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The Roles of Unique Product Development and Global Technological Competence in the Effect of International Entrepreneurial Orientation on Company Performance in International Markets: A Study on Born Global Companies

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Abstract

The purpose of this study is to search the mediator roles of unique product development and global technological competence in the effect of international entrepreneurial orientation on company performance in international markets for born global companies. The study was conducted on born global companies which started its international activities in its first 7 years and operate in technoparks in Turkey. Data was collected by a questionnaire from 158 born global companies. According to the method proposed by Baron and Kenny, three models were created and compared with each other. The Structural Equation Modeling (SEM) method was applied because it is more appropriate for complex models. According to the findings of the study, unique product development and global technological competence do not have mediator roles in the effect of international entrepreneurial orientation on company performance in international markets. However, there is a direct effect of international entrepreneurial orientation on company performance in international markets. Global technological competence has a direct effect on performance in international markets. On the other hand, unique product development does not have a direct effect on performance in international markets but unique product development has a direct effect on global technological competence.

Keywords: Unique Product Development, Global Technological Competence, International Entrepreneurial Orientation, Performance in International Markets.

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1. Introduction

Companies can expand in international markets in the first couple years of their operations via traditional and digital international expansion methods. They can export by sending sales people to potential customers, attending to tradeshows, meeting with potential customers in B2B meetings organized by chambers, consulates, trade associations. Nowadays, there are more born global companies due to digital market expansion potentials such as making e-commerce via company e-commerce platform or global electronic market places such as Amazon, E-bay, Alibaba, etc. Logistic opportunities, government incentives, Eximbank opportunities, digital platforms accelerate international expansion and facilitate the birth of born global companies. The purpose of this study is to search the mediator roles of global technological competence and unique product development in the effect of international entrepreneurial orientation on company performance in international markets for born global companies. This study shades light to the foreign expansion process of born global companies with 4 major variables in Turkey. The scale of Knight and Çavuşgil (2004) was translated into Turkish with the feedback of Çavuşgil. The scale could be used in the further studies by other researchers. The research findings could be used by new born global companies and academicians. Unique Product Development and Global Technological Competence variables are expected to encourage entrepreneurs to make investment to R&D and be more innovative in international markets. Thus, technological changes could be accelerated in different industries.

There isn't any other empirical study which collected data for these variables and with these scales in Turkey in the existing literature. Therefore, the findings of this study are important as it aims to contribute to the existing literature. The first 4 sections will explain four variables in this study. Then, research section will explain the methodology of the research and present its findings. The last section will wrap up the paper with conclusion and recommendations. According to researchers, companies have internal capabilities to expand to and succeed in international markets (McDougall et al., 1994; Autio et al., 2000; Zahra et al., 2000). The evolutionary economics view explains that companies can have superior abilities to make innovation and create knowledge leads to develop organizational capabilities such as embedded routines and critical competences. These resources lead to superior performance especially in turbulent and competitive environments (Nelson and Winter, 1982). Companies can make

innovations by making investment to RandD to accumulate knowledge and expand in new markets (Schumpeter, 1934; Nelson and Winter, 1982; Lewin and Massini, 2003; Massini et al., 2003). Expansion in international markets is an innovative act (Schumpeter, 1939; Simmonds and Smith, 1968; Casson, 2000) for born global companies. The resource-based view (RBV) (Penrose, 1959; Rumelt, 1984; Wernerfelt, 1984; Teece and Pisano, 1994; Grant, 1996) highlights how companies develop and leverage knowledge and organizational capabilities. Companies neeed resources to develop appropriate strategies in turbulent environments (Grant, 1996; Prahalad and Hamel, 1990). Since, knowledge is the most important resource, the integration of specialized knowledge of employees is the foundation of organizational capabilities (Solow, 1957; Nelson and Winter, 1982; Dierickx and Cool, 1989; Leonard-Barton, 1992; Conner and Prahalad, 1996; Grant, 1996). Knowledge creates advantages facilitating international market expansion (Kogut and Zander, 1993). Organizational performance and output increase organizational knowledge (Solow, 1957; Nelson and Winter, 1982). The integration of knowledge of employees converts tacit knowledge (Polanyi, 1966) into organizational activities to create customer value. The most important knowledge resources are inimitable, unique, and immobile and reflect organizational styles (Dierickx and Cool, 1989; Grant, 1991, 1996; Nonaka, 1994; Teece et al., 1997) which reflect organizational abilities to do tasks related to organizational capacities to create value of born global companies (Knight and Cavusgil, 2004, pp. 125-126) through influencing transformation of inputs into outputs (Nelson and Winter, 1982; Teece and Pisano, 1994). When employees combine their specialist knowledge, organizational capabilities emerge related to development of organizational routines and competences (Grant, 1991; Teece and Pisano, 1994). Competences are performance-enhancing, knowledge-intensive activities where the company is skilled (Teece et al., 1997). Routines are consistently practiced, regular patterns of behaviors of an organization and employees which institutionalize organizational and individual knowledge about profit creating activities (Nelson and Winter, 1982; Dosi, 1988; Teece and Pisano, 1994). Organizational activity routinization implants capabilities into organizational memory to form a distinctive configuration of organizational resources. Organizational capabilities are the source of performance advantages of companies (Grant, 1991). Capabilities have two features: (1) the shifting nature of the business environment; and (2) strategic management to adapt, integrate, and re-configure knowledgebased capabilities

toward the turbulent environment. Capabilities are 'dynamic', and reflect managerial abilities to renew organizational competences to be congruent with the turbulent environment (Teece et al., 1997). Replication of organizational capabilities transfer capabilities between organizational settings to improve organizational performance in new ways of doing business, product categories, and markets (Nelson and Winter, 1982; Teece et al., 1997) (Knight and Cavusgil, 2004, p. 127).

