

FACTORS AFFECTING THE COMPETITIVENESS OF FASHION RETAIL SMALL AND MEDIUM-SIZED ENTERPRISES DURING DIGITAL TRANSFORMATION IN VIETNAM

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Abstract

The burgeoning fashion industry in Vietnam is escalating competition among small and medium enterprises, amplified by surging foreign investments. Despite comprising 97% of all businesses, small and medium enterprises encounter hurdles due to their limited technological capabilities, hindering their seamless integration into industry value chains. While digital transformation stands as a pivotal factor in heightening competitiveness, traditional and small-scale brands are sluggish in embracing it, thereby jeopardizing their potential for growth. This lack of consensus on the determinants of small and medium enterprises competitiveness in the fashion retail sector underscores the need for thorough research. Employing the Competence-based view (CBV) theory, our research delves into the dynamics of competitiveness for small and medium-sized fashion retailers amid Vietnam's digital transformation. Through in-depth interviews with 12 managers and brand founders, a survey of 260 businesses, and data analysis using SPSS 26 software, six key factors were identified, ranked by their impact on competitiveness: R&D capability (0.266), Digital transformation (0.245), Service quality (0.215), Marketing capability (0.203), Business management capability (0.174), and Financial capability (0.15). Furthermore, our study scrutinizes how variables like scale, operational location, business age, and product segment impact competitiveness, unearthing disparities across enterprises of varying sizes. Consequently, we offer strategic recommendations tailored for small and medium-sized fashion retailers and governmental entities, aimed at harnessing the digital transformation landscape to bolster competitiveness.

Keywords: Competitiveness, small and medium enterprises, digital transformation, fashion retailers.

1. Introduction

1.1. Rationale of the research

The fashion industry's rapid growth, projected at an annual rate of 7.58% from 2024 to 2028, intensifies competition among small and medium enterprises in the domestic fashion retail sector, amidst escalating foreign investment in Vietnam (Statista, 2024). Despite constituting 97% of all enterprises, small and medium enterprises encounter challenges stemming from their limited technological capabilities, impeding their integration into industry value chains (Vietnamese Ministry of Finance, 2016). Recognized as essential for enhancing competitiveness, digital transformation has been underscored in studies for its potential to promote sustainability and customer-centric approaches (Bertola & Teunissen, 2018). However, traditional brands are trailing in digital adoption, thereby risking stagnation within a rapidly evolving market (Boston Consulting Group, 2020). Addressing this disparity, the present research aims to explore how digital transformation influences competitiveness among small and medium enterprises in the fashion retail sector, with the objective of providing insights to inform effective strategies tailored to the digital era. While numerous studies have examined enterprise competitiveness and its determining factors from various theoretical perspectives, a consensus regarding the specific influences on small and medium enterprises competitiveness within the fashion retail sector amidst digital transformation remains elusive. This knowledge gap presents a significant opportunity for research and practical application. Given the dynamic nature of the fashion industry and the swift pace of digital transformation, there exists a pressing need to identify and comprehend the distinct factors driving competitiveness in this context. The proposed research endeavors to bridge this gap by offering valuable insights into the dynamics of competitiveness within the small and medium enterprises segment of the fashion retail sector amidst the ongoing digital transformation.

1.2. Literature Review

International research in recent years has extensively explored factors driving competitiveness in businesses, particularly focusing on small and medium enterprises (small and medium enterprises). Financial aspects, including financial resources, innovation, knowledge, and decision-making, have been studied by scholars such as Arnis Sauka (2014) and Nikita Mehta et al. (2020), who emphasize their role in enhancing SME competitiveness. Leadership and management practices have also been identified as crucial, with researchers like Irungu & Arasa (2017) highlighting their positive impact on operational efficiency and innovation within small and medium enterprises.

Innovation and creativity are recognized as key drivers of competitiveness, as suggested by Mosey (2005) and Sibel Ahmedova (2015), although Elif Akben-Selcuk (2016) presents a contrasting view. Digital transformation has emerged as a pivotal driver of competitiveness, with technologies like cloud computing and artificial intelligence enabling small and medium enterprises to streamline operations and enhance customer engagement, as noted by Kurakhuk & Gavrysh (2019).

In the fashion and textile industry, factors such as product differentiation, international market participation, and government support are key determinants of competitiveness, according to Karabag et al. (2013). Bellagamba's study (2015) emphasizes the importance of market leadership capabilities, while Danese & Vinelli (2015) underscore the significance of global supply network strategies.

