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Green innovation and purchasing strategy: Mediators between top management commitment and competitive advantage

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Abstract

This article aims to investigate how top management commitment (TMC) affects competitive advantage (CPA) within the manufacturing industry in Vietnam. It specifically explores the mediating roles played by purchasing strategy (PSG) and green innovation (GRI). By integrating these variables into a unified model, the research seeks to provide a comprehensive understanding of how TMC translates into CPA through strategic purchasing and environmental innovations, using PLS-SEM to analyze the relationships between TMC, purchasing strategy, green innovation, and CPA. Theoretical frameworks such as the AMO theory, RBV theory, and Dynamic Capabilities (DC) theory underpin the article, guiding the formulation of hypotheses and interpretation of results. The findings indicate that TMC significantly enhances CPA by positively influencing purchasing strategy and green innovation. Both purchasing strategy and green innovation serve as crucial mediators, translating TMC into tangible competitive benefits. The article highlights the importance of proactive and strategic purchasing, as well as the implementation of green innovations, in achieving sustainable CPAs in the manufacturing sector. Manufacturing enterprises are encouraged to invest in green technologies and develop strategic purchasing policies that align with their sustainability goals. This approach not only enhances competitive positioning but also addresses environmental and social responsibilities.

Keywords: Competitive advantage, Green innovation, Purchasing strategy, Top management commitment.

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1. Introduction

In the era of economic globalization, manufacturing enterprises confront an increasingly competitive environment and stringent demands from customers and society to ensure sustainable development [1]. Competitive advantage is considered a critical factor determining the success or failure of a company in competitive markets [2]. To capitalize on these advantages, companies often integrate resources in innovative ways to surpass competitors [3]. Existing competitive advantages can be

optimized through strategic leverage, enabling firms to access new opportunities [4]. In this context, top management commitment plays a pivotal role in driving and implementing organizational strategies to achieve competitive advantage [5]. By fostering a strong and open corporate culture, leaders not only enhance employee morale and motivation but also contribute to product and service improvements and customer satisfaction. Additionally, they need to consider stakeholders to ensure the sustainability of organizational success [6]. Top management commitment serves as a crucial driving force in enhancing sustainable performance [7]. Moreover, by laying a strong foundation for sustained organizational growth and competitiveness, this commitment exerts a significant and positive influence on business performance [8]. Furthermore, it plays a pivotal role in improving operational efficiency [9] and strengthening the organization's competitive advantage, enabling it to maintain a dominant position in the market [5].

Although top management commitment is important, it does not always directly lead to a competitive advantage for the business [10]. This necessitates supporting intermediaries such as purchasing strategy [5] and green innovation [11]. Additionally, the importance of purchasing strategy and green innovation for increasing competitive advantage cannot be denied [5, 12]. The role of a purchasing strategy is to support and align with the overall strategies of the company to achieve business objectives [13]. Proactive and strategically oriented purchasing presents substantial opportunities for gaining a competitive edge [5]. Green innovation encompasses product and process improvements that are environmentally friendly, such as using efficient technologies, pollution prevention, waste recycling, and sustainable design and packaging [11]. When implemented correctly, green innovation can help businesses achieve sustainable firm performance [14]. Green innovation can serve as a catalyst for competitive advantage, enabling businesses to not only respond to environmental pressures but also leverage them as a driving force to create competitive advantages [15]. Practice shows that when green innovation is implemented correctly, it can strengthen the competitive advantage of the organization [16].

While abundant research exists on the importance of top management commitment in driving competitive practices within businesses [17] studies on the correlation between TMC and CPA remain scarce in Vietnam, particularly within the Ho Chi Minh City (HCMC) manufacturing sector. Existing studies often adopt frameworks such as RBV [16] Stakeholder Theory [10] Natural Resource-Based View (NRBV) [17] or other conventional perspectives [5, 11]. However, the application of these theories remains limited in explaining the mechanisms linking TMC to CPA. Moreover, while prior research has explored the mediating role of either green innovation [11] or purchasing strategy [5] individually, there is a lack of studies integrating both factors into a unified model. These observations underscore a notable void in the current literature, highlighting the critical need to address this gap through research endeavors. Hence, this article holds paramount importance in advancing knowledge in this domain.

To address this gap, the article focuses on several key research questions to gain deeper insights into the complex relationships in this context. Firstly, it explores the impact of TMC on purchasing strategy, green innovation, and CPA. Secondly, it assesses the significance of purchasing strategy and green innovation as critical determinants of competitive advantage for local businesses. Thirdly, it analyzes the intermediary role of purchasing strategy and green innovation in the manufacturing sector of HCMC, elucidating how they influence the relationship between top management commitment and competitive advantage. Finally, the article proposes management implications for managers of manufacturing enterprises in HCMC to enhance awareness of the importance of senior leadership commitment, purchasing strategies, and green innovation in effectively promoting competitive advantage.

This research makes significant contributions both theoretically and in practical management. Theoretically, it expands our understanding of the impact of TMC on purchasing strategy and green innovation, integrating these two factors into a unified model to elucidate their intermediary roles in creating competitive advantage. Moreover, it provides deeper insights into the mechanisms through which top management commitment can influence competitive advantage, particularly within the manufacturing industry in HCMC. On a practical level, the article offers strategic guidance for leaders, encouraging businesses to develop effective and sustainable purchasing strategies while investing in green innovation. Additionally, it proposes managerial implications to help managers gain a proper understanding of the importance of TMC, purchasing strategy, and green innovation, thereby enhancing the competitive ability of businesses in a challenging business environment.

