Journal of Information Systems Engineering and Management
2025, 10(17s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

How Environmental Dynamics Shape firm Performance in Sri Lankan Apparel Firms

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ARTICLE INFO

Received: 08 Dec 2024

Revised: 30 Jan 2025

Accepted: 07 Feb 2025

ABSTRACT

Purpose:- Prior empirical research has established that environmental characteristics influence business performance supported by the theoretical assumptions of contingency theory as well as dynamic capabilities theory. However, the influence of environmental variables on innovativeness and firm performance dynamic is not well established and few studies have explored the influence of environmental dynamism and environmental munificence on innovativeness – firm performance relationship. The objective of this article is to examine the moderating effect of environmental dynamism as well as environmental munificence on the innovativeness – firm performance relationship in a relatively less explored industry context in an emerging economy.

Method:- A deductive research approach guided by a positivistic research philosophy underpinned the study. The sample frame consisted by 234 apparel firms listed with the export development board (EDB) of Sri Lanka. 415 usable responses were received.

Findings:- There is an inverse relationship between the moderators (environmental dynamism and environmental munificence) and the innovativeness – performance relationship. Environmental dynamisms and environmental munificence moderate the innovativeness – firm performance relationship at different conditions. The moderators have a significant impact when they are strong as well as weak. When both environmental dynamism and environmental munificence is low, the influence on firm performance is greater and firm performance increases. Compared to environmental munificence, environmental dynamism has the largest influence on firm performance.

Research Limitations:- The findings are not easily generalizable since the study is confined to a single industry context. Underlying factors that influence firm performance are not directly identified as the study focuses on testing established relationships, rather than building new theoretical perspectives. The results may not be easily applicable to developed countries since the regulatory framework, organizational practices and cultural norms could differ.

Novelty:- The relationship between firm innovativeness and performance has been analysed in prior empirical research. However, this is among the first studies that links dynamic capabilities view, firm innovativeness, firm performance, environmental dynamism and environmental munificence in a family business context.

Keywords: Environmental Dynamism, Environmental Munificence, Firm Performance, Innovativeness, Family Business

1. Introduction

Sri Lanka is an apparel supplying hub, supplying manufactured garments directly to third parties. Unlike their counterparts in the developed world, apparel firms in Sri Lanka add little value to the product and do not have their own brands either. Compared to apparel suppliers in developed countries who develop their own brands for local markets and also supply global buyers at the same time, only larger firms in Sri Lanka have ventured towards creating brands for the local market while others have focused only on delivering garments to global buyers or third parties.

The business environment in the apparel industry has been quite turbulent in recent years and influenced by both internal and external challenges. The recent economic decline, rising foreign debt led to inflationary pressures on energy, raw materials and labour leading to higher operational costs. The depreciation of the Sri Lankan rupee led to higher import costs when procuring machinery, raw materials of technical system resulting in challenging times for apparel manufacturers due to escalating operational costs. The greater majority of apparel firms are family owned businesses.

Family businesses are inherently risk averse, prefer family association, retention of power and control within the family itself and focus on leaving the business in the family for generations to come. These tendencies have limited the ability of family businesses to be innovative and competitive in a dynamic and turbulent business environment. This study uses the theoretical lens of resource based view and dynamic capabilities view to identify the interaction of environmental dynamism and munificence on innovativeness and firm performance relationship in family businesses.

1.1 Theoretical gap

The interaction of environmental munificence on innovativeness – firm performance relationship remains relatively unexplored in the empirical research literature. Although it is assumed that environments rich in resources will have a positive impact on innovativeness and subsequently firm performance, how munificence moderates this dynamic remains under developed. The degree of environmental munificence on the strength and direction of innovativeness remains more or less unexplored. Therefore, this study aims to bridge this theoretical gap by exploring the interaction between environmental munificence and innovativeness – firm performance relationship.

Environmental dynamism influences innovativeness and firm performance relationship. Yet, a theoretical gap exists regarding the degree of interaction of the moderators impact and its consequence on both innovativeness and firm performance. This paper seeks to bridge this theoretical gap.

1.2 Empirical gap

There have been calls to explore the impact of environmental munificence in manufacturing industries in a developing country context. In Sri Lanka, business uncertainty and risk fueled by economic and political uncertainty is high and business infrastructure, commercial laws and supply chain networks are considerably under developed. Sri Lanka has adopted market based economic policies since the early 1990s which saw subsequent institutional, regulational and social upheavals in the country. It has experienced recent economic uncertainty due to political instability and escalating foreign debt due to foreign exchange borrowings and investments which have not yielded sufficient economic return. These dynamics have influenced the managerial assumptions, strategies and decision making processes of businesses and how they pursue innovations that deliver value.

Prior empirical research studies have analysed the interaction of environmental munificence on innovativeness and firm performance in different industrial contexts. However, many studies have viewed environmental munificence as a simple contextual variable and have overlooked the influence of other intervening variables such as family ownership. The influence of family firm dynamics on innovativeness and firm performance in dynamic and munificent environments is mixed, with family businesses experiencing varied levels of innovativeness. The unique interplay of family dynamics in munificent environments is under explored in the empirical literature and this study seeks to bridge this empirical gap by analysing the complex role played by environmental munificence not just as a contextual variable but also as a moderator and an intervening variable in the innovativeness – firm performance relationship.

Although prior empirical research findings have established the role of environmental dynamism as a moderating the innovativeness – performance dynamic, the complex dynamics involved in this relationship are often unexplored. This study seeks to identify dynamics involved in family businesses and how this affects the interactions between environmental dynamism, innovativeness and firm performance.

2. Theoretical background

The dynamic capabilities view (DCV) argues that when firms are able to configure internal resources to fit changing business environments effectively competitive advantage is achieved. This dynamic capability should be developed by firms since it enables better business performance in the face of challenging business environments. Dynamic

capability refers to the businesses ability to 'build, integrate and reconfigure internal and external competencies in rapidly changing environments'. Innovation is a dynamic capability of a firm since it enables a firm to compete and also is an indicator of the firms capacity to adapt and adopt ideas that will enable it to survive in dynamic business climates. In more munificent environments, firms can deploy such resources to innovate and improve firm performance. Despite strong internal dynamics, the lack of a munificent environment could hinder innovativeness and firm performance. However, the presence and easy access of many resources could also lead to complacency and reduce the need for improvements and innovation. Contingency theory implies that organizational performance is influenced by organizational characteristics that can be matched to contingencies, i.e. variables that influence the effect of organizational characteristics on organizational performance. The business environment can influence the extent of innovation in a firm as the environment has a significant influence on the firms dynamic capabilities. The business environment moderates the relationship between a firms strategy, structure and business performance. Resource based view (RBV) argues that firms with ample resources perform better and resource utilization has a critical impact on competitiveness. In resource rich environments, firms will typically be more innovative and perform better.

