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**COMPETITIVE AGGRESSIVENESS AND BUSINESS
PERFORMANCE: EXAMINING THE MODERATING ROLE OF
AGE OF FIRM**

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Abstract

Competitiveness is the foremost component of entrepreneurial orientation. This paper attempts to develop a model explaining the relationship of competitiveness with the performance of the firm by considering age as a moderator. Data has been collected from 500 micro firms through the survey method. Researchers adopted a cross-sectional design. To check the moderating role of the age of the firm on the relationship between competitiveness and the firm's performance, researchers applied the technique given by Andrew F. Hayes. Interaction and conditional effects of competitiveness on the perspective of business performance find that moderator plays a very important role in defining the relationship between competitiveness and business performance.

Keywords

Competition, Competitiveness, performance, entrepreneur, association, age of firm, moderator



INTRODUCTION

The competitiveness dimension defines the way how a firm responds to its threats (Lumpkin *et al.*, 2001) and gives challenges to its competitors (Frese *et al.*, 2002). These are possible either by introducing a new product or by changing its strategies (Covin *et al.*, 1990). Negative interaction between the firms is defined as competition (Krauss *et al.*, 2005). Entrepreneurs need to keep an eye on their rivals to beat their strategy and maintain the same position in the market (Dess *et al.*, 2005). The performance of a firm depends upon its competitive ability. The single indicator may not judge the operations of any business concern. The efficiency and effectiveness of managerial operations can be measured by the different performance indicators of any enterprise ((Wiklund *et al.*, 2003, Ghalayini *et al.*, 1997). The ability of an enterprise to satisfy numerous parties such as creditors, customers, the public and media define the performance of an enterprise (Ford *et al.*, 1982, Dess *et al.*, 1984). The accomplishment of targets of an enterprise, initiative for the future, concern for developing new ideas, and plan to improve the efficiency of an enterprise indicates good performance (Neely *et al.*, 1997, Purbey *et al.*, 2007, Lynch *et al.*, 1991, Bititci *et al.*, 2000) and vice-versa.

Measuring the relationship between competitiveness and business performance inspires an entrepreneur to work more for neutralizing the effects of competitors' strategies. Although some studies explain the relationship between competitiveness and business performance but this study attempts to develop a model explaining the relationship of competitiveness with the performance of the firm by considering age as a moderator. The paper has been prepared in different segments. The series includes a literature review, and objectives, followed by a hypothesis, methodology and moderation analysis. In the end, the results of the study have been discussed. The Paper has been closed after the conclusion and limitations.

The scope of the study is limited to micro-enterprises established in all the districts of Haryana state only. The

enterprises registered with the Government of India, Development Commissioner (Micro, small and medium enterprises), and Ministry of MSME have been considered. The promoters or owners of that enterprise are the respondents for the study.

REVIEW OF LITERATURE

Competitive aggressiveness is the foremost component of entrepreneurial orientation. The 'Competitiveness' dimension of strategic orientation explains the battling disposition of a firm with its rivals (Lumpkin and Dess, 2001). The challenge to the industrial competitors shows the competitive aggressiveness of an entrepreneurial firm (Krauss *et al.*, 2005; Certo *et al.*, 2009). Taking initiatives in the market, and dominating the competitors with innovative actions confirms a firm's insolence for competition (Covin and Covin, 1990; Miller, 1983). Aspiration to become a market leader also explains the quality of competitiveness among micro-entrepreneurs.

The quality of competitive aggressiveness is that an enterprise tries to eliminate its competitors from the market while maintaining its current position in the market (Lumpkin and Dess, 2005). Different typologies affect the competitive aggressiveness of an enterprise. Degrading the products of its competitors in the eyes of customers defines *Debase* attack. The second attack is *Defect* by which an entrepreneurial firm tries to capture its competitor's resources which may include suppliers, customers or human resources. These typologies help an entrepreneurial firm to capture the market of its rivals. One more typology is *Deny* attack which forces an enterprise to maintain its place in the market. The entrepreneurial strategy of retaining the basic material itself and not allowing the competitors to use or retain defines *Deny* attack typology (Chen and Hambrick, 1995).