The remainder of this paper is structured as follows: Section 2 presents the theoretical framework and hypothesis development, integrating relevant theories to support the research model. Section 3 details the research methodology, including data collection, measurement scales, and analytical techniques. Section 4 discusses the findings, highlighting key relationships between TMC, PSG, GRI, and CPA. Section 5 provides a discussion and managerial implications, emphasizing the practical significance of the results. Finally, Section 6 outlines the conclusion, limitations, and future research directions, offering insights for further studies.

2. Theoretical Underpinning and Hypotheses Development

2.1. Theoretical underpinning

The Ability-Motivation-Opportunity (AMO) theory by Appelbaum, et al. [18] highlights the importance of aligning and integrating ability, motivation, and opportunity to enhance organizational effectiveness. This theory emphasizes that when these elements are synchronized, organizations can achieve peak performance. In which opportunities created by leaders help employees have the conditions to develop their capacity and motivation to work. And is an important factor contributing to promoting organizational success [19]. Simultaneously, the RBV, initially proposed by Wernerfelt [20] and expanded by Barney [21] underscores how firms can gain a competitive advantage by effectively utilizing distinctive resources and capabilities that are valuable, rare, difficult to imitate, and irreplaceable. According to Barney [21] sustaining a competitive advantage requires implementing strategies that competitors are unable to replicate. TMC is considered the key resource for

achieving the competitive advantage of the organization [22]. Furthermore, Dynamic Capability (DC), articulated by Teece, et al. [23] refers to a firm's capacity to continuously adapt and innovate by integrating, developing, and reconfiguring both internal and external competencies. The emergence of DC has enhanced the RBV by addressing the evolutionary nature of a firm's resources and capabilities in response to environmental changes. Dynamic capability guides a company's behavior toward continuously integrating, reconfiguring, innovating, and regenerating its resources and capabilities, most importantly, upgrading and reconstructing its core competencies to adapt to changing environments and achieve sustained competitive advantage. Furthermore, it enables the identification of firm- or industry-specific processes that are crucial to a company's development [24]. In this context, the process of building and developing dynamic capabilities within an organization is primarily carried out or led by senior managers. They play a crucial role in decision-making, strategic adjustments, and facilitating the organization's adaptation to a changing environment [25].

From this discussion, TMC aligns with the standards of AMO, RBV, and DC in enhancing an organization's competitive advantage. Therefore, this research model integrates the AMO, RBV, and DC theories, interacting with one another to provide a comprehensive perspective on the relationship between top management commitment, purchasing strategy, green innovation, and competitive advantage. By combining AMO, RBV, and DC theories, this article not only elucidates the micro-level factors and organizational behaviors but also underscores the importance of strategic resources and adaptive capabilities in a dynamic business environment.

2.2. Hypotheses development

2.2.1. Top Management Commitment (TMC) and Purchasing Strategy (PSG)

Top management commitment refers to the active involvement and support of senior management in a company's strategic direction and daily operations. This involves senior leaders defining and sharing the company's vision and objectives, engaging in the management process, investing resources and time in the company's operations, empowering and motivating employees, and overseeing activities to ensure that goals are achieved [11]. Leadership at the senior level is defined as "a person or group of people who direct and control an organization at the highest level" [6]. These individuals are responsible for defining success criteria for projects, establishing project management methodologies, and participating in the oversight and control phases of the enterprise's programs and portfolios [26].

Empirical evidence shows that senior leadership commitment significantly enhances sustainable purchasing practices as well as green purchasing practices by leveraging organizational resources and capabilities [1]. Furthermore, by facilitating the allocation of appropriate resources to execute corporate strategies, TMC promotes efficient procurement processes [5]. In other words, TMC is an "Opportunity" to promote a business's procurement strategy, which aligns with the AMO perspective. Simultaneously, the dynamic capabilities (DC) framework emphasizes the important role of senior leaders in the organization in developing dynamic capabilities [23]. They not only set the standards of success and establish project management methods but are also responsible for overseeing the company's investment programs [26]. This ensures that purchasing activities are aligned with the overall strategy of the organization and meet strategic requirements and objectives [11]. Moreover, top management plays a critical role in driving supply chain integration, thereby establishing a strong foundation for an effective procurement strategy [25]. Therefore, leadership commitment not only supports but also plays a crucial role in optimizing and developing the organization's purchasing strategy. Therefore, leadership commitment supports and plays a crucial role in optimizing and developing the organization's purchasing strategy [5].

Hence, this discussion concludes that:

H_1: TMC positively influences purchasing strategy.

2.2.2. Top Management Commitment (TMC) and Green Innovation (GRI)

Green innovation, as conceptualized in the literature, pertains to the systematic advancement of hardware or software components associated with products or processes geared toward environmental sustainability. This encompasses technological advancements aimed at energy conservation, pollution mitigation, waste recycling, green product design, and corporate environmental management [15]. Green innovation includes green product innovation and green process innovation [11]. Green product innovation entails the integration of design alterations to bolster energy efficiency during product utilization, the utilization of fewer or non-polluting materials, and the adoption of eco-labeling [27]. It manifests in the recovery and recycling of end-of-life products, fostering a closed-loop approach to resource utilization [28]. On the other hand, green process innovation is exemplified by initiatives such as process recycling and material reuse, enhancing resource and energy efficiency, and embracing cleaner technologies [29]. This facet of innovation underscores the company's efforts to curtail hazardous emissions and waste generation while minimizing raw material consumption [11].

This article approaches green innovation from two aspects: product innovation and process innovation, aligning with the approaches of Gelmez, et al. [12] and Xie, et al. [27]. According to Arsawan, et al. [30] top management support significantly influences green innovation, emphasizing the importance of leadership in driving sustainable practices. Siagian, et al. [11] further confirm this relationship, highlighting that committed leadership is essential for the implementation of environmentally friendly technologies. Similarly, Burki and Dahlstrom [29] validate that top management commitment positively impacts green innovation efforts. This is because committed leaders ensure that adequate resources are allocated and prioritized for green projects, as suggested by the DC Theory. Moreover, Thurner and Proskuryakova [31] note that managerial initiatives are pivotal in encouraging companies to adopt greener technologies. Therefore, it is evident that TMC not only sets a strategic direction for enhancing business performance [8] but also plays a crucial role in driving green investment [32] and fostering green innovation by providing the necessary support and resources [16].