Absorptive capacity theory posits that firms that can recognize new information and can use it and apply it to commercial purposes can be more innovative. In dynamic environments, firms with high absorptive capacity can innovate better and firms with limited absorptive capacity are less likely to innovate. Innovations tend to proliferate and spread faster in environmentally munificent environments. Moderately innovative firms may tend to implement such practices after observing the benefits according to innovation diffusion theory and this avoids the risks associated with early adoption. Open innovation theory argues that external ideas, knowledge and resources are the focal point for innovativeness. Open innovation theory encourages collaboration with external stakeholders such as customer, competitors and suppliers. Moderate innovators can thrive in munificent environments and leverage external networks compared to less munificent environments. Therefore, resource based view, contingency theory, absorptive capacity theory, innovation diffusion theory, open innovation theory and dynamic capabilities theory have been adopted as the theoretical background for this paper.

3. Literature Review

This section summarizes the key empirical literature pertaining to intervening variables, main exogenous and endogenous constructs.

3.1 Apparel industry and Environmental Uncertainty

The Covid-19 pandemic had a severe impact on global supply chains and many supply chains were disrupted. Further lock downs and closure of production premises led to decline of consumer demand through reduced orders and delays. A global shipping crisis as well as post covid supply chain delays have led to increases in shipping costs and this has made it challenging for Sri Lankan apparel firms to deliver products on time. Shortages in the supply of typically used raw materials such as cotton, silk, synthetic fibre and packaging materials have affected Sri Lankan apparel firms. High energy costs, under developed of transport infrastructure and inefficiencies in distribution networks remain a challenge.

Sri Lankan apparel firms are losing market share to regional players such as Bangladesh, India and Vietnam as these are more competitive with lower labour costs. The termination of Multi Fibre Agreement in 2005 and the uncertainty regarding Generalized Scheme of Preferences Plus (GSP+) has rendered the future uncertain for many small and medium apparel firms. Protectionist policies in US and EU markets also have affected Sri Lankan apparel exports significantly.

The apparel sector in Sri Lanka is facing challenges due to rising operational costs stemming from high energy and labour costs in the country as well as fluctuating consumer demand in export markets. Exchange rate fluctuations cause short terms advantages when exporting as a weaker rupee means that the exports are more affordable. However, since majority of raw materials are imported, such advantages are only temporary. Recent controls of foreign exchange movements by the government have affected apparel firms as importing raw materials and transferring payments for imports have faced constraints. The post -Covid era has seen a shift in consumer preferences with a tendency to prefer lounge wear, personal protective equipment and sportswear.

3.2 Impact of environment on business performance

Environmental munificence is defined as 'abundance of critical resources needed by firms' operating within a business context (Farooq, 2017). Environments with scarce resources hinder the growth and development of businesses and also act as a barrier to entry for new entrants. Business can adapt to resource constrained environments by innovating more frugaly using few resources and adopting business models which focus on value addition. Low munificent environments tend to adopt frugal innovation patterns, compared to more munificent environments. Moderate innovators perform better in more munificent environments, since such firms are able to balance risks and resources much more effectively and perform better than others. This is supported by resource based view, dynamic capabilities theory and innovation diffusion theory. In more munificent environments, slack resources are often beneficial to firms, as they enable businesses to expand and grow. The availability of resources supports innovation since resources are readily available for allocation for innovative projects. Munificent environments have easy access to universities, support pooling of skilled staff and clustering of firms leading to better firm performance. Information in munificent environments flow fast and more efficiently leading to better firm performance. In less munificent environments, resources are scarce, leading to less innovations and decline in firm performance. Some scholars have argued that the intervening effect of munificence on firm performance is moderate (Dahan & Shoham, 2022).

Environmental dynamism is defined as 'extent to which the firm operates in changing environment. The dynamism is intended to capture the extent of volatility or change in the environment (Do et al, 2022; Heeley, King & Covin, 2006). Firms that exist in volatile context tend to invest more in R & D to promote innovation and be abreast with the demands of a dynamic environment. Firm often find that innovation allows it to adjust well and respond quickly to the demands of a volatile environment. In more dynamic environments, firms that innovate faster, are flexible and adapt to change and can assimilate external knowledge efficiently will innovate and perform better. Moderator innovators are successful in dynamic environments as they will avoid risky choices (Faassen, 2024) and adopt a more measured approach to inventions and this is supported by resource based view, dynamic capabilities theory, innovation diffusion theory and absorptive capacity theory. Dynamic environments are characterized by varying customer preferences, technology driven production, frequent product modifications and changing inputs. Innovation is higher in dynamic environments since businesses tend to take more risks and are more likely to be proactive.

3.3 Innovativeness and firm performance in family businesses

Innovativeness is defined as firms 'ability to introduce discoveries and novel solutions through experimentation and creative problem solving (Lumpkin & Dess, 1996). Innovativeness is a key antecedent of competitiveness. The extent of innovativeness in family businesses reduced when family members shareholding is high, risk averse behavior inherently reduces the amount of R & D investments (Basco et al, 2023). Family conflicts may increase with more family involvement making it difficult to monitor firm behavior and family members may seek more control-oriented benefits such as dividends linked with firm growth. Similar results have been supported by the findings of Block (2010a) in the USA and Munoz-Bullon & Sanchez-Bueno (2011) in Canada. Resource availability is limited in family firms (Munoz-Bullon & Sanchez-Bueno, 2011) and this reduces investments in R & D (Patel & Chrisman, 2014). Family owned businesses tend to be less keen to adopt new technologies as they are keen to maintain control and seek to protect their image (Kotlar et al, 2013, Calabro et al, 2018). Innovation productivity in family businesses is less compared to their non-family counterparts due to less risk taking, resource limitations, agency costs and lack of preference for external collaboration (Nieto et al, 2015).

Firm performance is a critical indicator that affects sustainability and productivity of the firm and includes operations and financial activities (Santo & Brito, 2012). Performance has been defined by Steers (1982) as 'efficiencies in terms of utilization of resources as well as the accomplishment of organizational goals'. Venkatraman & Ramunujam (1986, p.803) conceptualise firm performance as 'the use of simple outcome based financial indicators that are assumed to reflect the fulfillment of the economic goals of the firm'.

