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FEMALE AS OWNER AND MANAGER, EXPORT ORIENTATION, AND VALUE RELEVANCE OF INNOVATION EVIDENCE FROM EMERGIN G COUNTRIES

[1]Dr. Hamid Ullah, [2]Dr. Hamid Ali Shah, [3] Dr Sajjad Ahmad Khan
Corresponding Author/Principal Author
[1] [Assistant Professor]
Department of Management Sciences
Islamia College Peshawar
Hamidullah@icp.edu.pk

2654Co Authors

[2] [Assistant Professor]
Quaid-e-Azam College of Commerce
University of Peshawar
hamidqcc@uop.edu.pk

[3][Director]
Institute of Management Studies,
University of Peshawar
Sajjad@uop.edu.pk

Abstract
The study investigates the impact of the females at the top, females with majority and minority ownership, and females as workers on the export orientation. Moreover, the study also examines the value relevance of the product, process, market, and organizational innovation in the relationship between the females at four different levels in hierarchy and export orientations in the case of emerging markets. The study use data of Enterprise survey conducted by the World Bank from 2002 to 2019 for 40 emerging countries. The sample included 20,019 export-oriented firms. We use hierarchical regression models for estimation. The results of various models show that females at the top position and females with majority ownership have a positive and significant effect on the export orientation. However, female minority ownership and female workers have no significant influence on export orientation. Moreover, product, market, and process innovations have a positive and significant incremental effect in the relationship between females at the top and females holding majority ownership and export orientation. The theory of internationalization is found valid as females in the two significant positions (majority shareholdings and manager at top) are found relevant to the export orientation of the firms. The findings of the study that females as controlling shareholder behave differently than men in emerging markets challenge the principal-principal agency conflicts. Organizations chasing the goal to improve their revenues and grow through exports shall try to attract female investors and hire or promote female to the rank of top-level managerial positions.Moreover, the results of the study encourage small firms to employ and utilize the potentials of females as managers and focus on innovations to exploit export opportunities.Whereas, to boost exports of the local industries, governments are required to provide structural and legal support.

Keywords: Gender diversity, Export Orientations, Innovation, Female Owner, Agency Conflicts

Introduction

The term export behavior is a broad term that includes its various facets such as export initiation decision, export growth, export performance, and export aggressiveness. A firm exporting initiation or expansion is a result of managerial decisions and motivations (Zou & Stan, 1998). Since the liberalization of international trade, various studies have examined the influential role of management in explaining the export behavior of firms. For instance, Leonidou et al., (1998, p. 94) reported that management role is "one of the most widely studied, but least conclusive areas of exporting research." This study revisits the effect of managerial influences on export behavior of firms with a focus on export active female businesses. The theory of internationalization considers that intangible resource such managerial and others are firm specific, hard to imitate, and easy to transfer to subsidiaries would become source of competitive advantage and enhance the value of firm relative to others.

From the last two decades, there has been a significant increase of women in colleges and universities studying different courses in general and business studies in particular (Wootton & Kemmerer, 2000; Ballarin, 2001). Moreover, female orientation towards their own business and working in an organization at the managerial level has also significantly increased (Gomez-Anson, 2005). However, female represents a relatively small percentage in firms at managerial positions due to various barriers and glass ceiling that have significantly reduced their likelihood of reaching higher positions in firms (Weyer, 2007). From an economic standpoint, if firms failed to give equal opportunity to females in managerial positions, firms may lose a well-trained and knowledgeable worker that could significantly partake in the value-added activities (Weyer, 2007; Ballarin, 2001;). Moreover, from a social perspective, firms may lose a well-prepared force that could have a better understanding of their co-workers and customers alike and who could respond to market demands more attractively (Rosener, 1990; Claes 1999).

The considerable increase in export active women businesses may be due to two trends; the first one mentioned by Adler (2004) is that women are now founding and running their businesses in both developed and emerging economies as they form a major chunk of the world population. Secondly, owing to globalization and trade liberalization, the interconnectivity of markets has significantly intensified competition among firms that have further increased motivation towards export orientation (UNCTAD, 2004; 2016). Dana and Wright (2004) also suggested, "Small Medium Enterprises must face the reality that they must now compete on a global stage,

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regardless of where they are based." Therefore, firms in different countries strive to initiate exports as their first step towards international operations and similarly, female-owned enterprises are also expected to increase their export orientations. However, an increase in the female-owned firms exporting has got less attention from the researchers and policymakers due to lack of data regarding an increase in women-owned businesses and their export orientations (e.g., OECD, 1998, 2001).

Due to the aforementioned reason, majority of the studies have adopted a narrow perspective for measuring gender by a dummy variable coded as '1' if female is the owner otherwise coded '0' (Deng, Hassan, & Jivan, 1995; Grondin & Schaefer, 1995; Canadian Bankers Association, 1996, 1997, 1998; Carrington, 2004; Marques, 2015; and Provasi & Harasheh, 2021). Moreover, these studies have not considered gender as an explanatory variable; however, a few of them have assumed gender as a demographic factor and their focus was to capture the biological sex aspect only, as defined by Manolova et al., (2002). Unlike the sex differences of gender that are based on physiological characteristics, the conceptualization of gender is different in management and gender studies where it is based on social construction (Powell, 1993; Provasi & Harasheh, 2021).

Contrary to the above-mentioned studies, this study focuses on a particular aspect of gender diversity and takes females at the top positions, female-majority ownership, female minority ownership, and female labor as a determinate of export orientations. Moreover, the current study is different from the previous studies as this study considers managerial ownerships aspect of women measured in quantitative terms. Second, we argue gender as a variable that is used and computed in a narrow sense in previous studies should be replaced with "gender as social identity" and have employed this approach to women-owned and women-led businesses in emerging markets. This study has considered the role of women as an owner and decision-maker that could have a more direct impact on firms managerial decisions, whereas, prior studies have focused on their role as export managers (employee) and assumed that their managerial skills have influential role in enhancing the exports (Reuber & Fischer, 1997; Sadler-Smith et al., 2003; Orazalin & Baydauletov, 2020). The explanation is in line with the theory of internationalization that intangible sources of competitive advantage boost the value of internationalizing firms over their other local competitors.

This study also contributes to the agency theory by taking in to account the behavioral differences in men and women in emerging markets. The controller shareholders are assumed to have a conflict with minor dispersed shareholders (Shleifer and Vishny, 1997) and may expropriate the wealth of minority shareholders. However, we argue that females being a dominant shareholder behave differently as women are assumed to be more ethical in business dealings (Bernardi & Guptill, 2008) have a higher degree of risk aversion and prefer longevity in the growth of the company (Bird & Brusch, 2002). Moreover, women are more concerned about the going concern of a firm rather than in accumulation of short-term profits and expropriations. Finally, research into issues that relate to accounting, gender, and diversity can lay a foundation for a more in-depth understanding of the benefits associated with gender diversity and equitable representation of females which can bring new insights to management and business decision making.

After the seminal work of Schumpeter (1936), innovation is touted as an essential business activity needed for the sustainable growth of a firm. This sustainable growth is due to core competencies realized through innovations. Innovation in terms of business is defined as anything novel that has a significant impact on a firm, for instance, development of new products or services, new process addition, new market exploration or organizational structure innovation (Aranda et al., 2001; Bigliardi & Dormio, 2009). Wright, Palma, and Perkins (2004) asserted that innovation plays a vital role in a firm's exporting decisions since a firm with innovative products can capitalize on the competitive advantage in the international markets.

Theory of internationalization predicts that innovation serves as competitive advantage; hence we posit that product, market, and process innovation play a vital role in sustaining and improving a firm's product positioning in international markets and enhance export orientations (e.g. Crone & Roper, 2001; Görg & Ruane, 2000; Palangkaraya & Yong 2007; 2011). Minguel and Elena (2009) submitted that innovation is an important aspect of international business, which has taken limelight because of relatively increased competition. Therrien and Doloreux, (2007) also found that increased spending on firm innovation is positively associated with the export intensity. Similarly, Xayhone and Yoshi (2009) suggested that export competitiveness depends on firm capabilities to innovate their products or services, which could lead to sustainable export performance (Caldera, 2010; Tomiura, 2007). The current study intends to investigate that a firm with female stake in the business has a significant effect on export orientation and firm various types of innovations could have an incremental effect in the relationship between a female stake in a business and export orientations.

