

Co-opetition Strategy and Its Relationship with Responsive and Proactive Market Orientation in Iranian Biotechnology Industry

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Abstract

Studies confirmed on the role of network factors to extensively influence firm's market orientation. Co-opetition suggests that companies can interact in competing environment due to conflicting interests, and at the same time co-operate due to common interests for achieving pro-activeness and responsiveness market orientation. Yet little research has been done to investigate the association between market orientation approaches and interfirm network strategies. A sample of 107 small, medium and large companies took part in this research. Partial Least Squares (PLS) approach to Structural Equation Modelling (SEM) was used to explain the pro-activeness and responsiveness market orientation. The results show that co-opetition strategy regarding the trust, cooperation and competition between competitors can affect responsive and proactive market orientation. The conclusion is that, co-opetition is an important phenomenon that should be taken into consideration by marketing planners. The model has contributed to the context of market orientation and practically, serves as a tool for companies to become more market oriented, specifically those in the biotechnology industry.

Keywords: Network strategy, Co-opetition, Responsive market orientation, Proactive market orientation

1. Introduction

Market orientation is known as a key source of firm's competitive advantages (Jaworski & Kohli, 1993; Narver and Slater, 1990) and inter-firm network strategy can create similar advantages within business relationships that aim at offering the final market attractive and competitive products. Co-opetition explains a business situation in which competitors trust and co-operate with each other and co-ordinate their activities to obtain mutual benefits, but at the same time compete with other firms. In the field of market orientation, scarce studies have examined the impact of network strategy on market orientation. Researchers in marketing approved that to achieve the sustainability and success ability, firms should consider importantly the network factors (Elg, 2008; Helfert, Ritter, & Walter, 2002). In addition, firm's market orientation can be primarily influenced by network factors. The market knowledge is scarcely available within firms and exposure to this knowledge is hard to achieve; therefore, interfirm networks can help in accessing knowledge (Huggins, 2010; Håkansson & Ford, 2002). Nevertheless, previous studies regarding the relevancy between inter-firm network strategies and market orientation are inadequate (Elg, 2008). Elg (2007) noted that network factors and industry structure can better manage market orientation activities.

Cooperation and other network factors including, trust, network ties, retail power, influence market orientation among companies (Elg, 2008). In the same line, Tuominen, Rajala, & Möller, (2004) believed that network resources such as cooperation, trust, asymmetries, power, can increase the degree of firm's market orientation. In the context of business-to-business relationship, the significant role of network factors greatly motivates researchers to study their influences on market orientation. Large number of researches pertaining to inter-firm attempted to examine market orientation in the vertical relationship. Nonetheless, Elg (2007) argued that more research need to be done on the other network levels in order to gain insight into the market orientation. It has been found by marketing scholars that interactive relationship are the key elements for companies to survive and success (Kock, Nisulus, & Soderqvist, 2010). Hakansson & Ford (2002) claim that the business market is a network and network is described as a "web of relationships".

The relationships among companies can make different strategies including competition, co-existence, cooperation and newly strategy named co-opetition (Kock et al., 2010; Bengtsson & Kock, 2000). Co-opetition is a new paradigm and still is in the stage of its concept and definition (Kock et al., 2010). Some researchers look into the antecedents and consequences of co-opetition and its relationship with

other strategies (Bengtsson & Kock, 2000; Rindfleisch, 1998). Rindfleisch (1998) raised the question of whether “managers in co-opetitive relationships are more market oriented than their competitive-centered counterparts? Very few scholars carried out investigations the notion in the food industry.

Elg (2007) conducted a study to examine the external context that affects the feature and level of market orientation supplier-retailer relationships in Grocery industry of Sweden, Italy and the UK. They found that firm’s market orientation is influenced by external relationships such as cooperative inter-firm activities. Furthermore, Nikolić, Uzunović, & Mujčinović et al. (2014) emphasized on the role of co-opetition strategy to strengthen the interest bonds between companies and encourage them to exchange experiences, and market knowledge that allow them to learn from each other. Hence, this is an effective way to increase the level of market orientation that leads to sustainable competitive advantages with respect to Bosnia and Herzegovina food companies.

