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Salesperson's procedural knowledge, experience and performance: An empirical study in Japan¹

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Abstract The authors investigated the moderating effect of sales experience on the relationship between salespeople's procedural knowledge and their performance, using a sample of 108 salespeople working at three car dealerships in Japan. Moderated regression analyses suggested that the more experience salespeople gain, the stronger the relationship between procedural knowledge and performance becomes. The results provide some support for the hypothesis that the sales experience moderates the relationship between procedural knowledge and performance, which is consistent with Anderson's (1982, 1983) model and the ten-year rule of necessary preparation in expertise research. The results also suggest that a high-performing sales expert has customer-oriented and active selling knowledge. Theoretical and practical implications of these findings in managing salespeople are discussed.

Keywords: Salesforce, Procedures, Selling, Experience, Japan

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The present study focuses on how salespeople acquire their knowledge for two reasons. First, salespeople serve a critical boundary-spanning role in building relationships with customers in turbulent environments (Achrol, 1991; Dubinsky et al., 1986; Ganesan, 1994; Singh, 1998; Singh et al., 1996). Given the increased importance of long-term relationships between customers and sellers, key marketing personnel like salespeople who have relationship management skills will become valuable as business assets (Webster, 1992). Second, the knowledge-based view of the firm argues that, of all possible resources, the firm's knowledge bases are the main determinants of sustainable competitive advantage (Gupta and Govindarajan, 2000). Nonaka (1994) suggests that tacit knowledge held by individuals may lie at the heart of the knowledge creating process. These arguments indicate that examining the knowledge acquisition process of salespeople could contribute to the advance of marketing management research.

This study pays attention to the role of experience that links salespeople's knowledge and their performance. Understanding the relationships between experience, knowledge and performance should provide insights in explaining the knowledge acquisition process, which will help in building better tools for managers in passing on and developing useful knowledge within an organization. Nevertheless, there have been few studies of the empirical relationships between job experience and job performance (Borman et al., 1993; McDaniel et al., 1988), and the literature on the mechanism by which job experience influences job performance is limited. While some researchers have investigated the experience-performance relationship through job knowledge or proficiency, there is little agreement between the results (Schmidt et al., 1986; Borman et al., 1993). In personal selling research, the relationship between knowledge and performance has been examined (Leong et al., 1989; Macintosh et al., 1992; Sujan et al., 1988). However, no study has tried to investigate the effect of experience on salespeople's knowledge.

The purpose of this study is to extend previous research by investigating the moderating effects of experience on the relationship between salespeople's procedural knowledge and their sales performance. By studying the impact of experience on the knowledge-performance relationship, we can obtain some clues about the knowledge acquisition process, which may have useful implications for managing knowledge transfer or development in a sales department. In addition, knowledge acquisition is a basic construct involving the concept of organizational learning (Huber, 1991; Nevis et al., 1995). Thus, examining the knowledge acquisition process of salespeople could contribute to organizational learning research.

In the following sections, we briefly outline studies on the experience-performance

relationship, knowledge acquisition model, and expertise research. This is followed by an overview of cognitive research in personal selling. We use these arguments to propose a hypothesis.

Experience - performance relationship

Some researchers have examined job knowledge or proficiency as a variable mediating the effect of job experience on performance. Schmidt et al. (1986) examined soldiers in four different job classifications and found that job experience has a substantial indirect effect on performance through its effect on job knowledge. In a study of the US army, Borman et al. (1993) reported that supervisory experience had a greater impact on proficiency than on knowledge. Perkins and Rao (1990) reported that for unprogrammed decisions, experienced marketing managers differ from novices in both their use of information and in the decisions they make. They insisted that managers acquire expertise in making decisions with experience. These studies show that there is no agreement on the relationship between job experience, job knowledge and performance, and that further studies are needed.

Schmidt et al. (1986) and Borman et al. (1993) used path analysis and covariance structural analysis to analyze job knowledge or proficiency as a mediator between experience and performance. However, experience can also moderate the relationship between knowledge and performance, in terms of Anderson's (1982, 1983) skill acquisition model and previous expertise research. A moderator is a variable that affects the direction or strength of the relationship between an independent variable and a dependent variable (Baron and Kenny, 1986; Saks, 1995). A person's knowledge or skill is thought to become more elaborate and effective with experience. In other words, the more experience people have, the stronger the relationship between knowledge and performance becomes.

Anderson (1982, 1983) proposed three stages of knowledge acquisition on the basis of Fitt's (1964) study:

- (1) the declarative stage;
- (2) knowledge compilation; and
- (3) the procedural stage.