The rest of the paper is organized as under; Section two comprises of the relevant theoretical and empirical discussion on the female stake in business and export orientation and the moderating role of innovation. Section three includes discussion on research design, data sources, research model and variables used and their computation. While section four discusses the results and the last section concludes and states future scope of the study.

1. Literature Review and Hypotheses Development

This section includes extant literature on the role of women ownership in export performance and the moderating role of various types of innovations.

2.1 Theoretical Lens

The two but competing theories,theory of internationalization and agency theory provide theoretical explanation of the relationship of gender diversity or more specifically of female as owner or manager and firm export orientation performance. Interestingly, these theories offer different theoretical explanations and hence predict incongruous nature of associations between the independent and dependent variables of the current study. The theory of internationalization considers female as a source of competitive advantage. Hence, female as major owner or manager at top position are expected to contribute positively, enhance performance and value of firm. They are expected to explore all possible and feasible opportunities including those found in the foreign markets. Rose (2007) argued that innovation and creativity are the consequences of gender diversity that creates social cohesion in firms

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which could further positively affect the market share, performance of firms, firms' value. Carter et al., (2007) and Erhardt et al., (2003) reported a positive influence of gender diversity on the value of firms. It is important to note that the ratio of females to male in businesses is in the favor of the later and hence the gender diversity is comprehended as involvement to females in the male dominated business environment across the world. The resource based view also support the theory of internationalization; it stresses that corporate performance is strongly influenced by the physical, organizational and human resources that are available to management, which comply with several features (Barney, 1991); they must be valuable, rare, none imitable and should have no strategically equivalent substitutes. For instance it suggests that female involvement in business decision making is a source of increased diversity; hence it could help firms to access those resources that are of critical importance and play a role in problem-solving (Johnson, Daily, and Ellstrand, 1996). Further, it considers females board member as a resource that could contribute to the decision-making process and significantly affect firm performance (Barney, 1991). The proponents of this view argue that the presence of females along with males in a firm have a synergy effect in gaining competitive advantage. In line with the theory of internationalization, the resource based view also suggests that optimal level of gender diversity could be a source of competitive advantage if each gender significantly contributes in a way to complement each other in management (Watson, Kumar, and Michaelsen, 1993; Shrader, Blackburn and Iles, 1997; Farrell and Hersch, 2001). However, Ely and Padavan (2007) stated that most of the studies on gender and diversity in organizational context have a major limitation of lacking a sound theoretical framework and are mostly based on empirical data analyses that examined differences in women and men in case of business performance (Terjesen et al., 2009).On the other hand, according to agency theoryconflict of interests exists between managers and dispersed shareholders (Shleifer and Vishny, 1986; Jensen, 1993) and dominant shareholders act as a governing mechanism to mitigate this conflict. But in emerging markets, the controlling shareholders may have a conflict with minority dispersed shareholders (Shleifer and Vishny, 1997), in that case, the dominant shareholders may exhibit conflict with the minority shareholders known as principal-principal conflict. However, we argue that females with majority ownership or in senior position in firms may behave differently than men. Because females are believed to be more ethical in business relations (Bernardi & Guptill, 2008), they are risk-averse, more concerned with the going concern of a firm,and do not engage in accumulation of short term gains (Weiler and Bernasek, 2001).Keeping in view the counter arguments about the agency relation in the case of female as managers or owners, we accept the significance of the theory of internationalization and summarize the above by stating that involvement of female in business decision making would boost export orientation performance of firms.

2.2 Gender Diversity and Export Performance

Keeping in view the increasing complexity and dynamism in the business environment, firms are now required to have a more diversified group of management that could befit their culture. Diversity is assumed to influence organizational performance positively owing to a better view of the problems faced by firms and response to the market demands (Pitcher & Smith, 2001; Carpenter et al., 2004). The best performing teams are composed of members that may vary in terms of gender, experience, background, and knowledge. An extensive literature in management showed a significant effect of diversity in firms in general and workgroups or teams in particular (see Milliken & Martins, 1996; Jackson et al., 2003; Carpenter, Geletkanycz & Sanders, 2004). For instance, a more diversified workforce could have a better understanding of its customers' needs (Carter, Simkins & Simpson, 2003), could have a wide knowledge of the firm or industry or financing sources for projects (Randöy, Thomsen & Oxelheim, 2006). The diversity in firms' ownership and management promotes more understanding of the market which helps to increase relatively more market shares (Carter, Simkins, & Simpson 2003; Campbell & Mínguez-Vera, 2008a). We argue that in the male dominated business environment gender diversity is the inclusion of female in the capacity as decision maker such as owners or managers in businesses. Thus the presence of capable female human capital in firms improve gender diversity and hence performance. Kalleberg and Leicht (1991) conducted their study in the US by taking data of 300 small firms managed and operated by females. They found the firms to have a quality of strategies and the same level returns as of firms managed by men (Provasi & Harasheh, 2021). Across various industries, female business owners have a significant representation but are observed very few in manufacturing, knowledge and technology-based industries (Orser et al., 2010). Female employees are very limited in numbers in the R&D intensive industries (Statistics Canada, 2006). Moreover, a limited number of females on top positions in firms could depict discrimination, which is considered unethical and trifling as an impartial and unhinged selection process could only attract and retain human capital from the available pool (Jimeno & Redondo, 2008).

In addition, females in management bring creativity and innovation in a firm's operations that could improve problem-solving mechanisms, since the diverse board could be better able to evaluate a variety of alternates available with firms (Rose, 2007). Campbell and Mínguez-Vera, (2008a) found that if selected without prejudice, females as members in a firm's board enhance the quality of decisions of the board. Moreover, they also suggested that inclusion of both male and female as board members send a positive signal to capital markets, products and labor markets regarding the legitimacy of the firm.Thus allowing females to become majority shareholders or top managers would enhance performance and creativity of firms.

The extant literature supports the positive influence of gender diversity on firm financial performance (Smith, Smith & Verner, 2006; Carter, Simkins and Simpson, 2003; Campbell and Mínguez-Vera, 2008a). Moreover, Rose, (2007) argued that innovation and creativity are the consequences of gender diversity that creates social cohesion in firms which could further positively affect the market share, performance of firms and firm's value. Similarly, Campbell and Mínguez-Vera, (2008a), Carter et al., (2007) and Erhardt et al., (2003) also reported a positive influence of gender diversity on the performance of firms and value measured in terms of both accounting and economic profits. Since a firm with an optimal level of males and females could develop such a unique synergy from their interactions that otherwise would not be possible in the case of a single gender-based firm. Therefore, we argue that firms with balanced gender representation in management and ownership are positively associated with export orientation.

Contrary to the aforementioned studies, Smith, Smith, and Verner (2006) argued that in the case of diversified board there could be more suggestions and discussions on issues than practical actions (Erhardt, Werbel & Shrader, 2003; Smith, Smith & Verner, 2006; Provasi & Harasheh, 2021). More specifically, Cox and Blacke (1991) suggested that

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females as members of boards create heterogeneity in teams that may lead to communication gaps (Watson, Kumar and Michaelsen, 1993; Earley and Mosakowski, 2000). Furthermore, Tajfel and Turner, (1985) and Williams and O'Reilly, (1998) reported that boards comprising of female and male members generally face conflicts and are found to be less collegial. Another stream of studies found that more diversified boards have slowed down the decision-making process, since; the leadership style varies between females and males (Litz & Folker, 2002; Fenwick & Neal, 2001).

2.3 Female Ownership and Export Orientations

The theory of internationalization and the resource-based view though predicts simple direct relationship between female ownership and export orientation as the farmer is considered a valuable intangible source that could translate into competitive advantage. Further, more stakes of the female as owner will induce them to devote more time, energies, and expertise to ensure the firm exploit all available opportunities including those present in the foreign markets. However, agency theory suggests that dispersed ownership leads to free-riding problems, where opportunistic behavior of manager is hard to manage; large controlling shareholders have incentives to monitor and act as an additional mechanism of governance (Shleifer and Vishny, 1986; Jensen, 1993) and have a positive influence on the firm performance. But in emerging markets, the controlling shareholders may have a conflict with minor dispersed shareholders (Shleifer and Vishny, 1997) and these dominant shareholders may expropriate the wealth of minority shareholders. It is a vexed question to examine whether both males and females as dominant shareholders behave in the same way in emerging countries, as women are considered to be more ethical in business dealings (Bernardi and Guptill, 2008). Moreover, women are also found to have a higher degree of risk aversion and prefer longevity in the growth of the company (Bird and Brusch, 2002) and are more concerned in the going concern of a firm rather than in accumulation of short term profits (Weiler and Bernasek, 2001). Similarly, Klein (2002) also suggested that gender-based diversity in board reduces the earnings management practices. Driga and Prior (2010) argued that female can better attempt to integrate social and family processes in managing a business as they focus on long term profits and performance of business relative to men. Therefore, females at the top or with majority ownership will be less likely to engage in expropriations rather than to achieve their targeted goals to increase their long-lasting personal wealth (Orazalin & Baydauletov, 2020).