Meanwhile, domestic research in Vietnam has primarily focused on analyzing competitive capabilities within specific industries and exploring internal factors impacting competitiveness. Nguyen Dinh Tho & Nguyen Thi Mai Trang's study (2009) identifies marketing capabilities, innovative capabilities, business orientation, and learning orientation as crucial intangible factors driving business success. Similarly, Tien et al. (2019) emphasize the importance of management capabilities and marketing in fostering effective competitive capabilities among businesses in Ho Chi Minh City. However, there remains a notable gap in comprehensive studies focusing specifically on the competitive capabilities of fashion and retail enterprises in Vietnam.

2. Theoretical foundation

2.1. Theoretical basis on small and medium enterprises in Vietnam

In the early 1990s, Vietnam began recognizing small and medium enterprises (small and medium enterprises), departing from a centrally planned economy where state-owned enterprises (SOEs) dominated. Vietnamese small and medium enterprises are typically small-scale, reliant on low-quality labor, and face challenges accessing foreign markets. Addressing these issues requires a focus on enhancing human resources, promoting innovation, and fostering partnerships (Ministry of Finance, 2016).

Recently, Decree No. 80/2021/ND-CP was issued by the Vietnamese government, aiming to redefine SME criteria. Micro-enterprises in commerce and services, with up to 10 employees and annual revenue not exceeding 10 billion VND or capitalization below 3 billion VND, are distinguished from small-scale businesses with up to 50 employees and revenue under 100 billion VND or capitalization below 50 billion VND. Medium-sized enterprises, with up to 100 employees and revenue under 300 billion

VND or capitalization below 100 billion VND, operate within commerce and services. These criteria aid in classifying enterprises based on size and financial metrics, enhancing clarity in academic discourse on business classifications.

2.2. Theoretical foundation on competitiveness

Concept of firm's competitiveness

Since the 1980s, scholars have emphasized competitiveness, though its definition remains multifaceted. Aldington (1985) characterizes firm-level competitiveness as producing high-quality products at lower costs, prioritizing long-term profitability. Echoing Porter (1990), this study adopts a firm-level perspective. Competitiveness involves sustaining market share, meeting customer needs profitably (Chikan, 2008), and designing products that outperform rivals (D'Cruz, 1992). Cetindamar & Kilitcioglu (2013) stress the role of daily activities, while Bhawsar & Chattopadhyay (2015) emphasize adaptability and profitability. Overall, firm competitiveness entails producing superior products, meeting customer needs, and continuously enhancing operations to access new markets and attract resources.

Perspective on competitiveness of small and medium enterprises

The Competence-based view emphasizes aligning resources to achieve organizational goals, especially crucial for small and medium enterprises in Vietnam facing resource constraints and competitive pressures. Adopting a competence-based approach to competitiveness is imperative because small and medium enterprises possess unique organizational structures, technologies, and human resources, necessitating tailored strategies aligned with market demands (Madhok, 2002). In a dynamic business environment, small and medium enterprises must continuously adapt to technological advancements and changing consumer preferences (Robinson, 2005). Competence-based approaches help small and medium enterprises leverage their strengths to navigate uncertainties and capitalize on emerging opportunities, enhancing resilience, innovation, and strategic agility for sustainable growth and success in a competitive marketplace.

2.3. Theoretical foundation on the fashion industry

Concept of the fashion industry

Fashion is a multifaceted concept encompassing clothing, attire, footwear, apparel, and textile manufacturing (Hines & Bruce, 2007). Driven by human desires and creativity, it remains dynamic and vibrant (Hines & Bruce, 2007). The industry, noted for its fusion of technology, business acumen, and artistic expression, persists

amidst technological advancements and globalization (European Commission, 2020; Black, 2012).

Fashion holds significant importance in people's lives, allowing individuals to express identity and lifestyle preferences (Hines & Bruce, 2007; Black, 2012). It plays a crucial role in shaping personal identity, enabling individuals to align their image and style with their values. Additionally, through innovative design, fashion influences cultural and aesthetic trends globally, intersecting with various creative sectors like architecture and product design.

The retail fashion industry

Retail is defined as "the collection of marketing activities involved in selling products or services to consumers for their use." Retail plays a crucial role in the economies of nations and consumer lifestyles (McGoldrick, 2002).

Within the retail fashion sector, there are several key segments: specialist apparel stores, department stores, variety stores, independent stores and supermarkets.

2.4. Theoretical foundation on digital transformation

Definition of digital transformation

Digital transformation, as defined by various scholars, encompasses the comprehensive evolution of a company's products, processes, and structures driven by the emergence of new technologies (Matt et al., 2015). This transformation involves the strategic application of digital technologies to a company's business model, resulting in changes to products, organizational structures, or process automation (Hess et al., 2016).