A perusal of the family business innovation research literature reveals that the findings are inconclusive as innovation outcomes are different and this has led to calls from scholars to understand the antecedents of heterogeneity (Chrisman et al, 2015). The influence of the environment on the innovation – performance relationship is significant in family controlled firms (Kraiczy, Hack & Kellermanns, 2014). The main dimensions of this construct are

environmental dynamism and environmental munificence. Environmental dynamism is the extent to which the firm operates in changing environment. The dynamism is intended to capture the extent of volatility or change in the environment (Heeley, King & Covin, 2006). Firm that exist in volatile context tend to invest more in R & D to promote innovation and be abreast with the demands of a dynamic environment. Firm often find that innovation allows it to adjust well and respond quickly to the demands of a volatile environment.

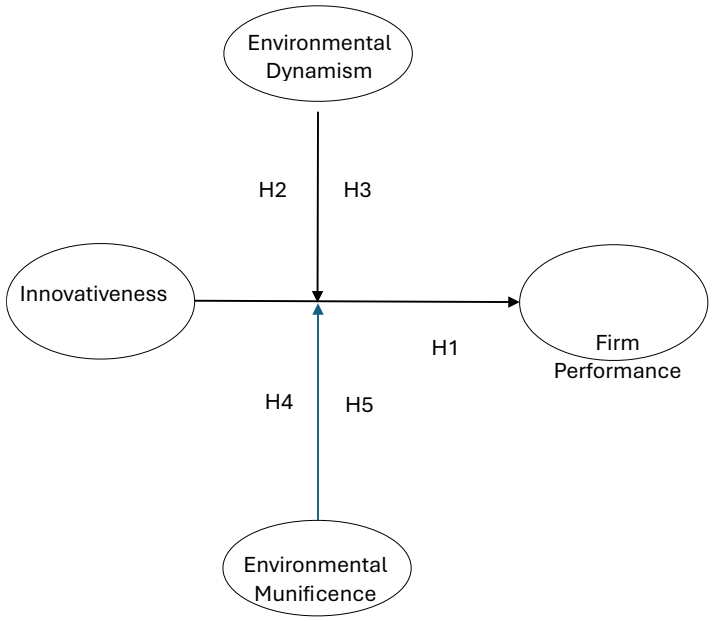
Family business environments are unique compared to non -family businesses since the family dynamic, long term orientation, aversion to risk, resource constraints due to reluctance to seek external resources, retaining control among family members and a generational outlook are unique to the former. This unique environment influences the extent and nature of innovation that is pursued by family businesses.

4. Conceptual model and Hypothesis Development

The conceptual model is based on the theoretical and empirical literature review and identifies the moderating effect of both environmental dynamism as well as environmental munificence on firm innovativeness – performance relationship. Innovativeness is the independent variable and firm performance is the dependent variable. Environmental munificence and environmental dynamism are the moderators. Figure 1 provides a graphical summary of the hypotheses.

Figure 1: Conceptual model

Figure 1 provides a graphical summary of the hypotheses.



4.1 Firm Innovativeness and Firm Performance

Family businesses tend to be innovative, largely due to the long term orientation of such firms as this allows them to deploy resources for innovation. An external orientation, focus on long-term investment horizons, decentralized structures (Zahra et al, 2004, Madanoglu et al, 2016) and the involvement of several generations also promote innovation capacities in family businesses (Lichtenthaler & Muethal, 2012) through leveraging resources in a unique way (De Massis et al 2013; Ashwin et al, 2015) and enabling firms to optimize innovation output (Matzler et al, 2015). Long term horizons improve resource allocation for innovation and increase experimentation (Lumpkin et al, 2010, Lichtenthaler & Muethal, 2012, Lopez-Fernandez et al, 2016, Singh & Kota, 2017). When family members are directly involved in the business, the tendency to pursue radical innovations increase compared to non-family firms with the exception of when CEO tenure is long (Zahra, 2005). Family influence has a positive impact on innovation and thereby on firm performance (Craig, Dibrell & Garrett, 2014), however, negative effects on innovativeness have also been observed (Beck, Prugl & Walter, 2020).

Hypothesis 1: Family Firm innovativeness has a positive impact on the firms performance.

4.2 Moderating Role of Environmental Dynamism

Environmental dynamism is the extent to which the firm operates in changing environment. The dynamism is intended to capture the extent of volatility or change in the environment (Do et al, 2022; Heeley, King & Covin, 2006).

Firms that exist in more stable environments benefit from reduced risk and predictability leading to operational efficiencies and consistent performance levels. In less dynamic environments, competitive pressures are less and firms find it much easier to develop competitive advantage by building their brand identity and establishing expertise overtime due to less pressure from changing business environments.

Hypothesis 2: Environmental Dynamism negatively moderates the relationship between Firm innovativeness and firm performance

Hypothesis 3a: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is low and the level of environmental dynamism is low

Hypothesis 3b: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is medium and the level of environmental dynamism is low

Hypothesis 3c: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is high and the level of environmental dynamism is low

In family owned businesses, low complexity is often an enabler of more stable environments which supports innovation and firm performance (Bauweraerts, 2018). Effective innovation management practices can be implemented effectively in far more stable environments (Faassen, 2024) than in more turbulent environments leading to better firm performance since firms do not have constantly adopt to face external changes (Do et al, 2022; Kalay & Lynn, 2015; Naheed & Aamir, 2019). In mature markets, firms can build on incremental innovations without the need to constantly adopt to environmental changes (Wang, 2019) and optimize performance in far more stable markets compared to dynamic market conditions (Elfita et al, 2021).