The initial studies on women entrepreneurs, and growth, success, and performance of women-owned businesses conducted by Watkins and Watkins (1984), Fischer (1992) and Rosa, Carter, and Hamilton (1996) supported the "controversial hypothesis" of female underperformance by assuming that females have less corporate exposure and skills. Kochan et al., (2003) found no significant effect of gender diversity on a firm's performance. Whereas, Daunfeldt and Rudholm, (2012) found a negative impact on the company's return after looking into an increasing number of gender-based board diversity in Swedish firms from 1997 to 2005. However, studies of Carter and Shaw (2006) and Driga and Prior (2008) suggest that the difference in the performance of women and men-owned businesses is due to the availability of resources and nature of the business rather than the discrepancies in the managerial ability of women. Driga and Prior (2010) investigated the initial capital invested by men and women in business and its impact on financial performance and found that female start-ups were initiated with relatively less capital than men and their financial performance was also relatively low as compared to men-led businesses. Furthermore, they also reported that a firm's size is positively related to initial capital investments but negatively related to a firm's performance. Krishnan and Park, (2005); Litz and Folker, (2002); Shrader, Blackburn, and Iles, (1997); Smith, Smith, and Verner, (2006) reported a significant and positive effect on the various measures of financial returns.

Gallego- Alvarez, Garcia-Sanchez and Rodriguez-Dominguez, (2010) conducted a study on gender diversity and corporate performance. They reported that females at the top, females as a senior manager or member of the board positively contribute towards the economic value, accounting profits, earn relatively higher returns and perform more efficiently. Francoeur, Labelle, and Sinclair-Desgagné, (2008) explored gender diversity from the viewpoint of corporate governance and documented that participation of women on the board as executives positively enhances financial performance. Board composition, board size and its impact on firm performance is positively evidenced in the scholarly works conducted by (Jadah, Mohsin, Murugiah, Binti, & Adzis, 2016). Similarly, many studies have reported no difference in the performance of women and men controlled and owned businesses, after controlling for business size, nature of business and availability of resources at the time of starting (Carpenter et al., 2004; Driga and Prior, 2008; Johnson and Storey, 1993; Du Rietz and Henrekson, 2000).

Rosener (1990) argued that females follow an interactive leadership style if they are encouraged to lead in business decisions. Araujo, Florez, and Sanchez-Velez, (2010) also examined the diagnostic vs interactive style of leadership followed by women in business and actively participating in the export market. Furthermore, their results supported the interactive style of leadership, which is more participative and proactive in women-owned active exporting businesses. They also argued that an export decision is an inter-organizational association mainly attributed to trust, flexibility, sharing of information and mutual sacrifice for the collaborative success largely found in women leadership in contrast to men (Li et al., 2005). Similarly, Litz and Folker, (2002) suggested that males have higher emphasis on low emotionality, competition, balanced problem solving, hierarchy and high control, whereas, females have lower level of control, team accomplishment, more institutive problem solving, and are more emotionally biased with weak control (Fenwick and Neal, 2001). A cross-country analysis conducted by (Marques, 2015) found that gender diversity in top-management of the companies matters a lot for the company's export propensity and intensity in the future.

In the light of discussion in the above two sections, it is hypothesized that:

H_1: Female as majority shareholder will positively and significantly influence export orientation of firms.

H_2:Femaleas manager in top positions will have a positive and significant influence on export orientation of firms.

2.4 The Moderating Role of Innovation in Gender Diversity, Female Ownership and Export Orientations

The importance of new product, process, and market innovation act as a potential driver for firms' improved performance and achieving a competitive advantage in the market. Through various types of innovation, firms

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rejuvenate or reinvent to fit in the changing environment and adapt to technological advancements to meet their customers' demands. Hult et al., (2004) argued that firms with an ability to innovate will gain competitive advantageand perform better due to their more favorable response ability to the dynamic market demands. Firms spending on innovation pursuits are being proactive in exploring new opportunities that could further improve their position in the market (Menguc & Auh, 2006). Hence, innovation is imperative for survivor and growth. Ritter & Gemunden, (2004) suggested that innovation-oriented firms' will allocate a significant portion of their budget to research and development activities, hire more experts, create an environment conducive for learning and creativity. Similarly, Zheng, Yim, and Tse (2005) also found that process and market innovation have a positive influence on the firms' performance.

Beamish and Munro (1987) reported that export performance is closely associated with technology, knowledge and manufacturing-based sectors across the industries (Baldwin & Gu, 2003; Cavusgil, 1984; Seringhaus, 1993). Beamish, Craig & McLellan (1993) also suggested that those firms that are more inclined toward investments, innovation, research, and development activities are relatively more export-orientated. Similarly, Therrien & Doloreux (2007) also found that increased spending on a firm's innovation is positively associated with the export propensity. In this vein, Cavusgil, Baldin, and Gu (2003) also reported that knowledge-intensive firms have more export orientation due to more marketability and attachment with the foreign markets. Pla-Barber and Alegre (2007) also reported that an increase in product and service innovation has a close association with the export propensity and intensity. Market innovation, product development is positively associated with export performance in an international context (Guan & Ma, 2003).

Therefore, we investigate the role of innovation in the relationship between female as owner/ female as manager and export orientations and hypothesize that:

H_3: The effect of various types of innovation positively moderates the association between female as owner and as manager at top and export orientations.

3. Research Methodology

This section of the study includes discussion on the data sources, variables computations and research models used for the estimations of results.

3.1 Data Description and Sources

The study analyzed the effect of female ownership and female as manager on export orientation and also examined the moderating role of the various types of innovations. The study used data from the Enterprise survey conducted by the World Bank from 2002 to 2019 for 40 emerging countries that constituted 20,019 export active firms. The study used gender diversity measured at four levels of hierarchy i.e. as gender (male/ female), as owner (majority/ minority), as manager (senior management or top position), and female as labor. Export is measured as a percent of firms that export only 10% percent of their total sales and as a percent of firms exporting more than 10% portion of their total sales. The study used four types of innovation i.e. product or service innovation, market innovation, process innovation, and organizational innovation. Furthermore, the study also used an innovation index for the robustness of the results which is computed by Principal Component Analysis (PCA) from the four measures. The data of the macroeconomic variables used as control variables were collected from the World Bank Developing Index (WDI) for the sample period. The control variables include capacity utilization of firms in a country, political instability, foreign recognitions, government ownership, foreign ownership, private domestic ownership, top management experience, number of days taken in clearance exports, firms' size, inflation rate, GDP growth, rule of law, control of corruptions and average age of firms in a country. The data of the index of Economic freedom was collected from the Heritage Foundation website.

3.2 Research Models

The current study followed the approach of Fischer et al., (1993) regarding measurement of the dependent variable (exports) and independent variables (gender measured at four levels) and at the same time draw from the same population, otherwise temporal or situational factors may adversely affect the validity of the results. The research model is adapted from the study of Lee, Paik and Uygur (2016) and Orser et al., (2010) with minor modifications such as we use female in various positions (Gallego- Alvarez, Garcia-Sanchez and Rodriguez-Dominguez, 2010). They have employed gender as a categorical variable. Furthermore, we use firm-specific variables as control variables such as capacity utilization of firms, foreign recognitions, top management

Table 3.1: Variables Definitions and Expected Signs

Variables	Expected Signs	Definitions
FTOP	+	FTOP is percent of firms where female as a top manager
FMAJOR	+	FMAJOR is the percent of firms where female are the major shareholders
FWORK	+	FWORK represent the percentage of female in firms
FOWN	+	FOWN represents percent of firms with 10percent of ownership held by a female.
INV_INDEX	+	INV_INDEX represents the overall innovation index computed as an average of the various types of innovations
ORG_INV	+	ORG_INV stands for organizational innovation and is computed as a percent of firms spend on research and development activities
PROC_INV	+	PROC_INV stands for the process innovation and is computed as the percentage of firms engaged in process innovation
MARK_INV	+	MARK_INV is represents market innovation is computed as a percentage of firms spends on market innovation
PRO_INV	+	PRO_INV represents the product innovation and is computed as the percent of firms spending on product innovation

