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Understanding Industrial Buyer Behavior in Small and Medium-Sized Enterprises Operating in the Iranian Market

ABSTRACT

In industrial marketing, understanding buyer behavior and the factors influencing buyers' decision-making is a fundamental requirement for establishing and maintaining business relationships. Awareness of why and how industrial customers make purchasing decisions enables firms to formulate more effective strategies for attracting customers, retaining them, and developing business relationships in accordance with their needs and expectations. Accordingly, the present study aimed to develop and test a model of industrial buyer behavior in small and medium-sized enterprises (SMEs) operating in the Iranian market. In terms of methodological approach, this study employed a mixed-methods design (qualitative–quantitative), and in terms of purpose, it was applied research. In the qualitative phase, the study population consisted of experts in industrial procurement and purchasing, university faculty members, and managers working in SMEs. Participants were selected through purposive and judgmental sampling. At this stage, 21 semi-structured interviews were conducted, and the data were analyzed using thematic analysis. In the quantitative phase, the statistical population consisted of SMEs operating in the Iranian market, and 392 completed questionnaires were collected and analyzed. Quantitative data were analyzed using structural equation modeling (SEM) with SmartPLS software. Data were collected through both library-based and field methods. The findings indicated that industrial buyer behavior and decision-making in SMEs are influenced by five major categories of factors: environmental factors, organizational factors, purchase characteristics, seller characteristics, and relationship-enhancing factors. Based on these factors, a model of industrial buyer behavior in SMEs was developed, and the relationships among the model components were subsequently tested and confirmed in the quantitative phase. The results demonstrate that industrial buyer behavior in SMEs is a multidimensional phenomenon and is not influenced solely by product characteristics or price. Rather, environmental and organizational conditions, characteristics of the purchasing process, seller attributes, and the quality and continuity of the business relationship all contribute to the formation of purchasing decisions. Therefore, firms operating in industrial markets can develop more effective strategies for understanding buyer needs, improving the sales process, and strengthening long-term business relationships by simultaneously focusing on these five categories of factors.

Keywords: industrial buyer behavior, organizational buyer behavior, small and medium-sized enterprises, industrial marketing, purchasing decision-making, business relationships.

Introduction

Industrial markets differ fundamentally from consumer markets in terms of the nature of demand, the complexity of transactions, the number and roles of actors involved in purchasing, the duration of buyer–seller relationships, and the strategic consequences of procurement decisions. Organizational purchasing is generally undertaken not for direct personal consumption but to support production, service delivery, resale, operational continuity, or the achievement of broader organizational objectives. Consequently, industrial buying behavior is shaped by a combination of economic, organizational,

technological, relational, and environmental considerations that extend well beyond product price or functional specifications. Business-to-business (B2B) purchasing decisions may involve multiple participants, formal evaluation criteria, technical assessments, contractual requirements, risk considerations, and long-term relationship consequences. Therefore, understanding industrial buyer behavior is essential for firms seeking to improve market segmentation, supplier positioning, value propositions, sales management, and customer relationship strategies [1, 2]. The strategic importance of this issue becomes even greater in small and medium-sized enterprises (SMEs), where procurement decisions may have substantial effects on cash flow, production continuity, competitive positioning, and organizational survival because these firms generally operate with more limited financial, technological, and managerial resources than large corporations.

Organizational buying behavior has long been recognized as a multidimensional process involving the interaction of environmental conditions, organizational characteristics, buying-center dynamics, task-related variables, and individual decision makers. Integrative conceptualizations of organizational purchasing emphasize that buying decisions emerge from interactions among the characteristics of the external environment, organizational structures and policies, purchasing situations, and the behavior of individuals participating in the buying process [3]. Unlike routine consumer purchases, industrial procurement frequently involves complex decision-making structures in which technical personnel, managers, procurement specialists, users, financial decision makers, and senior executives may influence supplier evaluation and final selection. The structure and level of involvement of the buying center may also vary according to the type and significance of the purchase. Evidence indicates that buying-center composition, involvement, and decision processes are affected by the purchase situation, particularly whether the purchase represents a routine rebuy, a modified rebuy, or a new and relatively uncertain purchasing problem [4]. Accordingly, any comprehensive explanation of industrial buyer behavior must consider not only the attributes of the supplier or offering but also how organizational and situational conditions shape the manner in which purchasing decisions are made.

The purchase itself constitutes an important determinant of industrial decision-making. Industrial purchases vary considerably in strategic importance, technical complexity, financial magnitude, perceived risk, novelty, and availability of alternatives. When an item is critical to operations, technically complex, financially significant, or difficult to replace, organizations tend to employ more formal and extensive evaluation procedures and involve a larger range of organizational actors. Procurement is therefore not merely an administrative function but increasingly represents a strategic activity through which firms can reduce costs, improve quality, manage operational risks, enhance innovation, and create competitive advantage [5]. Purchasing performance is affected by how organizations structure procurement activities, define selection criteria, evaluate suppliers, and align procurement procedures with project or organizational objectives [6]. In SMEs, these issues may be particularly important because even a limited number of inappropriate purchasing decisions can generate disproportionate consequences for operating performance. Thus, purchase complexity, product importance, product type, and buying situation can meaningfully influence both the structure of the purchasing process and the method through which suppliers are evaluated and selected.

Supplier selection is one of the most consequential components of industrial purchasing because supplier performance directly affects cost, quality, delivery, flexibility, technological capability, and continuity of operations. Modern supplier selection typically involves multiple criteria rather than a simple comparison of purchase prices. Firms may assess product quality, service capability, reliability, responsiveness, delivery performance, financial stability, technological competence,

reputation, capacity, and overall procurement cost. Multi-criteria approaches to supplier selection reflect the recognition that industrial purchasing decisions involve trade-offs among several attributes that may differ in importance according to organizational priorities and purchasing conditions [7]. Seller characteristics therefore represent a central domain of industrial buyer behavior. A seller with a strong brand image, reliable service support, rapid response capability, adequate supply capacity, and competitive total costs may reduce perceived uncertainty and become more attractive to organizational buyers. At the same time, supplier power can influence negotiations, switching possibilities, contractual terms, and the degree of dependence within the exchange relationship. Consequently, industrial buyers often evaluate suppliers in terms of both immediate transaction performance and their ability to contribute to the buyer's longer-term operational and strategic objectives.

The growing emphasis on flexibility and risk management has further increased the strategic significance of supplier characteristics. Organizations operating in volatile markets require sourcing arrangements that enable them to respond to fluctuations in demand, input availability, technological change, transportation disruptions, and other unexpected events. Sourcing flexibility can improve organizational resilience by enabling buyers to adjust volumes, sources, or supply arrangements in response to changing conditions, although the development of such flexibility depends on both market and relationship characteristics [8]. Similarly, the management of operational and environmental risks has become an increasingly important component of organizational decision-making because procurement choices can expose firms to regulatory, reputational, environmental, financial, and supply-related vulnerabilities [9]. Enterprise risk considerations therefore intersect with purchasing behavior, particularly when organizations evaluate suppliers whose actions or failures may generate consequences beyond a single transaction. Risk-oriented perspectives emphasize that firms should not evaluate purchasing options solely on expected returns or immediate costs but must also consider the uncertainty and potential consequences associated with alternative suppliers and sourcing strategies [10].