Hypothesis 4a: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is low and the level of environmental dynamism is medium

Hypothesis 4b: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is medium and the level of environmental dynamism is medium

Hypothesis 4c: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is high and the level of environmental dynamism is medium

Firms that exist in volatile context tend to invest more in R & D to promote innovation and be abreast with the demands of a dynamic environment. Firm often find that innovation allows it to adjust well and respond quickly to the demands of a volatile environment. When environments are dynamic and volatile, Small and Medium Sized enterprises (SMEs) tend to be more innovative in order to navigate complex environments (Do et al, 2022; Yuniarty et al, 2022). Product marketing innovations (Kafetzopoulos et al, 2019), innovation performance (Turulja & Bajgori, 2019) and transformative leadership (Dong, 2023) that supports innovation performance tend to thrive in dynamic environments

Hypothesis 5a: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is low and the level of environmental dynamism is high

Hypothesis 5b: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is medium and the level of environmental dynamism is high

Hypothesis 5c: Environmental dynamism moderates the relationship between firm innovativeness and firm performance when the level of environmental munificence is high and the level of environmental dynamism is high

4.3 Moderating Role of Environmental Munificence

In contexts where environmental munificence is low, i.e. resources are scarce, it is important for firms to navigate the treacherous waters and innovate to survive. When munificence is high, firms don't need to find unique ways of competing. However, when munificence is low, firms need to adapt and innovate to survive and thrive (Rekelhof, 2024; Martinez del Rio et al, 2015). When munificence is low, there is greater need for entrepreneurial orientation to be high as there is a greater need to innovate and survive in such situations (Yoo & Kim, 2019). When resources are scarce, firms innovate to compensate for deficiencies in the external environment to survive and compete (Gul, 2019). In scarce or less munificent environments, access to resources is scarce, lack of information and external support (Faassen, 2024) lead to declining levels of firm performance

Hypothesis 6: Environmental munificence negatively moderates the relationship between Firm innovativeness and firm performance

Hypothesis 7a: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is low and the level of environmental munificence is low

Hypothesis 7b: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is medium and the level of environmental munificence is low

Hypothesis 7c: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is high and the level of environmental munificence is low

Empirical research literature has mainly focused on the influence of resource rich and dynamic environments and their relationship with firm performance. Studies on resource constrained and less dynamic environments and its impact on businesses is less explored. The influence of varying dynamics of both environmental munificence and dynamism on firm performance has been relatively under explored in the research literature. In resource constrained environments, firms will need to focus less on internal capabilities and instead depend on developing strategic orientations that will build resilience and stability. Therefore, we hypothesize that

Hypothesis 8a: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is low and the level of environmental munificence is medium

Hypothesis 8b: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is medium and the level of environmental munificence is medium

Hypothesis 8c: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is high and the level of environmental munificence is medium

Environmental Munificence is one of the environmental dimensions identified by Dess and Bard (1984). These dimensions proposed by Dess and Bard (1984) are conceptually similar to other dimensions explained by others and adopted by recent studies. The influence of environmental conditions have not been widely analysed in the context of family firm innovativeness and firm performance. This study is an attempt to bridge this gap in the literature by analysing the moderating effect of environmental munificence. Environmental munificence is the 'degree to which environmental resources are supportive of sustained growth for the overall set of firms within the industry' (Heeley, King and Covin, 2006). Often referred to as the environmental carrying capacity, it typically has a positive impact

on firm performance. In more munificent environments, firms can deploy such resources to innovate and improve firm performance (Shimizu et al, 2024). Typically in munificent environments, firms have easy access to abundant resources, information flow is better due to clustering and external support leading to innovation and improved firm performance. Therefore, we hypothesize the following.

Hypothesis 9a: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is low and the level of environmental munificence is high

Hypothesis 9b: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is medium and the level of environmental munificence is high

Hypothesis 9c: Environmental munificence moderates the relationship between firm innovativeness and firm performance when the level of environmental dynamism is high and the level of environmental munificence is high

Hypothesis 10: Environmental dynamism moderates the relationship between innovativeness and firm performance when environmental dynamism is both strong as well as weak

Hypothesis 11: Environmental munificence moderates the relationship between innovativeness and firm performance when environmental dynamism is both strong as well as weak

Hypothesis 12: Environmental dynamism and environmental munificence moderate the relationship between innovativeness and firm performance.

In munificent environments, although resources maybe abundant, firms may often lack the capability to innovate. Firms in dynamic environments have to adapt and innovate rapidly to survive and compete with other firms. Hence environmental dynamism has a greater impact on firm performance.

Hypothesis 13: Environmental dynamism has a greater impact on firm performance than environmental munificence.

5. Method

The sample frame was 234 listed on the Export Development Board website (www.srilankabusiness.com). The empirical study was based on cross sectional data drawn from a sample of 132 apparel exporting firms in Sri Lanka. Apparel is leading foreign exchange earner for the country and the greater majority of firms are family owned enterprises. The family business was considered the unit of analysis. Screening questions were used to identify if the firm was a family business. 598 questionnaires were distributed and 481 usable responses were received. Of these, 36 responses were discarded as they were not from family businesses. A further 12 responses were discarded due to incomplete responses. Finally, 415 usable responses were coded into SPSS and AMOS software. Data was collected from senior, junior and middle managers, owners, directors, managing partners and a response rate of 70% was recorded. Similar response rates were reported in the following studies carried out in Sri Lanka. Wickremasinghe (2016) in a study of gender on work related attitudes in lean apparel firms in Sri Lanka recorded a response rate of 62%, receiving 616 usable responses from operator level employees. Anonymity of responses was respected and prior consent was obtained prior to data collection. Simple random sampling was used since it eliminates bias and is suitable to collect data from a representative sample (Kothari, 2014). A pilot study was conducted using 40 responses and the results (α= 0.8) was above the threshold value and was considered to be reliable for data collection purposes.

6. Measures

A cross sectional survey was used to collect responses using a 5 point Likert Scale. A 5 point Likert scale is theoretically suitable for this study as it has equal distances between responses.

Environmental munificence was operationalized using 8 items, through a 5 point Likert scale proposed by Covin, Slevin and Heeley (2000). A source close to 5 indicates that munificence is strong.

Environmental Dynamism was operationalized using 7 items on a 5 point Likert scale proposed by Anderson, Covin and Slevin (2009). A score closer to 5 denotes a dynamic environment.

Innovativeness was measured using indicators such as initiative to position firm and products, risk averse nature, inbound practices, commitment to R & D, technological innovation and leadership.
on an ordinal scale ranging from 1 to 5. 7 items were used to measure firm innovativeness adopted by measures validated by Hurt, Joseph & Cook (1977) and by Popa, Acosta and Martinez-Conesa (2017). A score closer to 5 denotes strong levels of innovativeness.

Firm performance was operationalized using eight items on a five point Likert scale developed by Kellermanns et al, (2012). Since variations in accounting procedures could lead to bias and uncertainties and since subjective measures show high convergence with objective measures of performance, the former were used in this study. Typical indicators of financial performance was critiqued for their inability to be understood, too focused on financial aspects, too static, too internally focused, have little indication of future performance and due to the difficulties associated with linking activities with outcomes (Vij & Bedi, 2015). Financial and non-financial performance is captured through the following indicators. RoA, ROE and Profit margin on sales captures the financial performance while, growth in sales, market share, profitability, number of employees and ability to fund growth through profits captures the non-financial performance. A score closer to 5 depicts strong levels of firm performance.