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CU	**-**	CU stands for the capacity utilization of firms in a country
PINST	**+**	PINST stands for political instability
FORRECOG	**-**	FORRECOG stands for foreign recognitions
GOVOWN	**+**	GOVOWN stands for government ownership
FOROWN	**+**	FOROWN represents foreign ownership
PDOWN	**+**	PDOWN stands for private domestic ownership
MGT_EXP	**-**	MGT_EXP is the top management experience
CLEAR_DAYS	**-**	CLEAR_DAYS represents the number of days takes in clearness exports
SIZE	**+**	SIZE represents firms' size and is computed as natural log of employees working in firms
EFINDEX	**-**	EFINDEX represents economic freedom index
INF	**+**	INF stands for inflation in a country
GDP	**+**	GDP stands for GDP growth
ROL	**+**	ROL stands for rule of law
COC	**-**	COC stands for control of corruptions
AGE	**+**	AGE average age of firms in a country

experience, firms' size and an average age of firms, and also include other ownership variables that could also affect the export orientation such as government ownership, foreign ownership,private domestic ownership. The study also takes in to account the macroeconomic factors that vary from country to country such as export clearance days, inflation rate, GDP growth, rule of law, and control of corruption. Further, the study uses the index of Economic freedom as a control variable for the economic and business environment that could affect export performance of firms.

$$\mathbf{Export}_{i,t}=\alpha_{i,t}+\beta\mathbf{Gender}_{i,t}+\beta\mathbf{FSV}_{i,t}+\beta\mathbf{MEV}_{i,t}+\mathbf{EFI}_{i,t}+\beta\mathbf{Year}+\beta\mathbf{Country}+\mu_{i,t} \text{ ----------} \mathbf{Eq\text{-}1}$$

In Eq-1 above, the subscripts i and t represent the value of a variable for a particular country's firms measured at time t. Similarly β stands for the estimated coefficient of the respective variables. The variable Gender represents female representation in firms and measured in different terms such as gender signifies male and female, female at the top, female-majority ownership, female minority ownerships and female as labor in the various specifications of the regression models. FSV stands for the firm-specific variables,MEV represents the various macroeconomic variables and EFI stands for the economic freedom index of the Heritage foundations. To account for the year and country heterogeneity, year and country dummy variables represented by Year and Country are included.

To check for the moderation of the various types of innovations (H_3) such as product innovation, market innovation, process innovation and organizational innovation in the relationship between female (as owner/ manager) and export orientation, we follow the generic framework described by Aguinis (2004).

$$\hat{\mathbf{Y}}_{i,t} = \alpha_{i,t} + \beta_1\mathbf{X}_{i,t} + \beta_2\mathbf{Z}_{i,t} + \beta_3\mathbf{X}_{i,t}\mathbf{*Z}_{i,t} + \beta_4\mathbf{C}_{i,t} + \beta_5\mathbf{Year} + \beta_6\mathbf{Country}+\mu_{i,t}\text{----------}\mathbf{Eq\text{-}2}$$

In Eq-2, Ŷ represents exports, X represents female (gender, owner, manager, and labour), Z represents the innovation variables, X*Z represents the interactions of various measures of gender with the different types of innovations, whereas, C represents the control variables of the baseline regression model.

4. Results and Discussions

Table 4.1 presents descriptive statistics distributed in various panels. Panel A shows statistics of the main variables such as export orientation, percentage of firms with females at the top, females with majority ownership, females' ownership, and female workers. On the average 52% sales are from exports by the sample firms. Moreover, 12.2 % of the total firms export at least 10% or less of their sales. On the average 49.2 % firms have females in the top position and females with majority shareholdings are observed in about 29% of the firms. The average value of female ownership is 13.4% and females as worker account for 34% of the total employees working in the sample firms.

Panel B of Table 4.1 presents descriptive statistics of the innovation-related variables. The average value of the overall innovation index is 0.251, organization innovation is 0.115, process innovation is 0.251, market innovation is 0.407, and product innovation is 0.252.

Panel C of Table 4.1 represents capacity utilization with an average value of 0.731, on the average political instability in the sample countries is 0.123, foreign recognition is 0.163, government ownership is 0.109, foreign ownership is 0.972, public-private ownership is 0.899, management experience is 16.20 years, export clearance is 6.855 days, size is 4.55, economic freedom index is 6.66, inflation rate is 4.08 percent, GDP growth is 3.58 percent, rule of law is 0.331, control on corruption is 0.371 and on the average age of these firms is 15.84 years.

Table 4.2 shows the result of the Pearson correlation between the variables. The two measures of export orientation have a positive association with female at the top position, female-majority

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Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Panel A: Export Orientation and Female Ownership Variables					
Export2	2262	0.528	0.477	0.1	0.775
Export1	2262	0.102	0.947	0	0.509
Ftop	2262	0.492	0.501	0	1
Fmajor	2262	0.287	0.276	0	0.879
Fwork	2262	0.34	0.18	0.2	0.883
Fown	2262	0.134	0.309	0	0.2
Panel B: Innovation types and Innovation Index					
inv_index	2262	0.251	0.216	0	0.68
org_inv	2262	0.115	0.143	0	0.66
proc_inv	2262	0.251	0.251	0	0.83
mark_inv	2262	0.407	0.341	0	0.91
pro_inv	2262	0.252	0.238	0	0.81
Panel C: Control Variables					
Cu	2262	0.731	0.955	0.39	0.975
Pinst	2262	0.123	0.144	0	0.799
Forrecog	2262	0.163	0.115	0	0.726
Govown	2262	0.109	0.227	0	0.184
Forown	2262	0.972	0.924	0	0.773
Pdown	2262	0.899	0.918	0.321	1
mgt_exp	2262	16.202	4.376	7.21	30.311
Clear_days	2262	6.855	5.144	1	29.512
Size	2262	4.552	0.146	3.679	4.888
Efindex	2262	6.663	0.676	4.871	7.881
Inf	2262	4.08	7.152	-3.516	12.583
GDP	2262	3.585	5.187	-14.812	20.882
Rol	2262	0.331	0.678	-1.781	1.993
Coc	2262	0.371	0.679	-1.412	2.153
Age	2262	15.847	5.067	5.732	37.545

Ftop is percent of firms where female as a top manager, fmajor is the percent of firms where female are the major shareholders, fwork represent the percentage of female in firms Fown represents percents of firms with 10percent of ownership held by a female. Inv_index represents the overall innovation index computed as an average of the various types of innovations, org_inv stands for organizational innovation and is computed as a percent of firms spend on research and development activities. Proc_inv stands for the process innovation and is computed as the percentage of firms engaged in process innovation, mark_inv is represents market innovation is computed as a percentage of firms spend on market innovation, pro_inv represents the product innovation and is computed as the percent of firms spending on product innovation. CU stands for the capacity utilization of firms in a country, Pinst stands for political instability, Forrecog stands for foreign recognitions, Govown stands for government ownership, forown represents foreign ownership, pdown stands for private domestic ownership, mgt_exp is the top management experience, clear_days represents the number of days takes in clearness exports, size represents firms size and is computed as natural log of employees working in firms, EFindex represents economic freedom index, inf stands for inflation in a country, GDP stands for GDP growth, ROl stands for rule of law, COc stands for control of corruptions and age represents average age of firms in a country.

ownership, female ownership, and female workers. Moreover, export orientation is also positively associated with the innovation index and its four components. The correlation of export orientation with the capacity utilization, foreign recognition, foreign ownership, domestic private partnership, government ownership, rule of law, and control of corruption is also positive. Export orientation has a negative association with the political instability, inflation, GDP growth, size and age of a firm. Moreover, the strength of the correlations between the independent variables does not indicate any issue of multicollinearity. However, the correlations between innovation index and organizational innovation, process innovation, market innovation, and product innovation are high. Therefore, this study uses each type of innovation in a separate regression model from overall innovation index. Similarly, females at the top, female-majority ownership, and female ownership are highly correlated therefor these are also used separately

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Table 4.2: Matrix of Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(23)	(24)	(25)	(26)	(27)	(28)
(1) export2	1.000																									
(2) export1	0.920	1.000																								
(3) ftop	0.160	0.130	1.000																							
(4) fmajor	0.123	0.096	0.907	1.000																						
(5) fwork	0.062	0.069	0.691	0.929	1.000																					
(6) fmajor	0.123	0.066	0.615	0.912	0.929	1.000																				
(7) inv_index	0.032	0.045	0.469	0.719	0.907	0.718	1.000																			
(8) org_inv	0.104	0.096	0.687	0.840	0.815	0.850	0.742	1.000																		
(9) proc_inv	0.021	0.016	0.461	0.715	0.852	0.716	0.892	0.761	1.000																	

