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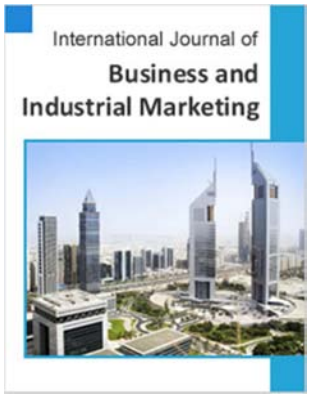

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Adaptation Affect the Procurement Situation to Performances

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Abstract

Although industrial and consumer markets are drastically different, industrial and consumer procurement teams both have the same objectives: to create profit, reduce costs, and fulfill buyers' needs. Understanding customers' buying behavior is crucial to organizational success. Most studies on industrial purchasing have described buyer performance through environmental, interpersonal, organizational, and personal factors. However, procurement situations (latent atmosphere and risks) also affect industrial buyer performance (social statistical and financial performance). The steel suppliers have gradually lost their advantages because the country joined the Free Trade Organization and because of the emergence of the Chinese market. How suppliers can increase their competitive advantage in a constantly changing business climate is a crucial question. This study investigated on Taiwan H-beam supply chain, second-order dealers and end-users steel construction company as the research object. A total of 135 questionnaires were returned from employees in these construction companies. Four samples missed the deadline and one sample was incomplete, yielding 130 valid samples for the subsequent statistical analysis. The results revealed that only purchasing latent atmosphere significantly and directly affects buyer performance. However, with the moderating effect of buyers' adaptation, both latent atmosphere and risk significantly affected buyer performance-social satisfaction. This study serves as a reference for understanding whether adaptive procurement affects buyer performance in a constantly changing market environment. In addition, this study can help suppliers further understand buyers' main concerns during the procurement process.

1. Introduction

The iron and steel industry can be regarded as an indicator of economic progress, and both developing and developed countries are actively pursuing its revitalization. During the early development of the Taiwanese iron and steel industry, the annual output was less than 30,000 tons due to limited natural resources and the emphasis of agricultural development under the Japanese rule. After World War II, postwar rehabilitation and reconstruction became a priority and Taiwanese society was gradually stabilized in the 1950s. To accelerate domestic economic development, multiple phases of light-industry construction were implemented with the progressive approach of agricultural–industrial cooperation. A series of national infrastructure projects were implemented in Taiwan between the late 1960s and the 1970s. Rapid industrial growth from 1965 led to the development of foreign trade and exports. However, public infrastructure and key commodities were insufficient to meet demand, thereby limiting the country's economic development.

The relationship between upstream and downstream products is crucial during the development of iron and steel industry. The management of the interaction process is particular relevant in industrial marketing because firms establish buyer-seller relationships which are often characterized by being close, complex and long-term. [1, 2] In addition to comprehensive support from the mining, mechanical, electrical, civil, refractory, transport, and information industries, cooperation and support from downstream companies are also required if all functions of the iron and steel industry are to be maximized. Therefore, the overall supply chain has places its emphasis on downstream products. Specifically, Taiwanese steelmakers have extended their strategic cooperation with large domestic processing plants to formulate integrated marketing plans; division of labor, however, is still employed in terms of manufacturing. In reality, the boundary between competition and cooperation is vague, resulting in mutual cooperation and competition between upstream and downstream firms that facilitate achieving vertical and horizontal alliances and the full utilization of resources. This enables an optimal situation that benefits all stakeholders. Alliances not only save time and money, they also enhance the competitiveness of the companies involved.

The purpose of this study is to elucidate how adaptation measures affect the procurement situation of industrial procurement and the link between the two methods. This can provide insight for industrial sellers and buyers. The seller has a better understanding of how to manage the relationship with the buyer in the case of rapid change purchases. Buyers will be able to take more effective and effective measures in dealing with the procurement process. [3]

Motives and Purposes

The main products of the iron and steel industry can be roughly divided into crude steel, cold and hot rolling steel, coated steel, structural steel, rods and wires, and special steel. Steel has increasingly replaced lumber as the preferred structural material in Taiwan since the 1980s, and the substantial demand for H-beams has mostly been for use in construction and public projects. This study focuses on the procurement of H-beams in Taiwan. Prior to 1993, H-beam supply was entirely dependent on imports from countries such as the Soviet Union, Spain, the United Kingdom, and Japan. The first H-beam manufacturer in Taiwan began production in July 1994, whereas the second firm commenced production in 1998. Annual H-beam imports decreased from 638,453 tons to 189,443 tons between 1994 and 1998. In 1999, this had further decreased to 49,454 tons. Consequently, domestic steel producers enjoyed market advantages for 14 years between 1999 and 2012.

After Taiwan became a member of the World Trade Organization (WTO), the Taiwanese iron and steel industry experienced a devastating shock because the country agreed to participation in the Uruguay Round zero-for-zero sectoral initiatives, which came into effect on January 1, 2004 and eliminated tariffs on medicine, paper, steel, construction equipment, agricultural equipment, medical equipment, furniture, and toys. Fortunately, the global economic boom between 2003 and 2008 alleviated the threat posed by cheaper imported products. The yearly change in world gross domestic product increased from 2.96% in 2002 to 4.055% in 2003, further increasing to 5.702% in 2007.