There are two approaches called as stages models for internationalization: One of them is Uppsala Internationalization Model (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977) and the innovation model (Cavusgil, 1980). They view internationalization by incremental stages. On the other hand, born-global approach focuses on fast internationalization of companies (Jolly, Alahuhta, and Jeannet, 1992; McKinsey and Co., 1993; Oviatt and McDougall, 1994; Knight and Cavusgil, 1996). Oviatt and McDougall (1994, p. 49) define a born global company as "a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries." Knight and Cavusgil (1996, p. 11) define a born global company as "small, technologyoriented companies that operate in international markets from the earliest days of their establishment." They view a born-global company as a small company with a leading-edge technology, less than 500 employees, and an annual turnover of US$100 million. It produces high-tech products for a niche market (Knight and Cavusgil, 1996). Born global companies are entrepreneurial, see the world as one market, do not restrict themselves to one country and consider international markets as opportunity provider (Madsen and Servais, 1997). They grow through international sales by producing highly specialized customized products for international niche markets, access to international financial markets and networks (McKinsey and Co., 1993; Knight and Cavusgil, 1996; Madsen and Servais, 1997) (Chetty and Campbell-Hunt, 2004, pp. 59-61).

McKinsey and Company (1993) coined born global companies which participate in the high-technology knowledge-intensive sectors, focus lead markets, and operate through first-mover advantage (Bell, 1995). Born global companies target countries based on their specialized industries. According to Kuivalainen et al. (2012, p. 4) born global companies recieve 25% of their sales revenues from international markets but Knight and Cavusgil (1996) do not agree

with this measure (Freeman et al. 2013, p. 160). Born global companies can operate regionally by limiting their activities to few lead markets and relying on collaborative partnership. However, they can be global start-ups or focus on different regions (Oviatt and McDougall, 1994) (Freeman et al., 2013, p. 161).

The Born Global is used as a name for newly established companies which engage in international markets by several researchers (Rennie, 1993; Knight and Cavusgil, 1996; Madsen and Servais, 1997). Knight and Cavusgil (1996) state trends which accelerate the birth of born global companies: Increasing importance of niche markets, global alliances and networks, development of process technology and advvanced communication technology, and faster technology diffusion (Moen, 2000, pp. 156-157). Born global companies offer value-added innovative, unique and differentiated products from technology, design and science advances. Born global companies have change agent entrepreneurs and employees who accelerate exports and internationalization, have entrepreneurial orientation and mental models to decrease an internationalization risk. Born global companies have larger innovation capacity and innovative customer service ability (Leonidou and Samiee, 2012; Eurofound, 2012) (Cavusgil and Knight, 2015, p. 10).

1.1. International Entrepreneurial Orientation

Born global companies have a high degree of international entrepreneurial orientation. Their emergence and growth are supported by distinctive entrepreneurial prowess championed by entrepreneurs or managers. Born global companies are endowed with distinctive intangible resources and capabilities although they are small and have limited tangible resources. They allocate their resources under asset parsimony and prefer exporting as an international market entry mode. Early and fast internationalization is a novel form of international expansion. Born global companies have strong international orientation and view the world as their marketplace (Cavusgil and Knight, 2015, p. 4).

Companies which have international entrepreneurial orientation can expand into international markets due to their unique entrepreneurial competences and perspectives (McDougall et al., 1994; Autio et al., 2000). International entrepreneurial orientation which is related to vision, innovativeness and competitive position shows overall innovativeness and proactiveness of

companies for expanding in international markets (Miller and Friesen, 1984; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Dess et al., 1997). Thus, companies can be proactive to decrease uncertainity and risks which they will face in turbulent markets and get the advantage of opportunities. Entrepreneurial orientation improves practices, processes, and decisionmaking to enter into new markets successfully. International entrepreneurial orientation develops and enacts key organizational routines of born global companies (Knight and Cavusgil, 2004, p. 129).

International entrepreneurial orientation is associated with managerial vision, innovativeness, and pro-active competitive position in international markets (Khandwalla, 1977; Miller and Friesen, 1984; Covin and Slevin, 1989; Lumpkin and Dess, 1996). This position is important to strategic innovation (Lumpkin and Dess, 1996; Matsuno, Mentzer and Özsomer, 2002). Entrepreneurial orientation triggers "processes, practices, and decision-making activities" to enter into new markets successfuly (Lumpkin and Dess, 1996). Born globals companies are younger and smaller companies which are lack of substantial resources of MNEs but they implement strategies with a vision to improve international performance (Knight and Cavusgil, 2005, p. 19).

International entrepreneurial orientation is the behavioral elements of a global orientation and captures managerial propensity for innovativeness, risk taking, and proactiveness. International orientation has several psychological and demographic characteristics; managers with an international orientation are well educated, internationally experienced, less risk averse and resistant to change. They have high tolerance for psychic distance, a positive attitude toward internationalization and speak foreign languages (Nummela, Saarenketo, and Puumalainen, 2004) (Freeman and Cavusgil, 2007, p. 3). International entrepreneurial orientation facilitates a proactive approach to deal with risky environments (Knight and Cavusgil, 2005, p. 32). International entrepreneurial orientation reveals an innovation focused managerial mindset of born global companies to implement strategies to maximize international performance. International entrepreneurial orientation is important for born global companies to develop technologically advanced, distinctive, high quality products to succeed internationally (Knight and Cavusgil, 2004, p. 136).