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	0	0	0	0	0	0	0	0	0	1								
(1	.	.	.	.	.	.	.	.	.	.								
0)	0	0	0	0	0	0	8	4	6	0								
ma	0	0	6	3	5	3	7	6	5	0								
rk	8	8	3	0	3	1	1	1	4	0								
_in																		
v																		
	0	0	0	0	0	0	0	0	0	0	1							
(1	.	.	.	.	.	.	.	.	.	.	.							
1)	0	0	0	0	0	0	9	7	8	6	0							
pr	4	0	0	1	2	1	0	6	6	6	0							
o_i	3	2	1	4	9	2	6	5	5	8	0							
nv																		
	0	0	-	-	0	-	0	0	0	0	0	1						
(1	.	.	0	0	.	0	.	.	.	.	.	.						
2)	1	0	.	.	7	.	2	1	1	2	1	0						
cu	1	6	1	0	2	0	1	8	9	4	3	0						
	4	5	2	7	5	7	9	0	8	3	4	0						
			4	1		1												
	-	-	-	0	0	0	-	-	-	0	-	0	1					
(1	0	0	0	.	.	.	0	0	0	.	0	.	.					
3)	.	.	.	0	0	0	.	.	.	0	.	1	0					
pin	2	2	0	0	8	0	0	0	0	5	0	2	0					
st	1	4	7	2	9	2	2	7	9	3	9	9	0					
	5	6	6				8	4	5		3							
	0	0	-	-	0	-	-	0	0	-	-	0	0	1				
(1	.	.	0	0	.	0	0	.	.	0	0	.	.	.				
4)	3	3	.	.	1	.	.	1	0	.	.	2	1	0				
for	5	0	1	2	6	2	0	5	3	0	0	4	1	0				
rec	5	0	5	3	7	3	1	7	7	5	3	3	5	0				
og			8	2		2	2			9	4							
	0	0	0	0	-	0	-	-	-	-	-	-	0	-	1			
(1	.	.	.	.	0	.	0	0	0	0	0	0	.	0	.			
5)	0	0	1	1	.	1	.	.	.	.	.	.	0	.	0			
go	5	6	5	2	0	2	1	2	1	1	0	1	5	0	0			
vo	8	2	4	9	8	9	5	0	1	5	8	3	2	1	0			
wn					5		8	5	6	6	7	0		0				
	0	0	-	-	-	-	0	0	-	-	0	-	-	0	0	1		
(1	.	.	0	0	0	0	.	.	0	0	.	0	0	.	.	.		
6)	2	2	.	.	.	.	0	0	.	.	0	.	.	2	0	0		
for	2	0	1	0	0	0	1	8	0	0	2	1	0	2	8	0		
ow	7	6	9	2	9	2	5	4	3	1	7	1	1	0	8	0		
n			1	0	6	0			7	1		0	3					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1	
(1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0	.	
7)	1	0	1	0	2	0	1	0	0	1	0	2	1	1	.	.	0	
pd	3	8	1	6	1	6	0	6	8	2	8	3	2	7	0	0	0	
ow	1	0	4	6	2	6	2	1	4	5	0	9	7	0	7	4	0	
n															1	6		
	0	0	-	-	0	-	0	0	0	0	0	0	0	0	-	0	0	1
(1	.	.	0	0	.	0	.	.	.	.	.	.	.	.	0	.	.	.
8)	2	1	.	.	1	.	2	2	1	2	2	2	1	2	.	1	6	0
mg	5	6	1	1	6	1	3	3	6	0	4	9	6	8	0	3	4	0

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t_exp	0	5	12	32	1	32	9	0	0	2	9	2	3	7	81	7	0	0									
(19)	-.10	-.00	-.0	-.0	-.0	-.0	0.2	0.3	0.2	0.1	0.1	0.2	-.0	0.1	-.1	0.0	0.0	0.2	1.0								
clear_days	1905	1323	5328	3823	0244	3248	0206	1163	1177	1164	8184	2424	0430	9196	1442	0161	6177	0744	0400								
	-.0	-.0	0.	-.0	1.	-.0	0.	-.0	0.	0.	-.0	0.	0.	0.	-.0	0.	0.	0.	-.0	1.							
(22)	0.0	0.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.0	0.0	.0	.0	0.0	.0							
size	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.8	0.6	0.7	0.0	0.0	0.1	0.6	0.0	0.0							
	62	63	1	29	0	29	7	15	2	3	29	5	9	7	85	96	2	1	24	0							
	0.0	0.0	0.	-.0	0.0	-.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-.0	0.0	0.0	0.0	-.0	0.1	1.						
(23)	1.3	1.2	0.0	.0	3.1	.0	0.0	0.0	0.0	1.0	0.5	2.4	0.2	1.7	0.1	0.3	0.8	1.5	.0	3.1	0.0						
efindex	39	24	08	098	13	098	4	5	9	8	4	7	9	9	69	9	4	4	086	3	0						
	-.0	-.0	-.0	-.0	0.0	-.0	0.0	0.0	0.0	-.0	0.0	0.0	-.0	-.0	-.0	-.0	-.0	-.0	0.0	0.0	-.0	1.					
(24)	0.0	0.0	0.0	0.0	.0	.0	.0	.0	.0	0.0	.0	.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	.0	0.0	0.0					
infl	.2	.2	.0	.1	.9	.1	.2	.8	.4	.0	.5	.1	.0	.0	.2	.1	.1	.1	.1	.9	.1	.0					
	16	26	26	40	6	40	4	5	5	62	3	0	88	63	50	33	17	23	3	6	13	0					
	-.0	-.0	-.0	0.0	-.0	0.0	0.0	0.0	0.0	0.0	0.0	-.0	-.0	-.0	-.0	-.0	-.0	-.0	0.0	-.0	-.0	0.0	1.				
(25)	0.0	0.0	0.0	.2	.0	.2	.4	.3	.4	.4	.3	.0	.0	.0	0.0	0.0	0.0	0.0	.1	.0	.0	.0	0.0				
gdp	.2	.1	.0	.6	.1	.6	.4	.5	.5	.1	.9	.0	.1	.1	.1	.0	.0	.0	.6	.1	.3	.6	.0				
	06	67	08	5	29	5	8	2	2	8	5	02	56	68	00	94	74	5	29	26	2	0					
	0.0	0.0	0.0	-.0	0.0	-.0	-.0	0.0	-.0	-.0	-.0	0.0	-.0	0.0	-.0	0.0	0.0	0.0	-.0	0.0	0.0	-.0	-.0	1.			
(26)	.2	.2	.0	.0	.1	.0	.0	0.0	.0	.0	.0	.0	.0	.2	.1	.3	.9	.0	.0	.2	.5	.9	.0	.0	0.		
rol	69	32	18	090	25	090	025	0.0	0.0	0.0	0.0	0.9	1.2	2.9	1.5	3.5	9.0	0.5	0.3	0.2	5.2	0.6	0.3	0.0			
				0		0	4		8	3	8		42		58				5			0	84				
	0.0	0.0	0.0	-.0	0.0	-.0	0.0	0.0	0.0	0.0	0.0	0.0	-.0	-.0	-.0	0.0	0.0	0.0	-.0	0.0	0.0	-.0	-.0	0.1			
(27)	.2	.2	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.2	.1	.1	.0	.2	.0	.1	.5	.0	.0	.9	0.		
coc	44	03	19	112	185	112	162	76	234	728	966	156	296	156	195	148	890	400	085	375	058	022	258	200			
				2		2							29		95				5			50	58				
	-.0	-.0	-.0	-.0	0.0	-.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-.0	0.0	0.0	0.0	0.0	0.0	0.0	-.0	0.0	0.0	0.0	1.	
(28)	0.0	0.0	0.0	0.0	.0	.0	.3	.3	.2	.2	.3	.2	.1	.1	.1	.1	.5	.7	.2	.0	.0	.0	.0	.1	.1	.0	
age	20	07	03	14	42	14	52	31	82	62	59	80	34	97	22	31	80	57	31	42	54	02	33	18	74	00	
	06	78	6	10		10									2							20					

Note: Variable definitions are given below table 4.1

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from each other to avoid the problem of multicollinearity. Control of corruption and rule of lawshow a high correlation that is why the rule of law was dropped from the regression analysis and only control of corruption was retained in the rest of the analysis. There is a weak correlation between females at the top position, female-majority ownership, female ownership, and female workers with innovation index, organizational innovation, process innovation, market innovation and product innovation which is a necessary condition for testing moderation.

