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Influence of stages of economic development on women entrepreneurs' startups<sup>☆</sup>Dianne H.B. Welsh<sup>a,\*</sup>, Eugene Kaciak<sup>b,d</sup>, Narongsak Thongpapanl<sup>b,c</sup><sup>a</sup> Bryan School of Business & Economics, The University of North Carolina at Greensboro, Greensboro, NC, USA<sup>b</sup> Goodman School of Business, Brock University, St. Catharines, ON, Canada<sup>c</sup> Research Administration Center, Chiang Mai University, Thailand<sup>d</sup> Department of International Business, Kozminski University, Warsaw, Poland

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## ABSTRACT

Women entrepreneurs add to the economic well-being of countries. This study examines whether stages of economic development (SEDs) influence women entrepreneurs similarly across national settings. This study approaches the environments in which women entrepreneurs launch their businesses from two perspectives – family support and personal problems – in Canada, China, Egypt, Morocco, Poland, South Korea, and Turkey. Findings show that the relationship between SEDs and family instrumental support (financial and organizational) presents an S shape, whereas that between SEDs and family moral support is an inverted S shape. Evidence confirms that the relationship between SEDs and personal problems follows an inverted U-shape, with personal problems increasing with SEDs to an optimal point, above or below which personal problems decrease. This study exemplifies the need for joined theory and practice to influence public policy worldwide. The results are useful for further developing policies to promote women-owned business startups by understanding what barriers women entrepreneurs face and what solutions work best with the stage of country development.

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## 1. Introduction

Women and entrepreneurship have become an important research domain (Carrasco, 2014; Jennings & Brush, 2013; Nissan, Carrasco, & Castaño, 2012). The country-level literature regarding female entrepreneurship mostly uses the Global Entrepreneurship Monitor (GEM) data collected in over 60 countries (Acs, Desai, & Hessels, 2008), whereas studies based on individual-level data often focus simply on qualitative research with small samples within countries. A few exceptions include Lee and Osteryoung (2001), Verheul, Stel, and Thurik (2006), Kobeissi (2010), and Batsakis (2014). In view of this paucity of international comparative studies on female entrepreneurship, researchers have called for more quantitative, cross-cultural, investigations exploring female entrepreneurship across countries (Ahl, 2006; Hughes, Jennings, Brush, Carter, & Welter, 2012), and under different institutional environments (Carrasco, 2014). To answer this call, this study examines data in countries ranging from Canada, Poland, and Turkey, through

Morocco, and Egypt, to South Korea and China drawing on stages of economic development (SEDs).

The purpose of this study is to investigate whether SEDs affect women entrepreneurs in the same way across international borders. Specifically, the authors use a framework by Porter (1990), which suggests that countries go through five stages of economic growth – factor-driven, efficiency-driven, and innovation-driven – and two transition phases, one between the factor and efficiency-driven stages, and between the efficiency and innovation-driven stages. Countries in the factor-driven stage compete through low cost efficiencies in commodity production or low value-added products. They have poor supportive policies and need to improve basic and social infrastructure. Efficiency-driven countries are increasingly using efficient production practices for large markets, and economies of scale. Knowledge-intensive activities characterize the innovation-driven stage. The share of manufacturing to services decreases. This stage places a greater emphasis on innovation to generate national wealth.

Given the importance of context (Hughes et al., 2012), this study applies the family embeddedness perspective (Aldrich & Cliff, 2003) to investigate women entrepreneurs and their businesses in SEDs. Women's entrepreneurial activity presents a strong link with family systems (Cetindamar, Gupta, Karadeniz, & Egrican, 2012; Jennings & Brush, 2013). The study examines two support systems: family instrumental (organizational and financial) support, and family moral support. Female entrepreneurs frequently perceive their businesses as efforts entrapped with their familial relationships and responsibilities

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(Jennings & Brush, 2013) so their approaches in managing work-life balance affect the family (Cetindamar et al., 2012; Pathak, Goltz, & Buche, 2013; Powell & Eddleston, 2013; Rey-Martí, Porcar, & Mas-Tur, 2015).

Several studies document the negative impact of personal problems on an individual's work performance (Cropanzano, Rupp, & Byrne, 2003). Work-family conflict is a barrier to success for women-owned businesses; therefore, entrepreneurs must establish a balance between family and work (Jennings & Brush, 2013; Jennings & McDougald, 2007).

The entrepreneurship literature analyzes the SEDs according to their relationship to the level of intensity of entrepreneurial activity (Acs et al., 2008). One model worth analyzing is the S-shaped relationship. In the factor-driven stage, the entrepreneurship intensity level first increases, but at a decreasing rate as the country starts moving toward the efficiency-driven stage, and then accelerates again when the country moves into the innovation-driven stage, after which this rate starts decreasing again (Acs et al., 2008). Measures evaluating the entrepreneurship intensity level are the Total Early-Stage Entrepreneurial Activity (TEA) ratio (Acs, Autio, & Szerb, 2014), the Global Entrepreneurship and Development Index (GEDI) (Acs et al., 2014), and the Global Competitiveness Index (GCI) (Schwab, 2014), among others. This study uses the GCI because studies recognize GCI as one of the key assessments of global competitiveness (Schwab, 2014). This may be the first attempt to link the SEDs to family support and personal problems within the family-embeddedness framework. The results are useful to further developing policies to promote women-owned business startups building on country SEDs and understanding barriers and solutions. This study combines theory and practice and has implications for policy-making worldwide.