Majority of previous researches pertaining to relationship between co-opetition and market orientation focused in the food industry as the context of their research (Grunert, Fruensgaard, Risom, Sonne, Hansen, Trondsen, & Young, 2005; Elg, 2007; Gellynck, Banterle, Kühne, Carraresi, & Stranieri, 2012; Grunert & Traill, 2012; Nikolić et al., 2014). Therefore, more researches need to be conducted in other industries such as biotechnology for generalization of previous studies results. Furthermore, there is a need to assess the relevance of existing market orientation models and new dimensions that to be added to generate more precise results. Therefore, the aim of this paper is to propose a conceptual model and validate it in order to distinguish the impact of co-opetition on market orientation approaches within the context of biotechnology industry.

2. Literature Review

2.1 Co-opetition

The first definition of the term, co-opetition was provided by Raymond Noorda (Rusko, 2010). Brandenburger & Nalebuff in 1997 conducted a study on co-opetition in order to elucidate the concept to other scholars. They defined co-opetition as cooperating and competing simultaneously among rivalries for the same products (Bengtsson & Kock, 2000). There is no comprehensive definition for co-opetition due to its newest emersion. Several researchers provide the co-opetition definitions (Bengtsson & Kock, 2000; Bagshow & Bagshowe, 2001; Zineldin, 2004). In the definition provided by Bengtsson & Kock (2000), co-opetition has been defined as contradictory relationship that arise when two firms cooperate in strategic alliance, and simultaneously compete in other activities. Cooperation and competition are two main strategies that form the Co-opetition (Bengtsson & Eriksson, 2010; Rindfleisch, 1998;

Gnayawali & park, 2009). The obvious consequence of co-opetition for companies is a win-win situation. Nevertheless, the notion of whether these strategies can give benefit to customers, still remains unexplored. Only a few researchers implicitly emphasized that co-opetition can create a win-win-win situation for companies as well as customers (Kock et al., 2010; Bagshow & Bagshowe, 2001; Hunt & Lambe, 2000; Walley, 2007). In other words, co-opetition provides benefits to competitors and customers. For example, Hunt & Lambe (2001) highlighted that through cooperation with other competitors, firms can build a superior customer value. Kotzab & Teller (2003) emphasized that the program assists to achieve a win-win-win result that is to reduce cost and improve services.

There is an agreement among the scholars that co-opetition strategy among rivalries is based on the activity pertaining to customers (Bengtsson & Kock, 2000; Kotzab & Teller, 2003; Hunt & Lambe, 2000). Competitors cooperate in R&D and compete regarding of sales and distributions (Bengtsson & Kock, 2000; Osarenkhoe, 2010; Hunt & Lambe, 2000). In other words, on the market side, there is competition among firms and also cooperation on recourses. However, there is some disagreement on the aforementioned finding. Bengtsson & Kock (2010) conducted a study to examine competitors in the context of Swedish brewery that compete in distribution and marketing whereas, cooperating to collect their empty bottle. On the other hand, Kock et al. (2010) determined out that companies cooperate on sales and distributions in the process of internationalization. Nevertheless, existing literature presents that the behavior of co-opetition among companies is growing up in channel systems (Osarenkhoe, 2010; Chin, Chan, & Lam, et al., 2008).

Co-opetition offers several advantages to companies. Bengtsson & Kock (2000) noted that co-opetition is the most powerful strategy among firms. Many researchers seek various benefits of co-opetition strategy; rivalries collaborate in R&D, marketing activities as well as innovativng products, entry into new markets, cost reduction, and ability to transfer technology (Bengtsson & Kock, 2000). In addition, competitors by implementing the co-opetition strategy can achieve the vital resources as well as knowledge and expertise (Kock et al., 2010; Goldman and Grinstein, 2010). A study conducted by Kock et al. (2010) on co-opetition showed that competitors can be given the international opportunities through cost reduction of internationalization process, cooperate on sales and distribution, and boost up their product range by accessing to the products of other competitors (Kock et al., 2010).