This model proposes that knowledge is acquired as a set of facts at the verbal level (declarative stage) and that the knowledge is then converted into a procedural form with practice (knowledge compilation). Subsequently, there is fine tuning of the knowledge so that it can be applied more appropriately, and there is a gradual process of acceleration (procedural stage). For example, when learning a foreign language, one starts by reading

a textbook to acquire knowledge on how to speak or write. Such knowledge is at the declarative stage. Then, the knowledge is converted into knowledge at the procedural stage through practicing alone or with an instructor.

Anderson's skill acquisition model is consistent with expertise research. Glaser and Chi (1988) point out that experts excel mainly in their own domain, and they perform quickly with little error. Previous empirical evidence also revealed "the ten-year rule of necessary preparation", which means that it requires about ten years of preparation to attain high performance in several domains (Ericsson, 1996; Ericsson et al., 1993). Anderson's model and the ten-year rule imply that experience in a domain plays an important role in gaining useful knowledge or expertise for performing tasks. In other words, we can predict that the relationship between knowledge and performance is stronger in a group of experienced salespeople than in a group of inexperienced salespeople. In this case, ten years may be a critical period, in terms of the ten-year rule in expertise research. The present study defines sales experience as the length of experience in sales activities.

Salespeople's knowledge and performance

Knowledge can be classified into "declarative knowledge" and "procedural knowledge" (Anderson, 1980). Declarative knowledge refers to knowledge about facts, while procedural knowledge is knowledge of a method or skill. This distinction originates in Ryle's (1949) classification of knowledge: knowing what and knowing how, although it is not easy to draw an exact line between the two types of knowledge (Smith, 1994). Recent personal selling studies have focused on salespeople's declarative and procedural knowledge as a determinant of sales performance, and some empirical evidence shows that effective and ineffective salespeople have different knowledge bases (Leigh and McGraw, 1989; Szymanski, 1988; Weitz et al., 1986). In a selling context, declarative knowledge provides a database for recognizing customer types, needs, and the sales situation, whereas procedural knowledge indicates what types of selling methods or strategies should be used in specific situations (Weitz et al., 1986). Concerning declarative knowledge, Szymanski (1987) reported that high- and low-performing salespeople perceive the importance of the cues used in classifying prospective clients differently (Macintosh et al. 1992). Sujan et al. (1988) also found that effective salespeople have richer and more interrelated knowledge structures about their customers than ineffective salespeople. Salespeople's procedural knowledge has been investigated as script, which refers to organized knowledge that describes an appropriate sequence of events or activities to fit a particular situation (Schank and Abelson, 1977). For example, Leong et

al. (1989) reported that highly effective salespeople provide more elaborate, distinctive, contingent, and hypothetical scripts than effective salespeople. Matsuo and Yoshino (1996) examined salespeople's procedural knowledge as the guiding principle or strategy directing their behavior in a wide range of sales situations, and reported that an effective salesperson tends to be more alert to a customer's needs, reacts promptly, and makes an active proposal to a customer in the early stages of the sales process.

These studies show that salespeople's knowledge influences their performance. However, no study has examined the effect of experience on the knowledge-performance relationship. Past research on personal selling has paid little attention to how salespeople acquire task-specific knowledge, which may have implications for development and management of salespeople. This study focuses on salespeople's procedural knowledge, or knowledge about selling method or skill, because our view is based on Anderson's (1982, 1983) skill acquisition model. We define the procedural knowledge of selling as the selling method or skill used at a particular sales stage, such as the approach, communication, proposal, or closing stage. Understanding the moderating effect of experience on the relationship between salespeople's procedural knowledge and their sales performance should provide insight into the knowledge acquisition process of salespeople.

Hypothesis

This study attempts to extend the understanding of the knowledge-performance relationship by considering the moderating effect of experience on it. Our research differs from previous experience-performance studies in that it examines the procedural knowledge of salespeople, who play an important role in an organization as boundary spanners. Based on Anderson's (1982, 1983) skill acquisition model, we hypothesize that sales experience moderates the relationship between salespeople's procedural knowledge and sales performance. Specifically, we propose the following hypothesis:

H1. The more sales experience salespeople gain, the stronger the relationship between procedural knowledge and their performance becomes.

With experience, salespeople's declarative knowledge is converted into a procedural form that facilitates their selling activities. According to the ten-year rule of necessary preparation in expertise research, we predict that the knowledge-performance correlations in a group with more than ten years' experience is much higher than that in a group with less than ten years' experience. In addition, we examine the features of high performing

salespeople's knowledge.