Impact of digital transformation on businesses' competitiveness

Digital transformation serves as a catalyst for profound changes in business operations and processes, enabling companies to create superior value and maintain competitiveness in the digital era (Libert et al., 2016). Positioned as a critical tool for businesses, digital transformation leverages digital technologies to streamline operations, enhance efficiency, and reduce costs (Bharadwaj et al., 2013; Melrose et al., 2021; Björkdahl, 2020). By integrating information technology into operational processes, digital transformation optimizes workflows and resource allocation, leading to improved organizational performance.

2.5. Factors influencing the competitiveness of fashion retail small and medium enterprises in Vietnam

Business management capability (MC)

Business Management Capability is the survival and development of the enterprise (Tang & Tang, 2012) and enhances competitiveness (Arasa & Irungu, 2017).

Hypothesis 1: Business management capability has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

Marketing capability (MKT)

Marketing Capability, as delineated by Kotler (2006), refers to a firm's adeptness in creating, communicating, delivering, and exchanging value with its target customers. Research consistently underscores the pivotal role of marketing capability in bolstering a company's competitive edge. For instance, Sadq et al. (2019) found compelling evidence demonstrating that marketing capability significantly enhances the competitiveness of hotels in Iraq.

Hypothesis 2: Marketing capability has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

R&D (Research and Development) capability (RD)

Numerous studies concur that the continuous improvement of businesses through the adoption of modern technologies, facilitated by research and development (R&D), fosters sustainable competitiveness by enhancing operational performance (Porter, 1983; 1985). This emphasis on R&D enables firms to acquire knowledge at a faster pace than their competitors, thereby bolstering their competitive edge (Fatoki, 2021).

Hypothesis 3: R&D capability has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

Financial capability (FC)

Fonseka et al. (2014) illustrate that access to external financial resources contributes to short-term competitiveness and long-term sustainability. Likewise, Muiruri et al. (2021) have concluded that financial capability positively impacts a firm's competitiveness.

Hypothesis 4: Financial capability has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

Service quality (SQ)

High-quality service has a positive impact on customer perceptions, positioning the business advantageously against competitors (Sun & Pang, 2017). Additionally, Faria et al. (2022) observed a significant correlation between service quality and customer satisfaction in the retail sector. Their analysis further highlights the role of store design in moderating the relationship between consumer satisfaction and brand loyalty.

Hypothesis 5: Service quality has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

Digital transformation (DT)

To thrive in the digital era, businesses must allocate resources to embrace digital transformation, thereby enhancing profitability, productivity, and competitiveness (Albert et al., 2021). Sui et al. (2024) delved into this notion, examining how digital transformation drives competitiveness in manufacturing firms through increased productivity, intensified research and development efforts, and enhanced human capital.

Hypothesis 6: Digital transformation has a direct and positive impact on the competitiveness of fashion retail small and medium enterprises in Vietnam.

Control variables

- Location of operation

Dvouletý & Blažková (2020) conducted an assessment of factors influencing the competitiveness of Czech small and medium enterprises at the firm level, employing a comprehensive competitiveness index. Their study delved into the correlation between the overall competitiveness level and various firm characteristics, including size, age, industry linkages, and geographical location. The findings underscored the significant impact of regional location on determining the overall competitiveness level of these companies.

- Enterprises size

Research by Lemańska-Majdzik (2022) in Poland and Dvouletý & Blažková (2020) in the Czech Republic both highlight the impact of company size on competitiveness among small and medium enterprises. Different factors influence competitiveness based on company size, suggesting varied approaches to enhancing competitiveness.

- Enterprises age

Bibi et al. (2020) studied Chinese law firms, finding that enterprise size and age significantly impact competitive capacity and performance. The study stresses the importance of aligning organizational strategies with enterprise size and age for enhanced competitiveness and performance.

- Product segmentation

Drawing upon the fashion segmentation pyramid model by Sanmiguel & Sadaba (2020), the authoring team constructs a segmentation model for fashion retail small and medium enterprises in Vietnam as follows:



Figure 1: Product segmentation of fashion retail small and medium enterprises in Vietnam.

Source: Group of authors, 2023.

Kapustina et al. (2016) underscore the importance of market segmentation in strengthening the dynamic capabilities of industrial enterprises. Their study highlights the adoption of customer-centric market segmentation strategies as crucial for enhancing dynamic capabilities and fostering success in a market-oriented economy.