7. Analysis

The study assessed the moderating role of continuous variables, Environmental Dynamism (ED) and Environmental Munificence (EM) on the relationship between Innovation and Firm Performance. The combined effects, interaction effects and condition effects of the moderators were analysed using mixed method model and Hayes process model 2.

7.1 Moderation Analysis

The moderation effect of two continuous variables, environmental dynamism and environmental munificence was analysed using Hayes Process Model 2. The following outputs were received.

Table 1: Model variables

Model 2
Y: Firm Performance
X: Innovativeness
W: Environmental Dynamism
Z: Environmental Munificence

Hypothesis 1 is supported since there is a direct and positive relationship between innovation and performance (β =0.403, t= 13.992 , p= 0.000).

Table 2: Model Summary

Model Summary						
R	R-sq	MSE	F	df1	df2	P
.8116	.6587	.0976	157.8421	5.0000	409.0000	.0000

The R Square value explains 65.87% variation in the dependent variable, firm performance (Refer Table 6) due to the exogenous variables, environmental dynamism, environmental munificence and innovativeness (R^2 = 0.6587, p<0.001) and are significant predictors of firm performance. Table 2 depicts the model summary. Innovativeness has a significant positive impact on firm performance (b= 0.4025, t =13.9, p=0.000) [Table 3]. Therefore, hypothesis 1 is supported.

Table 3: Model

	Coeff	se	t	P	LLCI	ULCI
Constant	4.0975	.0165	247.7034	.0000	4.0650	4.1300
Innovat	.4025	.0289	13.9070	.0000	.3456	.4594
ED	.1398	.0318	4.3895	.0000	.0772	.2024
Int_1	-.2174	.0559	-3.8870	.0001	-.3273	-.1074
EM	.0898	.0304	2.9563	.0033	.0301	.1495
Int_2	-.2404	.0554	-4.3393	.0000	-.3493	-.1315

Table 4: Model showing latent observable variables

Relationship	B	S.E	C.R	P Label
Perform←--Innovation	0.482	0.040	12.023	****
Perform←--ED	0.302	0.042	7.187	****
Perform←--InterEDInnovation	-0.476	0.057	-8.382	****

The measurement model provides a more accurate estimation of the relationship between the dependent and independent variable since it includes measurement errors of the indicators. The results of the interaction term between moderator (Environmental Dynamism) and Independent variable (innovation) to the dependent variable (Perform) has now weakened to -0.476(Table 4), compared to -0.217 (Table 5). However, since the p value is significant, the interaction term is moderating the relationship between the independent variable (Innovation) and dependent variable (Firm Performance). Environmental dynamism has a negative impact (b = -0.2174) on the innovativeness – firm performance relationship. Hence the moderating variable has a significant but negative impact on firm performance. When environmental dynamism increases, firm performance declines (p=0.000, b= -0.2174). Therefore, hypothesis 2 is supported.

The results of the slope analysis conducted to better understand the nature of the moderating effects are shown in Figure 2. As can be seen in Figure 2, the line is much steeper for Low environmental dynamism and this shows that at Low level of environmental dynamism, the impact of Innovation on Firm Performance is much stronger in comparison to high environmental dynamism. As shown in Figure 2, as the level of environmental dynamism increased, the strength of the relationship between Innovation and firm performance decreases. Therefore, hypothesis 2 is supported.

Table :5 Moderation Analysis (Enviromental Dynamism)

Relationship	B	S.E	C.R	P
Perform←--Innovation	0.403	0.029	13.992	*****
Perform←--ED	0.140	0.032	4.416	*****
Perform←--InterEDInnovation	-0.217	0.039	-5.590	*****

Figure 2: Slope Analysis (Environmental Dynamism)

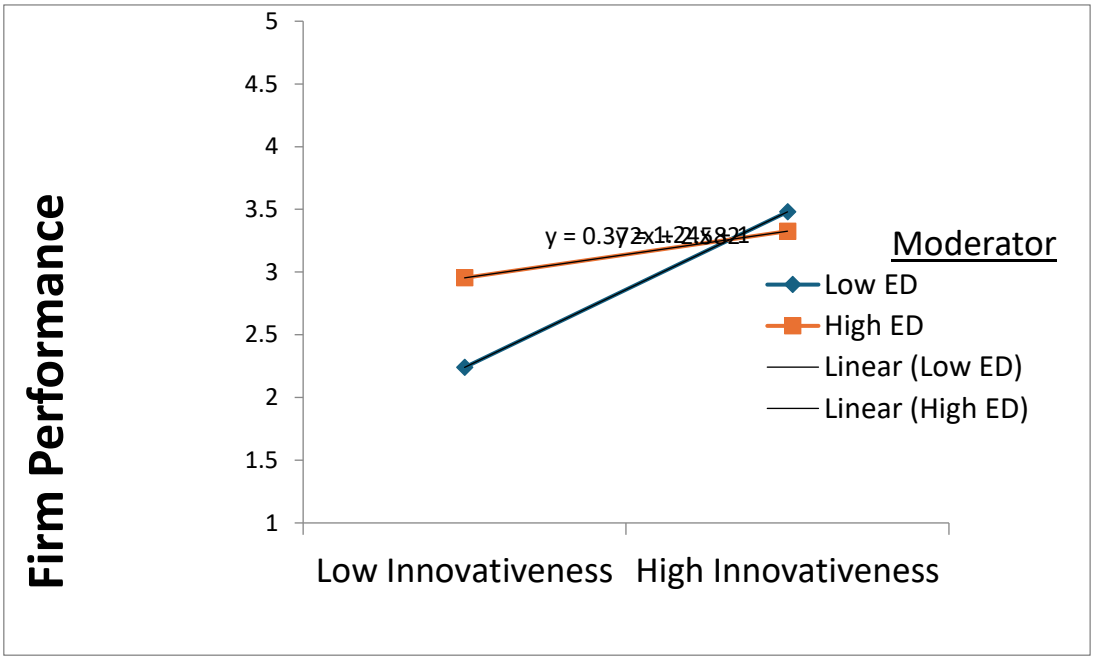


Table 6: Moderation Analysis (Environmental Munificence)

Relationship	B	S.E	C.R	P
Perform←--Innovation	0.403	0.029	13.992	*****
Perform←--EM	0.090	0.030	2.975	0.003
Perform←--InterEMInnovation	-0.240	0.055	-4.366	*****

Table 6 represents the moderation analysis summary. The results revealed a negative and significant moderating impact of EM on the relationship between Innovation and Firm Performance (β =-0.240, t= -4.366 , p= 0.000). Environmental dynamism has a significant impact on firm performance (b= 0.1398, t = 4.38, p=0.000). The results of the interaction term between moderator (Environmental Munificence) and Independent variable (innovation) to the dependent variable (Perform) has now weakened to -0.520(Table 7), compared to -0.240 (Table 6). However, since the p value is significant, the interaction term is moderating the relationship between the independent variable (Innovation) and dependent variable (Firm Performance). Environmental munificence has a significant impact on firm performance (b= 0.0898, t =2.95, p=0.000). Since b = -0.2404 (Table 8), environmental munificence has a significant but negative moderating impact on firm performance. When environmental munificence increases, firm performance decreases (p=0.000, b= -0.2404). Therefore, hypothesis 6 is supported.

