ESI Preprints **Not Peer-reviewed**

Innovation, Quality Management and Competitiveness in the Food Processing Industry of Cameroon

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Doi: 10.19044/esipreprint.12.2023.p866

Approved: 24 December 2023
Posted: 27 December 2023

Cite As:
Baninla N., Molem C.S. & Nwahanye E. (2023). *Innovation, Quality Management and Competitiveness in the Food Processing Industry of Cameroon.* ESI Preprints.
https://doi.org/10.19044/esipreprint.12.2023.p866

Abstract

With the intensification of global and national competition, the focus of companies is on how to achieve competitive advantage. This led the foundation of studies on innovation and competitiveness but there are inconclusive results. In this light, this study was out to examine the mediating effect of quality management in innovation and competitiveness in the food processing industry of Cameroon. This study adopted the cross sectional research design for the investigation. The primary source of data was used for this study through the distribution of questionnaires to the respondents. Data was collected from 335 managers drawn randomly from a population of 2564 food processing companies operating in Cameroon. Inferential statistics was used during the analysis of the data specifically the Baron and Kenny's approach of testing mediation hypothesis. Based on the results, there were traces of a positive and significant direct effects of product, process and organizational innovations on competitiveness. In terms of the indirect effect, there was the partial mediation of quality management in the effect of product innovation on competitiveness. While quality management had no mediating effect on other innovations (process, market and organizational) on competitiveness.

Keywords: Innovation, Quality Management and Competitiveness

1. Introduction

The intensification of globalization has led to the intensification of competition in the business field as of the past and of the present. With this in mind, businesses, companies and industries have been in a continuous search for better ways of standing the intense competition. According to Oral and Kettani (2009), in the current dynamic economic environment, competitiveness is a critical factor for a firm's survival, growth and success. Intense competition requires firms to be competitive for survival. These businesses have been looking for better ways to achieve a competitive advantage over their competitors. Some of the ways of standing to competition devised by many businesses include the, solving of customer's pain problems, selecting a niche in the market, pricing and changing business ideas. The trending strategy implemented by many businesses around the world in standing to increasing competition is the aspect of innovation. Porter (1996) stressed on the fact that a firm is able to compete effectively if it generates a specific and durable differentiating factor and innovation is one of the key ways through which firms can create the differentiating factor. Innovation is widely acknowledged as a core factor to increased productivity and competitiveness.

Innovation expresses the process of change or the transformation of knowledge, ideas and inventions into commercially viable goods, services or processes. It has evolved throughout the history though its analysis in the economics literature goes back to Adam Smith who, in 1776, implicitly argued that innovation drives growth. A more explicit analysis of innovation, its definition and its economic role was provided clearly by Schumpeter in 1934.

Efendi et al. (2020) ascertained that the rapid technological change along with increasingly uncertain business and market globalization that occurred in the last decade has a great impact on the competitive business environment. The innovation systems approach has received much attention from academics, but it still provides different assumptions on the determinants of innovation. Innovation systems have been adopted differently by country, regional, local, and in different sectors and technologies. Khyareh and Rostami (2021) in his investigation certified that the main concern of policy makers in developed and developing countries today is national competitiveness and how competitiveness can be improved. With focus on the food processing industry of Cameroon, the intensification of competition could not be hidden. The arrival of companies such as Dolait and Royal Crown on Cameroon's food industry made it quite competitive for the Cameroonian dairy company, Camlait, which in response decided to

diversify its line of products, thus introducing soya-based products. To this end, the firm invested 3 billion FCFA to set up a dedicated production line. Demand growth for yoghourt is so significant (25% per year) that rivals end up installing themselves in the long term. (Business in Cameroon, 2022). This intensified competition in the food processing industry of Cameroon.