Table 4.3 presents the results of the regression models, where export is used as dependent variable and female at the top, female-majority ownership, female ownership, and female workers are taken as main explanatory variables in model-1 to model-4 respectively. Moreover, foreign recognition, utilization, foreign ownership, government ownership, private domestic ownership, size, clearness days, political instability, GDP growth, economic freedom index, control of corruption are used as control variables.

The regression results in Table 4.3 for models 1 to 4 shows that females at top positions and females with majority ownership have a positive and significant effect on the export orientation of firms. However, females with minority ownership and female workers are found to have an insignificant effect on the export orientation of firms. Thus, firms with females at the top and females with majority ownership are expected to have a high export orientation. These results are in line with the theory of internationalization and contrary to the principal-principal agency conflicts and expropriation hypothesis, therefore, females holding top position or holding a senior position in management or having majority ownership could have no or less likelihood of conventional agency conflicts evidenced in emerging markets by Shleifer and Vishny (1997). These results are mainly attributed to the fact that women are presumed to be more ethical in business dealings (Bernardi &Guptill, 2008), have a higher degree of risk aversion and prefer longevity in the growth of the company (Bird & Brusch, 2002). Moreover, they are more concerned with the going concern of a firm rather than an accumulation of short-term profits (Weiler & Bernasek, 2001). The research findings of Klein (2002) also rejected the expropriation hypothesis by concluding that gender-based diversity in boards reduces the earnings management practices. These results are in line with the study of Marques (2015) who also reported a positive association of females at top positions with export intensity. Moreover, the results also support the findings of the previous studies, if the export is taken as a measure of firm financial performance (Smith, Smith & Verner, 2006; Carter, Simkins & Simpson, 2003; Campbell & Mínguez-Vera, 2008a).

These results about females (majority shareholder or senior/top manager) and export orientation of firms are in line with the theory of internalization. The theory considers females as source of competitive advantage and able to contribute towards effective corporate decisions making. These findings support these views that relative to male, females are more ethical, honest, and professional. Females actively involve themselves and make use of their abilities in the exports related decisions in order to enhance performance of the firms.

Moreover, control variables such as foreign ownership, private domestic ownership, foreign recognition, economic freedom index and control over corruption are found to have a positive and significant effect on the export orientation of firms. However, political instability, size, and inflation have a significant but negative effect on the export orientation. The results of the control variables further suggest that firms with foreign recognitions, relatively more foreign ownership, and private-domestic ownership is expected to have a high export orientation. Moreover, countries with more economic freedom, low inflation rate, low political instability and more control on corruption would improve the export orientation of firms.

These results suggest that females in general positively affect a firm's export orientation only where they have more ownership stakes and can participate in decision making regarding exports. However, there low level of ownership stake or being part of the labor workforce cannot affect the firm export orientations. Conducive economic environment and government support also strengthen firms ‘export orientation.

Model-5 includes all types of ownership variables and the results are not different from those of the baseline models except that the female minor ownership has also turned positive and significant.

In the case of analyzing moderating role of innovation in the relationship between gender and export orientations, the study used the aggregate index of innovation developed through principal component analysis from the four types of innovations. The interaction of the aforementioned index with variables female at the top, female majority and minor ownership, and female workers is used to examine the incremental effect of innovation towards export orientations.

Table 4.4 represents the results of models 1 to 4, where females at the top, majority and minority ownership and female workers along with their interaction with innovation index are the variable of primary interest. The results of females at top, majority and minority ownership and female workers are similar to the results of baseline models.

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The innovation index has a significant and positive effect on the export orientation of the sample firms in all the models. Moreover, the interaction term Ftop_inv is positive and significant at 5% with the export orientation. Similarly, the interaction of female-majority ownership with innovation index (Fmajor_inv) also has a positive and significant effect on the firms' export orientation. These results show that the presence of females at the top in innovative firms would have an incremental effect of 0.337; while in innovative firms with females as majority ownership there would be an incremental effect of 0.259 on the export orientation of such firms. However, female minority ownership and female workers' interactions with innovation index (Fown_inv & Fwork_inv) are found to have a positive but an insignificant effect on export orientations.

These results suggest that firms engaged in innovative operations and have females at the top position or females holding some majority shareholdings will experience an incremental role in the firms' export orientation. In other words, the effects on export orientation of the female majority ownership and female occupying top position in firm further increase with the firms' participation in innovative activities. These results are in congruence with the findings of Tse (2005) who also reported a significant influence of innovation on export performance. Moreover, the findings of Therrien and Doloreux (2007) and the current results are same as they also supported the strong influence of the spending on innovation activities and export performance. Similarly, Pla-Barber and Alegre (2007) also found that an increase in product and service innovation has a significant influence on the export propensity and intensity of firms.

Moreover, results of the control variables remained consistent with the results of the baseline regression models i.e., foreign ownership, private domestic ownership, foreign recognition, economic freedom index and control over corruption have positive and significant effect with export orientation whereas, political instability, size, and inflation have a negative and significant effect on the export orientations. The size negative effect is encouraging for small business enterprises. Management of small businesses shall focus on other aspect of their businesses to take advantage of the export opportunities. The results of Model-5 in Table 4.4, where all interaction terms are taken together, also show results similar to the baseline models from 1 to 4.

4.1 Robustness Check

For the robustness of the results, the study considered the moderating effect of each type of innovations between the female at the top and female with majority ownership on export orientation. As minority ownership, female workers and their interaction with innovation index were found insignificant therefore these two and their interaction terms are dropped from these analyses. The results are reported in Table 4.5 and Table 4.6 respectively.

The results of models 1 to 4 in Table 4.5 shows that product innovation, market innovation, and process innovation has positive and significant effect on firms' export orientation. However, organizational innovation is found to have a positive but insignificant effect on export orientation. Moreover, the interaction of product innovation, process innovation and market innovation with female at the top position is also positive and statistically significant. However, the interaction of organizational innovation with female at the top is found to have a positive but insignificant effect in relation to export orientations. The coefficient 0.429 of the interaction of product innovation with female at the top position is indicative of the incremental effect on the export orientation. Similarly, the incremental effects of the interaction terms of process and market innovation with female at the top are 0.393 and 0.309 respectively. Thus, these results further support the baseline findings that innovation positively moderates the relationship between female at the top position in firms and export orientation. These results, in general, show that the presence of a female on the top position in firms further accelerates the product, process and market innovation and significantly increases their impacts on firms' export orientation. These results are in line with the findings of Beamish, Craig and McLellan (1993). They also reported process and market innovation have a positive influence on firms' performance (Zheng, Yim, & Tse, 2005). Pla-Barber and Alegre (2007) also found a positive influence of the product and services innovation on the export propensity and intensity. The control variables results were found similar to the results of the baseline regression models.

Table 4.6 represents the results of regression models 1 to 4, where female majority ownership interaction with product innovation, market innovation, process innovation, and organizational innovation are used as main explanatory variables along with the control variables as specified in the baseline regression models. The results of these models show that the female majority has a positive and significant effect on the export orientation. These results are consistent with those of the baseline models. Furthermore, the interaction of product innovation, market innovation and process innovation with female-majority ownership has a positive and significant effect on the export orientation of firms. However, female-majority ownership interaction with organizational innovation has a positive but statistically insignificant effect on export orientation. The interaction coefficient of female-majority ownership

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and product innovation is 0.421, which implies that in firms where there is a more of female ownership the product innovation will have an incremental effect of 0.421 on the export orientation of the firms. Similarly, the interaction of female-majority ownership with market innovation and service innovation has coefficients of 0.365 and 0.273 respectively. These values of coefficients can be interpreted that in firms with more female ownership, market and process innovations will have an incremental effect of 0.365 and 0.273 respectively on the export orientation of firms. In general, these results suggest that firms with a higher level of female-majority ownership, product innovation, market innovation, and process innovation positively moderate the relationship between female majority ownership and firms exporting decisions. Thus, various types of innovation have an incremental effect on the export performance of firms while keeping the impact of other variables constant. Moreover, the results of the control variables are also similar to the results of the base models of the study. We do not report results of control variables in both cases to save space.