Method

Subject and procedure

The subjects were salespeople working at three car dealerships, located in Okayama City and affiliated with the same large Japanese auto manufacturer. We conducted two questionnaire surveys that were not anonymous. First, in order to gather information on selling strategies, methods, and the skills (or procedural knowledge), we administered an open-ended questionnaire survey to salespeople as preliminary research. The questionnaires were distributed to salespeople at each head office. Of the 100 questionnaires mailed, 63 were returned directly to the researcher, for a response rate of 63.0 per cent. The subjects were asked to write freely about the activities or tactics used to perform tasks properly at each of the nine steps involved in the sales process:

- (1) approach;
- (2) communication;
- (3) proposal;
- (4) closing;
- (5) receiving an order;
- (6) delivering the car;
- (7) follow up;
- (8) getting a referral; and
- (9) promoting a replacement.

Two researchers examined the answers and ultimately identified 119 examples of selling strategies, methods, and skills (or procedural knowledge). In specifying the procedural knowledge, we tried to cover all the answers by the subjects without duplication.

The main survey was based on the preliminary research and given to salespeople at the same companies, to measure procedural knowledge quantitatively. The questionnaires were distributed to salespeople by each head office. Of 150 questionnaires mailed, 108 (95 men, 13 women; the average age 32 years; average sales experience 8.4 years) were returned to the researcher, for a response rate of 72.0 per cent. The subjects of the main survey included 33 salespeople who had participated in a preliminary survey, as we had to have an adequate number of subjects. We used a t-test to check for systematic error caused by using the same salespeople from the preliminary research, and found that there was significant difference ($p < 0.05$) on five of 119 items between salespeople who had participated in the preliminary survey and those who had not participated. Thus, we eliminated these items from the following analyses. Our sample size ($n=108$) is not so

small in comparison with previous studies on personal selling using regression analyses. For example, Barling et al. (1996) examined the interaction of time management and achievement, striving to predict car sales performance using the moderated regression analyses on the basis of data from 102 salespeople. Stewart (1996) examined the moderator effect of reward structure on the relationship between extroversion and sales performance, using the hierarchical regression analyses based on the data from 102 sales representatives.

Measures

Procedural knowledge. The subjects were asked to rate the frequency of using each example of procedural knowledge, defined as the selling strategy, method, or skill, on a seven-point scale ranging from “7: always” to “1: never”. The 119 items examining procedural knowledge were presented for the nine stages of the sales process mentioned above. We measured the frequency of using knowledge because procedural knowledge is knowledge about a skill and it tends to be tacit and closely related to salespeople’s behavior or activity. Anglin (1990) found no difference between effective and ineffective salespeople on the perceived importance of sales script (Macintosh et al., 1992). By using a frequency scale, we were able to measure salespeople’s procedural knowledge indirectly.

Sales performance. Little consensus exists in the salesperson literature on whether job performance should be measured through subjective evaluations by supervisors, customers, or salespeople themselves, objective data-based measures, or a combination (Churchill et al., 1985; Sujan et al., 1994). Prior studies on cognitive personal selling used both outcome performance measures (Anglin, 1990; Leong et al., 1989; Szymanski, 1987) and subjective performance measures such as ratings by supervisors (Sujan et al., 1988; Leigh and McGraw, 1989). This study used the objective performance measures that reflect both short-term profit and long-term profit. We obtained information on the number of cars that salespeople sold and the inspection services that they arranged in a year from the head offices of the three car dealers. The inspection service is a safety check that Japanese automobiles must have every two or three years. The income from the service is a significant source of profit, and it is an important indicator of long-term relationship between salespeople and customers. In Japanese car dealerships, both the number of car sales and service inspections are used as performance data of salespeople. Therefore, sales performance was measured by adding the number of car sales and service inspections that the salesperson generated in a year (car sales: $M=38.0$, $SD=23.1$; service inspections: $M=48.7$, $SD=42.5$). The relatively high alpha coefficient (0.79) shows that the two performance criteria are closely related to each other. Using this scale, we can not

only measure the short-term performance of salespeople, but also their long-term performance.

Some researchers reported that objective measures were highly related to subjective measures. For example, Barling et al. (1996) measured the car salespeople's performance using annual vehicle sales and evaluation by the general managers, and reported that both measured were significantly related. Jaworski and Kohli (1991) reported high correlation between output performance and behavioral performance ($r=0.57$). Thus, using objective measures alone may not have significant bias on the results.