2.2 Market Orientation

Market orientation introduced the core center of marketing concept and it is one of the strongest activities in the marketing context (Jaworski & Kohli, 1996; Zebal, 2004). Researchers study market orientation from different perspectives. The behavior perspective defines market orientation as “organization-wide generation of market intelligence pertaining to current and future customers

needs dissemination of the intelligence across departments and organization-wide responsiveness to it” (Kohli & Jaworski, 1990). Kohli & Jaworski (1990) outlined three constructs for market orientation comprising the market intelligence generation, intelligence dissemination, and intelligence response. Responsiveness and pro-activeness are the two main approaches of market orientation (Narver, Slater, & MacLachlan, 2004). In responsive market orientation, the effort is more on the adaptation of existing market trends. In fact, organizations which access to current information of customers, perform the responsive market orientation (Jaworski & Kohli, 2000; Voola & O’Cass, 2010). Moreover, companies focus on finding solutions for existing customer’s problems (Kumar, Scheer, & Kotler, 2000; Voola & O’Cass, 2010; Slater & Narver, 2000; Slater, 2001).

In second generation, market orientation stress on future customer needs and wants as well as the capabilities of potential competitors (Mohr, Sengupta, & Slater, 2010). A proactive market orientated company strives to form the new market. Indeed, companies need to implement advance technology, associate with influential customers, apply structured customer visit program, and conduct observational research to predict customer future needs and wants (Mohr et al., 2010; Hills & Sarin, 2003). Hills & Sarin (2003) came up with a synthesized definition of proactive market orientation with a comprehensive explanation. The combinations structured three dimensions to be a proactive market oriented company: value creation, change, and leadership. The dimensions may apply at different levels of industry, market, and products. The authors defined proactive market orientation as the capability of companies establish a radical changes in the evolution of industry conditions by leveraging the process of creating the value with respect to the industry, market and product.

Due to the fundamental role of market orientation for company’s success ability, scholars realized several internal antecedents to increase market orientation approaches in organization (Kohli & Jaworski, 1990), yet, the external factors remains scant. Elg (2008) implicitly assumed an external factor like cooperation with other companies can foster market orientation. Several studies have supported this notion (Tuominen et al., 2004; Ghauri et al., 2008). However, the effect of co-opetition strategy is not explored regarding the proactive and responsive market orientation.

2.3 Co-opetition and Responsiveness Market Orientation

Market orientation approach including responsiveness can be positively affected by co-opetition strategy. Furthermore, intelligence generation is increased by cooperating of rivalries (Elg, 2007). Cooperation with other competitors gives access to market knowledge (Kock et al., 2010; Bengtsson & Kock, 2000). In fact, co-opetition can provide the benefit of knowledge sharing among competitors. Zineldin (2004) unveiled other benefits

including entering to the new markets, raising up customer value, and accessing to advanced technology”. Levy, Leobbecke, & Powell, (2001) mentioned that some small and medium companies can design product for large companies by gaining customer’s needs and wants to innovate new product.

Elg (2007) stated that market intelligence generation can be improved by several indicators. Cooperating competitors via market research program can increase market intelligence generation. Similarly, intelligence dissemination may be affected via cooperation of competitors. There are several activities such as IT sharing, formal market exchange information, trade association, or informal collaboration that can be indicators for market intelligence dissemination among rivalries.

Moreover, co-opetition can impact on market orientation to response and implement market requirement. Bengtsson & Kock (2000) determined that companies can joint on research and development with their competitor for the purpose of cost reduction regarding the product and decreasing the time. Competing on market side as well as sales and distribution can contribute firms in marketing response that to be more innovative, developed products and penetrated in market (Bengtsson & Kock, 2000; Kock et al., 2010).