## 2. Theoretical considerations

### 2.1. The Global Competitiveness Index (GCI)

The GCI is a weighted average of three sub-indexes, each of them composed of pillars (Schwab, 2014). The lowest level sub-index describes the factor-driven SED with four pillars (institutions, infrastructure, macroeconomic environment, and health and primary education). The second (efficiency enhancers) sub-index refers to the efficiency-driven stage, with six pillars (higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, and market size). The third sub-index encompasses business sophistication and innovation. The importance of each pillar depends on a country's particular SED. The GCI attributes higher relative weights to those pillars that are more relevant for an economy given its particular stage of development.

### 2.2. Family support

Aldrich and Cliff's (2003) family embeddedness perspective calls for studies investigating how family dynamics affect the entrepreneurial process. Support from the family is an essential element for business success (Jennings & Brush, 2013), and studies recognize the importance of family support for the emotional well-being of entrepreneurs (Hoang & Antoncic, 2003; Liao & Welsch, 2005).

### 2.3. Family instrumental (tangible) support

Instrumental support may take the form of comments from family members-ideas, advice, or assistance with running the business (Arregle, Hitt, Sirmon, & Very, 2007; Eddleston & Powell, 2012). This support can be even more important when family members have a business because they become advisers (Aldrich & Cliff, 2003; Chang, Memili, Chrisman, Kellermanns, & Chua, 2009). Family instrumental support includes assistance with household responsibilities (Eddleston & Powell, 2012) and may take the form of loans.

This study focuses on the way women entrepreneurs' set-up their businesses based on the family-oriented framework (Cetindamar et al., 2012; Jennings & Brush, 2013). The study examines whether women entrepreneurs launch their businesses with or without their family members' *organizational* involvement or *financial* involvement.

### 2.4. Family moral (intangible) support

Family moral support is part of family social capital, a type of capital that is inherent in family relationships (Cetindamar et al., 2012; Davidsson & Honig, 2003). Family members' moral/emotional support can be encouragement concerning the woman's career choice to be an entrepreneur or psychological assistance in dealing with business problems (Eddleston & Powell, 2012). Family moral support gives a woman entrepreneur confidence that she can manage her family-work responsibilities while growing her business.

### 2.5. Personal problems

This study focuses on women entrepreneurs' personal problems that the entrepreneur perceives during the start-up phase of their business. Those problems may include emotional stress, family stress, loneliness, influence of the business on personal and family relationships, time management, poor or lack of institutional support, and/or dealing with males. Women often have a greater responsibility for childcare than men do (Sullivan & Meek, 2012). Women have reported that being an entrepreneur affects their family life negatively (Ufuk & Özgen, 2001). Small business' owner-managers have a major influence on their new ventures' success or failure and multitasking may accentuate their personal problems (Welsh, Kim, Memili, & Kaciak, 2014).

## 3. Method

This study applies an inductive theory-building approach (Eisenhardt, 1989; Locke, 2007) that examines the evidence from multiple countries to generate a series of propositions from patterns of commonality and dissimilarity; which fit the multiple-country research of women entrepreneurs' perceptions of family support and personal problems combined with country-specific economic factors. First, the study estimates a number of logistic regression models and then determines patterns in the relationships between the SEDs and the family support and personal problems of women entrepreneurs drawing on the data from seven countries.

### 3.1. Data collection

This study uses a self-administered questionnaire from Hisrich, Bowser, and Smarsh (2006). The study uses the translation and back-translation process by Earley (1987).

### 3.2. The sample

Data collection took place between 2012 and 2015 using online surveys and personal contacts with business organizations. Usable surveys comprise: Canada (155), China (115), Egypt (117), Morocco (116), Poland (184), South Korea (100), and Turkey (147) for a total of 934 responses with response rates ranging from 33% to 84%. In line with past studies (Hadidi & Kirby, 2015; Schwab, 2013, 2014), this study refers to Egypt as a factor/efficiency-driven economy, to Morocco and China as efficiency-driven economies, to Poland and Turkey as efficiency/innovation-driven economies, and to South Korea and Canada as innovation economies.