During those years, the Taiwanese iron and steel industry witnessed unprecedented prosperity, with sellers enjoying almost absolute advantage over buyers. However, sales and revenues have plunged considerably since late 2010; sellers' power has gradually vanished and negotiation is now required between buyers and sellers. H-beam supply exceeded demand in 2010, and the annual difference has gradually widened since (152,716 tons in 2014). While major steel mills worldwide actively consolidated or formed strategic alliances, the Taiwanese iron and steel market experienced rapid changes due to their WTO membership and the emergence of the Chinese market. The gap between H-beam supply and demand widened in Taiwan during the 2013 economic downturn, and buyers' advantages overrode those of sellers.

H-beams have unique distribution channels in Taiwan. Manufacturers can effectively save on logistic costs through intermediaries who offer professionalism and convenience. Some manufacturers may not rely on intermediaries, but cannot omit the functions of intermediaries [4]. Norich (1991) reported that distributors have attained a steady increase in the number of end users since the 1990s. Therefore, distributors have gradually taken over as the leaders of the supply chain because they possess strong marketing networks and are capable of grasping the latest market trend. H-beam supply has greatly exceeded demand since the beginning of 2009, and buyers and sellers have begun bargaining. Because suppliers no longer have the most power, the H-beam market has shifted from that of seller's to that of buyer's since 2013.

The cost of steel accounts for the highest proportion of the total procurement cost expended by steel constructors and critically affects business performance. In a competitive business climate, whether price is the only factor in procurement decisions is up for debate. Steel is generally procured in large quantities and involves higher transaction amounts and costs than do general consumer market transactions. Expenditure on goods and services is regarded as an investment that is expected to generate profits upon the completion of projects. This study investigates whether buyer's adaptation moderates the effect of procurement situation on supplier satisfaction and organizational performance. The results can serve as a reference for suppliers' policymaking and business strategies.

2. The Literature Review and Hypothesis

The iron and steel market is considerably different from the consumer product market [5]. Although the industrial

product market has unique characteristics, the purposes of goods and services procurement are universal and are to generate profits, reduce costs, and meet organizational needs. During the marketing process, companies must understand why clients want to purchase certain products, or meeting customer needs and desires becomes difficult. Understanding consumers' buying behavior is critical to success in a business-to-business (B2B) market [6]. Although industrial market research has compiled abundant data on organizational procurement, few analyses of the existing data have resulted in helpful managerial implications. Therefore, additional data collection is required for a realistic conceptualization and understanding of the industrial procurement process [7]. Most research outcomes in consumer behavioral theory studies have little relevance to industrial marketing [8]. The procurement process in an industrial organization involves complex inter-personnel or interdepartmental interactions in addition to personal and organizational goals. Unlike consumer purchases in which only personal needs must be met, industrial buyers must follow the procurement policy set by their organization; hence, industrial procurement must be studied separately from consumer buying behavior.

The concepts of procurement centers, the procurement decision process, and buying situations were first proposed in the mid-1960s, and industrial buying behavior has attracted attention ever since [3]. The following works respectively investigated the three aforementioned concepts: *Industrial Buying and Creative Marketing* (Robinson, Faris, & Wind, 1967); *A General Model for Understanding Organizational Buying Behavior* (Webster & Wind, 1972); and *A Model of Industrial Buyer Behavior* (Sheth, 1973). Studies in the 1990s proposed an integrated framework of organizational buying behavior that consolidated these three concepts and additionally introduced the concepts of decision rule, role stress, buyer–seller relationship, and communication network.

Numerous conceptual articles have been published as organizational buying behavior has gradually drawn increased attention [9]. Furthermore, some studies have proposed conceptual models that are difficult to employ practically [10]. Most literature has described the effect of environmental, social, organizational, and personal variables on industrial buying behavior [8]. The cited studies have contributed valuable information regarding procurement behavior. The concept of buying situation was introduced as a reaction to the realization that sellers can only achieve success in industrial markets if they understand their buyers' purchasing behavior [3]. Increased pressure from competition, rapid technological advancement, and the increasingly shortened lifecycle of products have suggested the advantages of increased interactions, cooperation, and long-term relationships between buyers and sellers [11, 12].

In industrial markets, a relational perspective favors higher mutual benefits between sellers and buyers than a business perspective does [3, 11, 13]. Sellers can gain repurchase and new business opportunities from existing customers, reduce the possibility of customers' switching to other suppliers, obtain inspiration for innovative product designs, and gather valuable market information. By contrast, buyers can ensure they have sufficient raw materials to prevent the interruption of their production line, decrease production costs through sellers' expertise and resources, and pay more favorable sourcing prices [3].

When buyers' behavioral change is identified, suppliers can only remedy or reduce their loss. One of the most imperative elements of business thinking is to recognize and identify people's purchase decisions rather than merely offering products or services [14]. Understanding buyers' organizational or personal thinking processes substantially enhances suppliers' preparedness.