2.4 Co-opetition and Proactive Market Orientation

Proactive market orientation and co-opetition strategy both have capability to change structures and functions of a market. A proactive market oriented company tries to reform structure of a market in three ways. First, deconstructive through eliminating player from the market, second, constructive by adding new players to the industry, and third, modifying the functions of a market and shifts the roles of players within the industry (Voola & O’Cass, 2010; Siguaw, Simpson, & Baker, 1998; Garcia & Velasco, 2004).

Similarly, Brandenburger & Nalebuff (1996) discussed gamened theory has been used by co-opetition to alter the players, rules, and scope of a game. Furthermore, when firms are more proactive, the co-opetition strategy is suggested since they have the interest to learn, capturing power, and increasing capabilities. Additionally, a source of innovation, organizational learning, capabilities and lead users can be emanated from co-opetition, responsive and proactive market orientation. Firms to obtain market knowledge for innovation and cooperate to develop their quality and services should apply the strategy of co-opetition (Mention, 2011; Slater & Narver, 1994; Mention & Narver, 1994).

2.5 Research Model and Hypotheses Development

This research examined whether co-opetition derived by trust, commitment and mutual benefits influence the market orientation approaches including the pro-activeness and responsiveness? In other words, is there any relationship between co-opetitive strategy and market orientation that

can lead firms for sustainability and success ability? Hence, this research presents the factor which can influence the market orientation approach based on co-opetition strategy. The proposed model is shown in Fig. 1.

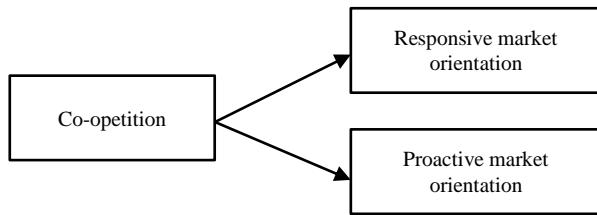


Fig. 1. Research model.

In accordance with the previously stated question and consistent with related literature, this study tested the following hypotheses:

H1: There is a positive relationship between co-opetition and responsive market orientation (RMO)

H2: There is a positive relationship between co-opetition and proactive market orientation (PMO)

3. Literature Review

3.1 Sample Procedure and Sample Profile

A sufficient sample is crucial so that generalization trends can be derived by studying this sample (Cavana, Delahaye, & Sekaran, 2001). There are several methods that can be used for minimum sample size justification. A study by Krejcie & Morgan (1970) indicates that when the population size is 200, the sample size 132 is required.

In this study, top managers were considered as samples if they have the knowledge of the phenomena or observed the situation. Random sampling as a probability sampling was used for this research. The entire process of sampling is done in a single step with each subject selected independently of the other members of the population. Therefore, probability sampling method is considered as a fair way of selecting a sample from a given population since every member is given equal opportunities of being selected (Neuman, 2006).

This study used paper based questionnaire to collect data from the respondents. The advantages of paper based questionnaire are noted by Boyer, Olson, Calantone, & Jackson, (2002): “[It] not only involve less pre-investment of time and resources to develop, but much easier because what you see is what you get.” That is, questionnaires that were self-administered were used to ask top managers in different companies at 170 biotechnology companies. 122 companies returned the questionnaires. Out of these 122 questionnaires, 15 questionnaires were rejected and not considered for the analysis as the participants had refused to answer over 50 percent of the questions. Thus, 107 questionnaires were considered to be eligible as they were complete. Collected data were coded and entered applying the SPSS v.21 for descriptive statistics. For inferential

statistics and testing the research hypotheses PLS-SEM approach was applied using Smart-PLS v.2.0.

3.2 Instrumentation

Items in the questionnaire were derived from original measurements, which had been applied in various research areas and models. This helps to enhance the validity of questionnaire. All latent constructs were measured with multiple items on 5-point Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale contains Likert items that are simply-worded statements to which respondents can represent their extent of agreement or disagreement (Bhattacharjee, 2012).