The basic attribute of a competitive aggressive firm is that it gathers all the data of its rivals like their strategies, strengths, weaknesses and their employee's disposition. Competitive aggressive enterprise also pays due attention

to its rival's manufacturing and distribution strategy and its resources. On these grounds, a competitive aggressive enterprise takes actions that make it superior to its competitors (Stone and Brush, 1996). The competitive steps taken by internally satisfied enterprises include giving higher discounts, reducing the prices of products, spending huge amounts on branding and marketing and forfeiting the profits of the concern (Venkatraman, 1989). Cutting down the prices of the products shows favorable effects on those enterprises only who enjoy economies of scale. It embraces scanning of competitors' strategies, and environmental factors, measuring its own strength and weaknesses and the knowledge of war games (Kopalle *et al.*, 1999; Edmans *et al.*, 2012). The enterprises who are not ready to indulge in war gaming, discriminate their products from their opponents and mark a limited market by producing low-cost products (Porter, 1985).

The approach of a competitive aggressive firm not only lies with guarding its existing allocation in the market but it extends to seeing forward and saving future shares (Reed, 2000). The eye of a competitive aggressive firm captures every action of the competitor like strategy, sales, employees, customers, suppliers, strengths and weaknesses. On that basis, it guides its entrepreneurs about the acquisition of resources, necessary steps to be taken and choosing future plans (Dutton and Duncan, 1987; Zahra *et al.*, 2002; Bell and McNamara, 1991).

In the words of Kaplan & Norton "Effective measurement must be an integral part of the management process." Planning and controlling both are important and major steps for taking any decision. Planning would be fruitful only when the results and performance have been defined and calculated appropriately. There are different indicators to judge the performance of an enterprise. Literature validates this statement. Authors mainly emphasize on financial indicators in the initial years but later on, Kaplan & Norton felt the need for non-financial indicators of measuring the performance and then a balanced scorecard approach came forth (Foraker *et al.*, 1996; Zahra and Garvis, 2000; Johnson and Kalpan, 1987).

A balanced scorecard entails financial and non-financial indicators for measuring performance. Therefore, it is considered a complete package for measuring the business performance of any enterprise. The indicators explained by Kaplan & Norton are categorized into four different sections. The first indicator taken is based on the financial perspective. This indicator explains the image of an enterprise in the minds of shareholders and creditors who do investment in the firm. This indicator is responsible for measuring and comparing the profitability of an enterprise and also puts a check on working capital, return on investment and earnings per share. The second indicator explains the performance concerning customers. How our firm appears to our customers? In this, performance is judged by taking their feedback and suggestions. The third indicator explained by Kaplan & Norton is the internal business process which is concerned with customers as well as creditors and shareholders. Innovation and quality of the product come in this attribute. The last one is learning and growth. Every business needs trained employees. Performance in this attribute includes all the grounds related to employees of the enterprise. Labour absenteeism rate, rate of productivity and level of their satisfaction comes under learning and growth.

A firm's future policies and strategies are based on the level of competition and competitor's strategies (Zahra *et al.*, 2002). The firm can take decisions wisely by monitoring threats and opportunities which are available in the market (Bell *et al.*, 1991). Firms that sacrifice from different perspectives and who take tough decisions to get their goals to survive in the competitive market for long. (Venkatraman, 1989).

Different researchers adopted different ways of measurement to differentiate between the ages of the firm. Firms' age can be categorized into three groups; matured firms and enterprises operating for more than 10 years, intermediate firms operating from 6 to 10 years and young ones for less than 5 years (Julienti, 2011; Ayyagari *et al.*, 2011). The age of a firm can be categorized based on its operations like the number of years spent in exporting

activities (Morgan *et al.*, 2004), and the formation of joint ventures internationally. One more basis of categorization is new firm and old firm. Matured firms refer to those firms which are being in operation for more than 5 years and firms which are in the environment for less than 5 years is a young firm (fort *et al.*, 2013). The firms which are in operation for the last 7 or more years are established firms and others are considered new firms. (Newbert *et al.*, 2013).