**Table 1**  
Global competitive indexes, stages of economic development, and the variables' means.

Country	Egypt	Morocco	Turkey	Poland	China	S. Korea	Canada
Global Competitiveness Index (GCI) 2014–2015	3.60	4.21	4.46	4.48	4.89	4.96	5.24
Stage of economic development	In transition from efficiency- driven	Efficiency- driven	In transition from innovation- driven	In transition from efficiency to innovation- driven	Efficiency- driven	Innovation- driven	Innovation- driven
Variables' means							
Family Organizational Support (FOS)	0.51	0.26	0.38	0.29	0.34	0.35	0.11
Family Financial Support (FFS)	0.45	0.25	0.28	0.28	0.47	0.40	0.20
Family Moral Support (FMS)	0.85	0.80	0.72	0.68	0.57	0.60	0.81
Personal Problems (PP)	0.01	0.03	0.21	0.31	0.15	0.01	0.12
Social networks support	0.85	0.65	0.69	0.52	0.84	0.07	0.66
Educational level	0.63	0.86	0.66	0.88	0.77	0.58	0.83
Perceived management skills	0.53	0.61	0.65	0.73	0.43	0.38	0.81

### 3.3. Dependent variables

*Family Instrumental Support (FIS)* captures both the organizational and the financial components. *Family Organizational Support (FOS)* equals (1) if she started the business with the family member(s) or (0) if she started either alone or with nonrelatives (Cooper & Saral, 2013). *Family Financial Support (FFS)* equals (1) if she started the business borrowing from her family or (0) if she financed the start-up with her own savings or with money borrowed from nonrelatives and/or banks. *Family Moral Support (FMS)* equals (1) when support is from the family member (spouse, parent, child, sibling, and/or relative) or (0) when no support exists. *Personal Problems (PP)* equals (1) for the presence of any combination of emotional stress, family stress, loneliness, influence of business on family relationships, influence of business on personal relationships, poor or lack of support, time management, and/or dealing with males, and (0) for the absence of problems.

### 3.4. Independent variable

*The Global Competitiveness Indexes (GCI)* draws on the individual GCIs for each country (ranked from the smallest to the largest) as reported in the Global Competitiveness Report 2014–2015 (Schwab, 2014): Egypt (3.60), Morocco (4.21), Turkey (4.46), Poland (4.48), China (4.89), South Korea (4.96), and Canada (5.24).

### 3.5. Control variables

*Social Networks Support* equals (1) when such support exists, or (0) when no support exists (Greve & Salaff, 2003; Jones & Jayawarna, 2010). *Educational level* equals (1) when the respondent has a high school diploma or above, and (0) otherwise (Lofstrom, Bates, & Parker, 2014; Mas-Tur, Pinazo, Tur-Porcar, & Sánchez-Masferrer, 2015; Nissan et al., 2012; Pathak et al., 2013). *Perceived Managerial Skills* equals (1) when the respondent ranks her start-up skills as good or excellent, or (0) when she self-rates them as poor or fair (Lerner & Haber, 2001; Nissan et al., 2012; Rey-Martí et al., 2015). Table 1 displays the GCIs and the variables' means for each of the countries. Table 2 reports the descriptive statistics.

### 3.6. Data analysis and development of propositions

To explore all possible relationships between SEDs and the socio-cultural dynamics, the study performs several binary logistic regressions (due to the binary nature of the dependent variables) that address the linear form of the independent variable (GCIs), and the quadratic and cubic forms. The results of the binary logistic regressions appear in Table 3. The study adjusts standard errors of the regression coefficients for heteroscedasticity. The bivariate relationships (Table 2) indicate no obvious problems with multicollinearity among the explanatory variables; all absolute values of the correlation coefficients are below 0.20. The variance inflation factors (VIFs) to determine the existence of multicollinearity among the variables further confirm that multicollinearity is not a concern: all VIFs are below 1.5 (Cenfetelli & Bassellier, 2009). For each of the dependent variables, the study presents two models, one with only the control variables and the other representing the highest significant degree of the independent variable resulting from the nonlinear relationship. In all models, the binary regression coefficients for the linear, quadratic, and cubic terms are strongly statistically significant except in Model 4b, where only the linear and quadratic terms are present.

For Model 1 (*Family Organizational Support*), Model 2 (*Family Financial Support*), the sequence of the negative linear term, followed by the positive quadratic term, and then by the negative cubic term indicate an S-shaped relationship between the SEDs (as exemplified by the increasing GCIs) and the corresponding dependent variable. For each of these dependent binary variables, the probability first decreases when

**Table 2**  
Descriptive statistics and correlations.

Variables	1	2	3	4	5	6	7	8
1. Family Organizational Support (FOS)	1							
2. Family Financial Support (FFS)	0.08*	1						
3. Family Moral Support (FMS)	-0.05	0.02	1					
4. Personal Problems (PP)	-0.05	-0.02	-0.06	1				
5. Global Competitiveness Index (GCI)	-0.19**	-0.06	-0.12**	0.07	1			
6. Social networks support	-0.05	-0.07*	0.05	0.11**	-0.16**	1		
7. educational level	-0.08*	-0.01	0.04	0.01	0.06	0.09*	1	
8. Perceived management skills	-0.04	-0.05	0.03	0.04	0.03	0.10**	0.12**	1
N	766	756	684	720	934	934	755	760
Mean	0.3	0.3	0.7	0.1	4.6	0.6	0.7	0.6
SD	n/a	n/a	n/a	n/a	0.5	n/a	n/a	n/a
Min	0	0	0	0	3.6	0	0	0
Max	1	1	1	1	5.2	1	1	1

Note:  
\*\* p < 0.05.  
\* p < 0.10.

the GCI grows from its lowest level, then starts increasing, and decreases again (which visually resembles an S shape appearing in Figs. 1 and 2).