Environmental factors constitute another major influence on organizational buying behavior. Industrial firms operate within broader economic, political, legal, sociocultural, customer, and technological environments that affect procurement priorities and constraints. Economic conditions can influence access to finance, input prices, exchange rates, purchasing budgets, and expectations about future demand. Political and legal factors can alter import conditions, contractual requirements, compliance obligations, taxation, sanctions exposure, and procurement regulations. Cultural and social conditions can influence communication styles, expectations of trust, negotiation behavior, and the legitimacy of particular business practices. Customer requirements can also reshape purchasing standards because firms often need to modify their procurement decisions in accordance with the quality, sustainability, delivery, and technological expectations of downstream customers. These factors are especially relevant in industrial markets because organizational buying is embedded in broader value chains and institutional environments rather than occurring as an isolated exchange [11]. As environmental pressures change, organizations may revise procurement policies, supplier criteria, and internal purchasing procedures to remain aligned with market and institutional requirements.

Technology has become especially influential in transforming organizational purchasing. Digital platforms, electronic procurement systems, data analytics, automation, and artificial intelligence are changing how organizations search for suppliers, assess alternatives, forecast demand, compare offers, negotiate terms, and monitor supplier performance. Recent developments in artificial intelligence are increasingly reshaping organizational buying behavior by enabling more data-driven

procurement processes, predictive analysis, automated evaluation, and enhanced decision support [12]. These developments have implications for both buyers and sellers because they alter the information available during purchasing processes and may reduce some forms of information asymmetry while increasing the importance of technological capability and data integration. In SMEs, technological adoption can provide opportunities to overcome resource constraints, improve procurement efficiency, and access broader supplier networks. E-commerce and digital technologies can also create competitive advantages for SMEs by expanding access to information, facilitating transactions, reducing search costs, and enabling more efficient interactions with customers and suppliers [13]. However, the degree to which such technologies influence purchasing behavior depends on organizational readiness, managerial capabilities, and the extent to which purchasing procedures have been integrated with digital systems.

The digitalization of business markets has also transformed the seller–buyer interface. B2B customers increasingly use digital channels to gather information, communicate with suppliers, compare alternatives, and evaluate firms before direct interactions with sales representatives. SMEs operating in B2B markets have gradually adopted social media and other digital marketing tools to enhance visibility, communicate value propositions, strengthen relationships, and support customer engagement, although resource limitations and difficulties in performance measurement may constrain implementation [14]. These changes complicate conventional models of industrial purchasing because buyers are now exposed to multiple information sources and communication channels before and during the purchasing process. A growing body of literature consequently emphasizes the need to understand the complete B2B buying journey rather than focusing solely on a discrete purchase event. Recent systematic evidence indicates that B2B buyer behavior increasingly reflects changing expectations concerning customer service, responsiveness, digital accessibility, value creation, and relational experience [15]. Accordingly, seller performance in industrial markets must be understood in a broader sense that encompasses both tangible offering characteristics and the service and relational experience surrounding the transaction.

Relationship quality is particularly important because industrial exchanges frequently extend over time and involve repeated transactions, information sharing, coordination, and mutual dependence. Relationship marketing theory identifies trust and commitment as central mechanisms through which successful long-term exchange relationships are created and maintained [16]. When organizational buyers perceive a supplier as reliable, competent, fair, and committed to the relationship, they may be more willing to continue cooperation, share sensitive information, engage in joint problem solving, and reduce the search for alternative suppliers. Long-term buyer–supplier orientation can generate benefits such as reduced transaction costs, improved coordination, greater knowledge sharing, and more efficient adaptation to changing conditions. However, the development and consequences of long-term orientation may also depend on cultural and relational contexts, which can modify how trust, dependence, and commitment affect interorganizational exchange [17]. Therefore, factors such as relationship quality, relationship duration, and the availability of substitute suppliers may strengthen or weaken the effect of seller characteristics on supplier selection decisions.

At the same time, buyer–supplier relationships are not inherently beneficial and can involve opportunism, unethical conduct, power imbalances, and conflicting interests. Recent research has highlighted the importance of understanding unethical behavior in buyer–supplier relationships because misconduct can damage trust, undermine relationship quality, increase monitoring costs, and ultimately affect purchasing and supplier-retention decisions [18]. This perspective suggests that relationship-enhancing factors should not be treated as merely supplementary dimensions of organizational buying.

Instead, they may shape how buyers interpret seller performance and whether favorable seller characteristics translate into actual supplier preference. For example, a technically capable and competitively priced supplier may still be rejected when trust is weak or prior interactions have created concerns regarding fairness, reliability, or ethical behavior. Conversely, strong and established relationships can reduce uncertainty and strengthen the influence of favorable supplier attributes. Thus, understanding industrial buyer behavior requires integration of transactional, relational, organizational, and contextual explanations.

Organizational factors represent an additional layer of this decision process. Purchasing activities are shaped by organizational goals, strategies, internal procedures, performance evaluation systems, incentive structures, and the technologies available to purchasing personnel. Procurement decisions are rarely isolated from overall business strategy because firms must align supplier choices with priorities such as cost leadership, differentiation, innovation, quality improvement, sustainability, or market responsiveness. Marketing and purchasing decisions are consequently interdependent components of organizational strategy, and the purchasing process must be understood in relation to broader organizational objectives [2]. Performance evaluation and reward systems may influence whether procurement staff emphasize short-term cost reductions, delivery reliability, quality, innovation, or relationship development. Likewise, formal procedures can determine the number of suppliers considered, the use of tendering or negotiation, approval thresholds, and the distribution of authority among organizational members. These organizational characteristics can therefore mediate the impact of environmental pressures on actual purchasing behavior.

Despite decades of research on organizational buying, important knowledge gaps remain. B2B marketing has historically received less systematic academic attention than consumer marketing, creating gaps between managerial relevance and the availability of robust theoretical and empirical evidence [19]. Many established models of organizational buying were developed primarily in large firms or mature Western markets, while the purchasing behavior of SMEs may differ because of smaller buying centers, more centralized ownership structures, limited specialized procurement expertise, stronger personal relationships, and greater sensitivity to external shocks. SMEs may simultaneously rely on formal purchasing criteria and informal managerial judgment, and decision-making authority may shift between individual and participative forms according to purchase complexity, strategic significance, and organizational structure. Accordingly, an integrated model designed specifically for SMEs can help clarify how environmental factors, organizational factors, purchase characteristics, seller characteristics, and relationship-enhancing factors jointly influence purchasing and supplier-selection methods.