With innovation and competitiveness trending, it was observed that a majority of studies on this topic were conducted in the developed world (Elife (2015); Ebru (2016); Fernandes & Ratten (2017); (Moen et al., 2018); Syoum et al. (2019); (Shilei et al., 2020); Mohsen & Nasrin, 2021) while a few in Africa (Kiveu et al., 2019 & Kiveu & Muathe, 2019) none of these studies in Cameroon. This gives room to a contextual gap (context of the study or geographical gap). Also, most authors investigated the effect of competitiveness on innovation instead of innovation on competiveness and finally, none of the studies considered using a mediating variable so as to test the effect of innovation on competitiveness.

In this light, this study has as main focus to investigate if innovation has a significant effect on competitiveness in the Food Processing Industry of Cameroon. Also if quality management could be a mediator to this relationship.

Theoretical Review

Innovation Diffusion Theory

In 1962 Everett Rogers introduced his Innovation Diffusion Theory (IDT) which has been referenced often in case analysis since. It provides a groundwork for understanding innovation adoption as well as the factors that influence an individual's choices about an innovation. Rogers' theory is broad in scope which lends itself to being flexible across many contexts but also difficult to use as a process model when planning for organizational change due to adoption of an innovation. This theory assumed that there are five main people in the diffusion of innovations, who are: innovators, early adopters, early majority, late majority and laggards.

Theory of Innovation and Entrepreneurship

This theory was developed by Joseph Schumpeter in the year 1911. The theory outlines the role of Entrepreneurship and Innovation in economic growth. The theory posits that there is a continuous process of change in economies and markets. According to the theory, innovations lead to economic growth and the entrepreneur is the one who innovates. The entrepreneur is responsible for allocating existing resources to new uses and coming up with new combinations. In other words, innovation theory of profit posits that the main function of an entrepreneur is to introduce innovations and the profit in the form of reward is given for his performance.

The Resource Based Theory

This theory was originally put forward by Penrose (1959), but developed by others (Wernerfelt, 1984, Barney, 1991; Teece et al., 1997). The theory argues that firms own resources which they can employ to become competitive. The theory posits that a firm can gain competitive advantage by being in possession of distinctive resources or capabilities which are valuable, difficult to imitate and rare in the marketplace. Proponents of this view argue that organizations need to utilise internal sources of competitiveness as opposed to external sources. According to RBV proponents, it is much more feasible to exploit external opportunities using existing resources in a new way rather than trying to acquire new skills for each different opportunity.

The Dynamic Capability Theory

The Dynamic capability theory was put forward by D. Teece & Pisano, 1994). This theory explains how firms achieve and sustain competitiveness based on the processes that take place in a firm to match the dynamic, volatile environment. The emergency of the theory was necessitated by the shortcoming of the resource based and action based theories in addressing dynamic economies. The Dynamic capability paradigm embraces entrepreneurship, innovation, organizational learning, and knowledge and change management (D. J. Teece, 2010). The ability of a firm to adjust to changes in the market through innovation is crucial for the competitiveness of firms. It is argued that the fundamental impulse that drives the capitalism stems from the innovation of new products, new methods of production, new markets and new forms of industrial organization (Schumpeter, 1942).

2. Methods

This paper adopted a cross sectional survey research design. This research design was selected for this study as it helps to gather data from a cross section of many food processing companies of the food processing industry of Cameroon. This was in a single time interval 2023. This study made use of only the primary source of data collected through the distribution of self-administered questionnaires to mangers of food processing companies in Cameroon. A sample of 335 managers of food-processing companies was be drawn from a total of 2564 through simple random sampling technique using the sample size determination Table by Krejcie and Morgan (1970).

Estimation Technique

A series of linear regression analysis were conducted in order to ascertain the relations amongst the three variables of this study as summarized by each of the equations.

Firstly, the effect of innovation on competitiveness in the food processing industry of Cameroon was tested for a significant effect. Multiple regression was used as estimation tool as it permitted the inclusion of multiple independent variables on the dependent variable as illustrated by Equation 1. Where Y is competitiveness and innovation was captured using product, process, market and organizational innovations as denoted by X_1, X_2, X_3 and X_4 respectively.