3.3 Pilot Study

To test the sufficiency of the research instrument, as well as to evaluate the feasibility of the main study, pilot study was conducted (Connelly, 2008). Hence, content validity and reliability of the questionnaire in pilot study was carried out prior to main survey. In order to ensure the content validity of the questions, the questionnaire was reviewed by a panel of experts to maximize the content validity of the instrument. Three lecturers who were expert in this field (Marketing) asked to check whether questions are according to the condition of marketing in Iran. On the other hand, three top managers were asked in the biotechnology industry to have a look at the question as well. Based on experience they had in the biotechnology industry, they were able to assess the relatedness of the questions in that area. The results help to ensure that the measurement adequately covers the concepts. To test the reliability, the questionnaire was distributed randomly among 30 respondents. Furthermore, to achieve the reliability of the survey instrument, the Cronbach’s Alpha was obtained (Hair, Hult, Ringle, & Sarstedt, 2013). According to Garson (2009), the constructs should have a Cronbach alpha of at least .70 to establish reliability of constructs. The results of pilot study in this research showed the adequate value of .70 for the Cronbach’s Alpha. After the pilot study, the main data collection could be conducted more confidently.

4. Result

4.1 Demographic Characteristics of the Respondents

The respondents who were selected for the current study belonged to varied backgrounds in context of the firms. Summary of companies’ information showed on the Table 1 which was examined by using frequency and percentage and presented.

Table 1.
Frequency distribution of companies' background and characteristics

Variable	Number	Percentage (%)
AGE of the Companies		
3<5 years	41	38.3
5 to 10 years	48	44.9
>10 years	18	16.8
No of Employee		
<50	48	44.8
50 to 250	43	31.8
>250	25	23.4
Filed of Companies		
Agriculture	20	18.7
Pharmacy	32	29.9
Bioinformatics	11	10.3
Medical	32	29.9
Material	12	11.2

This table shows that almost 44% of the companies currently possess 5 to 10 years' experience, and almost 44% of the companies have 50 to 250 employees. Additionally, the pharmacy and medical possessed the most percentages among the different field of companies.

Table 2.
Outer loading for co-opetition sub-dimension based on measurement model

	Commitment	Mutual Benefit	Trust
COMT1	0.871		
COMT2	0.871		
COMT3	0.793		
COMT4	0.865		
COMT5	0.806		
COMT6	0.789		
M.BEN1		0.737	
M.BEN2		0.711	
M.BEN3		0.650	
M.BEN4		0.649	
M.BEN5		0.744	
M.BEN6		0.802	
M.BEN7		0.712	
M.BEN8		0.708	
TRUST1			0.785
TRUST2			0.786
TRUST3			0.696
TRUST4			0.699
TRUST5			0.850
TRUST6			0.823

The inference of the confirmatory factor assessment indicated that all items linked to co-opetition sub aspect were crucial inputs for the linked sub aspect. All loading factors were more than 0.5 and hence all these items were used for the path assessment (Table 2). Confirmatory factor analysis results also indicated that all items related to responsive market orientation significantly contributed to the related sub-dimension with a loading factors value higher than 0.5 for all items (Table 3).

According to Table 4 all items related to the Pro-active market orientation showed a value more than 0.5 except the

4.2 Assessing the Measurement Model

In the measurement model, indicator reliability and both convergent and discriminant validity were checked. According to Hair et al. (2013), indicator reliability is "outer loadings on a construct indicating that the associated indicators have much in common, which is captured by the construct." The tables included the values calculated from the outer loading which showed the factor loading for each indicator. The researcher evaluated the individual item dependability by assessing the personal item loadings which values exceeded 0.7; this showed enough indicator dependability or link with each paradigm (Henseler, Ringle, & Sinkovics, 2009). On the other hand, it was recommended by Hair, Black, Babin, & Anderson, (2010) that the suitable factor loading (outer loading) was 0.4 for a sample size of 200 or more than 200. Initially, the researcher has recommended to employ the latest created scales (0.50 or more than 0.50) needed to be retained in the measurement prototype. Hence, the outer loadings with values below 0.50 needed to be eliminated from the measurement prototypes as it showed that these indicators had fewer inputs in context of these factors.

first question of pro-active market orientation that had a loading factor value less than 0.5.