Thus, we advance the following hypothesis:

$H_{2:}$ TMC positively influences green innovation.

2.2.3. Top Management Commitment (TMC) and Competitive Advantage (CPA)

Competitive advantage is central to a company's operations in a competitive market [2]. It is defined as the ability of a company to perform in ways that competitors cannot or will not match [4]. Top Management Commitment is pivotal in establishing a company's competitive edge [5]. As per Basana, et al. [9] the dedication of senior leadership significantly enhances operational performance, suggesting that strong leadership can steer the company towards greater efficiency and productivity. Moreover, the steadfast commitment of top management not only directly impacts the green competitive advantage [17] but also directly influences the overall competitive advantage of the enterprise [5]. This aligns with Porter's [2] perspective that competitive advantage includes cost leadership and product differentiation. When top management is committed and provides clear strategic direction, the company can optimize production processes, reduce costs, and enhance product quality, thereby improving market competitiveness. Moreover, this commitment significantly and positively influences business performance, laying a solid foundation for long-term organizational growth [8].

Simultaneously, the RBV theory suggests that competitive advantage is achieved when a company implements a value-creating strategy that no competitors can simultaneously pursue [21]. The effective deployment of resources, as expanded by the DC theory, requires the capabilities of top leadership, considering it a distinctive resource [24]. Strengthening top management commitment can enhance a firm's economic, environmental, and social performance [7] while also reinforcing its competitive advantage [5].

$H_{3:}$ TMC positively influences competitive advantage.

2.2.4. Purchasing Strategy (PSG) and Competitive Advantage (CPA)

Purchasing strategy is a crucial aspect of business operations, esteemed and reflected through the establishment of robust partnerships with suppliers [33]. It transcends mere shopping plans, instead reflecting customers' demands regarding quantity, quality, and product types [34]. The role of purchasing strategy is not only to support production processes but also to align with the company's overall strategies to achieve business goals [13]. The purchasing department is tasked with carefully selecting suppliers to ensure the company benefits in terms of cost and operational efficiency [33]. Additionally, a purchasing strategy reflects current market conditions such as prices, available raw materials, economic factors, competition, and market trends, all of which directly influence purchasing decisions [33]. To execute an effective purchasing strategy, companies need three key skills: technical knowledge, communication skills, and management skills. Developing and applying these skills will assist companies in building and maintaining a strong purchasing strategy [35].

Suppliers play a crucial role in supporting and implementing a company's competitive strategies. Whether a company chooses a cost leadership strategy (focusing on reducing production costs and supplying products at the lowest prices), a differentiation strategy (creating unique products or services that differentiate from competitors), or a hybrid strategy (combining both approaches), support from suppliers is indispensable [36]. According to the RBV theory, companies that combine resources in unique ways can realize advantages over competitors that cannot replicate such combinations. Thus, the distinctive linkages between companies can be a source of relational benefits and competitive advantage [3]. This suggests that a purchasing strategy, through establishing and maintaining special relationships with suppliers, can generate significant relational benefits and competitive advantages [11]. By optimizing its purchasing strategy, a company can leverage unique resources from suppliers. This contributes to improving operational efficiency [34] while also enhancing its competitive positioning in the market [5] leading us to the following hypothesis:

$H_{4:}$ Purchasing strategy positively influences competitive advantage.

2.2.5. Green Innovation (GRI) and Competitive Advantage (CPA)

From an RBV perspective, green innovation is considered a significant resource that assists businesses in constructing and sustaining competitive advantages [37]. Theoretically, within the framework of DC, the essential task is to transform these resources into a truly competitive advantage [24]. Green innovation is regarded as an innovative capability, enabling enterprises to adapt and adjust their strategies and actions according to changes in the business environment, with green product innovation correlating positively with competitive advantage [38]. Furthermore, empirical evidence supports the positive impact of green innovation on sustainable business performance [39] while also highlighting the significant competitive advantages it brings to businesses [12].

Therefore, the article proposes the following hypotheses:

$H_{5:}$ Green innovation positively influences competitive advantage.

2.2.6. The Mediating Role of Purchasing Strategy and Green Innovation

The integration of both the RBV and the DC theory reveals that senior leadership commitment fosters the development of an effective purchasing strategy, thereby enhancing the firm's internal resources and dynamic capabilities. A robust purchasing strategy not only optimizes costs and improves quality but also enables the company to flexibly respond to market dynamics, thereby contributing to the creation and sustenance of CPA. This assertion is consistent with Tarigan, et al. [5], finding the pivotal intermediary role of purchasing strategy in connecting top management commitment and competitive advantage.

As companies integrate environmentally friendly strategies and innovations into their daily operations, they enhance their appeal to current and future customers who prioritize green performance and competitive advantages in business interactions [29]. This alignment with the dynamic capabilities (DC) theory posits that senior leadership's commitment to

promoting green innovation enables the company to develop the necessary dynamic capabilities to continuously improve and adapt product and production processes, thereby contributing to achieving and sustaining the organization's competitive advantage.

Empirical evidence suggests that green innovation not only strengthens competitive advantage [12] but also acts as a conduit, transmitting the impact of top management commitment to further enhance competitive advantage [11]. Thus, we hypothesize:

$H_{6:}$ The purchasing strategy plays a positive mediating role between top management commitment and competitive advantage;

$H_{7:}$ Green innovation plays a positive mediating role between top management commitment and competitive advantage.