2.1. Procurement Situation

A situation pertains to an atmospheric effect that can be defined as a temporary set of individuals that are involved in a scenario or problem and must accomplish one or more alternative responses (judgment or inference) that are consistent with the general trend [11]. The buyer–seller interaction in an emotional environment, known as the "atmosphere," is essential for the feasibility and success of a long-term relationship between two parties [3]. Companies must thoroughly investigate the reasons why and the circumstances in which buyers make purchases if they want to fulfill customers' needs. Suppliers must be concerned about buyers' and competitors' responses to every transaction on the market [15]. Industrial companies historically account for the largest volume of sales because they deliver multiple products or services to end users [16, 17]. Both scholars and business executives agree that organizations employ different procurement decision processes that correspond to their various circumstances. The situational theory proposed by Robinson et al. (1967) is considered the most appropriate theoretical basis for general research on industrial procurement and is known as one of the most useful analytical instruments for studying organizational buying behavior in academia and related organizations [10]. Both Sheth and Garrett (1986) and Haas (1986) have argued that the study of Robinson et al. (1967) is the "masterpiece" in the industrial buying literature [18].

The three buy classes proposed by Robinson et al. (1967) and their definitions are as follows:

(1) New task: A problem or request that has not occurred before. A new task lacks related buying experiences or reference and is a critical message of buyer demand. Buyers seek solutions or alternative methods from suppliers. New tasks occur frequently and are critical to sales because they generally follow most of the conventional purchasing models and offer creative opportunities for sales development.

(2) Modified rebuy: A modified rebuy may derive from a new task or a straight rebuy. Buyers may request ongoing or repeating orders to be expanded to a more profound level of operation. They may also request modification of known substitute products, request

additional information before making buying decisions, or have emergency situations related to their orders. Because new tasks may internally affect potential cost reduction, quality improvement, or potential benefits, suppliers attempt to convert buyers' straight rebuys into modified rebuys.

(3) Straight rebuy: A straight rebuy is a continual or frequent purchase request and such buying decisions are usually made by sourcing departments, which have a formal or informal list of acceptable suppliers, although suppliers not on the list may also be acceptable. Sourcing buyers must have abundant purchasing experience to request bulk orders on behalf of their company. Decisions on issues such as purchase items, costs, and delivery time may be delayed by interdepartmental transactions, and these changes do not affect buyers' consideration of new suppliers.

The Buygrid proposed by Robinson et al. (1967) suggested potential buyphases that can be encountered by various roles in the procurement team. The eight buyphases are (a) anticipation or recognition of a problem (need) and a general solution, (b) determination of characteristics and quantity of needed item, (c) description of characteristics and quantity of needed item, (d) search for and qualification of potential sources, (e) acquisition and analysis of proposals, (f) evaluation of proposals and selection of suppliers, (g) selection of an order outline, and (h) performance feedback and evaluation (Table 1).

Table 1. *The Buyphase of R.F.W. Buygrid Framework.*

The Original Buygrid Model				
The Buygrid Framework				
BUY CLASSES				
		New Task	**Modified Rebuy**	**Straight Rebuy**
B	1. Anticipation or recognition of a problem (need) and a general solution			
U	2. Determination of characteristics and quantity of needed item			
Y	3. Description of characteristics and quantity of needed item			
P	4. Search for and qualification of potential sources			
H	5. Acquisition and analysis of proposals			
A	6. Evaluation of proposals and selection of supplier(s)			
S	7. Selection of an order outline			
E	8. Performance feedback and evaluation			

Source: Adapted from Patrick.Robinson, Charles W.Faris, and Yoram Wind, Industrial Buying and Creative Marketing. Boston: Allyn Bacon, 1967, p.14.

In 1987, a negotiation phase was added to the Buygrid model so it resembles actual situations more closely [19]. The modified Buygrid model comprises nine buy phases as follows: (a) anticipation or recognition of a problem (need) and a general solution, (b) determination of characteristics and quantity of needed item, (c) search for and qualification of potential sources, (d) identification of producers, (e) contact with salespeople, (f) evaluation loop with counter-proposals, (g) negotiation with suppliers, (h) final choice, and (i) execution of purchase.

The literature review presented herein demonstrates buyers' explicit demands. However, suppliers are more interested in understanding buyers' implicit demands. The procurement process involving buyers and sellers can no longer be regarded as merely an isolated decision-making process and a short-term transaction; the interactivity between buyers and sellers should be emphasized [20-22]. This interactivity includes complex patterns of the exchange of goods, services, information, and values and rigorous coordination of these activities and resources among the parties involved. Corey (1978); Hill, Alexander, and Cross (1975); and Lehmann and O'Shaughnessy (1974) all addressed more potential procurement scenarios than did Robinson et al. (1967) in their Buygrid model [6]. Recent empirical studies on procurement situations can be classified into various categories, including attempts to verify the core concept of the Buygrid framework [23], hypothesis tests [24], and the addition of new attributes in procurement situations [25]. Understanding buyers' power has affected the literature's development and various known buyer activities. In a B2B market, suppliers can choose the applicable market characteristics that benefit their clients. The four principal market characteristics comprise purchase importance, task uncertainty, choice extensiveness, and perceived buyer power [6].

2.2. Procurement Risks

Risk is an extremely abstract, vague, and dubious concept [26], and its interpretation can vary by domain. Some scholars have stressed that risk is subjective and refers to future uncertainty and loss that cannot be objectively measured [27]. By contrast, other scholars have argued that risk is an objective quantity that can be measured and have further distinguished risk from uncertainty and probability [28]. The concept of risk management was first proposed in 1971 for organizational risk resolution and the classification of various types of losses [29]. Risk management is a managerial tool that can be described as a "systematic investigation on sources and effects of risks and uncertainty and an approach to consciously determine appropriate risk resolutions" [30].