The results of the slope analysis conducted to better understand the nature of the moderating effects are shown in Figure 3. As can be seen in Figure 3, the line is much steeper for Low Environmental Munificence and this shows that at Low level of Environmental Munificence, the impact of Innovation on Firm Performance is much stronger in comparison to high Environmental Munificence. As shown in Figure 3, as the level of Environmental Munificence increased, the strength of the relationship between Innovation and firm performance decreases. Hypothesis 6 is supported.

Table 7: Model showing latent observable variables

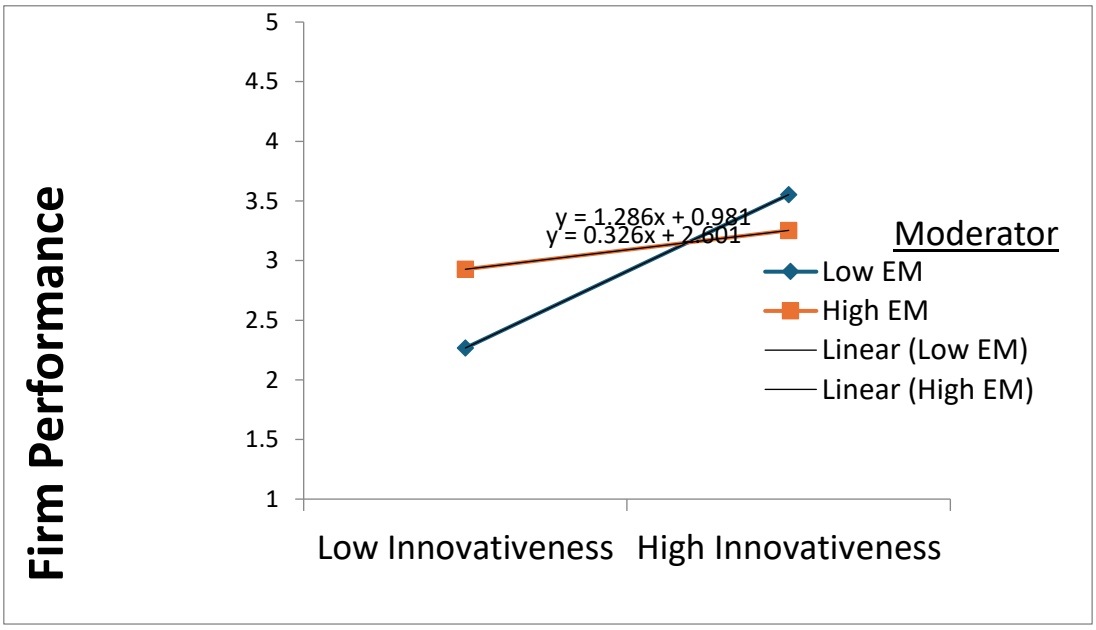
Relationship	B	S.E	C.R	P Label
Perform←--Innovation	0.563	0.042	13.363	****
Perform←--CentreEM	0.245	0.041	5.959	****

Perform←--InterEMInnovation	-0.520	0.058	-8.911	****

Table 8: Model

	Coeff	se	t	P	LLCI	ULCI
Constant	4.0975	.0165	247.7034	.0000	4.0650	4.1300
Innovat	.4025	.0289	13.9070	.0000	.3456	.4594
ED	.1398	.0318	4.3895	.0000	.0772	.2024
Int_1	-.2174	.0559	-3.8870	.0001	-.3273	-.1074
EM	.0898	.0304	2.9563	.0033	.0301	.1495
Int_2	-.2404	.0554	-4.3393	.0000	-.3493	-.1315

Figure 3: Slope Analysis (Environmental Munificence)



7.2 Condition Effects

Table 9, 10, and 11 depict the condition effects of low, medium and high level of environmental dynamism on low, medium and high levels of environmental munificence. Table 9 depicts the condition effect of low level of environmental dynamism on low, medium and high levels of environmental munificence. The conditional effect of low level of environmental dynamism with low levels of environmental munificence is positive and significant (p=0.000) while low level of environmental dynamism with medium (p=0.000) as well as high levels of environmental munificence is also positive and significant (p=0.000). Further at low level of environmental dynamism, increasing environmental munificence leads to increased firm performance (Table 9). Therefore, hypothesis 3a, 3b and 3c are supported.

Table 9: Condition effects of low level of environmental dynamism on environmental munificence

ED	EM	Effect	Se	T	P	LLCI	ULCI
-.5809	-.5757	.6672	.0343	19.4625	.0000	.5998	.7346
-.5809	.0000	.5288	.0382	13.8525	.0000	.4538	.6039
-.5809	.5757	.3904	.0614	6.3562	.0000	.2697	.5112

Table 10 depicts the condition effect of medium level of environmental dynamism on low, medium and high levels of environmental munificence. The conditional effect of medium level of environmental dynamism with low levels of environmental munificence (p=0.000) as well as medium level of environmental munificence is positive and significant (p=0.000). The condition effect of medium level of environmental dynamism with high level of environmental munificence is positive and significant (p=0.000). Hypothesis 4a, 4b and 4c are supported.

Table 10: Condition effects of medium level of environmental dynamism on environmental munificence

ED	EM	Effect	Se	T	P	LLCI	ULCI
.0000	-.5757	.5409	.0440	12.2903	.0000	.4544	.6274
.0000	.0000	.4025	.0289	13.9070	.0000	.3456	.4594
.0000	.5757	.2642	.0421	6.2748	.0000	.1814	.3469

Table 11 depicts the condition effect of high level of environmental dynamism on low, medium and high levels of environmental munificence. The condition effect of high level of environmental dynamism with low level of environmental munificence (p=0.000) is positive and significant. The condition effect of high level of environmental dynamism with medium level of environmental munificence is significant (p=0.000). The condition effect of high level of environmental dynamism with high level of environmental munificence is significant (p>0.05). Hypothesis 5a, 5b and 5c are supported.