3. Research Model and Methodology

3.1. Research Model

Building on the previously articulated arguments and synthesized hypotheses, this article proposes the following research model:

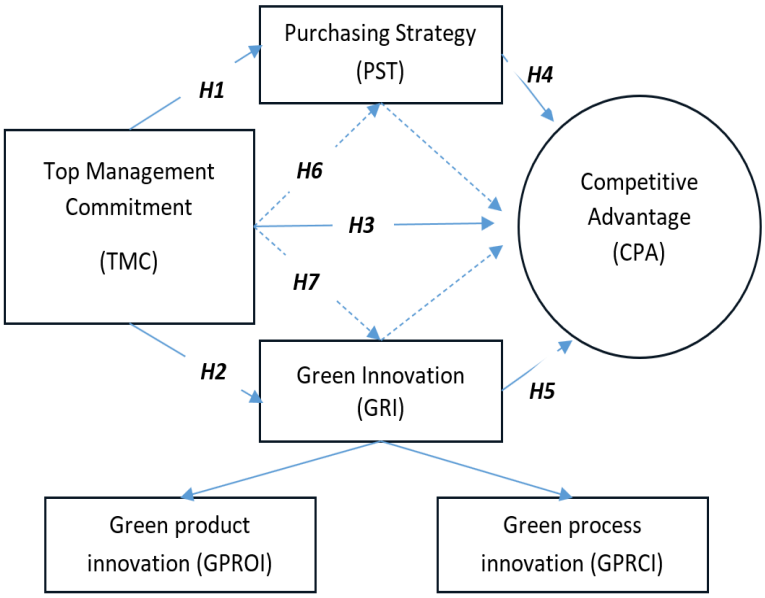

Figure 1.
Proposed Research Model.

3.2. Research Design and Methodology

3.2.1. Qualitative Research

The author first reviewed existing literature to develop reference scales. Following this, they engaged in discussions with six top managers from manufacturing companies in HCMC to tailor the survey questionnaire to local business specifics. Furthermore, a preliminary article involving 40 samples was conducted to further adjust the scales based on gathered insights. This adjustment process is repeated and results in the measurement scales presented in Table 1, ensuring accuracy and dependability in assessing key elements such as top management commitment (TMC), purchasing strategy (PSG), green innovation (GRI), and competitive advantage (CPA).

3.2.2. Sampling Method and Data Collection

To collect data for the research, the author implemented a systematic procedure to ensure reliability and representation. First, a convenience sampling method was applied using an email list compiled from reliable sources in the research field, ensuring diversity among manufacturing enterprises in HCMC. A total of 411 emails were sent to selected representatives in each company, including directors and department managers, who were chosen based on their extensive knowledge of purchasing activities, production processes, and their company's competitive advantage.

To enhance response rates, follow-up reminder emails were sent to non-respondents after one and two weeks, emphasizing the importance of senior management's commitment to business sustainability and its role in shaping competitive advantage. Participants were not financially compensated for their participation to ensure unbiased responses. Instead, they were informed that their contributions would support academic research and industry knowledge exchange, helping to develop best practices for sustainable and competitive business strategies.

To ensure anonymity and confidentiality, participants were not required to provide personally identifiable information, and all responses were treated with strict confidentiality. The collected data were stored securely and analyzed in aggregate form, ensuring that individual responses could not be traced back to any specific company or respondent. This approach encourages honest participation and minimizes response bias.

The data collection process took place between February 2024 and June 2024, yielding 328 responses.

3.2.3. Data Processing Method

After removing samples that did not meet the requirements, the author collected 311 final data samples and processed them using Excel and SmartPLS 3 software. Therefore, the author evaluated the measurement model and assessed the linear structural model. Finally, a bootstrapping test was performed to check the reliability of the SEM model. The purpose of this is to test the appropriateness of the relationships in the empirical research model.

3.2.4. Variable Measurement

The measurement scale used is a Likert scale with 5 levels ranging from 1 to 5, tailored and improved to fit the research context based on previous studies. The proposed model includes five main components presented in Table 1. Green innovation (GRI) is assessed based on two variables: Green product innovation (GPROI) and Green process innovation (GPRCI). Specifically, GPROI is cited from studies by Siagian, et al. [11] and Tarigan, et al. [5]. Top management commitment (TMC) is referenced in Siagian, et al. [11] and Tarigan, et al. [5]. Purchasing strategy (PSG) is referenced from the research works of Tarigan, et al. [33]; [34]. Green product innovation (GPROI) is also cited in studies by Chiou, et al. [28]; Xie, et al. [27] and Siagian, et al. [11]. Green process innovation (GPRCI) is discussed in studies by Chiou, et al. [28] and Siagian, et al. [11]. Competitive advantage (CPA) is cited from studies by Li, et al. [40] and Siagian, et al. [11].

Table 1.
Variables and items.