Convergent validity of scale items was examined using two criteria recommended by Fornell and Larcker (1981): 1) composite construct reliability and 2) Average Variance Extracted (AVE). Composite Reliability (CR) larger than 0.7 is acceptable. Regarding the findings of this study CR is between 0.86 and 0.94. Also, in this study, AVE is above 0.5 for all constructs (Table 5), therefore it can be concluded that all constructs had an acceptable convergent validity.

At the end, discriminant validity was evaluated by investigating the AVE for each paradigm in contrast to the squared correlations (shared variance) amongst the paradigm and all other paradigms in the prototype, can validate the discriminant soundness (Hair, 2013). As Table 6 presents, the AVE for each paradigm exceeds the squared correlation between the paradigms. This, discriminant

soundness is suitable for the paradigms the sole exception being the co-opetition subscales.

Thus, all constructs were evaluated for construct reliability (indicator reliability) and validity using SEM_PLS method applying SmartPLS v.2.0. The result of measurement model indicated that all constructs met the reliability and also convergent and discriminant validity.

Table 3.

Outer loading for responsive market orientation sub-dimension based on measurement model

	Intelligence Dissemination	Market Intelligence Generation	Response Design	Response Implementation
INT.DSM1	0.827			
INT.DSM2	0.849			
INT.DSM3	0.832			
INT.DSM4	0.812			
INT.DSM5	0.780			
INT.DSM6	0.845			
INT.DSM7	0.786			
INT.DSM8	0.831			
MRK.INTG1		0.527		
MRK.INTG2		0.565		
MRK.INTG3		0.668		
MRK.INTG4		0.733		
MRK.INTG5		0.772		
MRK.INTG6		0.744		
MRK.INTG7		0.774		
MRK.INTG8		0.825		
MRK.INTG9		0.700		
MRK.INTG10		0.653		
MRK.INTG11		0.746		
RESP.DS1			0.809	
RESP.DS2			0.784	
RESP.DS3			0.825	
RESP.DS4			0.716	
RESP.DS5			0.793	
RESP.DS6			0.787	
RESP.DS7			0.854	
RESP.IMP1				0.663
RESP.IMP2				0.667
RESP.IMP3				0.606
RESP.IMP4				0.814
RESP.IMP5				0.779
RESP.IMP6				0.711
RESP.IMP7				0.660

Table 4.

Outer loading for pro-active market orientation based on measurement

Item	Pro-active Market Orientation
MRKT.ORN1*	0.051
MRKT.ORN2	0.803
MRKT.ORN3	0.767
MRKT.ORN4	0.830
MRKT.ORN5	0.800
MRKT.ORN6	0.800
MRKT.ORN7	0.773
MRKT.ORN8	0.713

*This item was excluded the analysis due to low factor loading

Table 5.
The result of convergent validity

Construct	AVE	Composite Reliability	Cronbach's Alpha	Communality
Commitment	0.695	0.932	0.912	0.695
Intelligence Dissemination	0.673	0.943	0.931	0.673
Market Intelligence Generation	0.498	0.915	0.897	0.498
Mutual Benefit	0.512	0.893	0.863	0.512
Proactive Market Orientation	0.616	0.918	0.897	0.616
Response Design	0.634	0.924	0.905	0.634
Response Implementation	0.495	0.872	0.828	0.495
Trust	0.601	0.900	0.871	0.601

Table 6.
The results of discriminant validity for reflective constructs

	1	2	3	4	5	6	7	8
1.Commitment	0.833							
2.Intelligence Dissemination	0.220	0.820						
3.Market Intelligence Generation	0.225	0.596	0.706					
4.Mutual Benefit	0.785	0.234	0.263	0.795				
5.Proactive market Orientation	0.305	0.147	0.179	0.259	0.785			
6.Response Design	0.247	0.682	0.585	0.249	0.012	0.796		
7.Response Implementation	0.298	0.277	0.491	0.328	0.164	0.362	0.703	
8.Trust	0.765	0.275	0.239	0.775	0.230	0.206	0.238	0.775

4.3 Analysis of Structural Model

In the final (structural) model, the effect of co-opetition as latent variable on responsive market orientation and proactive market orientation dimensions was studied. Figure 2 shows the results of our SEM model.