Industrial purchasing is complicated and involves numerous unpredictable risks. Sheth (1973) incorporated "risk awareness" into the behavioral model of organizational transactions. During transactions, organizations are concerned with the need uncertainty, transaction uncertainty, and market uncertainty generated by potential risks. Valla

(1982) proposed that the following buyer and seller characteristics affect procurement risks: (a) suppliers' characteristics: the nature and degree of homogeneity of market structure; (b) buyers' characteristics: innovation, market stability, and market growth.

Procurement is a critical phase for steel constructors because any error during the procurement process directly affects the expected targets of undertaken projects. However, risks exist in any buying behavior, including personal, economic, environmental, and contractual risks [31]. Inaccurate forecasts proposed by procurement teams particularly lead to dissatisfaction in construction teams or overbudgeting. Potential risks in industrial procurement must be addressed using certain measures to prevent organizational loss. Newall (1977) classified risk factors in industrial purchasing into three major categories after a literature review: the nature of procurement problems, the characteristics of industrial buyers, and the characteristics of the organizational environment. In contrast with other industries, the construction industry faces additional risks because of its unique characteristics such as long construction hours, complicated processes, harsh environment, financial strength, and a dynamic organizational structure [32-34]. Therefore, effective risk management techniques for various construction-related risks are imperative for successful project delivery. In addition to the price of raw materials, industrial buyers must also consider risks associated with variable costs during the construction, the project deadline, the quality of the contractors, environmental requirements, and safety requirements. Various studies have examined the effect of these risks on cost, time, safety, the design phase, and the construction phase [34, 35].

2.3. Social Satisfaction

In this study, Social Satisfaction is defined as Supplier Satisfaction that depended on questionnaires of outcome atmosphere [20]. Companies must deal with enormous transitional pressure to keep up to date with rapid changes in the business climate. Most companies emphasize job allocation and assume that optimization of individual units will lead to the maximal efficiency of the entire company. However, the concept of allocation has gradually reduced the focus on the concept of a company as a single unit. Consequently, buyers frequently experience difficulty during face-to-face communication with suppliers, resulting in errors caused by miscommunication. Suppliers commonly overlooked consumers' real needs when there were fewer competitors or the competition was not fierce; transactions were limited to buyers with little demand differentiation, and the buyer–seller relationship was simple.

In recent years, however, the number of competitors in various industries has increased and consumer awareness has emerged, so the consumer market has become flexible to offer consumers suitable products. Therefore, suppliers must be capable of delivering products that are in high demand if they are to survive in a competitive industry. The first problem for industrial buyers is the selection of suitable suppliers for materials with costs accounting for more than 60% of the total production cost. Without suitable suppliers of low-cost and high-quality materials, companies cannot produce low-cost and high-quality goods or services.

Supplier selection is thus imperative for a company's success. Before suppliers are selected, selection criteria must be formulated for supplier assessment. After prospective suppliers are identified, selecting the optimal suppliers and developing the most adequate procurement strategies are crucial issues for industrial buyers. Additionally, industrial buyers must evaluate supplier performance as a reference for supplier communication and negotiation, thereby maximizing organizational interests. Constructing a supplier assessment model can enhance organizational competency and competitiveness (Chi & Hung, 2011).

During supplier selection, several factors must be considered as the principles of assessment. Dickson (1966) proposed 23 evaluation criteria for supplier selection, including quality, cost, delivery, and financial strength; another study proposed other criteria such as finance, corporate culture, and technology after conducting case studies [36]. Table 2 lists the supplier evaluation criteria proposed in various studies; the present study used the buyer–supplier relationship as the variable of supplier satisfaction.

Table 2. *Supplier evaluation criteria in various studies.*

Author name(s)	Year	Assesed items
Dickson	1966	quality, price, delivery, performance history, warranties and claims policies, production facilities and capacity, technical capability,financial position, procedural compliance, communication system, reputation and position in industry, desire for business, management and organization, operating controls, repair service, attitude, impression, packaging ability, labor relations record, geographical location, amount of past business, training aids, reciprocal arrangements
Ellram	1990	financial issues, organizational culture and strategy, technology
Cusumano and Takeishi	1991	financial issues, price, quality, delivery, technical capacity, past business relationship
Weber and Current	1993	price, delivery reliability, product quality
Chaudhry et al.	1993	quality, delivery capability, price break
Swift	1995	products, usability, trust, experience, price
Choi and Hartley	1996	financial, consistency, flexibility, technical capability, service, reliabili
Jayaraman et al.	1999	quality, product essense, lead time, inventory capability and limitation
Lee et al.	2001	cost, quality, delivery, service

Author name(s)	Year	Assesed items
Muralidharan et al.	2001	quality, technical capability, delivery
Muralidharan et al.	2002	quality policy, delivery time, price, technological, financial, past performance, equipment, flexibility, service
Prahinski and Benton	2004	quality, delivery performance, price, ability to respond to demand change, support service
Kreng and Wang	2005	cost, quality, delivery reliability, lead time, delivery punctuality
Pi and Low	2005	quality, delivery, price, service
Chang et al.	2007	R&D capacity, cost, quality, service, response
Yu, Chunxia, & Wong, T. N.	2014	financial, price, quality, service, technological capability