Item	**Top Management Commitment (TMC)**	**Reference**
TMC1	The top management regularly communicates the organization's vision and goals to all employees.	Siagian, et al. [11] and Tarigan, et al. [5].
TMC2	The top management consistently empowers employees and encourages them to make decisions.	
TMC3	The top management ensures the allocation of appropriate resources to implement the organization's strategies.	
TMC4	The top management continuously monitors and evaluates the organization's activities to ensure the achievement of the set goals.	
TMC5	The top management often devises employee development plans to enhance their skills and capabilities.	
Item	Purchasing Strategy (PSG)	Reference source
PSG1	The purchasing strategy reflects current market conditions, such as prices and the availability of materials.	Tarigan, et al. [33] and Tarigan and Siagian [34].
PSG2	The purchasing strategy reflects market demand regarding the quantity, quality, and types of products required by customers.	
PSG3	The purchasing strategy is an integral part of the company's overall strategy.	
PSG4	The company periodically evaluates suppliers to ensure quality and reliability.	
PSG5	The company builds good partnerships with suppliers.	
PSG6	The company accurately determines material specifications during purchasing.	
Item	Green Product Innovation (GPROI)	Reference
GPROI1	The company uses eco-labels on products to inform customers about the product's environmental friendliness.	Chiou, et al. [28]; Xie, et al. [27] and Siagian, et al. [11].
GPROI2	The company uses little or no polluting/toxic materials (using environmentally friendly materials).	
GPROI3	The company modifies product designs to enhance energy efficiency during operational use.	
GPROI4	The company recovers its end-of-life products and recycles them.	
Item	Green Process Innovation (GPRCI)	Reference
GPRCI1	The company uses cleaner technology to save and prevent pollution (like energy, water, waste, etc.).	Chiou, et al. [28] and Siagian, et al. [11].
GPRCI2	The company minimizes the use of raw materials in the production process, optimizing the use of resources.	
GPRCI3	The company reduces the consumption of water, electricity, coal or oil during production.	
GPRCI4	The company applies measures to recycle waste and exhaust gases, and reuse them in the production process.	
GPRCI5	The company effectively minimizes emissions of hazardous substances or waste during production.	
Item	Competitive Advantage (CPA)	Reference
CPA1	The organization competes effectively against major competitors by offering competitive pricing or cost advantages.	Siagian, et al. [11] and Li, et al. [40].
CPA2	The organization consistently meets customer demands by delivering the right type and volume of products on schedule.	
CPA3	The organization is capable of offering product quality and performance that creates higher value for customers.	
CPA4	The organization has the capability to bring new products to market faster than its major competitors.	
CPA5	The organization demonstrates the ability to launch innovative new products and features into the market.	

A questionnaire was developed based on a total of 25 observations. Additionally, variables such as industry sector, workforce scale, function/department, experience, and position were included.

4. Results

4.1. Representativeness of Collected Samples

The dataset, consisting of responses from 311 participants (refer to Table 2), offers fundamental insights into the research sample, which are crucial for investigating the relationship between TMC and factors in the model. The predominant sector represented is processing and manufacturing, accounting for 94.53% of the sample, emphasizing its significance in the article. This sectoral focus ensures the article's relevance and practical application to the local manufacturing environment, particularly in understanding how TMC influences procurement strategies and drives sustainable innovation.

The workforce distribution across companies of varying sizes, from small enterprises with fewer than 10 employees to larger organizations exceeding 200, reflects the diverse operational scales prevalent in the city's industrial landscape. This diversity enriches the article by capturing perspectives across different organizational dimensions, which is crucial for assessing the implementation of TMC-driven strategies in procurement and green innovation initiatives.

Most respondents hold managerial positions (87.78%), highlighting their pivotal role in executing strategic decisions related to procurement and innovation. The presence of directors (12.22%) further enhances the dataset, offering insights into top-level strategic directions aligned with sustainability and competitive positioning.

In terms of experience, the dataset exhibits a balanced representation across various tenure categories, ranging from less than 3 years to over 10 years. This diversity in experience underscores the breadth of knowledge and operational insights informing strategic decision-making concerning green initiatives and competitive advantage.

Based on the authors' understanding and existing literature, this data is well-suited to the article, contributing significantly to understanding the dynamics of TMC, purchasing strategy, and green innovation in the manufacturing sector of HCMC.

Table 2.
Demographic profile of the respondents.

		n	%
Industry Sector	Water supply, management, and waste treatment	8	2.57%
	Processing and manufacturing industry	293	94.53%
	Mining Industry	4	1.29%
	Electricity and Gas Production and Distribution	5	1.61%
Workforce scale	Less than 10 employees	96	30.87%
	10 to 99 employees	128	41.16%
	100 to 199 employees	62	19.94%
	200 employees and above	25	8.04%
Function/ Department	Purchasing	79	25.40%
	Production	98	31.51%
	Human Resources	51	16.40%
	Business	43	13.83%
	Other departments	40	12.86%
Experience	Less than 3 years	42	13.50%
	3 - 5 years	74	23.79%
	6 - 10 years	131	42.12%
	More than 10 years	64	20.58%
Position	Director	38	12.22%
	Manager	273	87.78%

4.2. Measurement Model Analysis

Green Innovation (GRI) is a second-order construct manifested through two components: Green Process Innovation (GPRCI) and Green Product Innovation (GPROI). Analysis of the measurement model reveals that both GPROI and GPRCI exhibit factor loadings exceeding 0.7, correlation coefficients surpassing 0.3, Cronbach's Alpha values of 0.855 and 0.893 respectively, and CR values of 0.902 and 0.921 (Table 3).

Table 3.
Construct reliability and validity.

	Cronbach's Alpha	CR	AVE	Outer loading	VIF
TMC	0.888	0.918	0.691	0.797 - 0.883	2.482 – 4.566
PGS	0.899	0.922	0.663	0.790 - 0.833	2.169 – 3.439
GPRCI	0.893	0.921	0.701	0.783 - 0.874	1.874 – 3.019
GPROI	0.855	0.902	0.697	0.810 - 0.866	1.794 – 2.239
CPA	0.908	0.932	0.733	0.805 - 0.880	2.482 – 4.566

Additionally, the extracted average variance (AVE) exceeds 0.5. These findings indicate that both variables meet the necessary conditions to form reflective indicators for GRI in the research model. As a result, the formal model has been streamlined into a first-order structure with four variables: TMC, PSG, GRI, and CPA.

The analysis of the first-order measurement model shows that TMC, PSG, GRI, and CPA have factor loadings exceeding 0.7, correlation coefficients exceeding 0.3, Cronbach's Alpha values ranging from 0.72 to 0.908, CR values between 0.870 and 0.932, and AVE above 0.5. Additionally, discriminant validity was assessed using Fornell and Larcker's criteria [41] and the Heterotrait-Monotrait (HTMT) ratio. The findings indicate that the square root of the AVE exceeds the correlations between latent variables, and HTMT values are below 0.85 [42], confirming discriminant validity (see Table 4 and Table 5).