$Y = f(X_1, X_2, X_3 \& X_4)$……... …….(1)

$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i$…….....(2)

Secondly, the effect of innovation on quality management in the food processing industry of Cameroon was tested for a significant effect using the multiple regression technique as illustrated by Equation 2. Where M is quality management expressed as a function of innovation (X_1, X_2, X_3 and X_4).

$M = f(X_1, X_2, X_3 \& X_4)$……..... …..….(3)

$M_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i$…….....(4)

Thirdly, the effect of quality management on competitiveness in the food processing industry of Cameroon was tested for a significant effect using the univariate linear regression technique as illustrated by Equation 3. Where Y is competitiveness expressed as a function of quality management (M).

$Y = f(M)$……..... ……..……...(5)

$Y_i = \beta_0 + \beta_1 M_i + \mu_i$…….……...…(6)

Finally, mediation for this study was texted using the Baron and Kenny's approach of mediation of (1986) as they proposed a framework for testing mediational hypotheses through a four stage approach as captured by Equations 4, 5 and 6 (Baron & Kenny, 1986). This was done through the incorporation of the Hayes process macro for mediation process analysis for SPSS.

$Y = \beta_0 + \beta_1 X + \mu$…….....….....(7)

$M = \beta_0 + \beta_2 X + \mu$…….....…..…..(8)

$Y = \beta_0 + \beta_3 X + \beta_4 M + \mu$…….....……..(9)

The results obtained from the test of mediation using the Baron and Kenny's approach of mediation (1986) was confirmed through the boostrap test.

3. Results

3.1 The Effect of Innovation on Competitiveness

Table 1. Effect of Innovation on Competitiveness

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	Upper Bound
1	(Constant)	16.097	1.134		14.192	0.000	13.866	18.328
	PIN	0.150	0.051	0.158	2.953	0.003	0.050	0.250
	PROS	0.366	0.074	0.264	4.972	0.000	0.221	0.510
	MIN	0.016	0.083	0.010	0.194	0.847	-0.147	0.179
	OIN	0.186	0.073	0.137	2.558	0.011	0.043	0.329

Dependent Variable: COM

$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i$……………………………………(2)

Based on the results presented in Table 1, the coefficients of the variables (product = 0.150, process = 0.366, market = 0.016 and organization innovation = 0.186) are positive implying a positive effect on competitiveness. Both product and process innovations are significant at 1% level of significance, organizational innovation is significant at 5% level of significance while market innovation is insignificant (p>0.06).

3.2 The Effect of Innovation on Quality Management

Table 2. Innovation on Quality Management

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	Upper Bound
1	(Constant)	12.583	1.118		11.252	.000	10.383	14.783
	PIN	.131	.050	.149	2.610	.009	.032	.230
	PROS	.045	.073	.035	.616	.539	-.098	.187
	MIN	.097	.082	.067	1.190	.235	-.063	.258
	OIN	-.065	.072	-.052	-.907	.365	-.206	.076

Dependent Variable: QM

$M_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i$…………………………..…….(4)

Based on the results presented in Table 2, the coefficients of the variables (product = 0.131, process = 0.045 and market = 0.097) are positive implying a positive effect on quality management at the exception of organizational innovation (-0.065). Only product innovation is significant at 1% level of significance while process, market and organizational innovations are insignificant (p>0.06).

3.3 The Effect of Quality Management on Competitiveness

Table 3. Quality Management on Competitiveness

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	19.170	.834		22.993	.000	17.530	20.810
	QM	.274	.058	.252	4.757	.000	.161	.388

Dependent Variable: COM

$Y_i = \beta_0 + \beta_1 M_i + \mu_i$……...……(6)

Based on the results presented in Table 3, the coefficients of quality management (0.274) is positive implying a positive effect on competitiveness. Quality management has a significant effect on competitiveness at 1% level of significance (p>0.01).