Moving from the left to the right of the horizontal axis in Figs. 1 and 2 corresponds to moving from factor/efficiency-driven (low GCIs) through efficiency-driven and efficiency/innovation-driven (medium GCIs) to innovation-driven (high GCIs) economies. The S-shaped curve depicts probabilities of occurrence for a given dependent variable. In countries with low GCIs, women entrepreneurs expect high levels of family instrumental help (organizational and financial). The countries with low GCIs tend to be in the factor/efficiency-driven stage of economic development, where women choose the entrepreneurial careers because of necessity. Factor-driven countries have poor supportive policies and need to improve basic and social infrastructure. For a woman entrepreneur to be able to launch and succeed in her business, family instrumental support is indispensable. However, when a country starts moving to the efficiency-driven and then to innovation-driven stages, state support policies are improving and this may help women

entrepreneurs not be so dependent on family help. There are bumps in the three curves for countries in the transition stage from efficiency to innovation-driven economies. This may suggest that during the turmoil caused by the changing institutional environment of emerging economies, women entrepreneurs start needing their families' instrumental help again. In summary, within the framework of family embeddedness perspective (Aldrich & Cliff, 2003).

**P1.** The relationship between the stage of economic development and the probability of (i) the family organizational help and (ii) the family financial help follows an S-shaped curve.

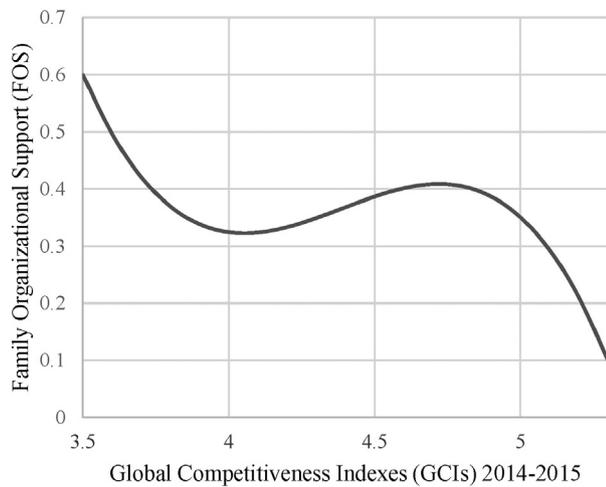
The results of Model 3 (*Family Moral Support*) point to a reverse relationship between the GCIs and the dependent variable. The sequence of first positive, then negative, and again positive linear, quadratic, and cubic terms, suggests an inverted S-shape (Fig. 3). During the transition between the factor-driven and the efficiency-driven stage, the likelihood of the family moral support increases. Later, when a country starts

**Table 3**  
Logistic regression results.

	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b	Model 4a	Model 4b
	N = 739	N = 739	N = 729	N = 729	N = 667	N = 667	N = 705	N = 705
Dependent variable	FOS	FOS	FFS	FFS	FMS	FMS	PP	PP
Constant	-0.244 (0.21)	312.665*** (79.34)	-0.318 (0.21)	371.118*** (79.32)	0.580** (0.22)	-278.975*** (84.59)	-2.748*** (0.36)	-81.678*** (23.74)
Control variables								
Social networks support	-0.201 (0.18)	-0.206 (0.19)	-0.386** (0.18)	-0.231 (0.19)	0.231 (0.20)	-0.092 (0.22)	0.844** (0.34)	1.046*** (0.35)
Educational level	-0.387** (0.18)	-0.265 (0.19)	-0.004 (0.18)	0.131 (0.19)	0.189 (0.20)	0.205 (0.20)	-0.061 (0.26)	-0.175 (0.28)
Perceived management skills	-0.081 (0.16)	0.062 (0.17)	-0.152 (0.16)	0.013 (0.17)	0.112 (0.18)	-0.039 (0.19)	0.215 (0.24)	0.301 (0.25)
Independent variable								
GCIs		-216.623*** (55.16)		-255.780*** (54.98)		199.535*** (58.52)		34.205*** (10.17)
GCIs squared		49.662*** (12.65)		58.122*** (12.56)		-46.719*** (13.35)		-3.683*** (1.09)
GCIs cubed		-3.773*** (0.96)		-4.365*** (0.95)		3.597*** (1.01)		
Reliability								
Model $\chi^2$	6.99*	50.87***	5.89	33.97***	3.25	35.89***	8.71**	49.40***
$\Delta$ Model $\chi^2$ (vs previous model)		43.88***		28.08***		32.64***		40.69***
Nagelkerke R <sup>2</sup>	0.01	0.09	0.01	0.06	0.01	0.08	0.02	0.13
Correct classification (%)	67.4	67.8	66.8	67.8	72.3	72.3	87.8	87.8

FOS = Family Organizational Support.  
FFS = Family Financial Support.  
FMS = Family Moral Support.  
PP = Personal Problems.  
GCIs = Global Competitiveness Indexes.