Table 4.
Discriminant validity: Fornell-Larcker criterion.

	GPA	GRI	PSG	TMC
GPA	0.856			
GRI	0.514	0.878		
PGS	0.445	0.333	0.814	
TMC	0.520	0.510	0.427	0.831

Table 5.
The results of the HTMT analysis.

	GPA	GRI	PSG	TMC
GPA				
GRI	0.642			
PSG	0.489	0.420		
TMC	0.580	0.646	0.476	

4.3. Structural Model Analysis

Based on the analysis, no critical levels of collinearity were detected, with the highest Variance Inflation Factor (VIF) at 4.566, which is below the critical threshold of 5 [42]. Additionally, the out-of-sample predictive power assessment indicates that the PLS-SEM model performs well, with 12 out of 13 indicators having lower RMSE values than the LM benchmark. Following the criteria of Hair and Alamer [43] this suggests that the model exhibits strong predictive power, reinforcing its external validity. Subsequently, the structural model and research hypotheses were evaluated using bootstrapping, depicted in Figure 2. The direct effects are outlined in Table 6, and the mediating effects are presented in Table 7.

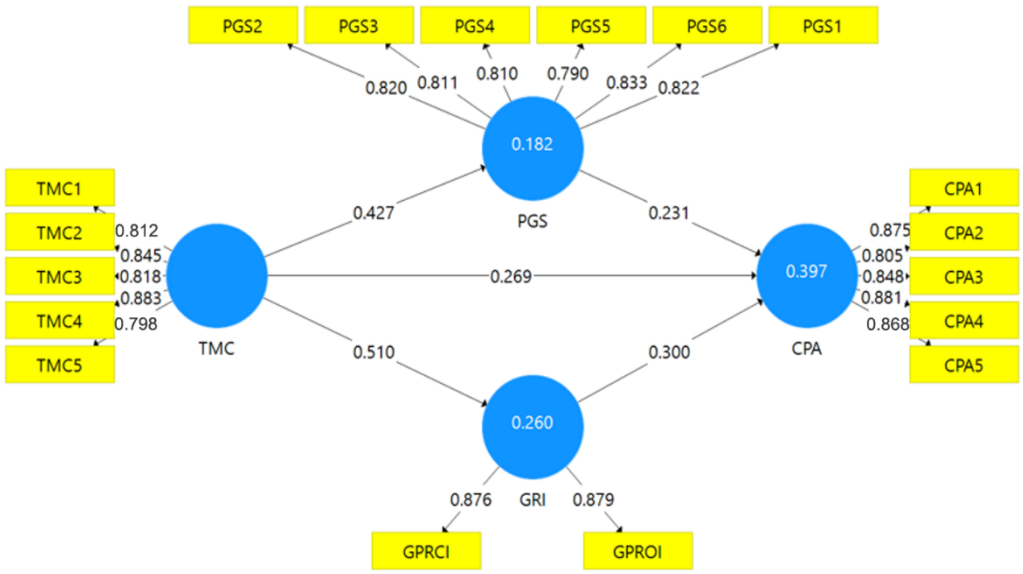

Figure 2.
Bootstrapping result.

Table 6.
Direct effects.

Casual path	Hypotheses	Path coefficient	t-statistics	P Values	Results
TMC -> PSG	H1	0.427	9.304	0.000	Accepted
TMC -> GRI	H2	0.510	10.588	0.000	Accepted
TMC -> CPA	H3	0.269	4.383	0.000	Accepted
PSG -> CPA	H4	0.231	4.432	0.000	Accepted
GRI -> CPA	H5	0.300	5.431	0.000	Accepted

Table 6 presents the analysis results, confirming the support for hypotheses H1, H2, H3, H4, and H5 ($P < 0.05$). Additionally, the mediating effects of PSG and GRI (Table 7) were evaluated using path coefficients, P values, and Variance Accounted For (VAF) values [42, 44]. Positive path coefficients and P values below 0.05 indicate the statistical significance of these relationships. Furthermore, VAF highlights the mediating role of PSG and GRI between TMC and CPA. Specifically, VAF values are 26.8% and 36.3% for the TMC->PSG->CPA and TMC->GRI->CPA pathways, respectively. Since these VAF values exceed 20% but are below 80% [44] it can be concluded that PSG and GRI partially mediate the impact of TMC on CPA (Table 7). Therefore, hypotheses H6 and H7 are accepted.

Table 7.
Indirect effects.

Casual path	Hypotheses	Path coefficient	VAF	P Values	Decision
TMC -> PSG -> CPA	H6	0.098	26.8%	0.000	Partial Mediation
TMC -> GRI -> CPA	H7	0.153	36.3%	0.000	Partial Mediation

5. Discussion and Implications

5.1. Discussion

The research findings offer deep insights into the impact of TMC on key elements such as purchasing strategy, green innovation, and overall organizational competitive advantage. TMC exerts a significant influence on purchasing strategy with a coefficient (β) of 0.427 and on green innovation with a coefficient (β) of 0.510. These results align with prior studies by Tarigan, et al. [5] and Burki and Dahlstrom [29]. These findings indicate that when senior management effectively communicates strategic goals and vision, it ensures that procurement policies align with market demands. Additionally, when leadership empowers employees in decision-making, companies are more likely to adopt clean technologies and reduce pollution in production processes. This underscores the crucial role of TMC in facilitating efficient procurement strategies while simultaneously strengthening sustainability efforts, such as energy conservation and product recycling. These insights align with the AMO theory, which views TMC as an opportunity to enhance employee capabilities and motivation, ultimately driving organizational success [19].