As older firms generally firm to their technology and customs; they fail to cope with the market changes by evolving strategies to satisfy suppliers, investors, and corresponding product suppliers (Balasubramanian and Lee, 2008; Giarratana, 2004). Conversely, some scholars supported their notion by concluding that younger firms execute well in innovation activities (Huergo and Jaumandreu, 2004), and matured and settled firms are not sufficiently flexible to make swift adjustments, entailing obstacles to innovate. This is because matured firms often possess antiquated technologies, plants and apparatus that bounds their innovation proficiency. Their administrative rigidities bound their growth by inhibiting change as they become firmer to transform over time.

This paper defines the relationship of competitive aggressiveness with the four constructs of a firm's performance given by Kaplan and Norton by considering age as a moderator. The study attempts to assess the following hypotheses about the age of the firm,

competitiveness and four different constructs representing the performance of a firm:

H1: The age of the firm significantly impacts the competitiveness and financial performance relationship.

H2: The age of the firm significantly impacts the competitiveness and Internal Business Process relationship.

H3: The age of the firm significantly impacts the competitiveness and learning and growth relationship.

H4: The age of the firm significantly impacts the competitiveness and customer relationship.

METHODOLOGY

The study is descriptive in nature. A cross-sectional design has been adopted by the researcher. Only those micro firms have been selected who were registered with DC-MSME. As per the data available on the DC-MSME site, 18229 micro firms are registered there. These enterprises define the population for our study. This is a firm-level study. Data from 545 micro-firms have been collected through a personal survey. After removing incomplete entries, finally 500 micro firms have been selected for the study purpose. Quota and convenience sampling technique has been adopted to ensure the true representation of the population. Primary data through the interview method has been collected personally. The following table has been considered for the selection of the sample:

Table 1: Sample Design of Registered Micro Enterprises

Districts	Population		Sample design		Actual Sample Taken
	No. of registered micro enterprises	Proportion (%)	Proportion	Approximation	
Ambala	880	4.83	24.15	24	28
Bhiwani	283	1.55	7.75	8	8
Faridabad	4399	24.10	120.5	120	112
Fatehabad	153	0.80	4	4	4
Gurgaon	2960	16.20	81	81	78

Hisar	395	2.15	10.75	11	13
Jhajjar (Bahadurgarh)	742	4.05	20.25	20	21
Jind	271	1.45	7.25	7	10
Kaithal	239	1.30	6.5	6	5
Karnal	794	4.35	21.75	22	21
Kurukshetra	247	1.35	6.75	7	10
Mewat	43	0.22	1.1	1	1
Mahendergarh (Narnaul)	73	0.40	2	2	2
Palwal	186	1.01	5.05	5	4
Panchkula	739	4.04	20.2	20	26
Panipat	1964	10.75	53.75	54	51
Rewari	144	0.75	3.75	4	2
Rohtak	329	1.80	9	9	8
Sirsa	381	2.05	10.25	10	9
Sonepat	1745	9.55	47.75	48	40
Yamunanagar	1332	7.30	36.5	37	47
Total	18229	100		500	

Source: Author's Calculation

Moderation Analysis

To check the moderating role of age of the firm on the relationship between Strategic Orientation and the firm's performance, we applied the technique given by Andrew F. Hayes. In modern times, this technique has gained popularity. Hayes is the most popular person who significantly worked on moderation and mediation.

In this study, the relationship between the competitiveness construct of strategic orientation with business performance will be examined by considering age as the moderator. *The moderating role of the age of the firm on the relationship between Competitiveness (Construct of strategic orientation) and financial performance (firm's performance)*

MODEL	
Y	Financial Performance
X	Competitiveness
M	Age
Statistical Controls	Innovativeness, Proactiveness, Risk Taking
Sample Size	500

Y is our dependent variable i.e. Financial Performance, X is the independent variable i.e. Competitiveness and M is our moderator i.e. Age. Control variables taken are innovativeness, proactiveness and risk-taking. We are trying to estimate the relationship between X and Y keeping the effect of innovativeness, proactiveness and risk-taking constant.