Note 1. Regression coefficients: \*\*\*p < 0.01; \*\*p < 0.05; \*p < 0.10; two-tailed tests.  
Note 2. Heteroskedasticity-robust standard errors in the parentheses.



**Fig. 1.** S-shaped relationship between Global Competitive Indexes and family organizational support.

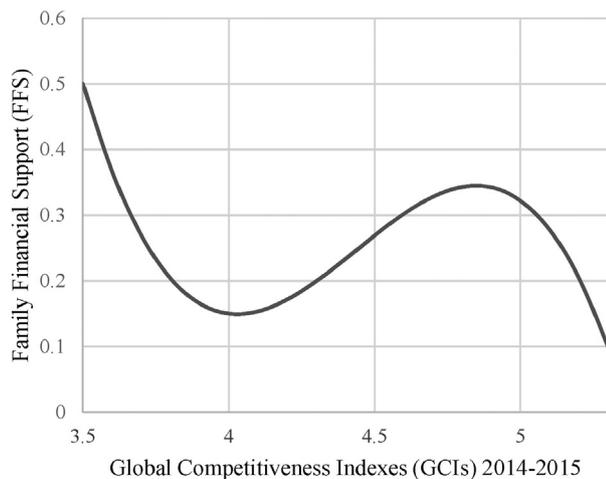
moving through the efficiency-driven stage toward the innovation-driven stage, the family moral support is decreasing. Finally, the family moral support increases again in the innovation stage.

**P2.** The relationship between the stage of economic development and the probability of the family moral help follows an inverted S-shaped curve.

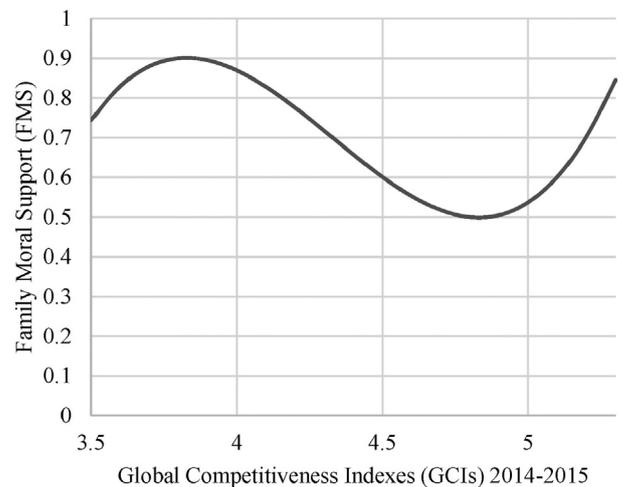
The only model that does not indicate a cubic relationship is Model 4. Instead, data shows a quadratic relationship (inverted U-shape) between the GCIs and *Personal Problems* (Fig. 4). The likelihood of experiencing personal problems is the highest for women entrepreneurs in the transition between efficiency and innovation-driven stage economies. During turbulent changes in institutions and business conditions in emerging economies, women entrepreneurs experience the most personal problems.

**P3.** The relationship between the stage of economic development and the probability of personal problems follows an inverted U-shaped curve.

As Propositions 1 and 2 stipulate, the family instrumental support and the family moral support move in opposite directions across the economic development spectrum. They could be complementary to each other—increased levels of instrumental support go together with



**Fig. 2.** S-shaped relationship between Global Competitive Indexes and family financial support.



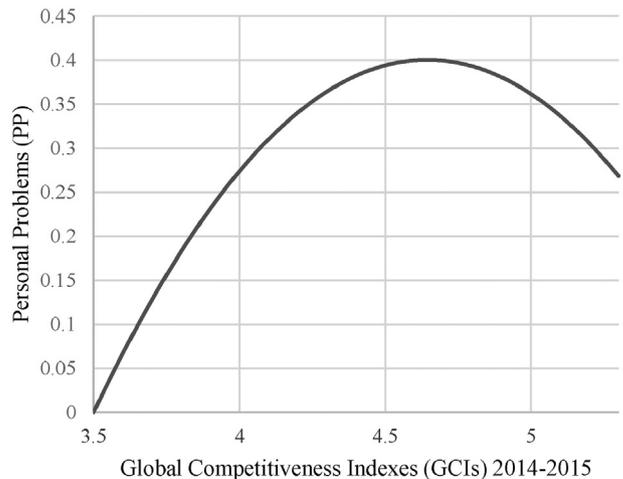
**Fig. 3.** Inverted S-shaped relationship between Global Competitive Indexes and family moral support.

decreased levels of moral support across the consecutive SEDs, and vice versa. This relationship appears in Fig. 5, where a [0,1] interval scales the two family support variables to yield comparable results. Fig. 5 displays three curves, the first one depicts the family instrumental support, the second represents family moral support, and the third displays the total family support (instrumental and moral). The first two curves move in the opposite direction and complement each other. Data shows an overall downward trend (as the family total support curve indicates) along the SEDs.

**P4.** The relationship between the stage of economic development and the probability of the family total support (instrumental and moral combined) is negative and linear.