Methodologically, examining such a multidimensional framework also requires an analytical approach capable of assessing relationships among latent constructs and testing both direct and moderating effects. Structural equation modeling provides an appropriate framework for evaluating measurement quality and estimating multiple interrelated structural relationships simultaneously [20]. In a model of industrial buyer behavior, this approach allows researchers to examine not only the direct effects of organizational, purchase-related, seller-related, and relational factors on decision-making and supplier selection but also the influence of environmental conditions on organizational factors and the possible moderating role of relationship-enhancing factors. Such an approach is particularly useful when industrial buying is conceptualized as a system of interdependent dimensions rather than a set of isolated predictors.

The Iranian market provides a particularly relevant context for examining these relationships because SMEs must make purchasing decisions under conditions characterized by environmental uncertainty, technological changes, evolving customer

expectations, resource constraints, and the need to maintain reliable supplier relationships. Within such an environment, supplier selection may depend not only on economic considerations but also on organizational capabilities, purchasing characteristics, the responsiveness and strength of suppliers, and the continuity and quality of established business relationships. The conceptual foundations of industrial marketing emphasize that organizational markets are driven by derived demand, interdependence, negotiation, and ongoing interaction among firms, making contextual analysis especially important [1]. Moreover, effective marketing and purchasing strategies require firms to understand how customers define value and how organizational decision processes translate perceived value into actual purchasing behavior [11]. Developing an empirically grounded framework for SMEs can therefore provide both theoretical value and practical guidance to industrial marketers, procurement managers, and supplier organizations seeking to understand the determinants of buyer choice.

Accordingly, the present study aimed to develop and empirically test an integrated model of industrial buyer behavior in small and medium-sized enterprises operating in the Iranian market by examining the effects of environmental factors, organizational factors, purchase characteristics, seller characteristics, and relationship-enhancing factors on decision-making methods and supplier selection.

Methodology

This study was applied in terms of purpose and employed a mixed-methods design for data collection. Both field and library-based methods were used to collect the required data. In the first stage, a library-based method was employed to develop the theoretical literature and review the research background. In the qualitative phase, thematic analysis using a template analysis approach was applied to identify, analyze, and report existing models, allowing the factors influencing industrial purchasing objectives to be inductively inferred from various types of content-based information. In this approach, existing theories and the findings of previous studies constituted the basis of the analysis and were used as initial and guiding codes. Subsequently, based on the extracted codes, a questionnaire was developed, and the identified factors were evaluated by experts through semi-structured interviews. The qualitative study population consisted of university professors specializing in marketing and purchasing and procurement managers working in SMEs who had more than 10 years of professional experience and were familiar with the relevant subject matter. Overall, 21 interviews were conducted in two stages using different procedures. Participants were selected purposively through judgmental and non-probability sampling. In this sampling method, participants were selected by the researcher based on the judgment that they possessed sufficient knowledge about the research topic and met the required characteristics. Interviews were discontinued once theoretical saturation was achieved. Finally, qualitative data obtained from the interviews were analyzed using thematic analysis with MAXQDA software.

After the research model had been extracted based on the results of the thematic analysis, quantitative data were collected through a questionnaire to assess and confirm the validity of the proposed model. The statistical population at this stage consisted of SMEs operating in the Iranian market. Questionnaire items were developed for all latent variables included in the research model. The research hypotheses and conceptual model were tested using partial least squares structural equation modeling (PLS-SEM) with SmartPLS software. Following the survey phase, confirmatory factor analysis and, more specifically, path analysis within the structural equation modeling framework were performed using SmartPLS to determine whether the hypothesized relationships among the variables of the proposed model were supported.

Findings and Results

In the present study, because the developed questionnaire needed to demonstrate adequate validity, the validity of the measurement instrument was assessed by obtaining the opinions of specialists from the industrial sector, purchasing and procurement experts, and university professors.

To calculate test–retest reliability in the qualitative phase, four interviews were selected from the completed interviews, and each interview was coded twice by the researcher at an interval of 14 days. Coding reliability was considered acceptable when the reliability coefficient exceeded 60%. Accordingly, the test–retest reliability of the interviews conducted in the present study was calculated as 89%, confirming the reliability of the qualitative coding process.

Before collecting the main study sample, an appropriately sized pilot sample was collected to assess the reliability of the questionnaire items based on the pilot data. For this purpose, an initial sample of 30 respondents was used.

Table 1 presents the calculated Cronbach's alpha coefficients. The closer the alpha coefficient is to 1.00, the greater the reliability of the questionnaire. A Cronbach's alpha coefficient below .70 is generally considered weak, whereas values above .70 are considered acceptable or good. In general, higher reliability coefficients approaching 1.00 indicate greater internal consistency.

Table 1

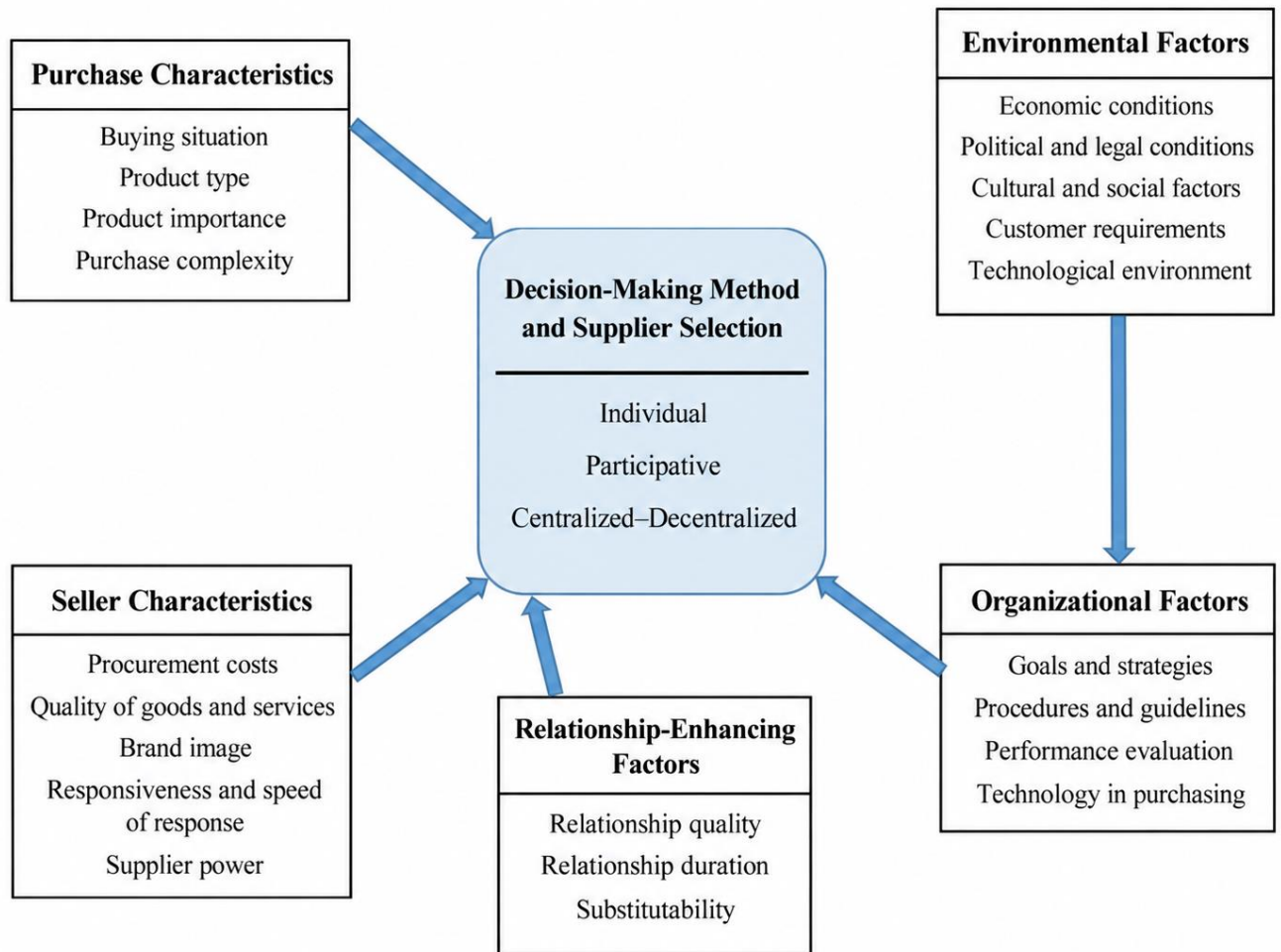
Cronbach's Alpha Coefficients for the Research Constructs