Table 2: Interaction Effect of Age and Competitiveness when the dependent variable is Financial Performance

MODEL						
	Coefficient	Standard Error	T	P	LLCI	ULCI
Constant	1.4358	.1574	9.1219	.0000	1.1265	1.7451
Age	-.0748	.0133	-5.6421	.0000	-.1009	-.0488
Competitiveness	.5336	.0699	7.6288	.0000	.3962	.6710
Interactions	-.3531	.0406	-8.6868	.0000	-.4329	-.2732
Innovativeness	.0760	.0522	1.4554	.1462	-.0266	.1787
Proactiveness	.5247	.0533	9.8404	.0000	.4199	.6294
Risk-taking	-.1400	.0558	-2.5110	.0124	-.2496	-.0305

Source: Author's Calculation

Here the effect of age is -.0748, the standard error is .0133 and the p-value is significant. That explains that age negatively affects financial performance. In this LLCI, ULCI and confidence level are also mentioned there. The effect of competitiveness is significant and the interaction effect is also highly significant. In this model, LLCI and ULCI do not cross 0, hence the effect is significant.

The coefficient of interaction is -.3531, the t-value is -8.6868 and the p-value is highly significant. This shows that the interaction effect of putting age and

competitiveness together is highly significant. The effect of constant taken i.e. innovativeness, proactiveness and risk-taking is also highly significant.

Here, *Interaction = Competitiveness x Age*

Next, we have a conditional effect of X on Y at the values of the moderator. This is called conditional processing. Values for quantitative moderators are the mean and plus/minus one standard deviation from the mean. The effect of age is shown here.

Table 3: Conditional Effects of Competitiveness on Financial Performance at values of Moderator (Age)

Conditional Effect of X on Y at values of the moderator (s)						
Age	Effect	Standard Error	T	P	LLCI	ULCI
-.8341	.8281	.0517	16.0194	.0000	.7265	.9297
.0000	.5336	.0699	7.6288	.0000	.3962	.6710
.6400	.3077	.0903	3.4070	.0007	.1302	.4851

Source: Author's Calculation

This is the data of the average mean age level. The effect of plus 1 and minus 1 of standard deviation is judged. When age decreases, it means subtraction of 1 standard deviation, it affects positively i.e. 0.8281. Simultaneously if age increases then it results in decreasing effect. This shows that as long as age increases effectiveness will be decreased. At the high level of age, the effect is .3077. The p-value when the age decreases is 0.0007. It means that at

on lower level of age, the relationship between financial performance and competitiveness is still significant.

Moderating role of the age of the firm on the relationship between Competitiveness (Construct of strategic orientation) and Internal Business Process (firm's performance)

MODEL	
Y	Internal Business Process
X	Competitiveness
M	Age
Statistical Controls	Innovativeness, Proactiveness, Risk Taking
Sample Size	500

Y is our dependent variable i.e. Internal Business Process, *X* is the independent variable i.e. Competitiveness and *M* is our moderator i.e. Age. Control variables taken are innovativeness, proactiveness and risk-taking. We are trying to estimate the relationship between *X* and *Y* keeping the effect of innovativeness, proactiveness and risk-taking constant.

Table 4: Interaction Effect of Age and Competitiveness when the dependent variable is Internal Business Process

MODEL						
	Coefficient	Standard Error	T	P	LLCI	ULCI
Constant	2.2808	.0950	24.0127	.0000	2.0942	2.4675
Age	.0677	.0087	7.8135	.0000	.0507	.0847
Competitiveness	.8324	.0374	22.2678	.0000	.7589	.9058
Interactions	-.0709	.0235	-3.0219	.0026	-.1171	-.0248
Innovativeness	.3059	.0253	12.0818	.0000	.2562	.3557
Proactiveness	-.0460	.0349	-1.3202	.1874	-.1146	.0225
Risk-taking	.2196	.0271	8.1122	.0000	.1664	.2728

Source: Author's Calculation

Here the effect of age is .0677, the standard error is .0087 and the p-value is significant. That explains that age positively affects the internal business process. In this LLCI, ULCI and confidence level are also mentioned there. The effect of competitiveness is significant and the interaction effect is also quite significant. In this model, LLCI and ULCI do not cross 0, hence the effect is significant. The coefficient of interaction is -.0709, the t-value is -3.0219 and the p-value is quite significant. This shows that the interaction effect of putting age and competitiveness together is significant. The effect of

constant taken i.e. innovativeness and risk-taking is also highly significant but the effect of proactiveness is insignificant.