**4. Discussion**

This study uses data from Canada, China, Egypt, Morocco, Poland, South Korea, and Turkey and evaluates the relationships between the SED and subjective variables that influence women's entrepreneurial careers: family instrumental (tangible) support, family moral (intangible) support, and personal problems. Economic development of each of the seven countries draws based on the GCI (Schwab, 2014). Nissan



**Fig. 4.** Inverted U-relationship between Global Competitive Indexes and personal problems.

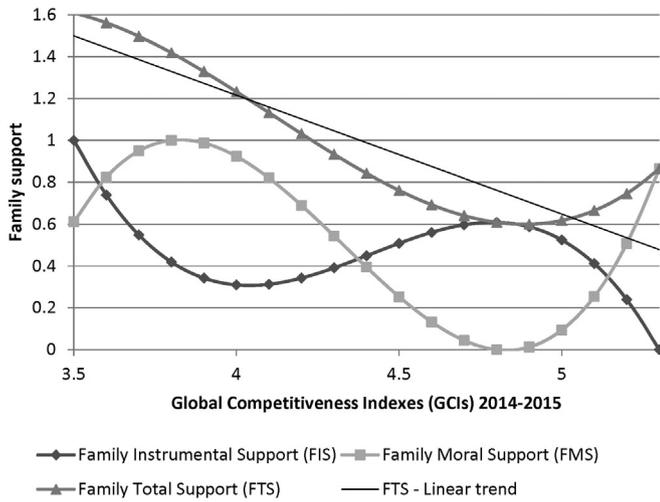


Fig. 5. Negative linear relationship between Global Competitive Indexes and family total support.

et al. (2012) also confirm the dependency relationship between female entrepreneurship and economic development.

Four major findings emerge from this study. First, the country's SED and the family instrumental support have an S-shaped relationship. The likelihood of the family instrumental support is highest in the factor/efficiency-driven stage. Family instrumental support decreases as the country moves through the efficiency-driven stage, then increases again during the efficiency/innovation-driven stage and decreases in the innovation-driven stage. Since the organizational and financial support that families provide to women entrepreneurs constitutes a tangible, economy-related factor, support is one of the important dimensions of entrepreneurship (Welsh, Memili, Kaciak, & Ochi, 2014). The findings confirm that the relationship between economic development and entrepreneurship forms an S shape (Acs et al., 2008).

Women entrepreneurs in innovation-driven economies need the least family instrumental support and have the lowest perception of gender discrimination regarding financing. This may owe to high public support of entrepreneurship, which allows women to be more independent from their families and more self-confident regarding financing. Figs. 1 and 2 show an overall tendency for a negative relationship between the SED and the family instrumental support: the need for family support decreases with an increase in economic development. This relationship does not hold between the efficiency and innovation-driven stages because family support increases. In countries that are in the transition phase between the efficiency and innovation-driven stages, the adverse external conditions force women entrepreneurs to seek family instrumental help. The findings might have generalizability limitations because this is the first time a study applies such findings to the SED stages; however, future studies should consider similar studies that might add to the knowledge base looking at SED stages and the country context.

Second, the country's SED and the family moral support have an inverted S-shaped relationship (Fig. 3). Family moral support increases during the transition from the factor-driven to efficiency-driven stage. Support starts decreasing until support reaches the transition from the efficiency-driven to innovation-driven stage. From then on, support starts increasing again. Family moral support is higher in turbulent times, when countries are in a transition between consecutive stages of economic development.

Third, the country's SED and women entrepreneurs' personal problems follow an inverted U-shaped curve (Fig. 4). Personal problems affect women entrepreneurs most in the economies moving from efficiency to innovation-driven stages. The volatile institutional changes during this transition stage may increase the uncertainty in running a business, amplifying obstacles and barriers and increasing negative perceptions of personal problems on their businesses (Welsh et al., 2014).

Fourth, the family instrumental support and the family moral support are complementary, producing a downward trend (Fig. 5) along the consecutive SEDs. Fig. 6 summarizes these findings in a theoretical model.

