationships, buyer/supplier development, value/demand analysis, supply chain alignment and strategic supply metrics.

These proposed PSM functions are drastically different from the traditional, transaction-based PSM practices, moving towards a more strategic and collaborative approach in supply chain management. To achieve them, PSM practitioners should require additional training and education. However, there is little research on PSM education and training needs. One of the few studies, Reference [7], surveyed US senior management and found that PSM practitioners need to improve their skills in team building, strategic planning, effective communication, business finance, relationship building and law (see also [9]). Reference [10] proposes that PSM professionals improve communication, project management, risk taking, decision making, and information technology skills.

To our best knowledge, no empirical study of PSM training and education needs has been recently conducted, particularly in Hong Kong and the Pearl River Delta region, where a large number of companies, such as Walmart, Metro, Ikea and Carrefour, have sourcing offices looking for low-priced finished goods. This area is also a key outsourcing location for multinationals such as General Electric and Philips. Thus, it is interesting to

know the current trends, skills and knowledge of PSM in this region.

III. METHODOLOGY

There is little research on PSM education and training needs. One of the latest comprehensive studies is Purchasing Education and Training II [7]. The authors, sponsored by CAPS Research, Arizona State University and the Institute for Supply Management (ISM), studied PSM training and education needs through a comprehensive literature review, focus groups with top executives of 41 US companies, and an online survey with 55 responses at the company director level. The online survey instrument was adapted in this study with two pilot studies. In the first pilot, the ISMHK chairperson and 18 committee members, each with over 10 years' managerial experience in PSM, intensively revised the content and wording of the questionnaire. In the second pilot, seven part-time Master of Science students working in the local supply chain-related industry were personally interviewed to fill in the revised questionnaire with comments. After the two pilot tests, the questionnaire was verified for this study.

The scope of the present research was limited to the 372 ISMHK members and a convenient sampling of 33 Master of Science students at City University of Hong Kong. ISMHK is affiliated with ISM, which is one of the largest associations of PSM specialists in the world. The Master of Science students surveyed all had current or past PSM working experience in local companies. Thus, the findings of the survey tend to reflect a general understanding of PSM in Hong Kong and the Pearl River Delta region. Of the 405 PSM practitioners contacted, 53 responded to the survey, for a response rate of 13.1%. The respondent profile is shown in Table 1.

IV. RESULTS AND DISCUSSION

Table 1 shows that 43.4% of the respondents were operational staff, 22.6% were supervisory and 18.9% were functional management. The respondents had diverse PSM experience: 45.3% had 1-2 years; 20.8% had 3-7 years; and 17% had 8-12 years. With such first-hand PSM experience, the respondents should be able to address PSM issues in the region.

The respondents were mainly from manufacturing (62.3%) and service (28.3%) industries. They worked in companies with less than 50 employees (17%), 50-249 employees (5.7%), 250-499 employees (13.2%), 500-999 employees (9.4%) and over 1,000 employees (47.2%). This suggests that the findings of this study may apply to companies of any size in both manufacturing and service industries.

Table 1. Respondent Profile

	N	Percentage
Respondent position		
Senior management	3	5.7%
Functional management	10	18.9%
Supervisory	12	22.6%
Operational	23	43.4%
No response	5	9.4%
PSM experience		
1-2 years	24	45.3%
3-7 years	11	20.8%
8-12 years	9	17%
13 years or above	4	7.5%
No response	5	9.4%
Company size		
1-49	9	17%
50-249	3	5.7%
250-499	7	13.2%
500-999	5	9.4%
>1,000	25	47.2%
No response	4	7.6%
Type of industry		
Services (including trade-related, communication & media, and professional services)	15	28.3
Manufacturing (electronics & electrical, toys & plastics, watches & clocks, food & beverage, textile & garment)	33	62.3
Building and construction	1	1.9
Others	4	7.5

Table 2 shows the supply chain organization and PSM status in the respondents' companies. A majority of the companies have a hybrid form of PSM organization. This is understandable as some PSM activities are better decentralized for operational flexibility (e.g. low-cost but infrequent purchases), while others are centralized for operational efficiency (high-value and frequent purchases). Similarly, PSM training organization is hybrid in form as it follows the general structure of the organization.

It has been argued that entry-level PSM positions require a certain level of formal education because the PSM function is strategic and important for an organization [7]. Table 2 shows that 56.6% of the respondents said PSM required a minimum of a bachelor degree, 7.5% said a master degree was needed, and 34% cited an associate degree or a higher diploma. More than half of the respondents (54.7%) said that professional qualification was not necessary but 28.3% said a PSM-specific higher diploma was needed). This result suggests that the respondents may lack a continuous learning attitude towards PSM, or that there are insufficient promotions or courses in PSM professional certification in the region.