In addition, TMC plays a crucial role in strengthening competitive advantage ($\beta = 0.269$), aligning with Tarigan, et al. [5]. This suggests that by ensuring efficient resource allocation, businesses can achieve cost advantages, enhancing their profitability and competitive position. These findings reaffirm that TMC serves as a critical internal strategic resource, enabling organizations not only to maximize the efficiency of existing resources in line with RBV theory [22] but also to develop adaptability and responsiveness to dynamic market conditions, as emphasized by DC theory [25].

When it comes to purchasing strategy (PSG), its influence on competitive advantage is also noteworthy ($\beta = 0.231$), supporting the findings of Tarigan, et al. [5]. A well-designed PSG streamlines production reduces lead times, and enhances labor productivity, strengthening firms' market standing. Furthermore, a procurement strategy that adapts to market conditions ensures flexibility in sourcing materials at competitive prices, improving cost efficiency and supply chain resilience. By integrating procurement into corporate strategy, businesses can accelerate market responsiveness, securing a long-term competitive edge.

Likewise, green innovation (GRI) contributes significantly to competitive advantage ($\beta = 0.300$), as documented by El-Kassar and Singh [37]. These findings highlight how GRI enables firms to comply with environmental regulations while optimizing resource utilization. Consequently, businesses can secure a more sustainable competitive position in the modern marketplace. The article further suggests that recycling end-of-life products allows companies to reclaim raw materials, lower production costs, and improve price competitiveness. Moreover, such initiatives enhance profit margins and mitigate cost pressures. Meanwhile, adopting eco-labeling attracts environmentally conscious consumers, strengthening product differentiation and increasing perceived value.

Beyond that, TMC also enhances competitive advantage through purchasing strategy ($\beta = 0.098$), consistent with Tarigan, et al. [5]. Like findings in the manufacturing sector of HCMC, Tarigan, et al. [5] also confirmed the positive relationship between TMC and CPA through purchasing strategy in Indonesia, reinforcing the broader applicability of these results across different regional manufacturing contexts.

This highlights that when senior leadership is dedicated to developing and implementing effective purchasing strategies, they not only secure supply chain stability and product quality but also enhance agility in response to market fluctuations. Such leadership commitment enables firms to control costs, improve product quality, and optimize production efficiency, ultimately strengthening their market position. These findings align with RBV theory, which views leadership commitment as a valuable internal resource [22] guiding procurement strategy, ensuring supply chain stability, and enhancing operational efficiency. From a DC perspective, senior leadership plays a pivotal role in shaping strategy, making key decisions, and enabling firms to adapt to changing market conditions [25]. guiding procurement strategy, ensuring supply chain stability, and enhancing operational efficiency. By effectively allocating resources for purchasing strategies, firms can build long-term supplier relationships and maintain supply chain flexibility, ultimately reducing production disruptions and optimizing costs.

Moreover, TMC strengthens its competitive advantage through green innovation ($\beta = 0.153$), consistent with Siagian, et al. [11]. Like Siagian, et al. [11] in Indonesia, this article confirms that TMC fosters CPA through GRI, suggesting that the influence of leadership commitment on green innovation and competitive advantage is a shared characteristic within the manufacturing sector across different regions. This suggests that when senior leaders prioritize green initiatives, they not only improve environmental efficiency but also create sustainable economic value for the company. Support from leadership

for green innovation projects, such as using eco-friendly materials, implementing energy-saving product designs, and adopting clean technologies in production processes, helps reduce operational costs, optimize resource utilization, and better meet customer demands.

According to the DC theory, firms must continuously adjust their strategies and resources to maintain superior performance in an ever-changing environment [45]. When senior leadership promotes clean technology, firms can reduce energy consumption, optimize operational costs, and gain a competitive cost advantage. Additionally, supporting recycling initiatives and waste reduction not only ensures compliance with environmental regulations but also allows firms to utilize resources more efficiently, lower production costs, and increase profitability.

Furthermore, Wang and Ahmed [24] posit that innovation capabilities enable firms to align resources with market demands, thereby enhancing product value. When leadership emphasizes sustainable development and invests in energy-efficient product design, firms can offer higher-value products, attract customers, and strengthen their competitive advantage. Moreover, in line with the RBV theory, GRI serves as a strategic resource that differentiates firms in the market [46]. Thus, this article not only reinforces prior research findings but also extends them by integrating both PSG and GRI into a unified model, offering a more comprehensive perspective on how TMC influences CPA within the manufacturing sector in HCMC.

5.2. Theoretical Implications

The article emphasizes the pivotal role of TMC in shaping CPA and driving purchasing strategy and green innovation. It reinforces prior literature indicating that TMC acts as a catalyst for organizational alignment and strategic focus. Moreover, the research identifies the intermediary roles of purchasing strategy and green innovation in translating TMC into competitive advantage. This integrative framework provides profound insights into how strategic initiatives driven by senior leadership can be operationalized through specific organizational functions, thereby offering theoretical insights into the mechanisms through which leadership influences organizational performance. Furthermore, the article enhances theoretical frameworks through the integration of AMO, DC, and RBV theories to explore how TMC influences purchasing strategy and green innovation, thereby enhancing organizational competitive advantage.