- Research model

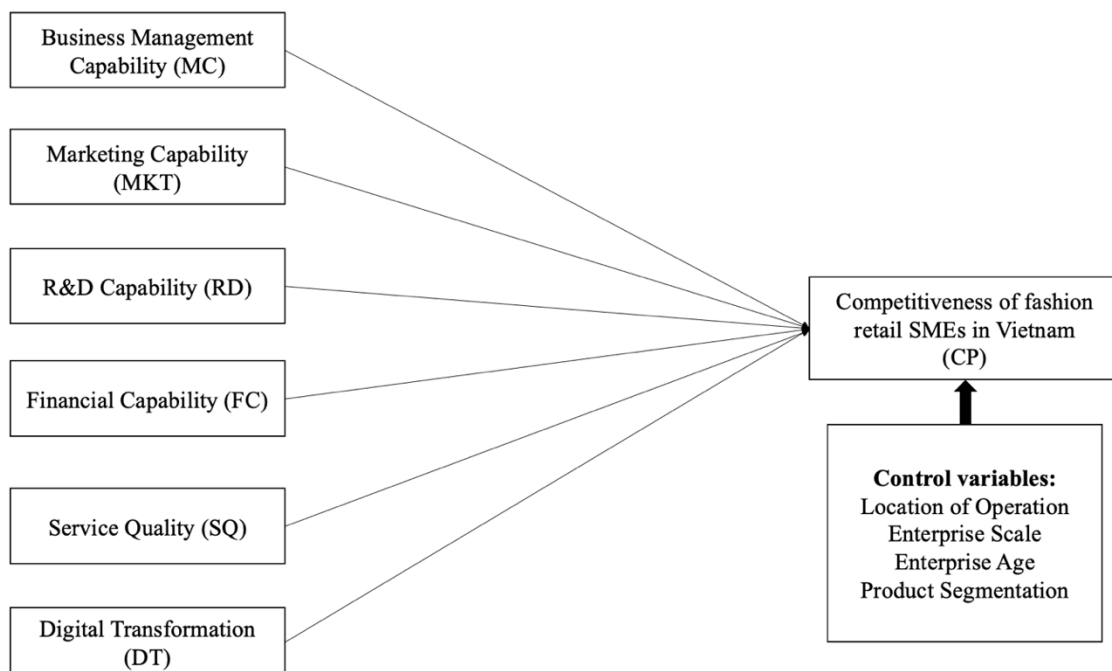


Figure 2: Research model

Source: Research group synthesis, 2023.

3. Research methodology

The author team employs a mixed-methods approach, utilizing both qualitative and quantitative research methods to address the hypotheses formulated from the theoretical framework.

3.1. Qualitative research

In-depth interviews were conducted with 12 high-level managers/founders of small and medium-sized fashion retail businesses in Vietnam. The purpose of these interviews was to gather insights and assessments from the management team regarding the factors influencing competitiveness in a digital transforming environment.

3.2. Quantitative research

The survey targeted small and medium-sized enterprises operating in the fashion retail sector in Vietnam. Data collection occurred from November 2023 to January 2024, with responses gathered from 260 people from different businesses, including CEOs, managers, personnels and project-based collaborators.

To construct the survey instrument, the research team synthesized existing scales and findings from reputable studies. The questionnaire employed a 5-point Likert scale, ranging from "Completely disagree" to "Completely agree," to measure the observed variables within the research model.

After distributing the survey forms, the research group received 287 responses. Following a rigorous data cleaning process, 260 forms were deemed suitable for inclusion in the research sample. Subsequently, all pertinent samples underwent analysis using SPSS 26 software.

Various analytical techniques were employed, including reliability analysis utilizing Cronbach's Alpha, Exploratory Factor Analysis (EFA), correlation analysis, and regression analysis, to scrutinize the collected data and derive meaningful insights.

Table 1: Measurement scales

Symbol	Observed variables	Source
MC1	Business has an effective and flexible organizational and operational apparatus.	Ho (2005)
MC2	Business has good personnel arrangements to ensure production and business activities.	
MC3	Business has a good strategic planning management team.	Rosenzweig (2013)
MC4	Business possess a management team with good management capacity and professional knowledge.	Cong & Anh Thu (2020)
MKT1	Business adapts well to macroeconomic changes (law, taxes, etc.).	Srivastava et al (2001)
MKT2	Business always considers competitor information before making strategies.	Homburg et al (2007)
MKT3	Business always updates fashion trends, listen to customers to offer suitable products/services.	