In this step second order latent variables was calculated for co-opetition and responsive market orientation due to their sub dimensions. In the final model the effect of co-opetition as latent variable on responsive market orientation and proactive market orientation dimensions were studied. SEM (PLS) was applied to test the research hypotheses and evaluate the effect of the independent variable (co-opetition) on proactive market orientation and responsive market orientation. Hypothesis testing was conducted within the context of the structural model. This simplified the interpretation of the results because a relationship between two constructs could be examined while holding constant other constructs in the model. Table 7 presents the hypotheses in this study.

Table 7.
Hypotheses in this study

Hypothesis	Path
H1 : There is a positive relationship between co-opetition and responsive market orientation (RMO)	COP -----> RMO
H2 : There is a positive relationship between co-opetition and proactive market orientation (PMO)	COP -----> PMO

Hence, in the final model the effect of co-opetition as latent variable on responsive market orientation and

proactive market orientation dimensions were studied. The R² value for the dependent construct measures the relationship of latent variable explained variance to its total variance. The acceptable R² values of 0.67, 0.33, or 0.19 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively (Henseler et al., 2009). The R² coefficient was 0.102 for responsive market orientation which indicated that the total effect of co-opetition were able to explain 10.2% of the variability in the responsive market orientation. The beta (standardized regression coefficient) revealed that co-opetition has a positive and significant relationship with responsive market orientation ($\beta = 0.3193$, p-value = 0.0005). The R² value for proactive market orientation was 0.08 which was less than responsive market orientation and revealed only 8% of variance of this variable can be explained by co-opetition. The relationship between co-opetition and responsive market orientation also was positive and significant ($\beta = 0.282$, p = 0.0027). All proposed hypotheses and parameters to be estimated in this study are presented in Table 8 and Figure 3. Therefore, hypotheses were tested to make modifications to the proposed research model.

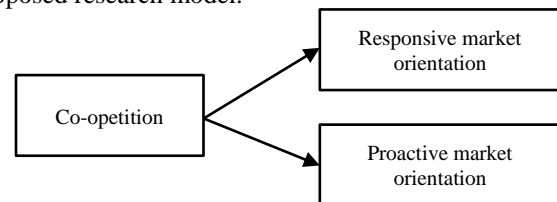


Fig 2. Hypotheses Testing Results

Table 8.
Summary of hypotheses testing

Hypothesis	Path	Original (O)	Sample (M)	Mean	Standard Error	T Statistics	p Value	Results
H1	Co-opetition orientation -> Responsive market	0.3193	0.3331		0.0893	3.5742	0.0005	Supported
H2	Co-opetition orientation -> Proactive market	0.2820	0.3020		0.0916	3.0785	0.0027	Supported