3.3 The Mediating effect of Quality Management in Product Innovation and Competitiveness

Table 4. The Mediating effect of Quality Management in Product Innovation and Competitiveness

	R^2	F	B	SE	T	P
Effect of product innovation on competitivess (Total effect) **(b_1)**	0.0568	20.0455	0.1949	0.0502	3.8843	0.0001
Effect of product innovation on quality management **(b_2)**	0.0238	8.1345	0.1355	0.0475	2.8521	0.0046
Effect of product innovation on competitivess when quality management is controlled (Direct effect) **(b_3)**	0.1043	19.3373	0.1949	0.0502	3.8843	0.0001
Effect of quality management on performance when product innovation is controlled **(b_4)**	0.1043	19.3373	0.2401	0.0572	4.1986	0.0000
Test Of Significance Of Indirect Effect						
Bootstrap Test						
Effect		**SE.**			**LL95CI**	**UL95CI**
0.0325		0.0112			0.0118	0.0561

Source: Author's Computation (2023)

The results presented in Table 4 show that product innovation positively and significantly affect competitiveness (b_1=0.1949; p<1%). Also, there is a positive and significant effect between product innovation and quality management (b_2=0.1355; p<1%) and the effect of product innovation on competitiveness controlled by quality management is positive and significant (b_3=0.1949; p>1%). Furthermore, the effect of quality management on competitiveness controlled by product innovation is positive and significant (b_4=0.2401; p<1%). The results are confirmed by a bootstrap test with a confidence interval of 5% with no zero found in the interval [0.0118; 0.0561]. Consequently, quality management has a mediating effect in the link product innovation and competitiveness. This mediation is a partial mediation due to the fact that the effect did not turn to a null (b_3). There seem to be a direct effect of product innovation on competitiveness.

Table 5. The Mediating effect of Quality Management in Process Innovation and Competitiveness

	R^2	F	B	SE	T	P
Effect of process innovation on competitivess (Total effect) **(b_1)**	0.1059	39.4375	0.4515	0.0719	6.2799	0.0000
Effect of process innovation on quality management **(b_2)**	0.0034	1.1246	0.0740	0.0698	1.0605	0.2897
Effect of process innovation on competitivess when quality management is controlled (Direct effect) **(b_3)**	0.1605	31.7459	0.4327	0.0699	6.1908	0.0000
Effect of quality management on performance when process innovation is controlled **(b_4)**	0.1605	31.7459	0.2547	0.0548	4.6490	0.0000
Test Of Significance Of Indirect Effect						
Bootstrap Test						
Effect		**SE.**		**LL95CI**		**UL95CI**
0.0188		0.0156		-0.0093		0.0523

Source: Author's Computation (2023)

The results presented in Table 5 show that process innovation positively and significantly affect competitiveness (b_1=0.4515; p<1%). Also, there is a positive but insignificant effect between process innovation and quality management (b_2=0. 0.0740; p>5%) and the effect of process innovation on competitiveness controlled by quality management is positive and significant (b_3=0.4327; p>1%). Furthermore, the effect of quality management on competitiveness controlled by process innovation is positive and significant (b_4=0.2547; p<1%). The results indicate the absence of mediation as confirmed by a bootstrap test with a confidence interval of 5% because there is zero found in the interval [-0.0093; 0.0523]. Consequently, quality management has no mediating effect in the relationship between process innovation and competitiveness. But there exist a direct relationship between process innovation and competitiveness (b_3=0.4327; p>1%).