MKT4	Business has good relationships with customers, suppliers, and local authorities.	Gronross. C (1994)
RD1	Business with R&D capability helps improve their ability to adapt to industry changes.	Porter (1983; 1985)
RD2	Business with R&D capability helps develop new products/services continuously.	
RD3	Business with R&D capability can design new products/services that are difficult for competitors to copy.	
RD4	Business with R&D capability produces goods/services at lower prices than competitors.	Liang et al (2020)
RD5	Business with R&D capability promotes rapid learning from competitors inside/outside the industry.	Fatoki (2021)
FC1	Business has the ability to generate stable profits.	Imbambi et al. (2020)
FC2	Business can afford to pay employees and suppliers on time.	
FC3	Business has enough available capital for current production and business activities.	
FC4	Business has capital reserves for future business expansion plans.	
FC5	Business does not lose revenue because competitors copy their product designs.	
SQ1	Business has effective operating and customer care policies.	Noel Y. M. Siu & Jeff Tak-Hing Cheung (2001)
SQ2	Business listens and takes care of customers wholeheartedly.	
SQ3	Business gains the trust and satisfaction of customers.	
SQ4	Business decorates stores beautifully and are suitable for customers.	
SQ5	Business has staff to solve problems quickly and effectively.	
DT1	Digital transformation stimulates continuous innovation within the company.	Liu Yang Zhang et al. (2023), Liu et al. (2023)
DT2	Digital transformation helps companies utilize resources more efficiently.	
DT3	Digital transformation assists companies in managing operational processes more effectively.	
DT4	Digital transformation aids companies in collecting and managing business data more effectively.	
DT5	Digital transformation enhances collaboration among fashion industry companies.	
DT6	Digital transformation shortens the distance between customers and companies.	
CP1	Business has stable revenue and profit sources.	Carvalho & Costa (2014)
CP2	Business possesses a high-performance team of employees.	
CP3	Business demonstrates quick adaptation to current fashion trends.	
CP4	Business provides high-quality products, delivering value to customers.	
CP5	Business consistently ensures customer experience meets satisfaction.	
CP6	Business maintains high-quality service standards.	

3.3. Data Collection

Research sample

- Sample Size

Following Bollen's (1989) recommendation of a sample size to observed variable ratio of 5:1, the research should include a minimum of 175 samples based on the 35 observed variables.

- Sampling Method

A combination of probability and non-probability sampling methods was chosen due to resource and time constraints. An online survey through Google Forms was distributed to managers/employees of Fashion Retail SMEs nationwide to gather samples.

- Data collection method***

- To identify and predict the fashion retail market and the competitiveness of SMEs in this field, a combination of primary and secondary information was utilized for analysis and research.

- Secondary Data Collection

Secondary data were collected by the research group through a comprehensive review and analysis of existing documents, previous relevant studies, local and international articles, and reliable electronic sources. This approach ensured meticulous search and selection of data and information for the study.

- Primary Data Collection

Primary data collection involved conducting an online survey and interviews with a select group of research subjects.

4. Qualitative research results using in-depth interviews

The quantitative research findings shed light on crucial aspects of SME management across various dimensions. In business management, digital transformation emerges as a key driver, facilitating flexibility and accountability through online channels. Marketing capabilities play a pivotal role in enhancing brand awareness and meeting customer needs effectively, aided by digital tools. R&D integration ensures ongoing innovation and better understanding of customer behavior, fostering competitive marketing strategies. Strong financial resources enable swift adaptation and investment in cost-effective technologies, while exceptional service quality distinguishes SMEs and enhances brand reputation. Embracing digital transformation streamlines operations, enhances productivity, and provides resilience amid economic fluctuations, driving competitiveness. Despite challenges like limited access to technology, SMEs can capitalize on opportunities in digital markets to scale up and optimize strategies. Recommendations stress the importance of tailoring digital strategies to resources and staying attuned to consumer trends. Finally, future trends point towards increased demand for sustainable products and personalized experiences in the fashion retail industry.

5. Results analysis and discussion

5.1. Statistical characteristics of the studied sample

The team conducted quantitative research by sending surveys to fashion retail small and medium enterprises employees in Vietnam. The result was 278 answers, during the censorship, 260 valid votes were obtained to conduct quantitative analysis.

Table 2: The statistical overview of the surveyed business's characteristics

Characteristics of business		Frequency	Rate (%)
Location of operation	Municipalities	197	75.8
	Others	63	24.2
Enterprises Scale	Fewer than 25 employees	97	37.3
	From 25 - 50 employees	73	28.1
	From 50 -75 employees	58	22.3
	From 75 -100 employees	32	12.3
Enterprises Age	Less than 3 years	35	13.5
	From 3 to 5 years	75	28.8
	From 5 to 10 years	97	37.3
	Over 10 years	53	20.4
Product segmentation	Cheap fashion segment	61	23.5
	Fast fashion segment	74	28.5
	Mid-market fashion segment	92	35.4
	Luxury fashion segment	33	12.7

Source: Results of the research team's data analysis, 2024.