*Sources: Chi and Hung (2011) and literature review of the present study

2.4. Organizational Performance

Performance is a holistic concept reflected by the outcomes of the operational activities of an organization and is a measure of organizational achievement [37]. Organizational performance evaluation is a part of management control. Performance evaluation and management favor effective resource management, measurement, and control of organizational goals [38]. Departing from the definition of performance and the mobility and effectiveness of performance evaluation is not feasible for researchers because improving performance is the core of strategic management [39]. Performance is an assessment of any strategy with respect to time [40], and most reports have used commercial operating performance to examine various strategic and procedural issues [41]. The increasing number of academic journals addressing business turnover and organizational transformation demonstrates the high academic interest in organizational performance, adaptability, and survival [42]. According to numerous scholars, organizational performance assessment facilitates effective resource management, objective control, performance enhancement, and future organizational development. With the increasingly fierce market competition, companies have become aware that market share reflects organizational performance and customer recognition of goods and services. Therefore, in addition to financial statements, companies must measure nonfinancial indicators to comprehensively evaluate their organizational performance.

(a) Nonfinancial performance

The development of nonfinancial performance indicators has earned support from numerous scholars [43]. In the present study, the nonfinancial performance of an organization was measured using employee and customer satisfaction, or the response to overall emotional integration after purchase. Kotler (2003) argued that customer satisfaction is the difference between the actual outcomes of goods or services and customers' original expectations. Customer satisfaction affects organizational profits, and therefore customer expectation must be fulfilled to improve organizational profitability. Similarly, employee satisfaction reflects the degree of employees' psychological and physical fulfillment, particularly regarding individual satisfaction in professions, job roles, and working experience [44]. Employees perform their work in a specific environment and express satisfaction or dissatisfaction through the gap between their self-awareness and actual obtained value. Therefore, companies should implement a system that gives employees' a satisfactory working environment and enhances their efficiency.

(b) Financial performance

The business performance evaluation model consists of financial and nonfinancial indicators. Organizational performance assessment is mostly focused on financial indicators that are considered to reflect the economic goals of an organization. This concept has been the dominant model of empirical strategy research [39]. Typical financial indicators include revenue, profit margins (proportional; such as return on investment, return on sales, and return on net assets), and earnings per share. The four models of financial indicators comprise profitability, solvency, operating efficiency, and development potential, with the first two being the two basic parts of an organizational financial evaluation [45]. The present study adapted the questionnaire scale proposed by Leonidou according to the practical situation in the iron and steel market to propose nonfinancial (i.e., supplier satisfaction) and financial indicators (i.e., financial performance) of organizational performance.

The present study proposed the following hypotheses according to the inferences of the literature review in Sections 2.1–2.4:

H1: Latent atmosphere is positively correlated with satisfaction.

H2: Latent atmosphere is positively correlated with financial performance.

H3: Procurement risk is positively correlated with satisfaction.

H4: Procurement risk is positively correlated with financial performance.

2.5. Adaptation

Establishing a buyer–seller relationship may involve the adjustment of sellers' own sales process and buyers' purchase process. Adaptation is common in sales relationships. Early research on sales focused on the process rather than the buyer–seller relationship [46], revealing that in general, the party that emphasizes personal level adaptation tends to dominate the sales process [47]. Adaptation is imperative in business relationships because it is otherwise impossible to communicate with business partners for resource investment [48]. Adaptation refers to the special adjustments of an organization that enable it to meet the requests of exchange partners during commercial behavior [49, 50]. Adaptation has been widely accepted as a characteristic of long-term relationships between suppliers and client companies [51].

Each type of adaptive behavior is used internally for various durations. Adaptation is used during the early stages of the sales process to gain the trust of the other party. As the sales process proceeds, the buyer–seller relationship expands and solidifies as a close relationship that forms a barrier to competitors' entry [52]. Because capacity change is critical to organizational performance in many companies, adaptation is a key feature of supplier–client relationships.

To promote and improve their relationship with buyers, sellers must understand that a structured approach to adaptation is required during the sales process. Although the relationship with buyers during the sales process has begun to affect the importance of sellers, few studies have investigated adaptation in buyer–seller relationships during the sales process and particularly how the effect of adaptation on this process might be defined. Studies on relationship management from both buyers' and sellers' perspectives have revealed that most investment in adaptation to a specific buyer–seller relationship is nontransferable to another relationship [53-56]. However, adaptive sales research has not focused on the critical phases of the sales process (e.g., buyers' and sellers' adaptation, both personal and organizational). Relationship-oriented adaptation may increase sales performance, improve adaptive sales behaviors, and strengthen the buyer–seller relationship [57]. Therefore, a similar effect may apply to buyers' purchasing process if buyers also attempt to adapt to sellers.

Similarly, adaptation is a key parameter in practical actions of professional relationships between buyers and sellers [3]. If one party commits to any strategic adjustment in their buyer–seller professional relationship, the structural changes or process will reflect their adaptation to the demand from the other party [12, 58]. Hallén et al. (1991) made three arguments regarding the importance of adaptation: (a) adaptation implies long-term investment; (b) adaptation attracts the other party and enhances the interfirm relationship; and (c) adaptation may positively affect the long-term competitiveness of the firms. Therefore, it is inferred that sellers are more concerned with their relationships with existing or regular customers than positively developing relationships with new customers.