Construct	Number of Items	Cronbach's Alpha
Organizational factors	11	.806
Environmental factors	14	.823
Purchase characteristics	10	.818
Seller characteristics	11	.731
Relationship-enhancing factors	7	.754
Decision-making method and supplier selection	4	.762
Overall questionnaire	—	.893

As shown in Table 1, all calculated Cronbach's alpha coefficients were greater than .70, indicating satisfactory internal consistency and high reliability of the questionnaire.

Following the completion of the organization of the identified themes, the final research report was prepared. According to Attride-Stirling (2001), the purpose of writing a thematic analysis is to transform the complete and complex account contained in the data into a concise, coherent, logical, non-repetitive, and meaningful narrative represented through themes.

Based on the findings of the qualitative phase, the framework of industrial buyer behavior in SMEs can be presented as shown in Figure 1.

Figure 1*Conceptual Model of Industrial Buyer Behavior in Small and Medium-Sized Enterprises*

When conducting structural equation modeling, it is necessary to determine whether the available data are suitable for analysis. In other words, the adequacy of the data for factor analysis must first be established. For this purpose, the Kaiser–Meyer–Olkin (KMO) measure and Bartlett’s test of sphericity were used. The results of these tests are presented in Table 2.

Table 2*KMO Measure and Bartlett’s Test for the Questionnaire Items*

Test	Statistic	Value
KMO measure of sampling adequacy	—	.706
Bartlett’s test of sphericity	χ^2	12,178.817
	df	1,596
	p	.001

As shown in Table 2, the KMO measure and Bartlett’s test of sphericity were examined together with their statistical significance. The KMO value in the present study was .706, which is above the minimum acceptable threshold of .60. This value indicates that the selected sample was adequate for conducting factor analysis.

Multicollinearity in a regression model occurs when strong correlations exist among several independent variables. Under such conditions, estimation of the regression coefficients may become unstable and subject to increased error.

It is generally suggested that a variance inflation factor (VIF) greater than 10 for an independent variable indicates that multicollinearity may create problems in coefficient estimation.

Table 3

Results of the Multicollinearity Assessment Among Independent Variables

Variable	Tolerance	VIF
Organizational factors	.602	1.662
Environmental factors	.532	1.879
Purchase characteristics	.536	1.865
Seller characteristics	.681	1.359
Relationship-enhancing factors	.759	1.205

According to the results presented in Table 3, the tolerance values for all variables were greater than .50 and therefore satisfactory. Moreover, all VIF values were below 10, indicating the absence of problematic multicollinearity among the independent variables.

In this section, confirmatory factor analysis (CFA) was employed to assess the construct validity of the constructs identified in the preceding stages.

Before proceeding to structural equation modeling, the research measurement instruments were subjected to confirmatory analysis to establish construct validity. In the present study, CFA was used to confirm each variable and its corresponding items. Confirmatory factor analysis is used to determine the adequacy of the measurement model. Factor loadings represent the correlations between observed variables and their underlying factors. Factor loadings with absolute values of .50 or greater are generally regarded as sufficiently strong, whereas items with factor loadings below this threshold may be disregarded or removed (Kline, 2011).

Table 4

Factor Loadings, Average Variance Extracted, and Composite Reliability for Environmental Factors

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Environmental factors	—	—	.500	.833
Customer requirements	QE01	.810	.664	.798
	QE02	.819		
Economic conditions	QE03	.875	.717	.835
	QE04	.817		
Political and legal factors	QE05	.809	.634	.872
	QE06	.617		
	QE07	.902		
	QE08	.829		
Cultural and social factors	QE09	.938	.870	.952
	QE10	.946		
	QE11	.913		
Technological environment	QE12	.808	.615	.827
	QE13	.703		
	QE14	.835		

Table 5

Factor Loadings, Average Variance Extracted, and Composite Reliability for Organizational Factors

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Organizational factors	—	—	.502	.799
Performance evaluation and reward systems	QO01	.943	.899	.947
	QO02	.953		
Goals and strategies	QO03	.861	.770	.909

	QO04	.890		
	QO05	.881		
Procedures and guidelines	QO06	.734	.667	.888
	QO07	.840		
	QO08	.898		
	QO09	.785		
Technology in purchasing	QO10	.927	.847	.917
	QO11	.913		

Table 6

Factor Loadings, Average Variance Extracted, and Composite Reliability for Seller Characteristics

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Seller characteristics	—	—	.550	.858
Brand image	QS01	.915	.817	.899
	QS02	.892		
Responsiveness and speed of response	QS03	.910	.837	.911
	QS04	.919		
Supplier power	QS05	.693	.640	.841
	QS06	.852		
	QS07	.845		
Quality of goods and services	QS08	.946	.898	.946
	QS09	.949		
Procurement costs	QS10	.893	.825	.904
	QS11	.924		

Table 7

Factor Loadings, Average Variance Extracted, and Composite Reliability for Purchase Characteristics

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Purchase characteristics	—	—	.621	.866
Product importance	QP01	.947	.900	.947
	QP02	.951		
Purchase complexity	QP03	.859	.723	.887
	QP04	.883		
	QP05	.807		
Buying situation	QP06	.764	.563	.795
	QP07	.752		
	QP08	.736		
Product type	QP09	.931	.809	.894
	QP10	.866		

Table 8

Factor Loadings, Average Variance Extracted, and Composite Reliability for Relationship-Enhancing Factors

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Relationship-enhancing factors	—	—	.592	.813
Substitutability	QM01	.793	.518	.792
	QM02	.875		
Relationship quality	QM03	.787	.515	.867
	QM04	.771		
	QM05	.953		
Relationship duration	QM06	.943	.564	.837
	QM07	.879		

Table 9

Factor Loadings, Average Variance Extracted, and Composite Reliability for the Decision-Making Method

Construct/Component	Item	Factor Loading	AVE	Composite Reliability
Decision-making method and supplier selection	QD01	.881	.687	.897
	QD02	.874		
	QD03	.810		
	QD04	.744		

The results of the factor-loading analysis are presented in the preceding tables. As indicated, all factor loadings exceeded .50; therefore, the measurement model demonstrated satisfactory indicator reliability.