5.2. Descriptive statistical analysis

Table 3: Descriptive statistics for dependent variables

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
MC1	260	1	5	3.55	.897
MC2	260	1	5	3.50	.924
MC3	260	1	5	3.57	.912
MC4	260	1	5	3.60	.901
MKT1	260	1	5	3.58	.916
MKT2	260	1	5	3.48	.932
MKT3	260	1	5	3.65	.912
MKT4	260	1	5	3.63	.911
RD1	260	1	5	3.51	.919
RD2	260	1	5	3.59	.961
RD3	260	1	5	3.41	.969
RD4	260	1	5	3.46	.952
RD5	260	1	5	3.53	.976
FC1	260	1	5	3.64	.934
FC2	260	1	5	3.54	.991
FC3	260	1	5	3.62	.928
FC4	260	1	5	3.50	.996

FC5	260	1	5	3.37	1.014
SQ1	260	1	5	3.57	.958
SQ2	260	1	5	3.65	.925
SQ3	260	1	5	3.67	.930
SQ4	260	1	5	3.54	.968
SQ5	260	1	5	3.60	.956
DT1	260	1	5	3.55	.983
DT2	260	1	5	3.51	.988
DT3	260	1	5	3.63	.976
DT4	260	1	5	3.68	.992
DT5	260	1	5	3.66	.995
DT6	260	1	5	3.71	.909

Source: Results of the research team's data analysis, 2024.

Based on the synthesized results of statistical analysis describing the factors influencing competitiveness, it is evident that survey participants concur with the perceptions of the direct and positive impact of these factors on competitiveness (Mean values ranging from 3.41 to 4.2, indicating agreement). Among the observed variables, the highest consensus is observed for DT6, “Digital transformation shortens the distance between customers and businesses” (3.71), reflecting a high appraisal of the role of digital transformation in enhancing the relationship between businesses and customers.

Additionally, observed variables RD3, “Businesses with R&D capacity can design new products/services that are difficult for competitors to copy,” received the lowest level of consensus. Survey participants also demonstrated alignment with the perception of dependent variables, with high agreement levels (3.83-3.93), though the differences among the observed variables were not substantial.

Table 4: Descriptive statistics for “Competitiveness” factor

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CP1	260	1	5	3.87	.917
CP2	260	1	5	3.89	.903
CP3	260	1	5	3.91	.909
CP4	260	1	5	3.93	.904
CP5	260	1	5	3.83	.927
CP6	260	1	5	3.90	.905

Source: Results of the research team's data analysis, 2024

Managers widely agree on the importance of factors like consistent customer satisfaction and delivering high-quality products, as shown by ratings ranging from 3.83 to 3.93. These minor differences emphasize a consensus among respondents. Notably, CP4, focusing on delivering high-quality products that provide tangible value, received

the highest rating at 3.93, reflecting the evolving customer demands, particularly regarding timeliness. Hence, fashion retail small and medium enterprises should prioritize providing high-quality products that not only meet basic needs but also build trust and commitment from customers. Consistently delivering quality not only boosts brand reputation but also fosters customer loyalty, enhancing competitiveness. In a competitive market, quality differentiation is crucial for a business to stand out from its rivals.

5.3. Cronbach's Alpha scale reliability assessment

Cronbach's Alpha method for independent and dependent variables was used by the team to assess reliability. The results are presented under the following table:

Table 5: Cronbach's Alpha test results

	Average value if variable type	Variance if variable type	Total variable correlation	Cronbach's Alpha if kind of variable
Cronbach's Alpha of the factor MC = 0.784				
MC1	10.68	4.868	0.593	0.730
MC2	10.72	4.859	0.567	0.744
MC3	10.654	4.838	0.585	0.734
MC4	10.62	4.776	0.617	0.718
Cronbach's Alpha of the MKT factor = 0.793				
MKT1	10.75	4.897	0.635	0.725
MKT2	10.86	5.034	0.576	0.755
MKT3	10.69	5.048	0.593	0.746
MKT4	10.71	5.009	0.606	0.740
Cronbach's Alpha of the RD factor = 0.833				
RD1	13.99	9.683	0.549	0.821
RD2	13.92	9.012	0.648	0.795
RD3	14.09	8.988	0.645	0.795
RD4	14.05	8.708	0.723	0.733
RD5	13.97	9.188	0.597	0.809
Cronbach's Alpha of the FC factor = 0.818				
FC1	14.03	9.401	0.598	0.785
FC2	14.13	8.994	0.625	0.777
FC3	14.05	9.326	0.619	0.779
FC4	14.17	9.160	0.588	0.788
FC5	14.30	8.946	0.614	0.781
Cronbach's Alpha factor SQ = 0.830				
SQ1	14.45	8.920	0.616	0.800
SQ2	14.37	8.806	0.674	0.783
SQ3	14.35	8.724	0.687	0.780
SQ4	14.48	9.061	0.578	0.811
SQ5	14.42	4	0.588	0.808
Cronbach's Alpha of the DT factor = 0.842				
DT1	18.18	13.778	0.594	0.821