The status of the PSM function may also affect a company's willingness to invest in PSM training and education. The higher the status of the function, the more the company will support training efforts. As shown in Table 2, the respondents perceived that PSM had a moderate status. PSM was mainly viewed as both a career and a rotational job assignment (50.9%) or a career track

within the PSM function (37.7%). As a career track, the respondents should continue to learn new PSM knowledge and skills in order to deal with PSM's increasingly strategic role in the organization, as noted in the top five trends (Table 3).

Table 2. Supply Chain Organization and Status

	N	Percentage
PSM organization		
Centralized/Decentralized (many annual purchase expenditures coordinated through joint activities of corporate office and operating units)	33	62.3%
Centralized (most annual purchase expenditures committed by corporate office)	13	24.5%
Decentralized (most annual purchase expenditures committed by operating units)	7	13.2%
PSM training organization		
Centralized/Decentralized	27	50.9%
Centralized	15	28.3%
Decentralized	9	17%
Not applicable	2	3.8%
Minimum formal education level in PSM		
Bachelor degree	30	56.6%
Higher diploma	10	18.9%
Associate degree (2 years)	8	15.1%
Master degree or above	4	7.5%
Not required	1	1.9%
Minimum professional certifications in PSM		
CPM/CPSM	4	7.5%
CIPS	5	9.4%
PSM-specific higher diploma	15	28.3%
Not required	29	54.7%
Perceived status of PSM		
What is the perceived status of the PSM function in your organization?*	Average: 3.12	
Both career and rotational	27	50.9%
Career track within the function	20	37.7%
Rotational job assignment	3	5.7%
None of the above	3	5.7%

* 1 = low status; 3 = moderate status; 5 = high status

Table 3 shows the perceived top five trends, skills and knowledge associated with PSM. The respondents were asked to rate the importance of 36 trends, 43 skills and 61 knowledge areas in the current PSM environment. (Interested parties may obtain the lists by contacting the authors.)

Three of the top five trends in PSM involved cost issues. The most important trend was cost reduction. The next two were purchasing performance monitoring and strategic sourcing, focusing on organizing the effort to carry out effective PSM. These findings are similar to the literature [7]. To achieve cost reduction, strategic sourcing and supplier selection efforts would be closely monitored because PSM will be expected to meet its targeted cost objectives.

According to Collins CoBuild [8]: "Skill is the knowledge and ability that enables you to do something well" and "is a type of work or activity which requires

special training and knowledge". Identifying appropriate skills for the PSM function is required for PSM training and education purposes. This study found that the top five PSM skills are negotiation, interpersonal communication, analytical, ability to work in teams, and decision making and problem solving. In other words, PSM practitioners have to be communicators, negotiators, able to make decisions, solve problems, and work well in teams.

Globalization, e-business and intense competition require PSM practitioners to acquire new knowledge. As shown in Table 3, the top five knowledge areas are price/cost analysis, competitive supply market analysis, supplier relationship management, analysis of suppliers, and supplier evaluation. These results show that the respondents need to analyze and evaluate suppliers, understand the competitive market, and adopt various pricing/cost techniques to achieve the lowest total cost. While managing total cost reduction, they also require knowledge supporting supplier relationship management programs and maintaining collaborative relationships with the suppliers. These findings are in line with the literature [7].

Table 3. Perceived Top Five Trends, Skills and Knowledge of PSM

	Mean (SD)
Trends*	
Pressure to reduce costs will increase	3.98 (0.92)
Purchasing performance will be more closely monitored	3.79 (0.74)
Strategic sourcing will increase in importance	3.77 (0.89)
Strategic cost management will increase	3.75 (0.83)
Supplier selection will focus on total cost analysis	3.72 (1.03)
Skills**	
Negotiation	4.26 (0.76)
Interpersonal communication	4.00 (0.81)
Analytical	3.98 (0.80)
Ability to work in teams	3.94 (0.79)
Decision making and problem solving	3.92 (0.87)
Knowledge**	
Price/cost analysis	4.02 (0.77)
Competitive market analysis #	3.83 (0.76)
Supplier relationship management	3.81 (0.79)
Analysis of suppliers	3.79 (0.69)
Supplier evaluation	3.75 (0.81)

* 1 = strongly disagree; 3 = neutral; 5 = strongly agree

** (1 = not important; 3 = important; 5 = most important

the market refers to supply market

The results suggest that PSM personnel need to communicate and negotiate well with internal and external customers to ensure better purchasing decisions and achieve effective supplier involvement in various business activities. PSM practitioners also need to have analytical skill to make decisions based on facts. Understanding business conditions such as the supply market and how the key suppliers operate gives the practitioners an early understanding of the supply base, helping the company to reduce supply risk and identify cost reduction opportunities. This reduces total costs and ensures business continuity.