As shown, the average variance extracted (AVE) values exceeded .50 in all cases, indicating satisfactory convergent validity of the research constructs. In addition, the composite reliability values for all components exceeded .70; therefore, the reliability of the research questionnaire was confirmed.

Furthermore, the square root of the average variance extracted for each latent variable was greater than its highest correlation with the other latent variables, indicating satisfactory discriminant validity of the measurement model.

To confirm the final model, structural equation modeling was conducted using SmartPLS software.

Figure 2 presents the results of the analysis of the overall research model. Figure 3 presents the t-statistics associated with each of the relationships specified in the model.

Figure 2

Testing the Overall Research Model

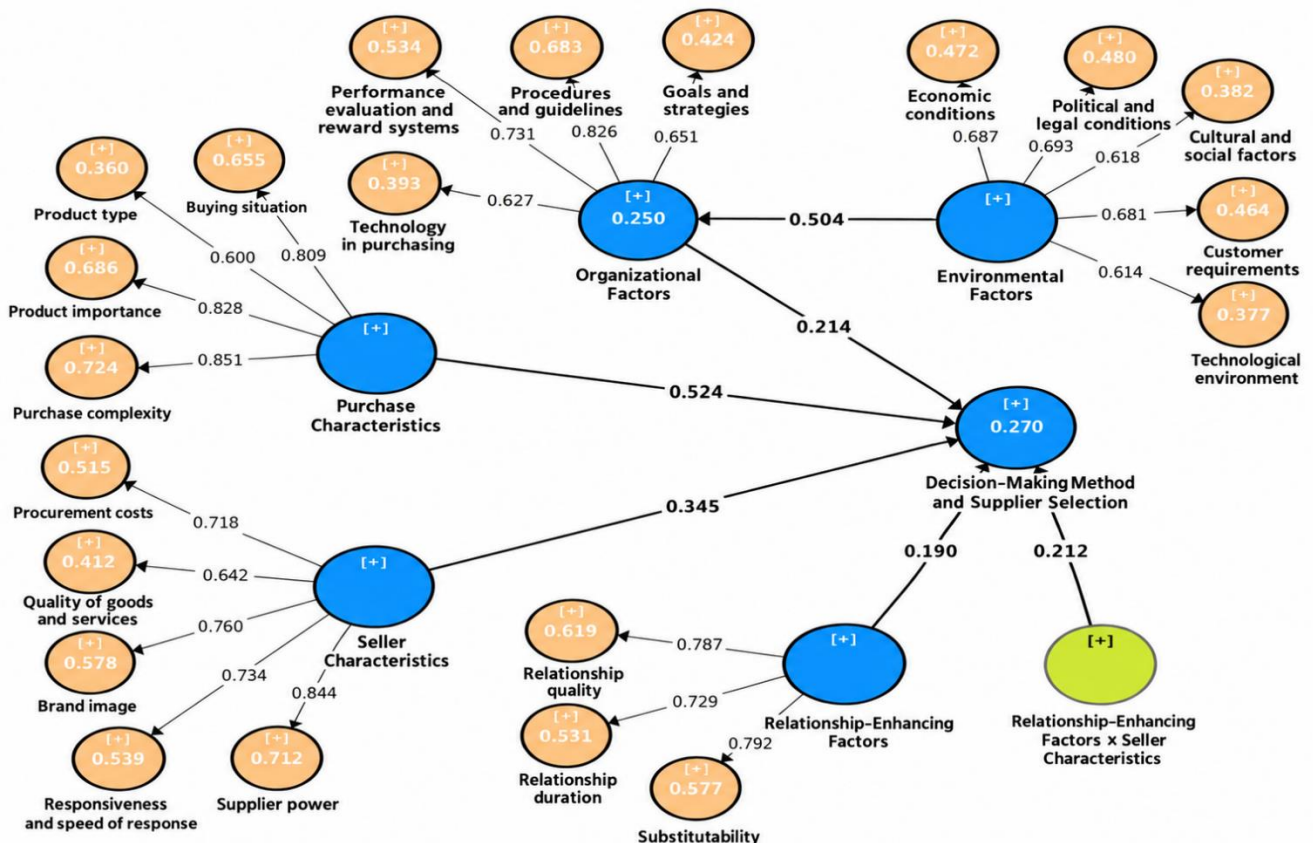
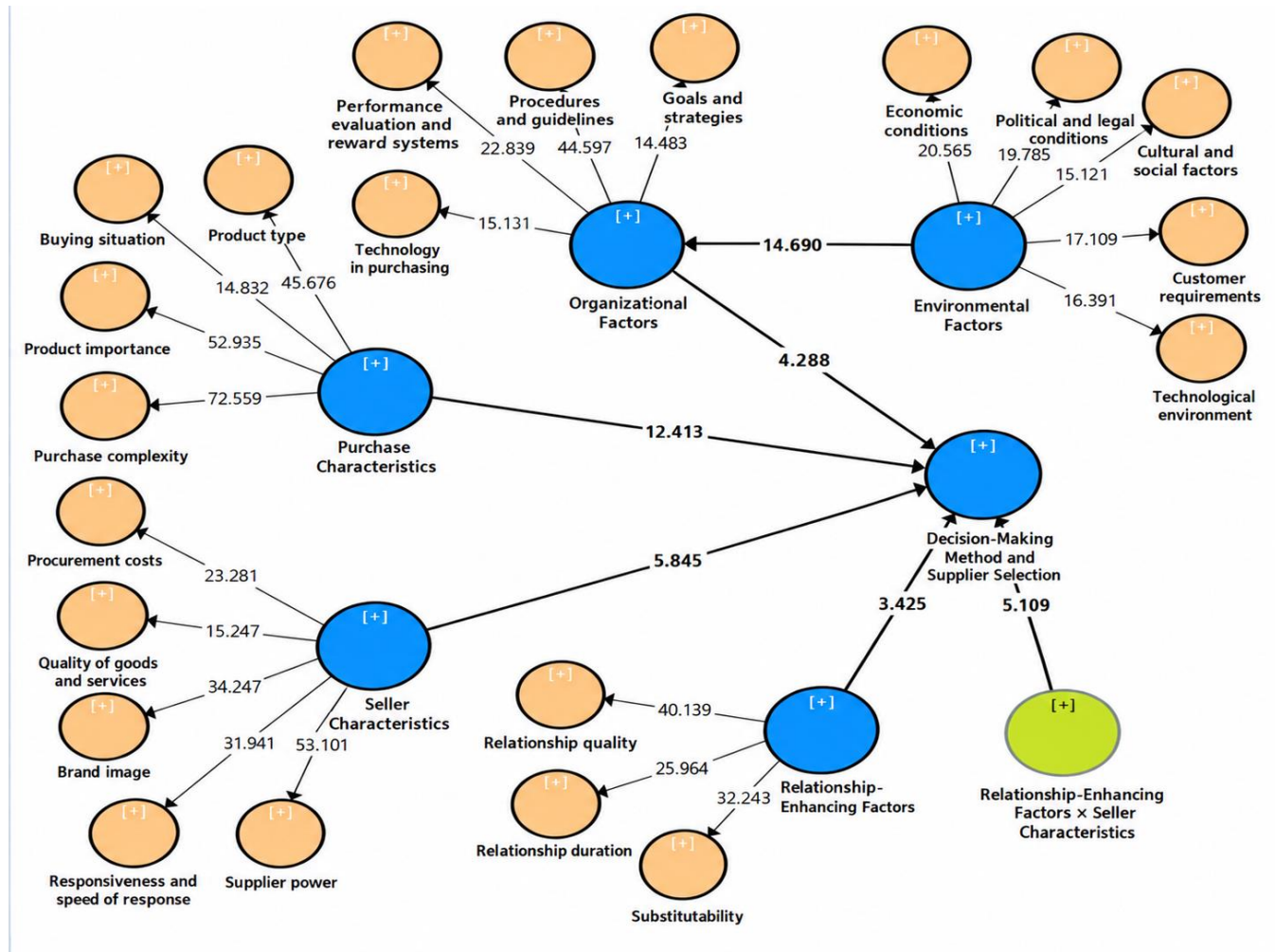