To check the robustness of the results the study also used another measure of export which is computed as a percent of firms that have at least 10% export sales. The same models were re-estimated and we found no significant variations in the results. Hence, we include only one table shown as annexure 1 and exclude others.

Table 4.3: Regression Results of Export Orientation and Female Ownership

	(Model1)	(Model2)	(Model3)	(Model4)	(Model5)
Variables	**Export1**	**Export1**	**Export1**	**Export1**	**Export1**
Ftop	**0.105****				**0.100****
	(0.051)				**(0.050)**
Fmajor		**0.032*****			**0.027****
		(0.011)			**(0.013)**
Fown			**0.003***		**0.004****
			(0.002)		**(0.002)**
Fwork				**0.167**	**0.177***
				(0.104)	**(0.099)**
Govown	0.073	0.079	0.056	0.092	0.063
	(0.075)	(0.074)	(0.074)	(0.073)	(0.074)
Forown	0.269**	0.243**	0.270**	0.236*	0.247**
	(0.121)	(0.122)	(0.117)	(0.121)	(0.116)
Pdown	1.860**	1.860**	1.843**	1.722*	1.745*
	(0.893)	(0.880)	(0.908)	(0.947)	(0.976)
mgt_exp	0.050	0.057	0.180	0.181	0.336
	(0.382)	(0.377)	(0.342)	(0.345)	(0.336)
Cu	0.043	0.033	0.034	0.080	0.099
	(0.067)	(0.067)	(0.068)	(0.096)	(0.092)
Pinst	-0.161**	-0.155**	-0.162**	-0.156**	-0.154**
	(0.065)	(0.066)	(0.063)	(0.065)	(0.063)
Forrecog	0.216***	0.227***	0.234***	0.215***	0.250***
	(0.078)	(0.077)	(0.077)	(0.079)	(0.076)
clear_days	-0.162	-0.145	-0.156*	-0.129	-0.154
	(0.100)	(0.089)	(0.091)	(0.086)	(0.100)
Size	-0.476**	-0.370**	-0.620***	-0.514***	-0.786***
	(0.185)	(0.154)	(0.201)	(0.174)	(0.239)
Efindex	0.356***	0.434***	0.345***	0.460***	0.391***
	(0.085)	(0.084)	(0.085)	(0.084)	(0.083)
Inf	-1.614***	-1.549***	-1.682***	-1.667***	-1.728***
	(0.514)	(0.508)	(0.489)	(0.549)	(0.528)
Gdp	0.007	0.009	0.008	0.005	0.009
	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)
Coc	0.176***	0.179***	0.178***	0.187***	0.187***
	(0.065)	(0.065)	(0.065)	(0.065)	(0.066)
Age	-0.269	-0.193	-0.265	-0.053	-0.035

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	(0.413)	(0.388)	(0.391)	(0.405)	(0.378)
_cons	-1.368	-1.500	-1.058	-1.967	-1.667
	(1.664)	(1.644)	(1.742)	(1.778)	(1.899)
Obs.	2260	2260	2260	2260	2260
R-squared	0.287	0.285	0.298	0.294	0.314
R2_adjusted	0.243	0.241	0.255	0.250	0.263

Standard errors are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

Table 4.4: Regression Results Export Orientation Female Ownership and Moderation of Innovation Index

	(Model1)	(Model2)	(Model3)	(Model4)	(Model5)
Variables	**Export1**	**Export1**	**Export1**	**Export1**	**Export1**
Ftop	**0.191****				**0.291*****
	(0.092)				**(0.140)**
ftop_inv	**0.377****	**0.377****			**0.360*****
	(0.149)	**(0.149)**			**(0.113)**
Fmajor		**0.026****			**0.047*****
		(0.057)			**(0.017)**
fmajor_inv		**0.259****			**0.344****
		(0.122)			**(0.161)**
Fown			**0.004***		**0.004***
			(0.003)		**(0.003)**
fown_inv			**0.061**		**0.034**
			(0.050)		**(0.022)**
Fwork				**0.186**	**0.123**
				(0.131)	**(0.102)**
fwork_inv				**0.0413**	**0.020**
				(0.031)	**(0.044)**
inv_index	0.167***	0.195***	0.335***	0.581***	0.269***
	(0.016)	(0.049)	(0.065)	(0.080)	(0.031)
Govown	0.080	0.067	0.065	0.074	0.065
	(0.077)	(0.074)	(0.076)	(0.073)	(0.074)
Forown	0.267**	0.246**	0.270**	0.217*	0.238**
	(0.122)	(0.122)	(0.119)	(0.125)	(0.119)
Pdown	1.813**	1.870**	1.785*	1.505	1.585
	(0.900)	(0.882)	(0.920)	(1.047)	(1.023)
mgt_exp	-0.066	-0.034	-0.190	-0.191	-0.272
	(0.382)	(0.365)	(0.333)	(0.318)	(0.328)
Cu	0.048	0.019	0.029	-0.118	-0.120
	(0.069)	(0.070)	(0.069)	(0.101)	(0.105)
Pinst	0.160**	0.159**	0.160**	0.158**	0.155**
	(0.065)	(0.064)	(0.063)	(0.066)	(0.063)
Forrecog	0.216***	0.246***	0.238***	0.211***	0.268***
	(0.077)	(0.077)	(0.074)	(0.077)	(0.076)
clear_days	0.153	0.154*	0.133	0.119	0.138
	(0.100)	(0.092)	(0.090)	(0.083)	(0.102)
size2	-0.495**	-0.343**	-0.624***	-0.512***	-0.698***
	(0.195)	(0.155)	(0.207)	(0.168)	(0.237)
Efindex	0.361***	0.543***	0.371***	0.476***	0.557***
	(0.087)	(0.086)	(0.086)	(0.089)	(0.086)
Inf	-1.600***	-1.478***	-1.702***	-1.653***	-1.576***
	(0.518)	(0.469)	(0.497)	(0.542)	(0.513)
Gdp	-0.008	-0.006	-0.008	-0.005	-0.006
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)

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Coc	0.177***	0.187***	0.177***	0.180***	0.195***
	(0.066)	(0.064)	(0.066)	(0.065)	(0.065)
Age	-0.268	-0.105	-0.250	-0.081	0.103
	(0.431)	(0.386)	(0.407)	(0.422)	(0.376)
_cons	-1.258	-1.575	-1.973	-1.571	-1.639
	(1.686)	(1.686)	(1.772)	(1.979)	(1.952)
Obs.	2260	2260	2260	2260	2260
R-squared	0.290	0.299	0.303	0.306	0.338
R2_adjusted	0.240	0.250	0.255	0.257	0.274

Standard errors are in parenthesis and *** p<0.01, ** p<0.05, * p<0.1

Table 4.5: Regression Results of Moderating Effect of Various Types of Innovations in Export Orientation and Female as Top Manager

Variables	**(Model-1) Export1**	**(Model-2) Export1**	**(Model-3) Export1**	**(Model-4) Export1**
Ftop	0.196**	0.196**	0.128**	0.195**
	(0.099)	(0.099)	(0.060)	(0.096)
pro_inv	0.242**			
	(0.109)			
ftop_pro_inv	0.429***			
	(0.190)			
mark_inv		0.267**		
		(0.101)		
ftop_mark_inv		0.309**		
		(0.143)		
proc_inv			0.239**	
			(0.114)	
ftop_proc_inv			0.393**	
			(0.172)	
org_inv				0.086
				(0.262)
ftop_org_inv				0.026
				(0.331)
_cons	-1.142	-1.350	-1.305	-1.302
	(1.697)	(1.689)	(1.684)	(1.668)
Obs.	2260	2260	2260	2260
R-squared	0.291	0.292	0.288	0.287
R2_adjusted	0.241	0.242	0.238	0.237

Standard errors are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

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Table 4.6: Regression Results of the Moderating Effect of Various Types of Innovations in Export Orientation and Female as a Major Shareholder

Variables	(1) export1	(2) export1	(3) export1	(4) export1
Fmajor	0.027***	0.010***	0.033***	0.006**
	(0.004)	(0.004)	(0.004)	(0.003)
pro_inv	0.407**			
	(0.201)			
fmajor_pro_inv	0.421***			
	(0.143)			
mark_inv		0.299**		
		(0.108)		
fmajor_mark_inv		0.365***		
		(0.092)		
proc_inv			0.158**	
			(0.066)	
fmajor_proc_inv			0.273**	
			(0.130)	
org_inv				0.436**
				(0.216)
fmajor_org_inv				0.376
				(0.242)
_cons	-0.473	-0.607	-0.736	-0.396
	(1.708)	(1.688)	(1.658)	(1.667)
Obs.	2260	2260	2260	2260
R-squared	0.297	0.293	0.304	0.296
R2_adjusted	0.248	0.243	0.255	0.247