DT2	18.22	13.268	0.671	0.805
DT3	18.10	13.330	0.673	0.805
DT4	18.05	14.140	0.530	0.833
DT5	18.07	13.269	0.665	0.807
DT6	18.02	14.227	0.588	0.822
Cronbach's Alpha of the CP factor = 0.834				
CP1	19.45	11.708	0.598	0.808
CP2	19.43	11.744	0.604	0.807
CP3	19.42	11.711	0.605	0.807
CP4	19.40	11.715	0.608	0.806
CP5	19.49	11.548	0.617	0.804
CP6	19.43	11.736	0.603	0.807

Source: Results of the research team's data analysis, 2024.

Based on the Cronbach's Alpha test results, all observed variables within each factor exhibit strong internal consistency, surpassing the threshold of 0.7, as recommended by Hair et al. (2014). Additionally, the total correlation coefficient for all observed variables exceeds 0.3 but remains below the general Cronbach's Alpha, indicating a satisfactory level of coherence among the variables. These findings affirm the reliability of the data and support the validity of subsequent analysis steps.

5.4. EFA (Exploratory factor analysis) results

After assessing reliability using Cronbach's Alpha index, observed variables will continue to be analyzed for correlation through EFA discovery factor analysis.

EFA results for independent variables

The research team conducted exploratory factor analysis (EFA) twice, with the results from the first iteration showing a Kaiser-Meyer-Olkin (KMO) measure of 0.779 (> 0.5) and a significant Bartlett's Test of Sphericity ($p\text{-value} = 0.000 < 0.05$), indicating the appropriateness of the EFA. Six factors were extracted with eigenvalues greater than 1, explaining a cumulative variance of 62.018%. However, three observed variables (CS3, SQ3, RD4) exhibited cross-loading on multiple factor groups, each with a difference in loading coefficients exceeding 0.2. Consequently, the team decided to exclude these three variables, retaining 26 observed variables for the second round of EFA.

Table 6: KMO and Bartlett's test for factors for the first time

KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy.		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	3947.605
	df	406
	Sig.	.000

In the second iteration, the KMO measure was 0.865 (> 0.5), and Bartlett's Test of Sphericity was significant ($p\text{-value} = 0.000 < 0.05$), confirming the suitability of the factor analysis. Six factors were extracted based on eigenvalues greater than 1, effectively summarizing information from the 26 observed variables. The rotation matrix revealed that these 26 variables were successfully grouped into six factors with loading coefficients exceeding 0.5 and no negatively loaded variables.

Table 7: KMO and Bartlett's Test for validity factors

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	2365.800
	df	325
	Sig.	.000

Source: Results of the research team's data analysis, 2024.

Table 8: Statistical summary of the final EFA results for independent variables

Factor	Observation variables	Factor name
1	FC1, FC2, FC3, FC4, FC5	Financial capability
2	DT1, DT2, DT4, DT5, DT6	Digital transformation
3	MKT1, MKT2, MKT3, MK4	Marketing capability
4	SQ1, SQ2, SQ4, SQ5	Service quality
5	MC1, MC2, MC3, MC4	Management capability
6	RD1, RD2, RD3, RD5	R&D capability
KMO coefficient = 0.865 $>$ 0.5		
Bartlett Test Sig = 0.000 $<$ 0.05		
Total variance extracted from 6 factors = 60.418% $>$ 50%		

Source: Results of the research team's data analysis, 2024.

EFA analysis for dependent variables

The results indicate a Kaiser-Meyer-Olkin (KMO) coefficient of 0.872 (> 0.05) and a significant Bartlett's Test of Sphericity with a $p\text{-value}$ of 0.000 (< 0.05), confirming the suitability of the exploratory factor analysis (EFA). All factor loading coefficients surpass 0.7, signifying that the observed variables are statistically significant for the latent construct. The analysis reveals one factor extracted with an eigenvalue of 3.276 (> 1), explaining 54.592% of the variance in the data contributed by the six observed variables included in the EFA. Based on these analyses, the team concludes that the measurement scale meets the requirements for analysis and can be utilized in subsequent research steps.

Table 9: KMO and Bartlett's test for “Competitiveness” factor

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	485.949
	df	15
	Sig.	.000

Source: Results of the research team's data analysis, 2024.

Pearson correlation and regression analysis

The results indicate that the significance level (Sig.) of the Pearson correlation test between independent variables and the dependent variable is consistently less than 0.05, suggesting a linear relationship between the independent and dependent variables. When examining the correlation between independent variables, the Sig. value is 0.000 (< 0.05), indicating a significant correlation among the independent variables. However, the correlation coefficients between the factors are all less than 0.5, indicating a weak relationship between these factors.