Figure 3*t-Statistics for Testing the Overall Research Model*

As shown in Table 10, all direct path coefficients were statistically significant at the 95% confidence level.

Table 10*Path Coefficients and t-Statistics for the Overall Model*

Path	Effect (β)	t Statistic	Result
Environmental factors → Organizational factors	.504	14.690	Relationship supported
Organizational factors → Decision-making method and supplier selection	.214	4.288	Relationship supported
Purchase characteristics → Decision-making method and supplier selection	.524	12.413	Relationship supported
Seller characteristics → Decision-making method and supplier selection	.345	5.845	Relationship supported
Relationship-enhancing factors → Decision-making method and supplier selection	.190	3.425	Relationship supported
Relationship-enhancing factors × Seller characteristics → Decision-making method and supplier selection	.212	5.109	Relationship supported

As indicated by the outputs presented in Figures 2 and 3, the t-statistic for each of the six paths exceeded the critical value of 1.96, indicating that all specified relationships were statistically significant. The path coefficients further showed that environmental factors had a positive and statistically significant effect on organizational factors ($\beta = .504$, $t = 14.690$, $p < .05$). Organizational factors ($\beta = .214$, $t = 4.288$, $p < .05$), purchase characteristics ($\beta = .524$, $t = 12.413$, $p < .05$), seller characteristics ($\beta = .345$, $t = 5.845$, $p < .05$), and relationship-enhancing factors ($\beta = .190$, $t = 3.425$, $p < .05$) each had positive and statistically significant effects on the decision-making method and supplier selection. In addition, relationship-enhancing factors

positively moderated the relationship between seller characteristics and the decision-making method and supplier selection ($\beta = .212$, $t = 5.109$, $p < .05$). This finding indicates that at higher levels of relationship-enhancing factors, the relationship between seller characteristics and the decision-making method and supplier selection becomes stronger, whereas at lower levels of relationship-enhancing factors, this relationship becomes weaker.

The coefficient of determination is a fundamental criterion for evaluating endogenous latent variables in a structural path model. This index indicates the proportion of variance in an endogenous variable that is explained by the exogenous variables; in other words, it reflects the percentage of variation in the dependent variable explained by the independent variables. Chin (1994) proposed R^2 values of .19, .33, and .67 as indicative of weak, moderate, and substantial explanatory power, respectively, for endogenous latent variables in structural models. However, when an endogenous latent variable is predicted by only a small number of exogenous variables, such as one or two predictors, moderate R^2 values may also be considered acceptable. The R^2 values presented in Table 11 provide general support for the adequacy of the structural model fit.

Table 11

R^2 Values for the Research Variables

No.	Variable	R^2
1	Organizational factors	.250
2	Decision-making method and supplier selection	.270

The Q^2 criterion indicates the predictive relevance of the model. For an endogenous construct, Q^2 values of .02, .15, and .35 are generally interpreted as indicating weak, moderate, and strong predictive relevance, respectively, of the associated exogenous construct or constructs. The Q^2 values presented in Table 12 indicate satisfactory predictive relevance for the endogenous constructs examined in the study and support the adequacy of the structural model.

Table 12

Q^2 Values for the Research Variables

No.	Variable	Q^2
1	Organizational factors	.135
2	Decision-making method and supplier selection	.163

Discussion and Conclusion

The present study developed and empirically tested a multidimensional model of industrial buyer behavior among small and medium-sized enterprises (SMEs) operating in the Iranian market. The qualitative phase identified five principal categories of determinants—environmental factors, organizational factors, purchase characteristics, seller characteristics, and relationship-enhancing factors—while the quantitative phase confirmed the structural relationships among these constructs and the decision-making method and supplier selection. The results showed that environmental factors had a positive and significant effect on organizational factors ($\beta = .504$, $t = 14.690$), while organizational factors ($\beta = .214$, $t = 4.288$), purchase characteristics ($\beta = .524$, $t = 12.413$), seller characteristics ($\beta = .345$, $t = 5.845$), and relationship-enhancing factors ($\beta = .190$, $t = 3.425$) significantly predicted the decision-making method and supplier selection. In addition, relationship-enhancing factors positively moderated the relationship between seller characteristics and industrial purchasing decisions ($\beta = .212$, $t = 5.109$). These findings collectively reinforce the argument that organizational buying should not be conceptualized as a simple price–product choice; rather, it is the outcome of the interaction among external environmental pressures, internal organizational mechanisms, characteristics of the purchasing task, supplier-related evaluations, and the quality and

continuity of interorganizational relationships. Such a multidimensional interpretation is consistent with integrative models of organizational buying behavior, which emphasize the simultaneous influence of environmental, organizational, group, and transaction-specific determinants on industrial purchasing decisions [1, 3].