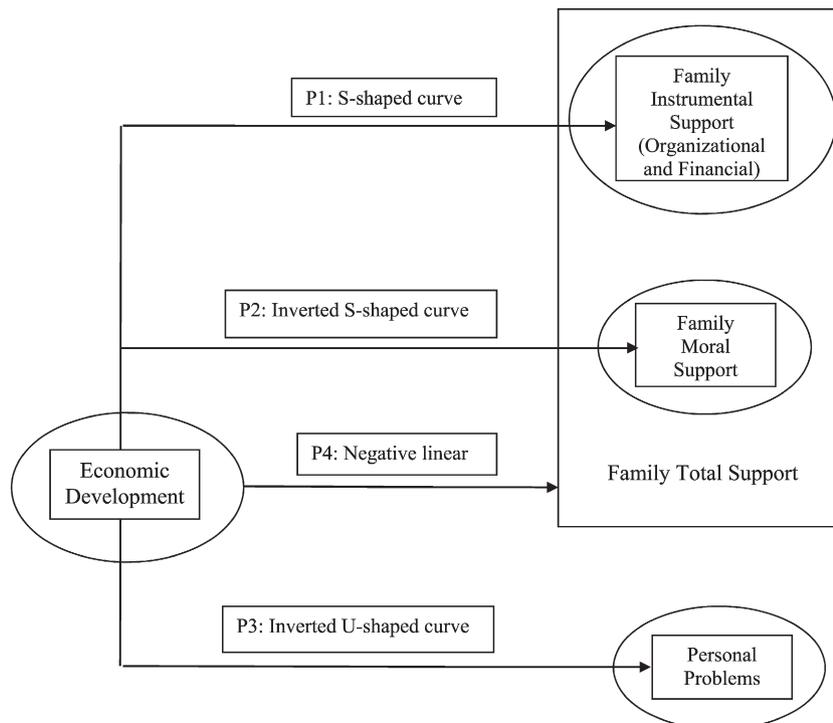


Fig. 6. Model of stages of economic development (SEDs) affecting family support and personal problems of women entrepreneurs.

## 5. Limitations and future research

This study uses limited convenience samples conducted online and through networking and support organizations. Future studies could include a broader sample of countries using the SEDs to test replicability. Studies could also use samples throughout rural and urban environments and matched gender-based samples. Furthermore, future studies might compare other countries regionally and following to their SEDs. This idea would be particularly interesting in regions with exponential growth predictions such as countries in Africa, which are on the lower end of the economic development spectrum and are currently factor-driven economies but are transitioning from factor to the efficiency-driven stage. Studies could gather best practice comparisons between countries and SED levels longitudinally. Information on the measurement of changes in the level of support of government initiatives and the effect on women-owned business performance with the level of SED is also important. Whether women entrepreneurs take advantage of these initiatives, which initiatives are most appealing, and the incentives used may affect future programs around the world. The World Bank, for example, would have an interest in the effects of incentives on women-owned business performance and sustainability of these businesses.

Future research could examine the impact of female entrepreneurs with family support on innovations in light of SED to see if differences exist in innovation startups and business sustainability. If women with family support, motivation, and higher education have the opportunity to use their knowledge by creating ventures, they may be the drivers of innovation around the world. Studies could explore factors in the environment (sociological, economic, geographic, and religious) along with the level of SED. Although measurement would be difficult, studies may incorporate worldwide indicators with the SED levels on women-owned business performance by country.

## 6. Policy implications

Stage of Economic Development (SED) significantly affects women-owned businesses in the start-up stage. According to the results, different economic stages need different policies. The need for family support decreases with the increase in country economic development. Policies that would help women-owned businesses in the first or factor/efficiency-driven stage would be state funded support, training, and counseling. Training in the types of support needed and modeling on how to deliver such support (role playing) would lead to improving the overall family support for women entrepreneurs. Family instrumental support is highest in the factor-driven stage; therefore policies should emphasize moral support.

A big issue is the lack of recognition of the new business. Women entrepreneurs are pioneers in society's recognition of the roles women can play and the success they can achieve. Basic support for improving women's lives and achieving self-realization is necessary with job training and support for household duties, including childcare. This support would help with personal problems, especially in the transition between the efficiency and innovation-driven stage economies where personal problems are the highest. Accessible business financing is necessary at every stage.

## References

- Acs, Z. J., Autio, E., & Szerb, L. (2014). National systems of entrepreneurship: Measurement issues and policy implications. *Research Policy*, 43, 476–494.
- Acs, Z. J., Desai, S., & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics*, 31, 219–234.
- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship: Theory and Practice*, 30(5), 595–621.
- Aldrich, H. E., & Cliff, J. E. (2003). The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, 18(5), 573–596.