Table 11: Condition effects of high level of environmental dynamism on environmental munificence

ED	EM	Effect	Se	T	P	LLCI	ULCI
.5809	-.5757	.4146	.0694	5.9788	.0000	.2783	.5510
.5809	.0000	.2763	.0483	5.7245	.0000	.1814	.3711
.5809	.5757	.1379	.0434	3.1783	.0016	.0526	.2232

Table 12 depicts the condition effect of low level of environmental munificence on low, medium and high level of environmental dynamism. The condition effect of low level of environmental munificence with low level of environmental dynamism (p=0.000) is positive and significant. The condition effect of low level of environmental munificence with medium level of environmental dynamism is significant (p=0.000). The condition effect of low level of environmental munificence with high level of environmental dynamism is significant (p=0.00-). Hypothesis 7a, 7b and 7c are supported.

Table 12: Condition effect of low level of environmental munificence on environmental dynamism

EM	ED	Effect	Se	T	P	LLCI	ULCI
-.5757	-.5809	.6672	.0343	19.4625	.0000	.5998	.7346
-.5757	.0000	.5409	.0440	12.2903	.0000	.4544	.6274
-.5757	.5809	.4146	.0694	5.9788	.0000	.2783	.5510

Table 13 depicts the condition effect of medium level of environmental munificence on low, medium and high level of environmental dynamism. The condition effect of medium level of environmental munificence with low level of environmental dynamism (p=0.000) is positive and significant. The condition effect of medium level of environmental munificence with medium level of environmental dynamism is significant (p=0.000). The condition effect of medium level of environmental munificence with high level of environmental dynamism is significant (p=0.00-). Hypothesis 8a, 8b and 8c are supported.

Table 13: Condition effects of medium level of environmental munificence on environmental dynamism

EM	ED	Effect	Se	T	P	LLCI	ULCI
.0000	-.5809	.5288	.0382	13.8525	.0000	.4538	.6039
.0000	.0000	.4025	.0289	13.9070	.0000	.3456	.4594
.0000	.5809	.2763	.0483	5.7245	.0000	.1814	.3711

Table 14 depicts the condition effect of high level of environmental munificence on low, medium and high level of environmental dynamism. The condition effect of high level of environmental munificence with low level of environmental dynamism (p=0.000) is positive and significant. The condition effect of high level of environmental munificence with medium level of environmental dynamism is significant (p=0.000). The condition effect of high level of environmental munificence with high level of environmental dynamism is significant (p>0.05). Hypothesis 9a, 9b and 9c are supported.

Table 14: Condition effects of high level of environmental munificence on environmental dynamism

EM	ED	Effect	Se	T	P	LLCI	ULCI
.5757	-.5809	.3904	.0614	6.3562	.0000	.2697	.5112
.5757	.0000	.2642	.0421	6.2748	.0000	.1814	.3469
.5757	.5809	.1379	.0434	3.1783	.0016	.0526	.2232

7.3 Interaction Effects

The interaction of the moderator was probed, i.e. how the relationship between independent and dependent variable changes in different levels of the moderator. The influence of low and high levels of moderator (Environmental Dynamism) on the independent and dependent variable was analysed. It was observed that the moderator (Environmental Dynamism) is positive and significant at levels, i.e high, mean centered or low.

High moderator level: 0.167

Mean centered level: 0.403

Low moderator level: 0.639

Therefore, Environmental Dynamism is moderating the relationship from Innovation to Firm Performance when Environmental Dynamism is both weak as well as strong. Therefore, hypothesis 10 is supported

The influence of low and high levels of moderator (Environmental Munificence) on the independent and dependent variable was analysed. It was observed that the moderator (Environmental Munificence) is positive and significant at levels, i.e high, mean centered or low.

High moderator level: 0.213

Mean centered level: 0.403

Low moderator level: 0.713

Therefore, Environmental Munificence is moderating the relationship from Innovation to Firm Performance when Environmental Munificence is both weak as well as strong. Hypothesis 11 is supported.

Table 15: Results of Combined Effects

	R2-chng	F	df1	df2	P
X*W	.0126	15.1087	1.0000	409.0000	.0001
X*Z	.0157	18.8298	1.0000	409.0000	.0000
BOTH	.0848	50.7912	2.0000	409.0000	.0000

The results of interaction effects are depicted in Table 15. Interaction 1 is innovativeness with environmental dynamism and interaction 2 is innovativeness with environmental munificence. The moderation effect of interaction 1 is significant ($F = 15.1$, $R^2 = 0.012$, $p = 0.0001$). interaction 2 also has a significant moderation effect ($F = 18.8$, $R^2 = 0.015$, $p = 0.000$). The overall combined effect of both moderators also has a significant impact (Refer Table 8) on the relationship between innovativeness and firm performance ($F = 50.7$, $R^2 = 0.08$, $p = 0.000$) and it can be concluded that both the moderators do moderate the relationship between innovativeness and firm performance. Therefore, hypothesis 10 is supported. The positive co efficient of interaction 1 (b=0.1398) reveals that higher the environmental dynamism, stronger is the relationship between innovativeness and firm performance (Table 3). Hypothesis 12 is supported.

7.4 Effect Size

The effect size (F^2) identifies the strength of the influence of the moderator on the endogenous variable. In the absence of the moderator, the R Square value of the endogenous variable is 0.597 and this denotes that in the absence of the moderator, the independent variable, innovativeness accounts for 59.7% variance in the endogenous construct. With the inclusion of the moderator, environmental dynamism, the R Square value increased to 0.644. This shows a 4.7% increase in the dependent variable with the inclusion of the moderator, environmental dynamism. When environmental munificence is included, the R Square value stood at 0.627 and shows 3% increase in the dependent variable and this reveals that environmental dynamism seems to have a larger moderating effect that environmental munificence.