The first major finding was the significant positive effect of environmental factors on organizational factors. The relatively strong path coefficient ($\beta = .504$) indicates that changes in economic conditions, political and legal circumstances, cultural and social factors, customer requirements, and the technological environment substantially shape the internal organizational context within which purchasing decisions are made. This result is particularly meaningful for SMEs because these firms generally possess fewer financial, technological, and managerial buffers against environmental turbulence than large organizations. Consequently, changes in inflation, regulatory requirements, market uncertainty, technological developments, or customer expectations may rapidly be translated into revised purchasing procedures, sourcing priorities, performance criteria, or strategic goals. Earlier organizational buying frameworks similarly regard the external environment as a fundamental antecedent of organizational purchasing behavior because economic, political, technological, and market developments establish the constraints and opportunities within which purchasing units operate [1, 3]. The result is also consistent with the broader risk-management literature demonstrating that environmental risks and external pressures influence organizational policies, resource allocation, and managerial responses [9, 10]. In industrial markets characterized by economic uncertainty and technological change, firms must therefore continuously adapt procurement systems rather than treating purchasing routines as stable administrative arrangements.

The identified importance of technological conditions is also consistent with contemporary transformations in B2B purchasing. Artificial intelligence, digital procurement platforms, data analytics, and automated supplier-evaluation systems increasingly influence how organizational buyers identify alternatives, compare suppliers, assess risks, and manage purchasing processes. Osmonbekov et al. demonstrated that developments in artificial intelligence are transforming organizational buying behavior by altering information processing, procurement efficiency, and the role of purchasing professionals [12]. The increasing digitalization of SMEs can similarly affect the accessibility of market information, supplier comparison, communication speed, and purchasing transparency. Earlier evidence on electronic commerce among SMEs also suggests that digital technologies can contribute to competitive advantage by improving organizational access to information and markets [13]. Moreover, the growing use of digital channels in B2B marketing indicates that even relatively small firms increasingly incorporate technology into communication and relationship management with industrial customers [14]. Thus, the environmental-to-organizational pathway identified in the current study reflects a broader transition in which external technological and market developments reshape internal procurement structures and purchasing capabilities.

Among the direct predictors of decision-making and supplier selection, purchase characteristics demonstrated the strongest effect ($\beta = .524$). This finding indicates that the nature of the purchasing task itself—including buying situation, product type, product importance, and purchase complexity—is the most influential determinant of how SMEs make purchasing decisions and select suppliers. Industrial purchasing decisions differ considerably according to whether a purchase is routine or novel, strategically important or peripheral, standardized or technically complex, and characterized by high or low financial and operational risk. When products are important or purchasing processes are complex, organizations are more likely to engage in extensive information search, formal evaluation, multiple-person participation, and systematic supplier comparison. Conversely, routine and low-risk purchases may involve more simplified decision procedures. This result strongly

aligns with the findings of Lewin and Donthu, who showed that purchase situations affect buying-center structure and involvement in organizational purchasing [4]. It is also consistent with the classical understanding of industrial markets, in which the complexity, importance, and novelty of a purchase influence the composition of the buying center and the intensity of information-processing activities [1, 3].

The prominence of purchase characteristics further demonstrates why standardized approaches to industrial selling may be ineffective. An SME purchasing an inexpensive standardized component is unlikely to apply the same decision rules used when selecting a strategically important technology, production input, or capital asset. Purchasing and supply management literature similarly emphasizes that procurement activities must be differentiated according to the strategic importance, risk, complexity, and supply characteristics of purchased items [5]. Supplier selection research also shows that organizational buyers normally consider multiple criteria rather than relying solely on price, particularly when purchasing decisions involve substantial risk or operational consequences [7]. The findings of Chavan and Chaudhuri likewise demonstrate that multiple organizational and procurement-related determinants contribute to purchasing performance in engineering procurement settings [6]. Therefore, the strong coefficient identified for purchase characteristics suggests that industrial marketers should first understand the specific purchasing situation confronting the customer before attempting to influence supplier-selection decisions.

Seller characteristics were the second strongest direct predictor of decision-making and supplier selection ($\beta = .345$). The dimensions identified in the qualitative phase—procurement costs, quality of goods and services, brand image, responsiveness and speed of response, and supplier power—collectively represent the value proposition and operational credibility of suppliers. Industrial buyers face consequences that extend beyond the immediate acquisition price; supplier failure may generate production disruptions, quality problems, customer dissatisfaction, inventory shortages, or reputational consequences. Consequently, the perceived reliability and responsiveness of the seller can become as important as the cost of the offering itself. This result is compatible with established B2B marketing principles emphasizing product quality, service support, supplier capabilities, reputation, and economic value as central supplier-evaluation criteria [2, 11]. Supplier-selection studies similarly highlight the multidimensional nature of vendor evaluation, with quality, cost, delivery, responsiveness, and operational capabilities frequently entering organizational decision models [5, 7].

The significance of seller characteristics may be especially pronounced for SMEs because a poor supplier decision can consume a larger proportion of their financial and managerial resources than would be the case for larger organizations. Sourcing flexibility and supplier capabilities can directly affect organizational performance when firms confront uncertainty or changing demand conditions [8]. Accordingly, industrial sellers that demonstrate flexibility, rapid response, consistent quality, and reliable fulfillment may reduce the buyer's perceived purchasing risk and increase the likelihood of selection. Recent B2B scholarship also indicates that customer service value is becoming increasingly important in contemporary organizational buying behavior, as buyers evaluate not only the technical attributes of a product but also the total experience and service value associated with the supplier [15]. The current results therefore indicate that supplier competitiveness in the SME market depends on delivering an integrated combination of economic, technical, service, and relational value rather than relying on price competition alone.

Organizational factors also had a positive and significant effect on the method of decision-making and supplier selection ($\beta = .214$). The relevant dimensions included organizational goals and strategies, procedures and guidelines, performance

evaluation, and technology in purchasing. This finding supports the premise that industrial buying occurs within an organizational system rather than being reducible to the preferences of individual purchasing managers. Procurement decisions are embedded in formal objectives, organizational policies, authorization procedures, performance criteria, and information systems. Accordingly, two firms facing an identical purchase situation may make different supplier decisions because their strategic priorities and internal procedures differ. One organization may emphasize cost reduction, another may prioritize technological innovation, and another may value continuity of supply or quality assurance. Organizational buying theories have long emphasized that internal structures, objectives, policies, and decision rules influence buying-center activities and supplier evaluation [1, 3]. Purchasing and supply chain management research likewise views procurement as an increasingly strategic function aligned with broader organizational priorities [5].

The comparatively smaller coefficient of organizational factors relative to purchase and seller characteristics should not be interpreted as evidence that internal organizational mechanisms are unimportant. Instead, organizational factors may establish the decision architecture through which purchase characteristics and supplier attributes are interpreted. This interpretation is compatible with the finding that environmental factors significantly predict organizational factors, suggesting a sequential process in which external conditions alter organizational priorities and procedures, which then affect purchasing decisions. Such interaction among levels of influence reflects the complexity of B2B markets and may help address the knowledge gap highlighted in industrial marketing research concerning how organizational-level processes translate into specific buyer behaviors [19]. From a managerial perspective, this means that understanding a customer requires knowledge not only of what the customer is buying but also of how its internal purchasing system is structured.