Sales experience. Previous studies measured job experience as the number of months or years the employee worked in his or her present occupation (Borman et al., 1993; McDaniel et al., 1988; Schmidt et al., 1986; Steven and Rao, 1990). Following the prior research, we define sales experience as length of experience in a sales activity. In this study, we measured sales experience as both continuous and categorical variables in the following analyses. Based on the ten-year rule of necessary preparation, we classified salespeople into two experience categories: the associate group (less than ten years of experience) and the veteran group (more than ten years of experience). Using a categorical variable helps to identify the direction of the moderating effect of sales experience on the relationship between procedural knowledge and performance. However, we should notice that tenure in years may reflect fit with organizational culture. In order to check this possibility, we conducted correlation analyses between averaged scores of perceived organizational culture (four dimensions, 20 items) and length of experience. The results showed no significant relationships between four cultural dimensions and length of experience ($r=0.15$, n.s.; $r=-0.15$, n.s.; $r=0.04$, n.s.; $r=-0.08$, n.s.). This means that length of experience is independent of fit with organizational culture.

Results

Experience and performance

The mean sales experience and standard deviation were 8.40 and 7.85 years, respectively. The correlation between sales experience and performance was 0.61, which is much higher than that reported in other studies. Using a meta-analysis, McDaniel et al. (1988) reported that the correlation between experience in a current occupation and supervisory performance ratings was 0.32. However, they also found that the highest correlations were obtained in populations with low mean levels of job experience and with a low level of job complexity. Thus, we classified salespeople into two experience categories, the associate (less than ten years of experience) and veteran (more than ten years of experience) groups, and conducted a correlation analysis between experience and

performance in each group. The correlation was 0.66 ($p < 0.001$) in the associate group ($n=64$), and -0.22 (n.s.) in the veteran group ($n=36$). This result is consistent with that of McDaniel et al. (1988) and suggests that experience has a great impact on the performance of newcomers or associate salespeople, while additional experience does not improve the performance of veteran salespeople.

Items of procedural knowledge	Knowledge F	Experience F	Knowledge \times experience F	R^2
a5 Talk to a customer with a smile	0.42	3.79	10.35**	0.44
a7 Create an atmosphere that lets the customer talk freely	0.48	4.06*	8.82**	0.42
a8 Read the customer's type	0.00	0.71	4.07*	0.39
b2 Ask the type of car the customer wants to examine	2.51	4.01*	8.17**	0.40
b16 Ask about the use of a car	0.90	2.33	8.87**	0.42
c14 Suggest a product confidently	0.10	1.80	4.80*	0.43
c15 Present the purchase conditions for examination	2.33	2.31	6.26*	0.39
d14 Do not hurry to close a deal	1.67	0.94	6.02*	0.39
d19 Ease the hesitation and anxiety of a customer	1.10	0.75	4.37*	0.38
d22 Make clear whether something is possible or impossible to do	0.36	0.45	4.41*	0.39
e10 Send a thank-you letter after receiving an order	3.88	1.26	9.92**	0.41
e11 Ask customers to make referrals	0.00	0.25	4.81*	0.40
f2 Recommend that the customer takes the car to the shop	0.06	0.94	6.54*	0.41
f7 Clean the car before delivering it	2.54	2.36	5.77*	0.39
g3 Be sure that the customer receives free repair service	0.69	1.72	6.86*	0.41
g7 Invite the customer to events	1.46	0.29	6.22**	0.39
g10 Make follow up visits with a purpose	1.01	0.02	7.57**	0.40
h1 Ask customers to make referrals after building relationships	0.11	0.37	5.52*	0.42
h2 Meet everyone customers have referred	0.11	0.56	4.05*	0.39
h7 Ask customers to make referrals based on the latest information	0.14	0.27	4.52*	0.39
h10 Ask customers to make referrals to friends or relatives	0.54	0.01	5.19*	0.39
h12 Ask customers to make referrals at their workplace	0.46	0.01	7.00*	0.45
i6 Approach on the basis of mileage or years of use	0.04	0.12	5.30*	0.40

Notes: Results were shown only when interaction term was significant ($p < 0.05$); * $p < 0.05$; ** $p < 0.01$

Table I. Moderated regressions for procedural knowledge, sales experience, and their interactions predicting sales performance ($n=100$)

Moderating effect of experience

To test the extent to which sales experience moderates the relationship between procedural knowledge and performance, we performed a separate moderated regression analysis for each of the 114 items of procedural knowledge. The dependent variable was sales performance, and independent variables were each item of procedural knowledge, sales experience, and their interaction term. Table I shows the results with a significant interaction term ($p < 0.05$) and shows that sales experience moderates the relationship between procedural knowledge and performance for 19 items of procedural knowledge. The main effect of procedural knowledge was not significant in all analyses, while the main effect of experience was significant in 19 analyses. To interpret and depict these

interaction effects, we conducted correlation analyses between procedural knowledge and performance in each experience group within the associate and veteran groups. A graphing procedure was not used because too many graphs were needed to depict the interaction effects.