Effective training requires a systematic and comprehensive training program to address the trainees' career goals and objectives. Career development programs seek to direct, track and monitor the career path of PSM staff [7]. Training programs provide formal courses for PSM personnel and a needs assessment that assesses each PSM practitioner's training needs. The respondents were asked to rate their companies' PSM training programs and their perceived effectiveness. Table 4 shows that only 22.6% of the companies had formal career development programs, 24.5% had formal training programs and 37.7% had needs assessment. This suggests that a majority of the companies have no systematic way to conduct PSM training and do not assess PSM training needs. Since there is a large and growing demand for skilled PSM talent with experience and expertise in analytical and strategic activities, a comprehensive human resource system that trains internal staff to be capable to handle these activities is crucial to ensure the availability of the needed talent [1]. A clear career development program may also attract talent in the marketplace. Thus, we suggest that companies start developing internal training programs for PSM staff.

The purchasing literature describes various training approaches, such as on-the-job training, formal classes, e-learning courses, manuals, teleconferencing and virtual classrooms [7]. Often various training approaches are integrated to provide better training results. For example, a company may provide on-the-job training for new employees while regularly sending them to formal training sessions to acquire new knowledge. In this study, the respondents were asked whether their companies used various training methods. If the methods were used, the respondents rated the frequency of use. As shown in Table 4, the most popular training method was on-the-job training (79.2%) and formal classroom training was second (50.9%). On-the-job training was also frequently used. IT and multimedia-based training methods such as video-conferencing, CD-ROMs, DVDs, videotapes and TV were not used by most companies to carry out training. Companies may find on-the-job training effective, for example, job rotation to expose employees to different functional units of the company can ensure that they are adequately prepared to work with the units in the future. However, it is also possible that the companies cannot identify new or other effective methods to provide PSM training. Or, there is simply no formal training for PSM staff. PSM practitioners are expected to perform immediately and learn by themselves. The company will not invest in staff training. This finding requires further study.

To assess the effectiveness of any training is to measure it. The common method to evaluate a course is to ask participants to evaluate the course immediately after it ends. Performance evaluation assesses performance before and after training. Needs assessment tests knowledge level prior to and after courses. Course evaluations after a time period assess if the trainee has adopted the knowledge learnt. As can be seen in Table 4,

less than 50% of companies measured training effectiveness. If they did, the most prevalent method was to conduct course evaluation immediately after the course and the second was performance evaluation. This result suggests that companies need to establish effective training measurements. Otherwise, the training investment may not be assessed or realized.

Table 4. PSM Training Programs and Effectiveness

	N	Percentage
Training programs		
Formal career development program	12	22.6%
Formal training program	13	24.5%
Needs assessment	20	37.7%
Training methods		
	Used	Frequency of adoption*
On the job/Informal	79.2%	3.76
Formal classroom/Instructor-led training	50.9%	2.96
Self-paced e-learning courses offered via intranet/internet/extranet	45.3%	2.46
Workbooks and manuals, self-paced	45.3%	1.91
Teleconferencing (facilitation via teleconferencing)	41.5%	2.73
Virtual classroom (facilitation via video conferencing)	37.7%	2.38
CD-ROM/DVD/Diskettes, self-paced	30.2%	2.15
Videotapes, self-paced	22.6%	2.71
Satellite/Broadcast TV	18.9%	1.75
Training effectiveness measurements		
	N	Percentage
Course evaluations with the course	24	45.3%
Performance evaluation (before training and after training)	20	37.7%
Needs assessment of knowledge (pre-test and post-test)	14	26.4%
Course evaluations after a time period (e.g. 3 months, 6 months, etc.)	9	17%
The role of colleges and universities in improving PSM		
		Average score**
Provide business students with an understanding of purchasing		3.58
Offer a specific major in purchasing/supply chain management		3.47
Conduct research on current supply chain management topics		3.42
Provide more technical training (e.g. computer skills)		3.37

* 1 = never; 3 = sometimes; 5 = always

** 1 = not important; 3 = important; 5 = most important

Finally, respondents were asked to rate what role should colleges and universities play in improving the effectiveness of PSM. Table 4 shows that their most important role is to provide business students with an understanding of purchasing. Next was offering a specific major in purchasing/supply chain management, followed by conducting research on current supply chain management topics and providing more technical training. The findings clearly indicate that the colleges and universities with resources and professionals who specialize in supply chain management knowledge have to make extra efforts to launch PSM courses to improve PSM professionalism. Colleges and universities are also expected to create new PSM knowledge through research and to provide technical skills, for example information technology, to PSM practitioners.