(Environmental dynamism) $F^2 = \frac{R^2_{Included} - R^2_{Excluded}}{1-R^2_{Included}}$

$= 0.644 – 0.597/(1-0.644)$

$= 0.132$

(Environmental munificence) $F^2 = \frac{R^2_{Included} - R^2_{Excluded}}{1-R^2_{Included}}$

$= 0.627 – 0.597 /(1-0.627)$

$=0.08$

Based on Kenny (2018) proposition that 0.005, 0.01 and 0.025 constitute small, medium and large effect sizes. Environmental dynamism has a significant influence on the endogenous variable, firm performance ($F^2 = 0.132$) and makes a larger impact on the dependent variable compared to environmental munificence considering that the effect size of environmental dynamism is greater than that of environmental munificence ($F^2 = 0.08$). Therefore, hypothesis 13 is supported.

8. Discussion

The statistical analysis provided through Hayes process model 2 revealed that environmental dynamism moderates the innovativeness -firm performance relationship, although the influence is inverse. An analysis of different levels of environmental dynamism on firm performance using hayes process model 2 revealed that when environmental dynamism decreases, firm performance improves. This is also supported by slope analysis (Refer Figure 2). Hypothesis 2 is accepted since environmental dynamism has a negative moderating impact on firm performance (Table 2). In less dynamic organizational environments, firms can achieve high performance levels through

enhancing customer satisfaction, developing strong brand loyalty and by building efficient business processes.In low dynamic environments firms can focus on long term strategies since market disruptions are less and this leads to profit maximization. Resource allocation is more predictable and long term investment decisions can be made since stable conditions make it feasible to develop internal capabilities that can leverage resources, leading to sustained firm performance in less dynamic environments.

An analysis of different levels of environmental munificence on firm performance using hayes process model 2 revealed that when environmental munificence decreases, firm performance improves. This is also supported by slope analysis (Refer Figure 3). The statistical analysis provided through Hayes process model 2 revealed that environmental munificence moderates the innovativeness -firm performance relationship, although the influence is inverse.. Family businesses are able to leverage internal capabilities through strong family leadership and extended family networks in resource constrained environments and achieve improved firm performance. Such family businesses typically have close partnerships with their suppliers and have a long term perspective which suits them well in such situations where resources are scarce (Hernandez-Perlines et al, 2021). In less munificent environments, family businesses have leveraged their internal capabilities and networks building on theoretical underpinnings of dynamic capabilities theory.

The impact of both moderators on firm performance reveals that when both environmental munificence and environmental dynamism are low, the effect size on firm performance increases (Table 12) compared to other levels of moderator influence. When firms function in less munificent environments they need to leverage internal capabilities, build external network capabilities, develop strong family leadership skills and pursue cost efficiencies to improve firm performance. In less munificent environments, family businesses can utilize family networks, focus on customer needs, build close relationships with suppliers and develop flexibility to survive in resource constrained environments (Davila et al, 2023).

Based on effect size, environmental dynamism makes a greater influence on the endogenous construct compared to environmental munificence. However, based on the statistical analysis the differences between the degree of influence of both variables seems to be slight. Apparel industry is a dynamic environment which is often characterized by high risk and uncertainty and adapting to such contexts require rapid and continuous innovation. Complementing prior empirical evidence, dynamic environments seemed to impact firm performance more than munificent environments.

Environmental munificence moderates the relationship between innovativeness and firm performance when environmental munificence is both strong as well as weak. These empirical findings are supported by resource based view, which argues that sufficiently abundant resources lead to improved firm performance. Complementing research findings by Lumpkin & Dess (1996), Shimizu et al (2024) in more munificent environments where resources are available, information is fast and efficient, and access to external resources is evident, organizational performance increases. However, in less munificent environments, scarcity of resources, lack of access to information and difficulty to access external networks results in declining performance (Rekelhof, 2024). Family businesses are able to achieve high performance levels even in less munificent environments due to their long term horizon, generational perspective and by leveraging internal capabilities despite resource scarcity.

Environmental dynamism moderates the relationship between innovativeness and firm performance when environmental dynamism is both strong as well as weak. When business environments are dynamic, business need to adapt quickly to meet changing consumer demand and innovate rapidly to survive and compete effectively with others. Rapid innovations result in improved performance, market advantages and better competitiveness .In stable environments, family businesses can make frugal innovations and rely on existing strategic orientations to improve firm performance. Family businesses focus on long term orientation, risk averseness, strong brand identity and generational focus makes them able to operate in less dynamic environments much more successfully than other firms. However, they need to innovate and adapt quickly to the business environment in order to secure market advantage to outwit the competition.

6.1 Theoretical implications

Resource based view and dynamic capabilities theory have offered limited explanation into how firms sustain performance in less munificent environments. The dynamics that firms employ to innovate in environments with limited resources remain relatively unexplored in the research literature. This study has contributed to the research

literature by exploring the dynamic nature of family businesses and their ability to adapt to munificent environments by leveraging long term focus, generational impact, risk averseness and close relationships with suppliers to achieve improved firm performance.

In less dynamic environments, family businesses are able leverage their social capital, family resources, generational focus to survive and improve firm performance in a stable environment. Theories such as resource based view, dynamic capabilities theory and open innovation theory offer limited insights into this particular context.

9. Recommendations

Diversification and decentralization are two methods that can be used to reduce uncertainty. However, decentralization reduces the control family members have in the business and may not be welcomed in family centric businesses compared to non-family businesses. Reduced levels of family control could undermine the families tendency to rely on nepotism when filling employee positions and also pose a threat to family continuity. Thus, there is a tendency for family businesses to prefer to operate in environments with higher environmental munificence despite the negative impact on performance, solely because they can retain family control of the business. However, in order to improve performance levels, family businesses will need to adopt greater autonomy in decision making, professional practices and limit familial involvement in business decisions.

Family businesses which are frugal innovators can adopt better in munificent and dynamic environment. Frugal innovators typically use fewer resources and are more focused on value creation compared to new product development. Given the preferred family dynamics (centralization of decision making, generational involvement, risk averseness, internal focus and limited professionalization), frugal innovation could serve the interests of family businesses while adapting better to less munificent and less dynamic environments.

9.1 Limitations

This study attempts to understand the dynamics of environmental variables on innovativeness – firm performance. However, it doesn't seek to identify the underlying causes that influence both dynamism and munificence. An analysis on the influence of environmental dynamics is best operationalized as a longitudinal study as it captures the ongoing influences of external factors on the broader business environment. The study is confined to the apparel sector and the generalizability of the findings would be limited to the manufacturing sector. Cultural identity and norms, strategic orientations, internal processes and structural dynamics may also influence decision making processes and subsequently firm performance. Yet, these were not included in the study due to increasing complexity of the conceptual model.

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Figure 1 provides a graphical summary of the hypotheses.