1.2. Unique Product Development

Born global companies have unique products and target market segments which MNCs can't serve due to emerging nature of these segments and not having flexibility to gain market share quickly within these segments (McDougall and Oviatt, 2000; Autio et al., 2000). Born global companies are smaller companies which offer innovative products due to their flexibility to serve emerging market segments (Knight and Cavusgil, 2004) (Kim et al., 2011, p. 879).

Born global companies can develop unique products by the help of their innovative and knowledge-intensive capabilities. Creating distinctive products and implementing a differentiation strategy requires customer loyalty by meeting certain needs uniquely. Marketing scholars recognized the value in providing unique offerings to differentiate the company from its competitors (Smith, 1956; Cavusgil et al., 1993). Born global companies which have specialized resources and valuable unique products can enter niche foreign markets easier. This approach is related to factors such as patented know-how, innovative product features, excellent customer service which distinguish companies from their rivals (Miles and Snow, 1978; Porter, 1980; Miller and Friesen, 1984). Knowledge developed within innovative processes provides capabilities for developing new technologies and is the key resource used by born global companies to overcome advantages of local companies and develop unique products (Oviatt and McDougall, 1994). If the knowledge to develop a unique product is imperfectly imitable or tacit (Barney, 1991; Grant, 1996; Autio et al., 2000), a company can keep it proprietary. The knowledge intensity of young, entrepreneurial companies is positively related to their international sales growth (Autio et al., 2000; Zahra et al., 2000). Companies with technological competence and knowledge can develop unique products easier. Born global companies which have knowledge fostering to develop unique products can serve specific markets, increase their market shares and sales. When companies offer unique products to satisfy special needs of customers, they can decrease the competition and increase their performances in international markets. Internationally entrepreneurial companies proactively try to be successful in international markets whereas young and small born global companies minimize direct competition with more established or larger competitors. Born global companies develop differentiated products and sell them in niche international markets to succeed. Thus, they can maximize their market shares and other performances in international markets dominated by resource-endowed, larger companies. Unique product development creates benefits of

differentiation strategy (Smith, 1956; Porter, 1980) which allow born global companies to serve niche markets more effectively, defeat competitors, and increase their sales and profits (Rosson and Ford, 1982; Bowersox and Cooper, 1992) (Knight and Cavusgil, 2004, pp. 131-132). Differentiation strategy brings uniqueness through developing new products and using marketing communication to create awareness (Menguc, Auh, and Shih, 2007) (Martin et al., 2016, p. 3).

1.3. Global Technological Competence

Innovation is decisive when markets are more globally integrated and new competition and technology types emerge. Managers should adapt to and exploit environmental changes while they are searching opportunities to create change through strategic innovation. Companies can expand into international markets with lower costs due to globalization and contemporary technology advances. The rise of born global companies is a trend in the World (Martin et al., 2016, p. 1). Global technological competence is the technological ability of a company It improves effectiveness and efficiency in production processes, and existing products, and to create superior products. Advances in production technologies facilitate low-cost, small scale production enabling smaller-scale companies to serve special needs of market niches efficiently in the World. Global technological leaders leverage ICT to interact with stakeholders more efficiently and have benefits (Clark, 1987; Zahra et al., 2000). According to researchers, innovative entrepreneurial companies focus on developing new technologies (Schumpeter, 1934; Nelson and Winter, 1982). Small companies leverage their resources and transform their markets through innovation (Steensma et al., 2000, p. 951). Innovativeness increases new ideas and creative processes for departing from current technologies (Lumpkin and Dess, 1996). Entrepreneurial companies create products and operating methods to improve their organizational performances (Mintzberg, 1973; Miller and Friesen, 1984; Lumpkin and Dess, 1996; Zahra et al., 2000). Innovation is an essential entrepreneurial process for organizational performance in competitive international markets (Miller and Friesen, 1984; Kotabe, 1990; Zahra et al., 2000; Steensma et al., 2000) (Knight and Cavusgil, 2004, p. 130).

Global technological competence of born global companies is an essential source of new business methods and products to improve e-commerce and information technology proficiency to affect international performance (Kotabe, 1990; Zahra et al., 2000) (Rosson and Ford, 1982;

Bowersox and Cooper, 1992) (Knight and Cavusgil, 2004, p. 132). Companies which do innovation strongly internationalize earlier than other companies. Innovation facilitates knowledge acquisition leading to capabilities increasing international performance. Companies which internationalize earlier have deeper innovation capacity (Knight, 2015) (Martin et al., 2016, p. 4). Technological capabilities of born global companies are positively related to organizational innovativeness (Kim et al., 2011, p. 882).

1.4. Company Performance in International Markets

Performance is a unidimensional measure related to the economic value of companies captured from commercialization of their capabilities in international business (Hult et al., 2008). Companies gain positional advantages to reach superior performance (Day and Wensley, 1988; Hunt and Morgan, 1995) (Martin et al., 2016, p. 2). Born global companies can overcome their asset-constrained conditions to improve their performances (Martin et al., 2016, s. 1). They leverage innovation to enhance performance (Oviatt and McDougall, 1995; Dimitratos, Johnson, Slow, and Young, 2003) (Martin et al., 2016, p. 2). Born global companies have international entrepreneurial orientation and technological orientation which lead them to their superior international performance (Knight and Cavusgil, 2005, p. 32). The global reach of emerging-market global challengers and other competitors pressure young companies to reach superior performances faster (Cavusgil and Knight, 2015, p. 12). The knowledge acquisition process increases organizational capabilities (Dierickx and Cool, 1989; Teece, Pisano, and Shuen, 1997) causing superior organizational performance (Grant, 1996) (Cavusgil and Knight, 2015, p. 7). Superior performance is an outcome of managerial and entrepreneurial knowledge (Penrose, 1959; Autio et al., 2000). Knowledge about international operations and markets is a determinant of superior international performance of companies (Autio et al., 2000). Lewin and Massini (2003) state that companies with superior innovation and knowledge-creation processes have highly developed, more elaborated and sophisticated knowledge-creation processes (Knight and Cavusgil, 2004, p. 127). Calantone et al. (2002) revealed that innovativeness is positively related to organizational performance.