V. CONCLUSION

The present study empirically examines PSM training and education needs, which has seldom been attempted in previous research. This study shows that PSM professionals need to think strategically, broaden their perspective on supply chain management, and continuously learn new skills and knowledge.

Cost reduction is by far the most important trend as rated by the respondents. It relates to many areas such as total cost analysis when selecting suppliers, global pricing arrangements, and price/cost analysis. Purchasing should also be organized to ensure that the purchase price is reasonable in order to maintain good supplier relationship management.

Negotiation skill is perceived as the most important skill in PSM. PSM personnel with effective negotiation skills have a positive influence on any relationship-building matter. For example, negotiation skill enhances strategic relationship management with both internal and external customers as well as suppliers. Individuals with strong negotiation skill may work well in several teams by better balancing multiple tasks and promoting compromise among team members with different perspectives. Negotiation is also a key part of interpersonal communication skills.

Price/cost analysis is the most critical knowledge area. Since increasing pressure to reduce cost is the most important trend, price/cost analysis is the most critical knowledge area. PSM professionals have to find any possible opportunity to reduce cost at a competitive level and understanding markets and suppliers is essential.

In PSM training and education, this study showed that companies are weak at staff training. Most of the companies do not have formal training programs and training effectiveness measurements. In light of the skills and knowledge required in PSM, we recommend that companies develop a systematic training program for their PSM staff. Since PSM functions are strategic and important to the business bottom-line, PSM staff with competent purchasing skills will significantly improve business performance. On the other hand, colleges and universities should provide more PSM-specific courses to the PSM practitioners, and PSM professional associations should take this opportunity to promote the importance of professional certifications in order to improve PSM professionalism.

For academics, this empirical study suggests that supply chain management researchers could make more effort to study the impact of PSM education and training on PSM practices and their relationships with business performance. Without empirical evidence, it is difficult to motivate business organizations to invest in supply chain management training and education, which eventually affects organizations' sustainability. Effective training and education methods in supply chain management should also be studied. Managing the recent supply chain environment requires special, more advanced skills. Various training methods such as active learning,

participative learning and e-learning may be effective with supply chain personnel. Further research may be needed to study the relationship between these training methods and training effectiveness and eventually human resource performance.

REFERENCES

- [1] Carter, P.L., Monczka, R.M., Ragatz, G.L. and Jennings, P.L. *Supply Chain Integration: Challenges and Good Practices*. USA: CAPS Research, 2009.
- [2] Shin, H., Collier, D.A. and Wilson, D.D., *Supply Management Orientation and Supplier/Buyer Performance*, *Journal of Operations Management*, 2000, 18 (3), 317-333.
- [3] Lin, C., Chow, W.S., Madu, C.N., Kuei, C.H. and Yu, P.P., *A Structural Equation Model of Supply Chain Quality Management and Organizational Performance*, *International Journal of Production Economics*, 2005, 96, 355-365.
- [4] Gunasekaran, A. and Ngai, E.W.T., *Adoption of E-procurement in Hong Kong: An Empirical Research*, *International Journal of Production Economics*, 2008, 113, 159-175.
- [5] Humphreys, P., Li, W.L. and Chan, L.Y., *The Impact of Supplier Development on Buyer-Supplier Performance*, *Omega*, 2004, 32, 131-143.
- [6] Monczka, R.M. and Petersen, K.J., *Supply Strategy Implementation: Current State and Future Opportunities*. USA: CAPS Research, 2008.
- [7] Giunipero, L. and Handfield, R.B., *Purchasing Education and Training II*. USA: CAPS Research, 2004.
- [8] Collins CoBuild, *Collins Cobuild Advanced Learner's English Dictionary*, 5th edition, USA.
- [9] Giunipero, L., Handfield, R.B. and Eltantawy, R., *Supply Management's Evolution: Key Skill Sets for the Supply Manager of the Future*, *International Journal of Operations & Production Management*, 2006, 26(7), 822-844.
- [10] McKinney, W.S. III, *Developing Supply Management Skills and Talent*, *The Supply Management Handbook* 7th edition. USA: McGraw-Hill, 313-327.