Table 10: Estimated results of the model

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.843 ^a	.710	.703	.36642	1.897

Source: Results of the research team's data analysis, 2024.

The very low significance level (Sig. = 0.000) and the adjusted R-squared value of 0.703 demonstrate the model's appropriateness. This implies that 70.3% of the business's competitive capabilities are explained by the six factors. The Durbin-Watson coefficient is 1.897 (> 1), indicating no autocorrelation among the variables.

Table 11: Regression coefficients of factors influencing the competitiveness of fashion retail small and medium enterprises.

Coefficients								
Model		Unstandardized Coefficients		Standardized coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-.237	.169		-1.398	.163		
	MC	.166	.037	.174	4.514	.000	.768	1.303
	MKT	.190	.037	.203	5.183	.000	.744	1.345
	RD	.243	.036	.266	6.683	.000	.722	1.385

	FC	.136	.035	.150	3.933	.000	.790	1.266
	SQ	.196	.036	.215	5.377	.000	.719	1.391
	DT	.226	.035	.245	6.402	.000	.779	1.284

Source: Results of the research team's data analysis, 2024.

Thus, the multivariate regression model for the study sample of 260 enterprises will be:

$$Y = 0.15*FC + 0.174*MC + 0.203*MKT + 0.215*SQ + 0.245*DT + 0.266*RD + \varepsilon$$

Based on the model results, all factors have a positive influence on competitiveness of small and medium enterprises in the fashion retail sector. Among them, the *R&D capability* factor has the greatest influence, with a Beta regression coefficient of 0.266. This means that, when other factors remain constant, each unit increase of *R&D capability* increases competitiveness by 0.266 units. Similarly, other factors contributed to the impact, with *Digital transformation* at 0.245, *Service quality* at 0.215, *Marketing capability* at 0.203, *Business management capability* at 0.174, and *Finance capability* at 0.150.

5.5.. Analysis of the influence of control variables on the competitiveness of fashion retail small and medium enterprises

Independent sample T-Test

For the factor “Location of operation” the Levene test yielded a significance level (sig.) of 0.999 (> 0.05), and the sig. value in the t-test was 0.585 (> 0.05). This indicates that there is no significant difference in the competitiveness of fashion retail small and medium enterprises when considering the operating location.

Table 12: Testing uniform variance by location

Independent Samples Test						
		Equality of Variances		T-test for Equality of Means		
		F	Sig.	t	Df	Sig. (2-tailed)
CP	Equal variances assumed	.000	.999	.550	258	.583
	Equal variances not assumed			.548	104.186	.585

Source: Results of the research team's data analysis, 2024.

One-way ANOVA

The analysis of the influence of control variables such as “Enterprise age” and “Product segment” showed that the Levene test results for both were greater than 0.05,

and the sig. F values were also greater than 0.05. This suggests that there is no significant difference in the competitiveness of fashion retail small and medium enterprises when considering different business ages and product segments.

However, when examining the control variable “Scale of business” the Levene test result was 0.672 (> 0.05). Despite this, the ANOVA results with sig. F = 0.031 (< 0.05) indicates a significant difference in competitiveness. The Welch test, with a sig. result of 0.045 (< 0.05), further confirms a statistically significant difference in competitiveness among businesses of different sizes.

Table 13: Testing uniform variance

Control variables	Sig. (Levene test)	Sig. F (ANOVA test)	Sig. Welch (Robust test)
Enterprise Size	.672	.031	.045
Enterprise age	.257	.180	
Product segment	.185	.300	

Source: Results of the research team's data analysis, 2024.

6. Recommendation and Conclusion

Fashion retail small and medium enterprises in Vietnam can boost competitiveness through R&D, digital transformation, service quality, Marketing, business management, and financial capabilities. Strategic investments in talent development, diversification of capital sources, market trend awareness, customer-centric approaches, industry partnerships, and digital integration are essential. Government support is crucial for institutional enhancements, training programs, management qualifications, streamlined loan procedures, and digital initiative awareness. Collectively embracing these measures can advance the fashion retail industry, fostering a more competitive business environment. Despite significant growth, maintaining competitiveness requires product diversification, quality, and affordability. Embracing digital transformation is key, though understanding its specific impact remains a challenge. This study examines competitiveness factors through Competence-based View theory, highlighting R&D, digital transformation, service quality, Marketing, business management, and financial capabilities. Practical insights for small and medium enterprises and policy recommendations are offered to nurture a supportive digital business environment. However, limitations exist, warranting further research on competitiveness in the digital era.

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