Making innovation ability help companies to meet customer needs to improve performance (Soni et al., 1993; Matsuo, 2006; Avlonitis and Salavou, 2007). Innovativeness of born global companies has a positive effect on their financial performances (Kim et al., 2011, p. 882).

Superior international performance of born global companies are gained by entrepreneurial orientation, technological leadership and differentiation and focus strategies (Knight and Cavusgil, 2005, p. 15). International performance and survival of born global companies are considered as strategic variables. International entrepreneurial orientation is important to born global companies. Since they have limited resources, they can not make mistakes in their international expansion process. Global technological competence and unique products development are significant drivers of international superior performance. Technological excellence helps born global companies to succeed in niche markets in the World. Rennie (1993) found out that born global companies grow by leveraging proprietary technologies (Knight and Cavusgil, 2004, p. 136). Global technological competence and unique products development show that RandD, innovation, knowledge management play crucial roles for positioning born global companies to succeed in international markets. Born global companies can gain monopolistic advantage (Hymer, 1976) by producing unique products to support their further international success (Knight and Cavusgil, 2004, p. 137).

2. Research

2.1. The Purpose of This Study

The purpose of this study is to search the mediator roles of unique product development and global technological competence in the effect of international entrepreneurial orientation on company performance in international markets for born global companies.

2.2. The Importance of This Study

This study shades light to the foreign expansion process of born global companies with 4 major variables in Turkey. The scale of Knight and Çavuşgil (2004) was translated into Turkish with the feedback of Çavuşgil. The scale could be used in the further studies by other researchers. The research findings could be used by new born global companies and academicians. Unique Product Development and Global Technological Competence variables are expected to encourage entrepreneurs to make investment to RandD and be more innovative in international markets. Thus, technological changes could be accelerated in different industries.

2.3.The Research Model

In light of existing literature the theoretical model is as follows in Figure 1.

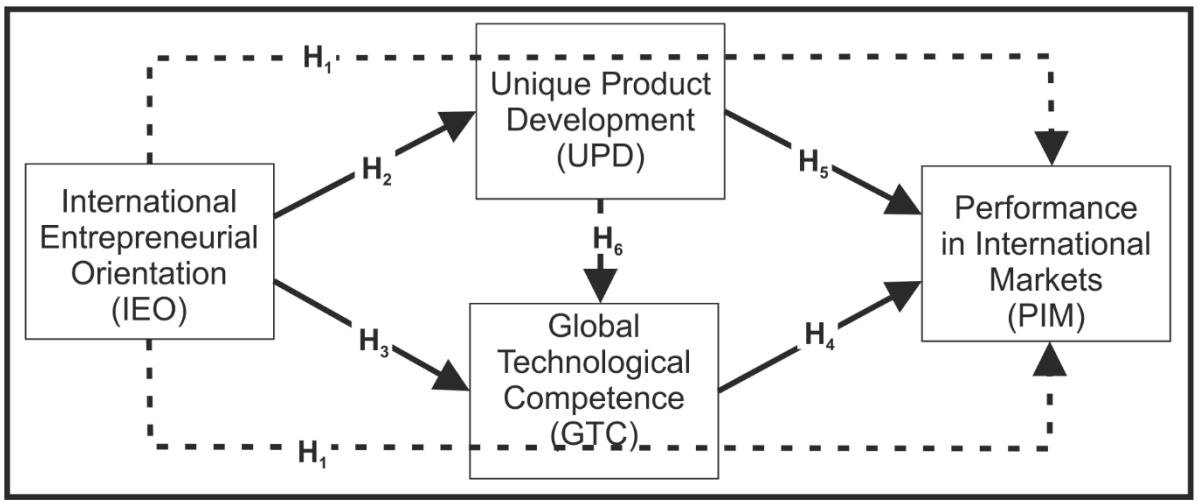


Figure 1. Theoretical Model

2.4.Hypotheses of This Study

H1: Unique Product Development and Global Technological Competence have mediator roles in the effect of International Entrepreneurial Orientation on Performance in International Markets

H2: International Entrepreneurial Orientation has a direct effect on Unique Product Development

H3: International Entrepreneurial Orientation has a direct effect on Global Technological Competence

H4: Global Technological Competence has a direct effect on Performance in International Markets

H5: Unique Product Development has a direct effect on Performance in International Markets

H6: Unique Product Development has a direct effect on Global Technological Competence

2.5.Sampling and Data Collection Method

The study was conducted on born global companies which started its international activities in its first 7 years and operate in 72 technoparks in Turkey namely Teknopark İstanbul, İstanbul Technical University Arıkent, Yıldız Technical University Technopark, Boğaziçi University Technopark etc. Data was collected by a questionnaire. The questionnaires were given and e-mailed to the respondents who are middle level managers, top level managers, owners or partners of these born global companies. 1000 questionnaires were given and e-mailed and 158 valid questionnaires were collected back.

2.6.Scales of This Study

The scales of this study was developed by Knight and Çavuşgil (2004). There were seven variables in their study, four of them was used considering the purpose of this paper namely International Entrepreneurial Orientation, Unique Products Development, Global Technological Competence, and Performance in International Markets.