The present study proposed the following hypotheses according to the relevant literature review:

H5: Latent atmosphere is positively correlated with adaptation.

H6: Procurement risk is positively correlated with adaptation.

H7: Adaptation is positively correlated with satisfaction.

H8: Adaptation is positively correlated with financial performance.

3. Methodology

3.1. Research Procedure

This study followed the steps of general social science research and divided the process into three stages. The research direction was developed in the first stage, including the literature review and the proposal of the research motive and research objective. The second stage addressed the research framework of this study. The third stage involved the execution of the study, including data analysis, results analysis, and suggestions.

3.2. Research Framework

The research framework of this study entailed developing a questionnaire to explore the effects of procurement situation and risk on social satisfaction and financial performance, and how buyer's adaptation moderates these effects. The five dimensions to be examined are as follows: latent atmosphere in procurement situation; procurement risk; adaption; social satisfaction; financial satisfaction. Figure 1 illustrates are the research framework of this study.

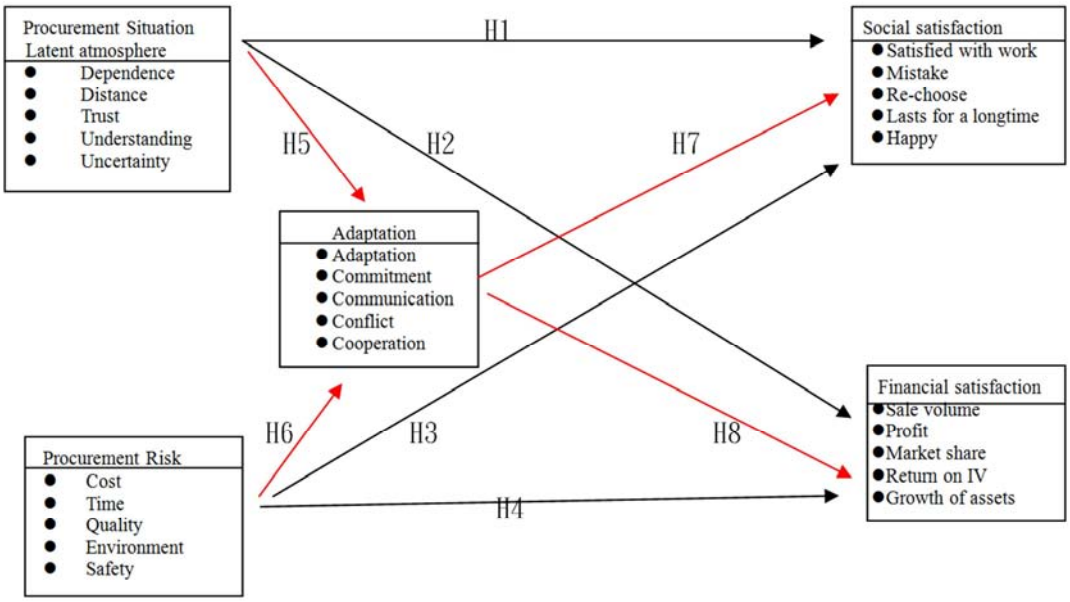

Figure 1. *Conceptual framework.*

3.3. Questionnaire Design and Distribution

Appropriate questionnaire items were compiled through a literature review to address the five dimensions. First, the three major aspects of procurement situations proposed by

Leonidou (2004) were employed: latent atmosphere, manifest atmosphere, and procurement outcome. Second, because this study targeted Taiwanese steel constructors, the procurement risk content in Zou et al. (2006) was employed. Because each research factor was vaguely defined and could not be measured using a single indicator, this study adopted the published literature to develop the questionnaire items as a measuring instrument. For the respondents' convenience, each questionnaire item employed a 6-point Likert scale (except for the demographic items), with 6 indicating *strongly agree*, 5 *agree*, 4 *somewhat agree*, 3 *somewhat disagree*, 2 *disagree*, and 1 *strongly disagree*.

The subjects of this study were members of the Taiwanese steel construction industry, including construction companies, steel constructors, and participants of the Steel Structure Committee in the Taiwan Steel and Iron Industries Association, as well as other companies with their business category codes registered as steel construction. A total of 232 surveys were distributed by mail or delivered in person by the researchers. The sampling period spanned from December 2016 to January 25, 2017. Questionnaires that were returned after January 25, 2017 were considered invalid. Excluding four late return samples and one incomplete sample were discarded yielded 130 valid samples that were subsequently used for statistical analysis.

3.4. Research Instruments and Analytical Methods

SPSS for Windows was used for descriptive statistics, reliability analysis, factor analysis, and regression analysis. Descriptive statistics were used to describe the respondent demographic information (e.g., sex, years of working experience, job position, job location, the year the respondent's company was established, and registered capital of the respondent's company). The reliability analysis used Cronbach's α to measure the internal consistency of the questionnaire items. The factor analysis reduced the number of variables to represent the structure of the original data while preserving most of their information. The regression analysis examined the effects of the independent variables (i.e., potential procurement factors and related risks) on the dependent variables (i.e., buyer's adaptation, social satisfaction, and financial performance) to seek the optimal interpretation of the two types of variables.