- Arregle, J., Hitt, M., Sirmon, D., & Very, P. (2007). The development of organizational social capital: Attributes of family firms. *Journal of Management Studies*, 44(1), 73–95.
- Batsakis, G. (2014). Impediments on the way to entrepreneurship. Some new evidence from the EU's post-socialist world. *Journal of Small Business and Enterprise Development*, 21(3), 385–402.
- Carrasco, I. (2014). Gender gap in innovation: An institutionalist explanation. *Management Decision*, 52(2), 410–424.
- Cenfetelli, R. T., & Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *MIS Quarterly*, 33(4), 689–708.
- Cetindamar, D., Gupta, V. K., Karadeniz, E. E., & Egriçan, N. (2012). What the numbers tell: The impact of human, family and financial capital on women and men's entry into entrepreneurship in Turkey. *Entrepreneurship & Regional Development*, 24(1–2), 29–51.
- Chang, E. P., Memili, E., Chrisman, J. J., Kellermanns, F. W., & Chua, J. H. (2009). Family social capital, venture preparedness, and start-up decisions: A study of Hispanic entrepreneurs in New England. *Family Business Review*, 22(3), 279–292.
- Cooper, D. J., & Saral, K. J. (2013). Entrepreneurship and team participation: An experimental study. *European Economic Review*, 59(2), 126–140.
- Cropanzano, R., Rupp, D. E., & Byrne, Z. S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology*, 88(1), 160–169.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18(3), 301–331.
- Earley, P. C. (1987). Intercultural training for managers: A comparison of documentary and interpersonal methods. *Academy of Management Journal*, 30(4), 685–698.
- Eddleston, K., & Powell, G. N. (2012). Nurturing entrepreneurs' work-family balance: A gendered perspective. *Entrepreneurship: Theory and Practice*, 36(3), 513–541.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
- Greve, A., & Salaff, J. W. (2003). Social networks and entrepreneurship. *Entrepreneurship: Theory and Practice*, 27(1), 1–23.
- Hadidi, H., & Kirby, D. (2015). Universities and innovation in a factor-driven economy: The Egyptian case. *Industry and Higher Education*, 29(2), 151–160.
- Hisrich, R. D., Bowser, K., & Smarsh, L. S. (2006). Women entrepreneurs in the Ukraine. *International Journal of Entrepreneurship and Small Business*, 3(2), 207–221.
- Hoang, H., & Antoncic, B. (2003). Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing*, 18(2), 165–187.
- Hughes, K. D., Jennings, J. E., Brush, C., Carter, S., & Welter, F. (2012). Extending women's entrepreneurship research in new directions. *Entrepreneurship: Theory and Practice*, 36(3), 429–442.
- Jennings, J. E., & Brush, C. G. (2013). Research on women entrepreneurs: Challenges to (and from) the broader entrepreneurship literature? *The Academy of Management Annals*, 7(1), 663–715.
- Jennings, J. E., & McDougald, M. S. (2007). Work-family interface experiences and coping strategies – Implications for entrepreneurship research and practice. *Academy of Management Review*, 32(3), 747–760.
- Jones, O., & Jayawarna, D. (2010). Resourcing new businesses: Social networks, bootstrapping and firm performance. *Venture Capital*, 12(2), 127–152.
- Kobeissi, N. (2010). Gender factors and female entrepreneurship: International evidence and policy implications. *Journal of International Entrepreneurship*, 8(1), 1–35.
- Lee, S. S., & Osteryoung, J. S. (2001). A comparison of determinants for business start-up in the U.S. and Korea. *Journal of Small Business Management*, 39(2), 193–200.
- Lerner, M., & Haber, S. (2001). Performance factors of small tourism ventures: The interface of tourism, entrepreneurship and the environment. *Journal of Business Venturing*, 16, 77–100.
- Liao, J., & Welsch, H. (2005). Roles of social capital in venture creation: Key dimensions and research implications. *Journal of Small Business Management*, 43(4), 345–362.
- Locke, E. (2007). The case for inductive theory building. *Journal of Management*, 33(6), 867–890.
- Lofstrom, M., Bates, T., & Parker, S. C. (2014). Why are some people more likely to become small-business owners than others: Entrepreneurship entry and industry-specific barriers. *Journal of Business Venturing*, 29, 232–251.
- Mas-Tur, A., Pinazo, P., Tur-Porcar, A. M., & Sánchez-Masferrer, M. (2015). What to avoid to succeed as an entrepreneur? *Journal of Business Research*, 68(11), 2279–2284.
- Nissan, E., Carrasco, I., & Castaño, M. S. (2012). Women entrepreneurship, innovation, and internationalization. In M. A. Galindo, & D. Ribero (Eds.), *Women's entrepreneurship and economics: New perspectives, practices, and policies* (pp. 125–142). New York, NY: Springer.
- Pathak, S., Goltz, S., & Buche, W. M. (2013). Influences of gendered institutions on women's entry into entrepreneurship. *International Journal of Entrepreneurial Behaviour & Research*, 19(5), 478–502.
- Porter, M. E. (1990). *The competitive advantage of nations*. New York: Macmillan.
- Powell, G. N., & Eddleston, K. (2013). Linking family-to-business enrichment and support to entrepreneurial success: Do female and male entrepreneurs experience different outcomes? *Journal of Business Venturing*, 28(2), 261–280.
- Rey-Martí, A., Porcar, A. T., & Mas-Tur, A. (2015). Linking female entrepreneurs' motivation to business survival. *Journal of Business Research*, 68(4), 810–814.
- Schwab, K. (2013). The Africa competitiveness report 2013. *World Economic Forum, Geneva, Switzerland*.
- Schwab, K. (2014). The global competitiveness report 2014–2015. *World Economic Forum, Geneva, Switzerland*.
- Sullivan, D. M., & Meek, W. R. (2012). Gender and entrepreneurship: A review and process model. *Journal of Managerial Psychology*, 27(5), 428–458.
- Ufuk, H., & Özgen, O. (2001). Interaction between the business and family lives of women entrepreneurs in Turkey. *Journal of Business Ethics*, 31(2), 95–106.
- Verheul, I., Stel, A., & Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. *Entrepreneurship & Regional Development*, 18(2), 151–183.

Welsh, D. H. B., Kim, G., Memili, E., & Kaciak, E. (2014a). The influence of family moral support and personal problems on firm performance: The case of Korean women entrepreneurs. *Journal of Developmental Entrepreneurship*, 19(3), 1450018–1450035.

Welsh, D. H. B., Memili, E., Kaciak, E., & Ochi, M. (2014b). Japanese women entrepreneurs: Implications for family firms. *Journal of Small Business Management*, 52(2), 286–305.