2.7.Research Method

Quantitative data has been provided by a questionnaire designed in a five-point Likert scale. Structural Equation Modeling method was applied due to the fact that it is a useful method to analyze highly complex multiple variable models and indicate direct and indirect relationships among variables. Initially, confirmatory factor analyses were applied to verify the convergent validity. Composite reliability and AVE values are obtained to verify reliability and discriminant validity of each construct. The hypotheses were tested by using Structural Equation Modeling method in AMOS statistics program. Structural Equation Modeling which is a multi variable statistical technique has been used to test the hypotheses of the theoretical model (Meydan and Şeşen, 2011). This technique is used in order to decrease measurement errors (Byrne, 2010). The main purpose of this method to reveal the indirect and direct effects in a structural model (Civelek, 2018). The analyses have been conducted in SPSS and AMOS statistics programs.

2.8.Limitations of This Study

Most of the questionnaires were sent and collected back by e-mail due to Covid-19. The study is limited with respondent companies. The data can be collected by personal visits from all

Technoparks in the following studies. In-depth interviews can be conducted to support the findings of questionnaires.

2.9. Frequency Distributions of The Data

Table 1. Sectoral Distribution of Companies

Sectors	**Number of Companies**
Agriculture	3
Logistics	3
Game	5
Finance	3
Environment-Energy	5
Information Technologies	65
Advanced Material Technologies	8
E-Commerce	5
Engineering-Architecture	7
Chemical	4
Industrial Automation	24
Health	14
Food	3
Automotive	3
Defense Industry	6
Total	158

Table 2. Foundation Year of Companies

Foundation Year	**Number of Companies**

Before 2000	3
Between 2000 and 2009	32
Between 2010 and 2019	115
2020 and onwards	8
Total	158

Table 3. Internationalization Period from Establishment of Companies

Internationalization Period from Establishment	**Number of Companies**
Within the first year of establishment	66
From 2 year to 4 years	71
From 5 years to 7 years	21
Total	158

Table 4. Operating Period of Companies in International Markets

Operating Period in International Markets	**Number of Companies**
Up to 1 year	24
Between 1 and 9 years	104
10 years and more	30
Total	158

Table 5. Type of Activity in International Markets

Type of Activity in International Markets	**Number of Companies**
Export Only	106

Co-investment Only	5
Direct Investment Only	1
Merger Only	1
Export and Co-investment	28
Export and Direct Investment	2
Export and Merger	1
Co-investment and Acquisition	1
Direct Investment and Co-investment	1
Export, Co-investment and Direct Investment	5
Others	7
Total	158

Table 6. Specific Information about Companies

Number of companies older than 7 years old	**70**
Profit percentage of companies from international markets	*Number of Companies*
25%-50%	46
51%-100%	24
Number of companies younger than 7 years old	**88**
Profit percentage of companies from international markets	*Number of Companies*
25%-50%	44
50%-100%	44
Number of companies which planned to operate in international markets at the time of their establishments.	140

Number of companies which did not plan to operate in international markets at the time of their establishments.	18

Number of expanded countries of companies which were established at least 7 years ago	*Number of Companies*
1-10 countries	59
11-50 countries	7
More than 50 countries	4
Number of expanded countries of companies which were established less than 7 years ago	*Number of Companies*
1-10 countries	74
11-50 countries	12
More than 50 countries	2

Company Ranking in International Markets	*Number of Companies*
Market leader	3
2nd or 3rd company	40
Others	115

Percentage of sales growth in the 8th year compared to the previous year (For companies older than 7 years old)	*Number of Companies*
0%-10%	31
11%-50%	22
More than 50%	16
Downsize	1

Percentage of sales growth compared to previous year (For companies younger than 7 years old)	*Number of Companies*
0%-10%	25

11%-50%	31
More than 50%	30
Downsizing	2

Number of employees now	*Number of Companies*
1 to 9	47
10 to 49	79
50 to 249	29
250 and more	3

Number of employees in the 7th year (For companies which were establihed at least 7 years ago)	*Number of Companies*
1 to 9	17
10 to 49	43
50 to 249	10

Availability of separate departments for activities in international markets (eg. export department)	*Number of Companies*
Yes	56
No	102

Position of the person participating to this research	*Number of Person*
Junior Administrative Officer	1
Mid-level Manager	14
Senior Manager	63
Owner/Partner	77
Others	3

2.9.Construct Validity and Reliability

First, exploratory factor analysis (EFA) was applied to purify the data and make the data ready for confirmatory factor analysis (CFA) (Anderson & Gerbing, 1988). 24 items remained after principle component analysis. Then convergent validity was determined by applying CFA. Fit indices values of the CFA was found satisfactory (i.e. $\chi 2/DF = 1.663$, CFI=0.935, IFI=0.936, RMSEA= 0.065) (Civelek, 2018). Table 7 shows the factor loads in CFA Results. As shown in Table 8, average variance extracted values were close to or above than the recommended limit point of 0.5 (Byrne, 2010). The results showed that validity of the constructs were convergent. The square roots of average values of each variable were obtained to find out the discriminant validity. The square root of AVE values is indicated by the diagonals in Table 8. All square roots of AVE values are greater than correlation values. This indicates determination of the discriminant validity (Civelek, 2018). Reliabilities of structures were found out independently. Cronbach α and composite reliability values are close to or above the recommended limit point of 0.7 (Fornell & Larcker, 1981).