Items of procedural knowledge	Less than ten years (<i>n</i> = 70)	More than ten years (<i>n</i> = 37)
a5 Talk to a customer with a smile	0.02	0.31
a7 Create an atmosphere that lets the customer talk freely	0.04	0.37*
a8 Read the customer's type	0.10	0.35*
b2 Ask the type of car the customer wants to examine	-0.08	0.20
b16 Ask about the use of a car	-0.04	0.28
c14 Suggest a product confidently	0.21	0.38*
c15 Present the purchase conditions for examination	-0.10	0.21
d14 Do not hurry to close a deal	-0.13	0.27
d19 Ease the hesitation and anxiety of a customer	-0.23	0.42*
d22 Make clear whether something is possible or impossible to do	-0.03	0.38*
e10 Send a thank-you letter after receiving an order	-0.16	0.15
e11 Ask customers to make referrals	0.17	0.15
f2 Recommend that the customer takes the car to the shop	0.02	0.37*
f7 Clean the car before delivering it	-0.19	0.21
g3 Be sure that the customer receives free repair service	-0.07	0.37*
g7 Invite the customer to events	-0.14	0.37*
g10 Make follow up visits with a purpose	-0.10	0.28
h1 Ask customers to make referrals after building relationships	0.25*	0.20
h2 Meet everyone customers have referred	0.12	0.21
h7 Ask customers to make referrals based on the latest information	0.17	0.07
h10 Ask customers to make referrals to friends or relatives	0.01	0.15
h12 Ask customers to make referrals at their workplace	0.31*	0.35*
i6 Approach on the basis of mileage or years of use	0.15	0.29

Note: * $p < 0.05$; ** $p < 0.01$

Table II. Correlation between procedural knowledge and performance in each experience group

Table II shows that the correlation between procedural knowledge and performance tended to be stronger in the veteran group than in the associate group. This means that the more experience salespeople gain, the stronger the relationship between procedural knowledge and performance. These results support our hypothesis. Next, to examine the

possibility of an experience-knowledge relationship, we conducted regression analyses for experience predicting each procedural knowledge item presented in Table I. Of the 23 items, experience was only significantly ($p < 0.05$) related to seven items of procedural knowledge, and the beta coefficients were negative in six of the seven analyses, ranging from -0.36 to -0.21 . For example, items such as “Ask the type of a car that the customer wants to examine” ($= -0.21$), or “Be sure that the customer receives free repair service” ($= -0.21$) are negatively related to experience. This means that inexperienced salespeople use the procedural knowledge mentioned above more frequently than experienced salespeople, but such knowledge does not help their performance. In other words, sales experience does not enhance the knowledge score itself, but it enhances the effectiveness of the knowledge. Knowledge elaborated by experience is important for salespeople to improve their performance.

Discussion

The results of this study support our hypothesis and extend previous research on the experience-performance relationship to show that experience moderates the relationship between knowledge and performance. Although this study is cross-sectional rather than longitudinal, our results can be interpreted using Anderson's (1982, 1983) model. That is, salespeople may acquire selling knowledge as a set of facts at the declarative level in the early stage of their careers, and later in their careers this declarative knowledge may be converted into a procedural form through practice. As salespeople gain experience, their selling knowledge may be compiled, elaborated, and structured. In addition, we could interpret that it takes about ten years for salespeople to acquire selling knowledge leading to high performance. This interpretation is consistent with “the ten-year rule of necessary preparation” (Ericsson, 1996). However, it must be noted that ten years of experience does not guarantee expert performance. Instruction and deliberate practice are needed to become a high-performing expert (Ericsson, 1996). It should also be noted that the results of this study not only replicate the ten-year rule, but also reveal the mechanism by which experience influences performance. That is, we could explain that it takes ten years to attain a high level of performance because it takes ten years to acquire knowledge facilitating people's task. Our results show that experience has no further impact on the performance of veteran salespeople with more than ten years' experience, while knowledge is important for improving their performance. Our finding also means that salespeople with useful selling knowledge serve as important intellectual capital and are sources of competitive advantage. Since it takes such a long time to develop salespeople's knowledge, it is not easy for a firm with less experience to imitate a competitor's sales

know-how.