Here, *Interaction* = *Competitiveness* \times *Age*

Next, we have conditional effect of X on Y at the values of the moderator. This is called conditional processing. Values for quantitative moderators are the mean and plus/minus one standard deviation from the mean. The effect of age is shown here.

Table 5: Conditional Effects of Competitiveness on Internal Business Process at values of Moderator (Age)

Conditional Effect of X on Y at values of the moderator (s)						
Age	Effect	Standard Error	T	P	LLCI	ULCI
-.8341	.8915	.0307	29.0238	.0000	.8312	.9519
.0000	.8324	.0374	22.2678	.0000	.7589	.9058
.6400	.7870	.0476	16.5345	.0000	.6934	.8805

Source: Author's Calculation

This is the data of the average mean age level. The effect of plus 1 and minus 1 of standard deviation is judged. When age decreases, means subtraction of 1 standard deviation, it affects positively i.e. 0.8915. Simultaneously if age increases then it results in decreasing effect.

This shows that as long as age increases effectiveness will be decreased. At the high level of age, the effect is .7870. P value when the age decreases is .0000. It means that at on lower level of age, the relationship between internal business process and competitiveness is still significant.

Moderating role of the age of the firm on the relationship between Competitiveness (Construct of strategic orientation) and Learning and growth (firm's performance)

MODEL	
Y	Learning and Growth
X	Competitiveness
M	Age
Statistical Controls	Innovativeness, Proactiveness, Risk Taking
Sample Size	500

Y is our dependent variable i.e. Learning and Growth, X is the independent variable i.e. Competitiveness and M is our moderator i.e. Age. Control variables taken are innovativeness, proactiveness and risk-taking. We are trying to estimate the relationship between X and Y keeping the effect of innovativeness, proactiveness and risk-taking constant.

Table 6: Interaction Effect of Age and Competitiveness when the dependent variable is learning and Growth

MODEL						
	Coefficient	Standard Error	T	P	LLCI	ULCI
Constant	2.3495	.0729	32.2067	.0000	2.2061	2.4928
Age	.1281	.0075	17.0494	.0000	.1133	.1429
Competitiveness	1.1629	.0255	45.6455	.0000	1.1129	1.2130
Interactions	.0920	.0151	6.0801	.0000	.0623	.1218
Innovativeness	.9912	.0219	45.2656	.0000	.9481	1.0342
Proactiveness	-.3645	.0309	-11.7831	.0000	-.4252	-.3037
Risk-taking	-.5167	.0166	-31.2165	.0000	-.5492	-.4842

Source: Author's Calculation

Here the effect of age is .1281, the standard error is .0075 and the p-value is significant. That explains that age positively affects learning and growth. In this LLCI, ULCI and confidence level are also mentioned there. The effect of competitiveness is significant and the interaction effect is also quite significant. In this model, LLCI and ULCI do not cross 0, hence the effect is significant. The coefficient of interaction is .0920, the t-value is 6.0801 and the p-value is quite significant. This shows that the interaction effect of putting age and competitiveness together is significant. The effect of constant taken i.e.

innovativeness, proactiveness and risk-taking is also highly significant.

Here, **Interaction = Competitiveness x Age**

Next, we have conditional effect of X on Y at the values of the moderator. This is called conditional processing. Values for quantitative moderators are the mean and plus/minus one standard deviation from the mean. The effect of age is shown here.

Table 7: Conditional Effects of Competitiveness on Learning and Growth at values of Moderator (Age)

Conditional Effect of X on Y at values of the moderator (s)						
Age	Effect	Standard Error	T	P	LLCI	ULCI
-.8341	1.0862	.0170	63.7079	.0000	1.0527	1.1197
.0000	1.1629	.0255	45.6455	.0000	1.1129	1.2130
.6400	1.2218	.0338	36.1834	.0000	1.1555	1.2882

Source: Author’s Calculation

This is the data of the average mean age level. The effect of plus 1 and minus 1 of standard deviation is judged. When age decreases, means the subtraction of 1 standard deviation, affects positively i.e. 1.0862. Simultaneously if age increases then it shows an increasing effect. This shows that as long as age increases effectiveness will be increased. At the high level of age, the effect is 1.2218. The value is significant at increasing effect also. P value is 0.0000 which means that at on higher level of age, the relationship between learning and growth and competitiveness is still significant.