Table 7. Confirmatory Factor Analysis Results

Variables	Items	Standardized Factor Loads	Unstandardized Factor Loads
International Entrepreneurial Orientation (IEO)	IEO0101	0.606	1
	IEO0909	0.641	1.261
	IEO1111	0.659	1.138
	IEO0202	0.692	1.333
	IEO0404	0.641	1.222
	IEO1212	0.770	1.118
	IEO0303	0.797	1.367
Unique Product Development (UPD)	UPD0119	0.738	1
	UPD0220	0.759	0.963
	UPD0321	0.852	1.177
	UPD0523	0.864	1.199
	UPD0422	0.831	1.089
Global Technological Competence	GTC0214	0.487	1
	GTC0315	0.487	0.734

(GTC)	GTC0416	0.814	1.439
	GTC0618	0.656	0.964
	GTC0517	0.893	1.281
Performance in International Markets (PIM)	PIM0531	0.600	1
	PIM0430	0.681	0.993
	PIM0329	0.814	1.306
	PIM0127	0.910	1.340
	PIM0228	0.928	1.475

p<0.01 for all items

Descriptive statistics, Cronbach α, composite reliabilities, average variance extracted values and Pearson correlations among dimensions are indicated in Table 8. Before testing roles of mediator variables, correlations among variables is checked. The prerequisite for this analysis is having significant relationships among all variables (Baron & Kenny, 1986). Table 8 shows that there is a significant relationship among all variables in the conceptual model.

Table 8. Construct Descriptives, Reliability and Correlation

Variables	1	2	3	4
1. International Entrepreneurial Orientation	(0.690)			
2. Unique Product Development	0.506*	(0.810)		
3 Global Technological Competence	0.402*	0.675*	(0.687)	
4. Performance in International Markets	0.398*	0.373*	0.544*	(0.797)
Composite reliability	0.863	0.905	0.809	0.895
Average variance ext.	0.476	0.657	0.473	0.635
Cronbach α	0.860	0.905	0.802	0.898