4. Analysis of Empirical Results

4.1. Descriptive Statistics

A total of 232 questionnaire copies were distributed by mail or delivered in person, and 130 valid copies were returned, with a response rate of 56.03%. The respondents represented 54 large corporations and 76 small and medium-sized enterprises (SMEs). In terms of company location, 32 of these companies are based in northern Taiwan, 30 in central Taiwan, 39 in southern Taiwan, and 29 in eastern Taiwan. Forty-seven respondents were high-ranking executives, 29 were mid-level managers, 19 were entry-level supervisors, and 35 were non-management employees of their company.

4.2. Factor and Reliability Analysis

The purpose of factor analysis is to reduce multiple behavioral variables to a fewer number of representative variables and enable efficient data analysis through principal axis rotation. Various factor-selecting methods are available, including principle component analysis and maximum likelihood methods. The present study adopted principle component analysis to reduce the number of factors. First, the Kaiser–Meyer–Olkin (KMO) test for sampling adequacy and the Bartlett test of sphericity were performed using SPSS to ensure that the collected data are applicable to factor analysis. Many studies have employed a KMO value between 0 and 1 defined by Kaiser (1960), with values close to 1 indicating high inter-item correlations and favorable sampling adequacy, and those approximating 0 indicating low inter-item correlations and unfavorable sampling adequacy. Kaiser (1974) further defined the criteria for assessing sampling adequacy using the KMO value: *marvelous* (>0.9), *meritorious* (0.8–0.9), *middling* (0.7–0.79), *mediocre* (0.6–0.69), *miserable* (0.5–0.59), and *unacceptable* (<0.5).

Reliability analysis evaluates the accuracy of the measuring instrument using repeated measurements of the same or a similar population. Similarly to most studies, the present study used Cronbach's α to measure the consistency between items of the same dimension. A high Cronbach's α indicates a high level of reliability and a consistent questionnaire. Generally, Cronbach's α should at least exceed 0.5, but a practically acceptable value must exceed 0.7. In this study, most of the KMO and Cronbach's α values of the main dimensions and subdimensions met the aforementioned criteria (Table 3).

Table 3. *KMO/Bartlett, p value, explanatory power, and Cronbach's α.*

Dimension	subdimension	KMO	Bartlett	p-value	explanatory power	Conbach α value
latent atmosphere		0.741	1261.408	0.000	68.592	0.802
	dependence	0.760	160.538	0.000	62.563	0.799
	distance	0.644	156.600	0.000	69.539	0.728
	trust	0.459	72.420	0.000	73.211	0.531
	understanding	0.858	423.139	0.000	73.111	0.908

Dimension	subdimension	KMO	Bartlett	p-value	explanatory power	Conbach α value
	uncertainty	0.666	60.165	0.000	61.110	0.682
procurement risk		0.893	4290.199	0.000	79.336	0.973
	cost	0.716	503.346	0.000	65.772	0.865
	time	0.812	461.833	0.000	73.907	0.911
	quality	0.797	442.678	0.000	72.939	0.907
	environment	0.829	589.255	0.000	78.720	0.932
	safety	0.829	720.186	0.000	83.799	0.952
adaptation		0.764	2473.726	0.000	78.611	0.779
	adaptation	0.596	196.590	0.000	69.688	0.718
	commitment	0.796	268.206	0.000	69.493	0.845
	communication	0.532	192.955	0.000	66.463	0.714
	conflict	0.709	609.479	0.000	91.962	0.812
	cooperation	0.656	618.299	0.000	81.217	0.806
social satisfaction		0.683	161.285	0.000	49.427	0.738
financial satisfaction		0.786	481.996	0.000	74.200	0.913

4.3. Regression Analysis

4.3.1. Effect of Latent Atmosphere and Procurement Risk on Social Satisfaction

This section examines whether the latent atmosphere during procurement directly effects on satisfaction. The beta coefficient of latent atmosphere on satisfaction was 0.287 (p =.001), but the beta coefficient of procurement risk on social satisfaction was nonsignificant at 0.369 (p =.426; Tables 4).

4.3.2. Effect of Latent Atmosphere and Procurement Risk on Financial Satisfaction

Both latent atmosphere and procurement risk were discovered to have no direct effects on financial satisfaction. The beta coefficients of latent atmosphere and procurement risk on financial satisfaction were 0.088 (p =.330) and -0.002 (p =.978), both the beta coefficient values were nonsignificant (p >.05). (Tables 4);

4.3.3. Effect of Latent Atmosphere and Procurement Risk on Adaptation

The beta coefficient of latent atmosphere on adaptation was 0.215 (p =.015; Table 4). Whether all latent atmosphere factors significantly affect buyer's adaptation was determined. Table 5 shows that dependence, trust, and understanding all significantly affected buyer's adaptation, with beta coefficients of 0.251 (p =.004), 0.230 (p =.009), and 0.266 (p =.002), respectively. As shown in Table 4, the beta coefficient of procurement risk on adaptation was nonsignificant (0.157, p =.072). The individual procurement risk factors were then evaluated (Table 5); only cost and safety risk were identified as significantly affecting buyer's adaptation, with beta coefficients of 0.205 (p =.019) and 0.207 (p =.018), respectively.