Moderating role of the age of the firm on the relationship between Competitiveness (Construct of strategic orientation) and Customer (firm's performance)

MODEL	
Y	Customer
X	Competitiveness
M	Age
Statistical Controls	Innovativeness, Proactiveness, Risk Taking
Sample Size	500

Y is our dependent variable i.e. Customer, X is the independent variable i.e. Competitiveness and M is our moderator i.e. Age. Control variables taken are innovativeness, proactiveness and risk-taking. We are trying to estimate the relationship between X and Y keeping the effect of innovativeness, proactiveness and risk-taking-constant.

Table 8: Interaction Effect of Age and Competitiveness when the dependent variable is Customer

MODEL						
	Coefficient	Standard Error	T	P	LLCI	ULCI
Constant	-.2532	.1497	-1.6911	.0914	-.5474	.0410
Age	-.0079	.0200	-.3970	.6916	-.0472	.0313
Competitiveness	-.1581	.1123	-1.4077	.1599	-.3789	.0626
Interactions	.0461	.0693	.6646	.5066	-.0901	.1823
Innovativeness	-.5280	.0878	-6.0145	.0000	-.7005	-.3555
Proactiveness	1.3263	.0764	17.3614	.0000	1.1762	1.4763
Risk-taking	.3101	.0938	3.3076	.0010	.1259	.4943

Source: Author’s Calculation

Here the effect of age is -.0079, the standard error is .0200 and the p-value is highly insignificant. That explains that age negatively affects the customer. In this LLCI, ULCI

and confidence level are also mentioned there. The effect of competitiveness is highly insignificant and the interaction effect is also insignificant.

Here, **Interaction** = **Competitiveness** \times **Age**

Next, we have conditional effect of X on Y at the values of the moderator. This is called conditional processing.

Values for quantitative moderators are the mean and plus/minus one standard deviation from the mean. The effect of age is shown here.

Table 9: Conditional Effects of Competitiveness on Customer at values of Moderator (Age)

Conditional Effect of X on Y at values of the moderator (s)						
Age	Effect	Standard Error	T	P	LLCI	ULCI
-.8341	-.1966	.0839	-2.3443	.0195	-.3613	-.0318
.0000	-.1581	.1123	-1.4077	.1599	-.3789	.0626
.6400	-.1286	.1464	-.8785	.3801	-.4164	.1591

Source: Author's Calculation

This is the data of the average mean age level. The effect of plus 1 and minus 1 of standard deviation is judged. When age decreases, means subtraction of 1 standard deviation, it affects negatively i.e. -0.1966. Simultaneously if age increases then it shows a positive decreasing effect. This shows that as long as the age increases negative effects will be decreased. At the high level of age, the effect is -.1286. The value is highly insignificant.

CONCLUSION

The study has been conducted to examine the relationship between the competitiveness ability of an entrepreneur and a firm's performance by taking the age of the firm as a moderator. Interaction and conditional effect of competitiveness on financial performance, internal business process and learning & growth are found highly significant whereas it is found insignificant from the customer perspective of business performance. Interaction and conditional effects of competitiveness on the perspective of business performance conclude that moderator plays a very important role in defining the relationship between competitiveness and business performance. The results of the study have vital implications for policymakers, academicians and practitioners. The study shows a positive relationship between competitiveness and business performance so if an enterprise is competitive, it can gain in terms of

finance, internal business process and learning and growth.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Researchers took a single response from each firm. The possibility of response biases could be maximum. Moreover, the study is restricted to 500 micro firms of Haryana state only. Generalization of results of one state all over the country may not give accurate results. In demographic variables, only age is taken as a moderator in this study. In further studies, other demographic variables can be considered.

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