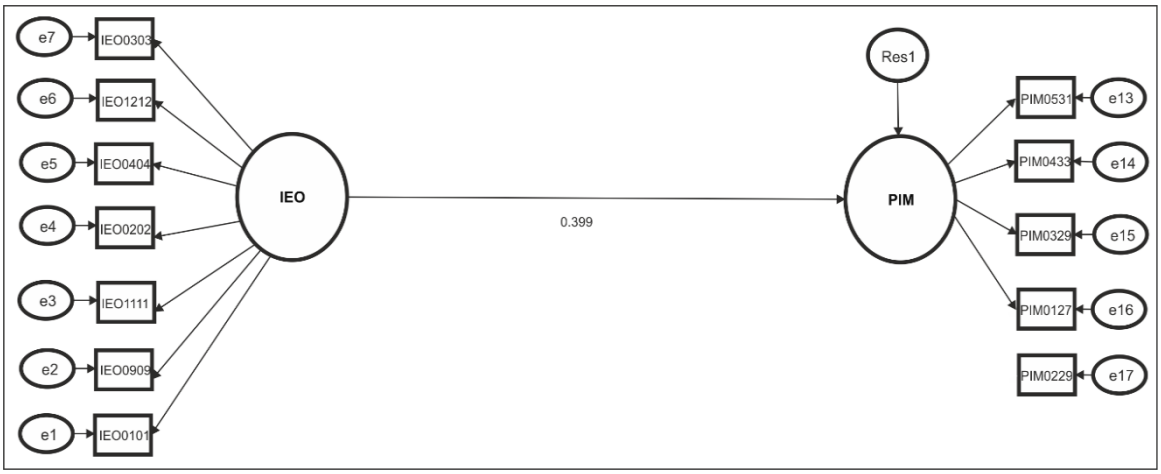
*p < 0.05

Note: Values in diagonals are the square root of AVEs

2.10. Test of the Hypotheses

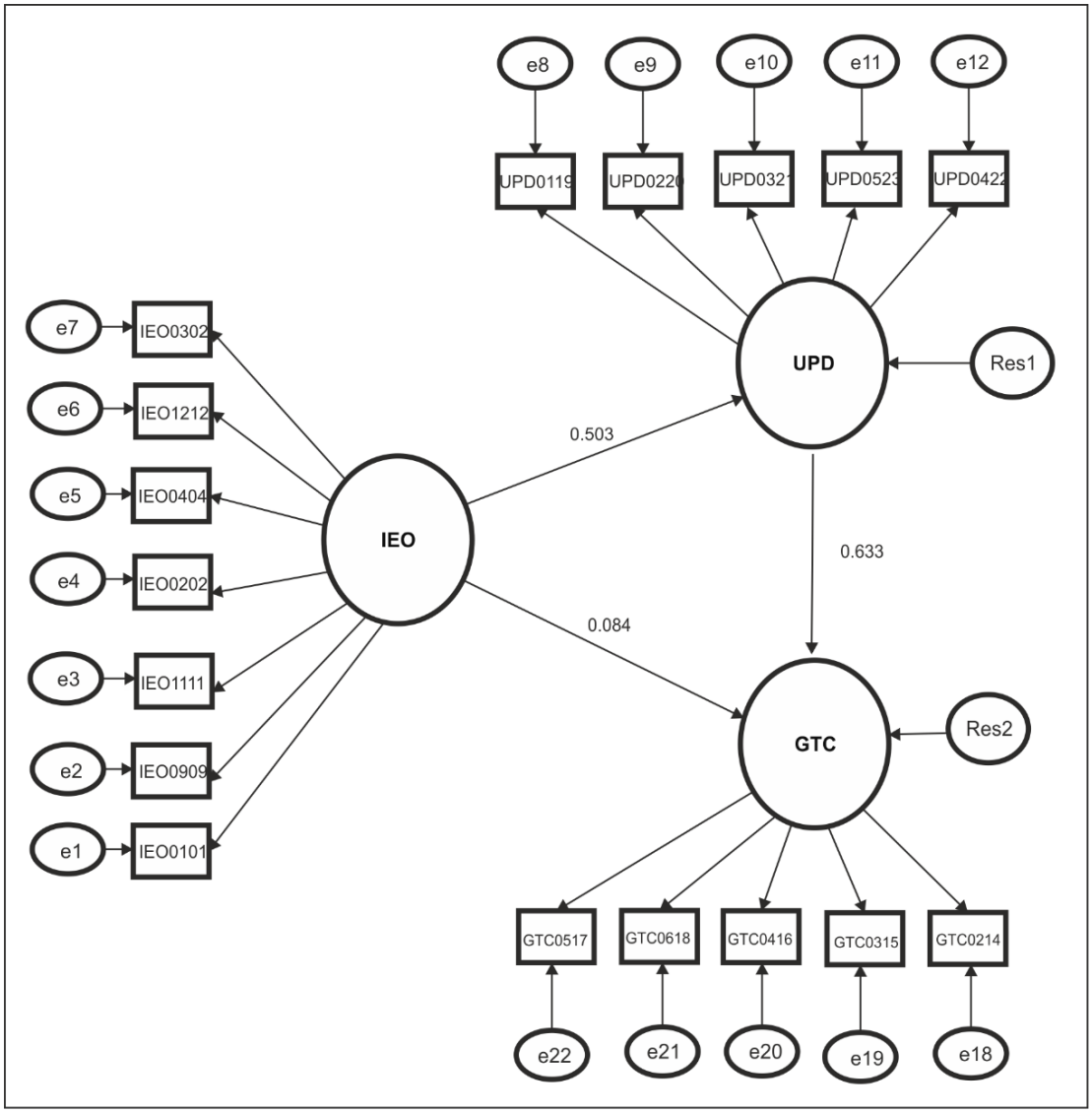
In the Structural Equation Modeling method, three different models are developed simultaneously to reveal roles of mediating variables in the the effect of the independent variable on the dependent variable. They are developed to decompose expected effects among independent, dependent, and mediator variables. In the first model, the direct effect between the independent and dependent variables is measured. In the second model, effects between the independent variable and mediator variables are measured. In the third model, effects among all variables are measured simultaneously. In all models, good fit values are taken into account. The standardized values of the available path analysis coefficients in three different models derived from the conceptual model are compared with each other. While making the comparison, it is checked whether the significant relationship between the independent variable and the dependent variable turns into insignificant when mediator variables are included in the model (Civelek, 2018). According to this method, the analyses were carried out as follows:

Three models used to test mediator roles can be seen in Figure 2, Figure 3 and Figure 4 respectively. Figure 2 shows the path analysis results of Model 1. In Model 1, the direct relationship between the independent variable and the dependent variable was tested. The relationship is significant and positive. The fit indices of the model are within the limits accepted in the literature. Values of fit indices of the model were found as $\chi 2/DF = 2.171$, CFI = 0.943, IFI = 0.944, RMSEA = 0.087 respectively.