Note: p-value is considered at 0.05

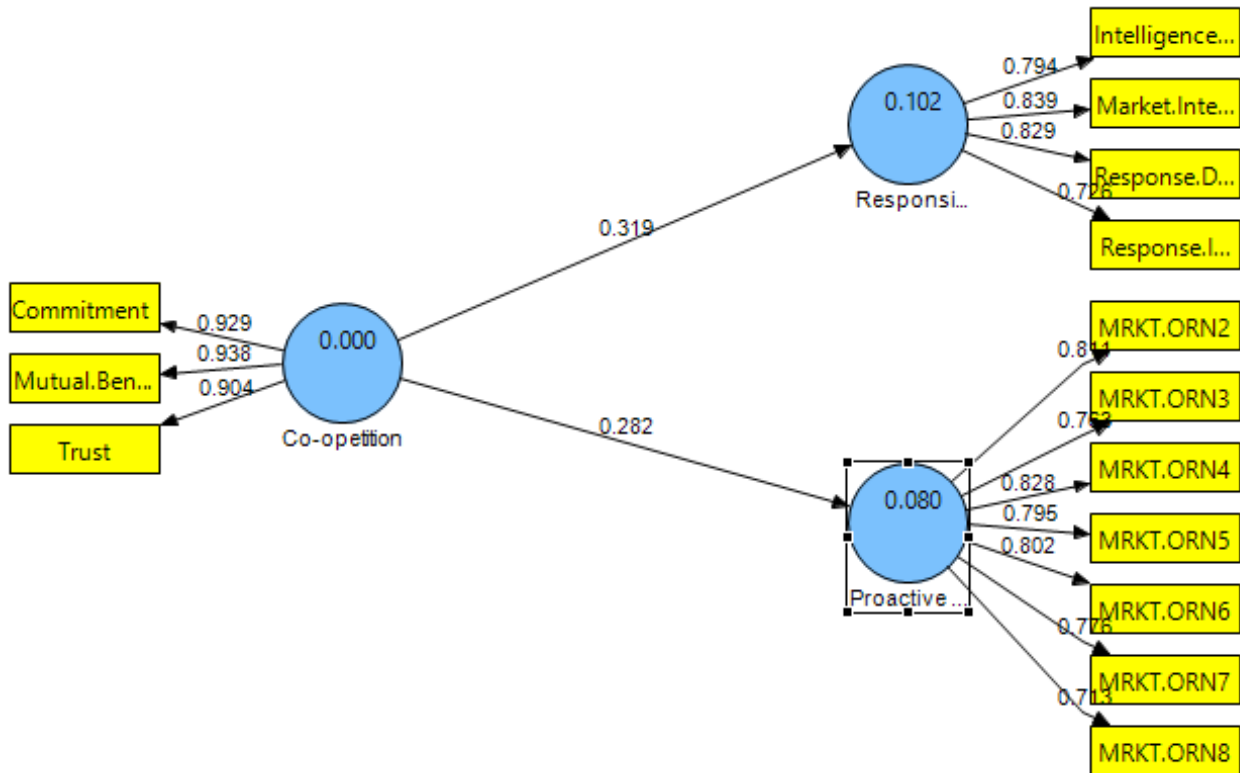


Fig 3. Parameters estimates of structural model

5. Conclusion and Discussion

The aim of this study was to understand the impact of co-opetition strategy on market orientation within business to business relationship. Hence, this study was conducted to shed some light on previous studies that argued there is a requirement to evaluate the connection between market orientation approach and inter-firm networks strategy. This paper shows that co-opetition strategy can positively influence the two market orientation approaches including responsiveness and pro-activeness. In our study, a cross-sectional and questionnaire survey were carried out for collecting data from a sample of Iranian biotechnology firms where network relationship is a substantial strategy within these companies.

We found support for the hypotheses provided in this study. Co-opetition emanating by trust, mutual benefits and cooperation contributes positively and significantly to responsive market orientation. The findings from this study support the debate pertaining to the theoretical model that co-opetition is an effective strategy. Regarding the co-

opetition, cooperation is one of the main element. Cooperation among companies such as strategic alliance can lead firms to access the customer’s needs. In the same vein, cooperation can foster the intelligence generation, dissemination and response in the market. With respect to another approach of market orientation, pro-activeness, this study found its positive and significant relationship with co-opetition strategy. Firms that have enthusiasm for learning, capturing power, improving capabilities, are proactive and can greatly benefit from the co-opetition strategy.

Thus, this study provides evidence for inter-firm activities and market orientation in the biotechnology industry. Regarding the managerial level this study investigates to increase our understanding of the role of inter-firm network strategies in innovation development in areas such as the biotechnology sector. Finally, some limitations should be addressed in this study and about how it might be best to proceed from here. The study does not investigate the extent to which inter-firm networks strategy and market orientation approaches affect the performance

of the firms involved or of the network as a whole. Hence, it would be interesting to seek the effect of the aforementioned theoretical factors on firm performance. This empirical study was conducted within Iranian biotechnology industry. Thus, future studies can be conducted in other contexts and industries to generalize the findings of this study, also to find the differences.

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