Relationship-enhancing factors also exerted a significant positive direct effect on supplier-selection decision-making ($\beta = .190$). Although this was the smallest of the direct coefficients, its significance demonstrates that relationship quality, relationship duration, and substitutability have meaningful roles in industrial purchasing. Long-term buyer–supplier relationships can reduce uncertainty, facilitate communication, enhance mutual understanding, lower transaction costs, and create confidence regarding future performance. The result is directly consistent with commitment–trust theory, which positions trust and commitment as central mechanisms supporting successful relationship marketing and durable exchange relationships [16]. It also accords with evidence that long-term orientation in buyer–supplier relationships develops through relational mechanisms and may be conditioned by broader contextual characteristics [17]. Therefore, even when industrial buyers conduct apparently rational evaluations of economic and technical criteria, prior relational experience can influence their perceptions of risk, reliability, and willingness to continue with a supplier.

Importantly, the study further showed that relationship-enhancing factors positively moderated the effect of seller characteristics on decision-making and supplier selection ($\beta = .212$). This means that favorable seller characteristics exert a stronger influence on purchasing decisions when the buyer–seller relationship is characterized by greater quality, continuity, or relational strength. This finding adds an important relational dimension to the proposed model. Quality, responsiveness, brand image, and procurement cost do not necessarily influence every buyer in the same manner; their effects are amplified when the supplier has established a credible and enduring relationship with the purchasing organization. Trust and relational commitment provide a context in which the supplier’s capabilities are perceived as more reliable and less uncertain [16, 17]. Conversely, weak relationships can reduce the influence of favorable seller attributes because buyers may remain uncertain about whether the supplier will consistently deliver the promised value. Recent research on unethical behavior in buyer–

supplier relationships further illustrates that relational governance, trust, and behavioral integrity are central to the stability and effectiveness of interorganizational exchange [18]. Thus, the moderation result suggests that supplier attributes and relational quality should be managed jointly rather than treated as independent sources of competitive advantage.

The model explained 25.0% of the variance in organizational factors and 27.0% of the variance in decision-making and supplier selection. In addition, Q^2 values of .135 for organizational factors and .163 for decision-making and supplier selection indicated predictive relevance, with the latter reaching a moderate level. These values suggest that the proposed model captures meaningful components of industrial purchasing behavior while simultaneously confirming that other determinants remain outside the model. Organizational buying is intrinsically complex and may also depend on interpersonal influence, power relations within the buying center, perceived risk, personal experience, organizational size, industry characteristics, competitive intensity, and decision-maker characteristics. This is consistent with integrative organizational buying frameworks and with the broader B2B literature, which cautions against overly simplified explanations of purchasing behavior [3, 19]. Methodologically, the use of structural equation modeling was appropriate for simultaneously estimating relationships among multiple latent constructs and evaluating a theoretically interconnected model of industrial buyer behavior [20]. Overall, the study extends the industrial buying literature by integrating purchasing-task characteristics, organizational and environmental conditions, supplier evaluations, and relational mechanisms within a unified model relevant to SMEs operating in an emerging and dynamic market environment.

The findings also have broader implications for contemporary industrial marketing. Traditional marketing logic emphasizes identifying customer needs and creating superior customer value, but in B2B settings this principle requires a nuanced understanding of organizational processes and interfirm relationships [2, 11]. The current findings indicate that industrial marketers must simultaneously understand the customer's external environment, internal procurement system, specific purchasing situation, supplier-evaluation criteria, and existing relational context. The evolution of digital procurement, artificial intelligence, electronic commerce, and social-media-based B2B communication further increases the number of information sources available to organizational buyers and may make industrial purchasing more analytically sophisticated [12-14]. Consequently, the model developed in this study provides a useful basis for interpreting industrial buyer behavior as a dynamic interaction among situational, organizational, supplier-related, environmental, and relational influences rather than as a linear selection process.

The present study has several limitations that should be considered when interpreting its findings. First, the quantitative phase was cross-sectional, and therefore the identified structural relationships reflect associations observed at a particular point in time rather than definitive causal processes evolving over time. Second, the study focused on SMEs operating in the Iranian market, and the specific institutional, economic, regulatory, technological, and competitive conditions of this context may limit the direct generalizability of the findings to large enterprises or organizations operating in substantially different markets. Third, questionnaire-based data may be affected by self-report bias, social desirability, recall limitations, and differences in respondents' interpretations of purchasing constructs. Fourth, although the qualitative phase achieved theoretical saturation and incorporated knowledgeable experts and managers, the purposive nature of the qualitative sample means that other industrial sectors or professional groups might identify additional themes. Finally, the model explained a meaningful but incomplete proportion of variance in purchasing decisions, indicating that other variables, including

interpersonal influence, perceived risk, organizational culture, buying-center composition, supplier innovation capability, and competitive intensity, may also contribute to industrial buyer behavior.

Future studies could employ longitudinal designs to examine how industrial buyer behavior and supplier-selection criteria change in response to economic fluctuations, technological developments, organizational growth, and changes in buyer–supplier relationships. Comparative research across industries, regions, countries, and firm-size categories would be valuable for determining whether the relative importance of environmental, organizational, purchase-related, seller-related, and relational factors varies across contexts. Researchers could also extend the proposed framework by incorporating constructs such as perceived purchasing risk, trust, commitment, supplier innovation, digital procurement maturity, purchasing-center composition, environmental uncertainty, and organizational resilience. Multigroup analyses could examine whether the structural relationships differ according to firm size, industry, purchasing experience, type of purchase, or technological intensity. Future investigations may also combine survey data with objective procurement records, supplier-performance indicators, transaction histories, or digital purchasing data to reduce reliance on self-reported information. Finally, qualitative longitudinal studies could provide deeper insight into how relationships with suppliers develop over time and how purchasing decision rules change following successful or unsuccessful procurement experiences.

Managers of industrial suppliers should approach SME customers through a differentiated and relationship-oriented strategy rather than relying primarily on product and price advantages. Because purchase characteristics were the strongest predictor of supplier-selection decisions, sales teams should first identify the importance, complexity, novelty, and type of each customer's purchase and adapt their information, proposals, technical support, and negotiation processes accordingly. Suppliers should simultaneously strengthen operational attributes such as product and service quality, responsiveness, delivery reliability, brand credibility, and competitive procurement costs. Particular attention should be given to relationship quality and continuity because strong relationships not only influence purchasing decisions directly but also increase the impact of favorable seller characteristics. Supplier firms should therefore establish systematic key-account management, rapid-response mechanisms, transparent communication, after-sales support, and periodic relationship evaluations. Managers should also monitor changes in customers' economic, regulatory, technological, and competitive environments because these changes can alter organizational purchasing priorities and procedures. By integrating customer intelligence, customized selling, reliable operational performance, digital procurement support, and long-term relationship management, industrial suppliers can improve their probability of selection and develop more sustainable business relationships with SMEs.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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