Note: $\chi 2/DF = 2.171$, CFI = 0.943, IFI = 0.944, RMSEA= 0.087

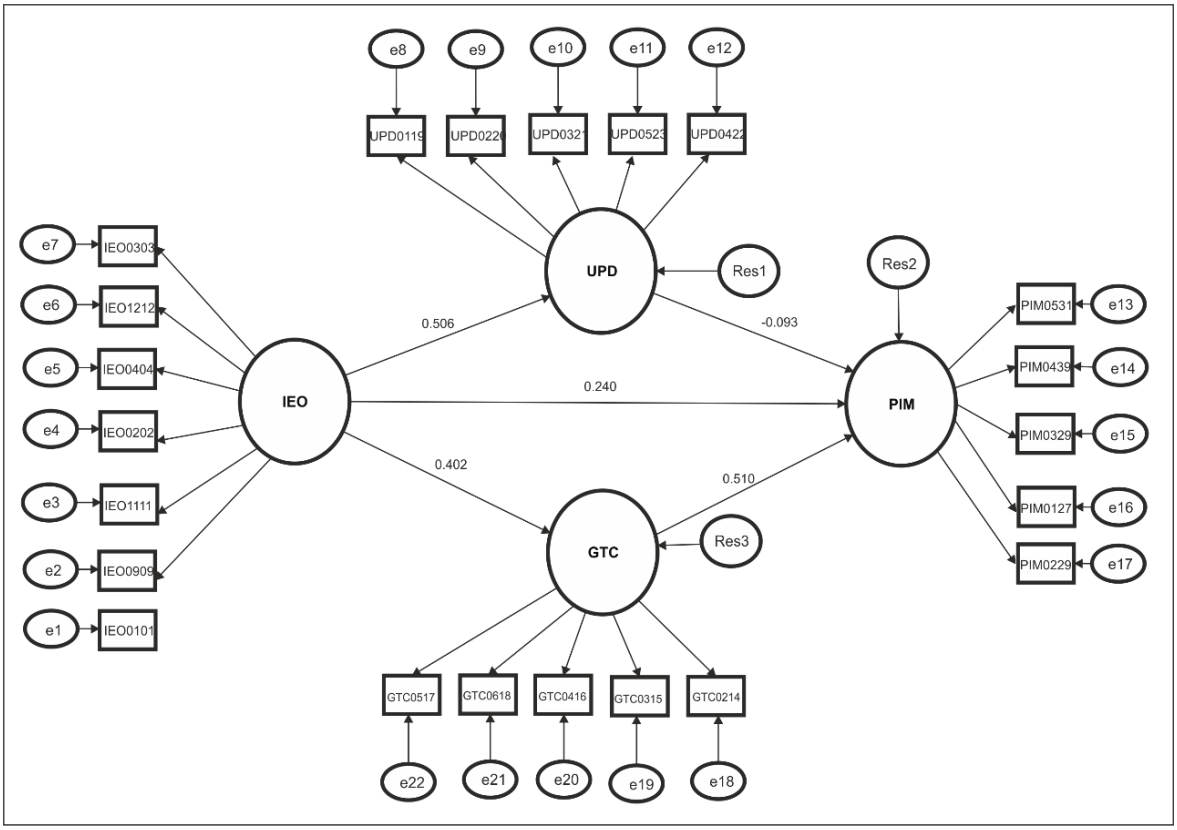
Figure 2. Results of the Model 1



Note: $\chi 2/DF = 1.749$, CFI = 0.939, IFI = 0.940, RMSEA= 0.070

Figure 3. Results of the Model 2

Figure 3 shows the path analysis results of Model 2. In Model 2, direct relationships between independent variable and mediator variables were tested. The relationship between International Entrepreneurial Orientation and Global Technological Competence is not significant. Other relations are found significant. The fit indices of the model are within the limits accepted in the literature. Values of fit indices were found as $\chi 2/DF = 1.749$, CFI = 0.939, IFI = 0.940, RMSEA = 0.070 respectively.



Note: $\chi 2/DF = 1.663$, CFI = 0.935, IFI = 0.936, RMSEA= 0.065

Figure 4. Results of the Model 3

Figure 4 shows the path analysis results of Model 3. The conceptual model was tested in Model 3. The fit indices are within limits recommended in the literature. Values of fit indices were found as $\chi 2/DF = 1.663$, CFI = 0.935, IFI = 0.936, RMSEA = 0.065 respectively. Test results of hypotheses in the conceptual model in three models are summarized in Table 9.

Table 9. Hypotheses Test Results

Relationships	**Model 1**	**Model 2**	**Model 3**
IEO → PIM (H_1)	0.399*		0.240*

IEO → UPD (H_2)		0.503*	0.506*
IEO → GTC (H_3)		0.084	0.402*
GTC → PIM (H_4)			0.510*
UPD → PIM (H_5)			-0.093
UPD → GTC (H_6)		0.633*	
Model Fit Indices	$\chi 2/df$=2.171, CFI=0.943, IFI=0.944, RMSEA=0.087	$\chi 2/df$=1.749, CFI=0.939, IFI=0.940, RMSEA=0.070	$\chi 2/df$=1.663, CFI=0.935, IFI=0.936, RMSEA=0.065

Note: Path analysis coefficients are standardized.

*p<0.01

H1 hypothesis is not supported because the relationship did not become insignificant after involving mediators. As a result of the analyses, there was not any finding that Unique Product Development and Global Technological Competence play mediator roles in the effect of International Entrepreneurial Orientation on Performance in International Markets. Therefore, H1 hypothesis is not supported. According to the results of Model 1 and Model 3, the direct effect of International Entrepreneurial Orientation on Company Performance in International Markets continues. H2 hypothesis is supported. This means International Entrepreneurial Orientation has a direct effect on Unique Product Development. H3 hypothesis is not supported in Model 2 but supported in Model 3. This indicates that Unique Product Development can play a mediator role in the effect of International Entrepreneurial Orientation on Global Technological Competence. This effect should be investigated in a future research. H4 hypothesis is supported. This indicates that Global Technological Competence has a direct effect on Performance in International Markets. H5 hypothesis is not supported. This indicates that Unique Product Development does not a direct effect on Performance in International Markets. H6 hypothesis is supported. This indicates that Unique Product Development has a direct effect on Global Technological Competence.

3. Discussion and Conclusion

Born global companies gain international experience and knowledge faster than traditional MNEs. Thus, they create an important challenge to traditional views on internationalization. The volume of global business activity has increased drastically since the millenium and is related to the emergence of infrastructures and mechanisms facilitating the internationalization of born global companies. This trend is accelerated by developing technologies allowing companies to internationalize and do global business more efficiently. Digitilization is driving a borderless global economy. Internet and information technology are liberating factors altering the international trade's landscape (Knight and Cavusgil, 2004, p. 137).

One of the remarkable result of this study is that unique product development and global technological competence did not play mediator roles in the effect of international entrepreneurial orientation on company performance in international markets. Some studies in the existing literature have concluded that network relationships affect unique product development ability of born global companies in international markets (e.g. Coviello and Munro, 1995, 1997). In our study, network relationships of the companies were not taken into account. Therefore, respondent companies can have different levels of networking relationships which can lead them to have different levels of product development capabilities. Therefore, network relationship of companies could be investigated in future research.

According to Knight and Cavusgil (2004) unique products development and global technological competence have mediator roles in the effect of international entrepreneurial orientation on company performance in international markets of born globals. Innovation orientations of born globals facilitate their activities in international markets (Shane, 2003; Meliá et al., 2010). The ability to innovate supports discovery of new markets and improvement of the company's operations. High level of innovation orientation leads to high unique product development capabilities. Therefore, companies can not be sufficiently innovative in technoparks in Turkey. Also, research and development infrastructure can not be developed enough to innovate in Technoparks in Turkey. The mediator role of unique product development in the effect of international entrepreneurial orientation and global technological competence could be searched in future researh as well. If this mediator role is found, it will be one of the major contribution of this research as well.

There isn't any other empirical study which collected data for these variables and with these scales in Turkey in the existing literature. Therefore, the findings of this study are important as it aims to contribute to the existing literature. The research findings could be used by new born global companies and academicians. They will encourage entrepreneurs to establish born global companies, expand in international markets, make investment to R&D and become more innovative. Academicians can conduct future researches to explore the current positions, international expansion and innovation potentials of born global companies both in Turkey and in the World.

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