Tables I and II also show the feature of high-performing expert salespeople's knowledge. These salespeople use both customer-oriented selling and active selling methods. For example, high-performing veteran salespeople try to create an atmosphere that lets the customer talk freely, while they ask about the customer's needs. This is consistent with the customer-oriented selling concept (Saxe and Weitz, 1982). At the same time, they actively or aggressively seek referrals, especially after receiving an order. This suggests that customer-oriented selling alone is not enough to become an expert. Saxe and Weitz (1982) indicate that customer-oriented selling incorporates both low-pressure selling and a satisfaction/problem-solving selling approach. However, our result shows that a combination of customer-oriented and high pressure or active selling methods is needed to become a high-performing expert. A positive proposal or a confident attitude may be important to gaining customer satisfaction. Regarding this point, Crant (1995) reported that salesperson's proactive personality affects their performance. Although past research has focused mainly on customer-oriented or problem-solving selling, active selling is a subject worth examining more closely.

Practical implications

Based on these theoretical implications, we discuss the management of sales departments. First, the sales manager should develop salespeople's knowledge, especially during the first ten years of their sales careers, by improving job design and training and by using an incentive system. One of the focuses of the cognitive approach in personal selling is the transfer of knowledge from high-performers to low-performers through training (Weitz et al., 1986). However, the results of this study suggest that sales training has no immediate effect on acquiring useful procedural knowledge. The company studied is putting a great deal of effort into sales training and developing sales manuals, especially for newcomer and associate members, but the selling knowledge of newcomers and associate salespeople had no significant effect on their performance. This means that the sales department manager should pay attention to both formal training and on-the-job training or team-oriented selling, which give inexperienced salespeople the opportunity to experience the skill of excellent salespeople. This is related to the concept of "cognitive apprenticeship" that stresses situated learning (Brown et al., 1989). Salespeople in car dealerships essentially conduct selling activities independently; knowledge transfer is therefore limited and individual high-performing salespeople retain their knowledge. Thus, team-oriented selling, in which a low-performer works with a high-performer, may promote knowledge sharing within a sales department. However, it must be noted that

team-oriented selling has some problems. First, it may decrease salespeople's motivation, because the performance appraisal criteria become unclear. Second, the effect of team-oriented selling is slow, because it takes time for salespeople to acquire useful knowledge. Third, not all high-performing salespeople are good instructors. To deal with these problems, the sales manager should develop a team-oriented incentive system, long-term performance criteria, and a manual to help high-performing salespeople to instruct efficiently.

Second, high-performing salespeople tend to be both customer-oriented and active. Therefore, the sales manager should maintain a good balance between these two types of selling style. In order to maintain the balance, evaluation criteria may be essential. Specifically, evaluation by sales volume promotes active selling, while stressing customer satisfaction enhances customer-oriented selling. It is important to measure salespeople's performance with multiple criteria. In addition, we should not forget this balance when transferring useful knowledge from a high-performer to a low-performer.

Limitations and future directions

We found the moderating effect on knowledge-performance relationship, and revealed some features of high-performing sales experts. However, this study has some limitations. First, our data are cross-sectional, not longitudinal. To test how salespeople acquire their knowledge and how long it takes to acquire knowledge, we have to conduct a longitudinal study. Second, we had difficulty measuring the validity of procedural knowledge. We only inferred the acquisition process of procedural knowledge from correlation data. More valid tools to measure procedural knowledge need to be developed. Collecting real-time data about the interaction between a customer and a salesperson with videotape may be effective. Third, we must investigate the mechanism by which knowledge is acquired or transferred in more detail, and we should examine the influence of the training system, incentive system, and team-oriented selling on knowledge transfer. Finally, our sample was limited to car dealerships salespeople in Japan, and our hypothesis was derived from US literature. The present study is aimed to examine the universal nature of the knowledge acquisition process of salespeople, and the result supports the theory of cognitive psychology and expertise research. However, the unique nature of specific industry, or of Japanese culture, may have affected our results. Some researchers suggest that national culture may be a significant, and hitherto neglected factor, in organizational learning (e.g. Easterby-Smith, 1998). In order to generalize our findings, we need to conduct research in other countries.

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