5.3. Managerial Implications

Research has demonstrated that a business's competitive advantage as well as its strategic purchasing activities and green innovation can be driven by senior leadership commitment. To reinforce the commitment of top management, nurturing a culture of transparency and alignment with the company's vision and goals can encourage employee engagement and dedication. This commitment extends to empowering employees to make decisions, ensuring the appropriate allocation of resources aligned with strategic objectives, and maintaining a robust monitoring and evaluation system. Furthermore, company leadership should actively engage with both suppliers and customers to strengthen their competitive advantage, as proposed by Siagian, et al. [11]. As suggested by Caroline, et al. [47] senior leaders are encouraged to establish a hierarchical system comprising committees dedicated to continuous improvement. By actively managing the development and implementation of projects and programs, management boards can effectively evaluate performance, ensuring efforts align with strategic goals and contribute to the organization's overall success. Moreover, TMC can be reinforced by demonstrating a genuine commitment to employee well-being and work-life balance. Providing support for professional growth and personal development as well as fostering a healthy work environment can foster loyalty and dedication among staff members. By incorporating these strategies into their leadership approach, senior management can elevate TMC to new heights, driving organizational success and competitive advantage.

Moreover, strengthening the purchasing strategy is essential for organizations looking to find a competitive advantage. This begins with building and managing relationships with suppliers. As proposed by Tarigan, et al. [5] organizations need to enhance supplier capabilities in flexibility, delivery efficiency, and cost-effectiveness to optimize overall business operations. Similarly, senior leadership should foster strong inter-departmental relationships within the company's procurement process for raw materials to support production. This collaboration ensures accurate information flow regarding product specifications, quantities, and delivery schedules among all relevant departments. Additionally, as suggested by Hesping and Schiele [13] purchasing strategy is not just about selecting which products to purchase but also about aligning and supporting the overall competitive strategy of the enterprise to achieve success. This entails ensuring that the procurement process not only optimizes costs and product quality but also contributes to creating a comprehensive competitive advantage for the organization. By aligning the purchasing strategy to reflect the goals and core values of the business, organizations can build a flexible and adaptable procurement system that supports meeting market demands and achieves significant competitive advantage.

To enhance green innovation, organizations should invest in green R&D to create efficient, high-quality products with minimal environmental impact. Collaborating with partners and suppliers is essential for improving production processes and sourcing green materials. Implementing green technology optimizes production and reduces waste and pollution. Certification and promotion of green products raise customer awareness and encourage eco-friendly consumption. Product lifecycle analysis optimizes the product's impact from production to recycling. Lastly, training employees on green innovation boosts environmental performance and fosters a positive, eco-conscious organizational culture.

Furthermore, managers should recognize that purchasing strategy and green innovation are key to turning top management commitments into market competitive advantages. This involves aligning purchasing strategies with organizational goals, integrating green innovation into product development, and regularly monitoring performance. By committing to green initiatives and purchasing strategies, top management can cultivate a shared mindset that motivates the entire organization, leading to improved sustainable procurement and eco-friendly advancement. This approach enhances timely market delivery at competitive prices, improves product performance, and sustains the enterprise's CPA.

6. Conclusion, Limitations, and Future Research Scope

This article provides important insights into the role of Top Management Commitment in shaping purchasing strategy, green innovation, and competitive advantage in the manufacturing industry in HCMC. The results confirm that TMC plays a fundamental role in ensuring the consistency of purchasing strategies, promoting green innovation, and enhancing firms' competitive advantage. This article is one of the pioneering efforts to integrate TMC, PSG, GRI, and CPA into a unified model, clarifying the role of TMC as the connecting thread between AMO, RBV, and DC, thereby emphasizing the importance of leadership commitment in driving purchasing strategy, green innovation, and competitive advantage.

The article highlights that TMC has a significant influence on PSG, enabling firms to build market-appropriate procurement strategies, optimize purchasing processes, and foster green innovation through clean technology and product recycling. Additionally, PSG and GRI directly impact CPA, as purchasing strategies enhance raw material sourcing, product quality, and supplier relationships, while green innovation helps optimize costs and create high-value products. Moreover, the findings underscore the mediating role of PSG and GRI, illustrating how these factors serve as a bridge between TMC and CPA. When top management actively supports employee development, encourages autonomous decision-making, and drives sustainability initiatives, firms can achieve greater cost efficiency, improved product quality, and faster time-to-market for new products.

From a practical perspective, the results provide valuable implications for manufacturing companies in HCMC. Firms can leverage TMC as a strategic driver to enhance procurement efficiency, strengthen supply chain performance, and implement green innovation initiatives. When senior management demonstrates a strong commitment to purchasing strategies and sustainability efforts, firms can not only improve operational performance but also increase resilience to market fluctuations, ultimately ensuring a sustainable competitive advantage.

These findings underscore the critical role of leadership commitment in aligning procurement strategies and green innovation to enhance competitive advantage. By embedding TMC as a strategic driver, manufacturing firms can achieve greater resilience, operational efficiency, and long-term sustainability in a rapidly evolving market.

This article is limited to manufacturing enterprises in HCMC, which may not fully represent other regions or industries. Additionally, the cross-sectional research design captures data at a single point in time, restricting the ability to establish causal relationships with certainty. Furthermore, the measurement of competitive advantage lacks specific financial indicators, relying instead on self-reported data, which may introduce subjectivity and response bias. While the article focuses on TMC, purchasing strategy, and green innovation, it may overlook other critical factors that influence competitive advantage, such as organizational culture, employee engagement, or technological adoption. Moreover, the article does not account for additional potential mediating variables that could further clarify the mechanisms through which TMC influences competitive advantage.

To address these limitations, future research could expand the scope to encompass a broader range of regions and industries, particularly those subject to lower environmental pressures, such as information technology, finance, or services. Investigating these sectors would enhance the generalizability of the findings and provide comparative insights into the varying impacts of TMC, PSG, and GRI across different industrial contexts. Additionally, adopting a longitudinal research design would allow for a more robust assessment of causal relationships, offering deeper insights into the long-term effects of TMC, PSG, and GRI on competitive advantage. Future studies could also incorporate more comprehensive financial performance metrics as well as explore additional mediators and moderating factors to develop a more holistic understanding of the determinants of sustainable competitive advantage.

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