Standard errors are in parenthesis *** p<0.01, ** p<0.05, * p<0.1

4.2 Implications

The results discussed above have both theoretical and practical implication. We found that females as top managers and major shareholders positively influence export orientation and hence performance of firms is increased; assuming that exports results in increased financial performance of firms. Similarly, we observed that interaction of females as managers and owners and innovation show incremental increase in the export performance of firms. These findings are in line with the prediction of the theory of internationalization. The theory of internationalization considers that intangible resource such managerial (including females)are firm specific, hard to imitate, and easy to transfer to subsidiaries become source of competitive advantage and enhance value of firms due to improved performance.The theory considers females as source of competitive advantage and able to contribute towards effective corporate decisions making.Moreover, innovation is an important aspect of international business and it significance is increasing due to increase in competition (see Minguel & Elena, 2009). In this context the theory of internationalization predicts that innovation serves as competitive advantage; hence we posit that product, market, and process innovation play a vital role in sustaining and improving a firm's product positioning in international markets and enhance export orientations (e.g. Crone and Roper, 2001; Görg and Ruane, 2000).Further, in line with the explanation of the theory, females are expected to explore all possible and feasible opportunities including those found in the foreign markets (Rose, 2007). Consistently thus, interaction of female with stakes in business and various types of innovation have favorable incremental effect on export orientations. The presence of females as top manager and majority shareholder in innovative firms further strengthen the export orientation of the sample firms.

It is interesting to note that these findings of the study do not support the explanations of conventional agency conflicts,entrenched and self centered managers, conflict of interests, expropriation and principal-principal conflict hypothesesoffered by the agency theory (for detail see Jensen, 1993; Shleifer & Vishny, 1986; and Shleifer &

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Vishny,1997). These results are mainly attributed to the fact that women are presumed to be more ethical (Bernardi and Guptill, 2008), more risk averse and prefer longevity in the growth of the company (Bird and Brusch, 2002).

The above stated findings are indicative of the practical implication that in ever increasing competition and dynamic business environment firms in the emerging countries are suggested to employ females as manger or encourage females to become shareholders using equitable and unbiased mechanisms for the purpose.

The size negative effect is encouraging for small business enterprises. Management of small businesses shall focus on other aspect of their businesses to take advantage of the export opportunities. In addition, results of the other control variables imply that conducive economic environment and government support strengthen firms' export orientation. More specifically, firms shall follow the goal to get registered on foreign stock exchanges or use other channels to attract foreign investors as foreign recognitions, relatively more foreign ownership, and private-domestic ownership is found to have a high export orientation. Similarly, governments shall improve economic freedom, control inflation, corruption and avoid political rifts to ensure stable political environment within the country. In short, small firms shall use the potentials of females as managers and focus on innovations to exploit export opportunities and to boost exports of the local industries; governments are required to provide structural and legal support.

5. Conclusion

With the increasing complexity and dynamism in the business environment, firms are now required to have a more diversified group of management that could fit the culture and could foster an environment of learning, creativity, and innovation. This study while taking advantage of the gender disparity in firms operating in emerging markets tried to investigate the effect of female at four different levels in a hierarchy on export orientations. Moreover, the study also examined the value relevance of the product, process, market, and organizational innovation in the relationship between female as owner and manager and exports orientation. For this purpose, the study used data of Enterprise surveys conducted by the World Bank from 2002 to 2019 for 40 emerging countries that constituted 20,019 exports active firms. The results of various hierarchical regression models showed that gender diversity, female at the top position, female-majority ownership have a significant and positive effect on the export orientation. Female minority ownership and female labor has no significant influence on export orientation. The moderation regression models showed that product, market, and process innovations have significant and positive incremental effect in the relationship between female at top and female majority ownership and export orientations. However, no such significant relationship was observed in the case of female minority ownership and female as labor. For the robustness of the results, the study used an innovation index that was found to have a positive and significant effect on the relationship between females (as owner and manager) and export orientation. The study extended the prediction of the theory of internationalization and principal-principal agency conflicts by including the role of females as a 'controller' shareholder. Females owner are said to behave differently than men. Women are more ethical in business dealings and prefer longevity in the growth and going concern of a firm rather than an accumulation of short-term profits and expropriations. The current study has managerial implications toward issues that relate to exports, females (as owner and managers), and innovations which can lay a foundation for a nuanced understanding of the benefits associated with diversity and fair gender representation in management and business decision making. Another glaring outcome is the negative association of size of firm with the export orientation. Small firms shall use female as managers in top positions and focus on the innovative approaches to take advantages of the export opportunities.

5.1 Limitations and Future Directions

The findings of this study relate to the included emerging economies and hence shall be cautiously be generalized but to countries similar those in the sample. For future, first of all country specific and sectoral specific studies will prove more valuable with respect to the practical implications of the results. The results could be further improved by taking into consideration other countries. Moreover, a country's governance variable can also be expected to have a significant influence on export orientations. The outcomes of the study can additionally be strengthened by considering individual dimensions of economic freedom that could better explain the conduciveness of economic and business environment for international trade. In addition, the findings of the study are based on a survey, which could be reviewed for robustness if quantitative data, based on firms' annual reports may be extracted and used for the analysis.

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Annexure - 1

Robustness Check by Using 2nd Proxy of Export Orientation

Table Regression Results Export Orientation and Female Ownership

	(Model1)	(Model2)	(Model3)	(Model4)	(Model5)
Variables	**Export2**	**Export2**	**Export2**	**Export2**	**Export2**
Ftop	**0.062****				**0.096*****
	(0.030)				**(0.026)**
Fmajor		**0.050****			**0.047****
		(0.027)			**(0.020)**
Fown			**0.025****		**0.013****
			(0.011)		**(0.070)**
Fwork				**0.106**	**0.111**
				(0.154)	**(0.152)**

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Govown	0.095	0.098	0.082	0.106*	0.086
	(0.063)	(0.062)	(0.064)	(0.062)	(0.064)
Forown	0.221***	0.206***	0.225***	0.202****	0.206***
	(0.012)	(0.012)	(0.011)	(0.012)	(0.011)
Pdown	1.464*	1.466*	1.456	1.378	1.385
	(0.870)	(0.862)	(0.879)	(0.901)	(0.917)
mgt_exp	0.120	0.123	0.208	0.202	0.327
	(0.373)	(0.370)	(0.345)	(0.338)	(0.350)
Cu	0.042	0.036	0.036	-0.035	-0.049
	(0.060)	(0.059)	(0.059)	(0.080)	(0.078)
Pinst	-0.113**	-0.110*	-0.114**	-0.110*	-0.109*
	(0.056)	(0.057)	(0.055)	(0.057)	(0.056)
Forrecog	0.234***	0.241***	0.247***	0.234***	0.259***
	(0.082)	(0.081)	(0.079)	(0.082)	(0.078)
clear_days	0.175*	0.165**	0.174**	0.155**	0.165*
	(0.090)	(0.080)	(0.084)	(0.078)	(0.089)
size2	-0.344**	-0.283**	-0.459**	-0.374**	-0.556***
	(0.156)	(0.137)	(0.179)	(0.144)	(0.196)
Efindex	0.401***	0.443***	0.381***	0.416***	0.431***
	(0.075)	(0.074)	(0.075)	(0.075)	(0.073)
Inf	-1.196**	-1.155**	-1.246**	-1.230**	-1.279**
	(0.534)	(0.530)	(0.515)	(0.550)	(0.531)
Gdp	0.012*	0.012*	0.012**	0.010*	0.013*
	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)
Coc	0.167***	0.168***	0.167***	0.173***	0.174***
	(0.059)	(0.059)	(0.060)	(0.060)	(0.060)
Age	0.226	0.272	0.223	0.360	0.377
	(0.395)	(0.373)	(0.376)	(0.384)	(0.368)
_cons	-1.890	-1.975	-1.676	-1.637	-1.390
	(1.583)	(1.567)	(1.636)	(1.642)	(1.729)
Obs.	2260	2260	2260	2260	2260
R-squared	0.298	0.298	0.306	0.302	0.314
R2_adjusted	0.255	0.255	0.263	0.259	0.263

Standard errors are in parenthesis and *** p<0.01, ** p<0.05, * p<0.1