Table 4. *Regression analysis for all independent variable and dependent variable.*

Dependent Variable	Independent Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B Value	Std. Err.	Beta			Zero-order	Partial	part	Tolerance	VIF
social satisfaction	latent atmosphere	0.105	0.310	0.287	3.331	0.001	0.301	0.283	0.281	0.959	1.043
	procurement risk	0.011	0.014	0.369	0.799	0.425	0.127	0.710	0.067	0.959	1.043
financial satisfaction	latent atmosphere	0.045	0.046	0.088	0.978	0.330	0.088	0.086	0.086	0.959	1.043
	procurement risk	-0.001	0.200	-0.020	-0.027	0.978	0.015	-0.002	-0.002	0.959	1.043
adaptation	latent atmosphere	0.216	0.087	0.215	2.478	0.015	0.247	0.215	0.210	0.959	1.043
	procurement risk	0.069	0.038	0.157	1.814	0.072	0.201	0.159	0.154	0.959	1.043
social satisfaction	adaptation	0.680	0.146	0.382	4.670	0.000	0.382	0.382	0.382	1.000	1.000
financial satisfaction	adaptation	0.405	0.217	0.162	1.862	0.650	0.162	0.162	0.162	1.000	1.000

Table 5. *Regression analysis of the effect of latent atmosphere and procurement risk factors on complementary assets.*

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model	B Value	Std. Err.	Beta			Tolerance	VIF
Dependence	0.749	0.255	0.251	2.938	0.004	1.000	1.000
Distance	-0.166	0.239	-0.61	-0.692	0.49	1.000	1.000
Trust	0.794	0.298	0.23	2.688	0.009	1.000	1.000
Understanding	0.699	0.224	0.266	3.122	0.002	1.000	1.000
Uncertainty	0.217	0.324	0.059	0.671	0.503	1.000	1.000
Cost risk	0.517	0.218	0.205	2.371	0.019	1.000	1.000
Time risk	0.174	0.202	0.076	0.862	0.391	1.000	1.000
Quality risk	0.211	0.188	0.098	1.118	0.266	1.000	1.000
Environment risk	0.257	0.166	0.135	1.546	0.125	1.000	1.000
Safety risk	0.388	0.162	0.207	2.390	0.018	1.000	1.000

4.3.4. Meditating Effect of Adaptation on Satisfaction and Financial Performance

The beta coefficients of adaptation on satisfaction and financial performance were 0.382 (p =.000) and 0.162 (p =.065), respectively (Table 6). Therefore, adaptation was verified to significantly affect satisfaction but non-significantly affect financial satisfaction.

Table 6. *Regression analysis of the effect of adaptation on social and financial satisfaction.*

Dependent Variable	Independent Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B Value	Std. Err.	Beta			Zero-order	Partial	part	Tolerance	VIF
social satisfaction	adaptation	0.680	0.146	0.382	4.670	0.000	0.382	0.382	0.382	1.000	1.000
financial satisfaction	adaptation	0.405	0.217	0.162	1.862	0.65	0.162	0.162	0.162	1.000	1.000

The full regression analysis results for the eight hypotheses proposed in the research framework of this study are presented in Table 7.

Table 7. *Hypothesis test results.*

Number	Hypothesis	Testing result
H1	Latent atmosphere is positively correlated with satisfaction.	Supported
H2	Latent atmosphere is positively correlated with financial performance	Rejected
H3	Procurement risk is positively correlated with satisfaction.	Rejected
H4	Procurement risk is positively correlated with financial performance	Rejected
H5	Latent atmosphere is positively correlated with adaptation.	Supported
H6	Procurement risk is positively correlated with adaptation.	Rejected
H7	Adaptation is positively correlated with satisfaction.	Supported
H8	Adaptation is positively correlated with financial performance.	Rejected

5. Conclusion and Suggestion

Amidst rapid changes in the global market climate, procurement or sales costs must be adjusted to conform to the market demand, making procurement activities more complicated and increasingly crucial. Establishing excellent buyer–seller relationships has a critical influence on the success of both buyers and suppliers. The purpose of this study was to investigate the procurement activities of steel constructors and understand whether adaptation affects procurement outcomes. The correlations between procurement factors demonstrated how buyers adapt to changes in business climate. The research outcomes and managerial implications of this study may serve as a reference for suppliers' strategic development.

Procurement risk was discovered to exert no direct effect on social satisfaction. However, through the moderating effect of buyer's adaptation, the effect of procurement risk on social satisfaction became significant. Additionally, neither latent atmosphere nor procurement risk was found to significantly affect financial performance, despite the moderating effect of buyer's adaptation.

This study was limited by its initial research motive and predefined research scope because of time constraints. In addition to providing a reference to related suppliers, the following recommendations are proposed for more in-depth investigation in subsequent relevant research:

(a) Although the iron and steel industry is regarded as a sunset industry by the public, it is still indispensable for national development. Future research can attempt to seek a novel sales model through further exploration of the management of buyer–seller relationships and services.

(b) Iron and steel products are produced and sold in large volumes and thus involve the movement of substantial funds. Subsequent research can further investigate whether the business type of iron and steel suppliers affects procurement-related factors.

(c) Are there any Government Policies to help the steel industry? How will the policies affect the procurement situation?

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