Table 6. The Mediating effect of Quality Management in Market Innovation and Competitiveness

	R^2	F	B	SE	T	P
Effect of market innovation on competitivess (Total effect) **(b_1)**	0.0105	3.5300	0.1628	0.0867	1.8788	0.0611
Effect of market innovation on quality management **(b_2)**	0.0094	3.1565	0.0740	0.0698	1.7766	0.0765
Effect of market innovation on competitivess when quality management is controlled (Direct effect) (**b_3**)	0.0698	12.4506	0.1251	0.0845	1.4800	0.1398
Effect of quality management on performance when market innovation is controlled **(b_4)**	0.0698	12.4506	0.2661	0.0579	4.5997	0.0000
Test Of Significance Of Indirect Effect						
Bootstrap Test						
Effect			**SE.**		**LL95CI**	**UL95CI**
0.0377			0.0224		-0.0049	0.0832

Source: Author's Computation (2023)

The results presented in Table 6 show that market innovation positively but insignificantly affect competitiveness (b_1=0.1628; p>5%). Also, there is a positive but insignificant effect between market innovation and quality management (b_2=0.0740; p>1%) and the effect of market innovation on competitiveness controlled by quality management is positive and insignificant (b_3=0.1251; p>5%). Consequently, quality management has no mediating effect in the relationship between market innovation and competitiveness as well as there exist no direct relationship between market innovation and competitiveness (b_3=0.1251; p>5%).

Table 7. The Mediating effect of Quality Management in Organisational Innovation and Competitiveness

	R^2	F	B	SE	T	P
Effect of organisational innovation on competitivess (Total effect) **(b_1)**	0.0605	21.4462	0.3332	0.0720	4.6310	0.0000
Effect of organisational innovation on quality management **(b_2)**	0.0000	0.0024	0.0034	0.0682	0.0494	0.9607
Effect of organisational innovation on competitivess when quality management is controlled (Direct effect) (**b_3**)	0.1238	23.4553	0.3323	0.0696	4.7749	0.0000
Effect of quality management on performance when organisational innovation is controlled **(b_4)**	0.1238	23.4553	0.2737	0.0559	4.8974	0.0000
Test Of Significance Of Indirect Effect						
Bootstrap Test						
Effect		**SE.**			**LL95CI**	**UL95CI**
0.0009		0.0178			-0.0391	0.0312

Source: Author's Computation (2023)

The results presented in Table 7 show that organisational innovation positively and significantly affect competitiveness (b_1=0.3332; p<1%). Also, there is a positive but insignificant effect between organisational innovation and quality management (b_2=0.0034; p>5%) and the effect of organisational innovation on competitiveness controlled by quality management is positive and significant (b_3=0.3323; p>1%). Furthermore, the effect of quality management on competitiveness controlled by organisational innovation is positive and significant (b_4=0.2737; p<1%). The results indicate the absence of mediation as confirmed by a bootstrap test with a confidence interval of 5% because there is zero found in the interval [-0.0391; 0.0312]. Consequently, quality management has no mediating effect in the relationship between process innovation and competitiveness. But there exist a direct effect between organisational innovation and competitiveness (b_3=0.3323; p>1%).

4. Discussions of Results

Based on the results of the test of mediation through the Baron and Kenny approach, product innovation affects the competitiveness of food processing companies in Cameroon through the partial mediation of quality management (Table 4). That is, through the partial mediation of quality management, there is a positive and significant effect on product innovation on competitiveness making product innovation a predictor of competitiveness. These results are in line with the work of Kipchumba et al. (2021) who conducted a study on the effects of production and market innovations on the level of competitiveness of Sorghum Small Scale Agri-enterprises in Kenya. After careful examinations, the author recommended that interventions targeting usage of innovations in sorghum agri-enterprises should be sensitized to integrate different innovations on product, process, and market in enhancing competitiveness. This implies with continuous improvements in in products will positively affect quality management which in turn affects competitiveness.

Based on the results of the test of mediation through the Baron and Kenny approach, process innovation does not affect the competitiveness of food processing companies in Cameroon through the mediation of quality management (Table 5). That is, through the mediation of quality management, there is a positive but insignificant effect of process innovation on competitiveness. There is a positive and significant direct effect of process innovation on competitiveness. The results of the direct effect are in line with the work of Kipchumba et al. (2021) conducted a study on the Effects of Production and Market Innovations on the Level of Competitiveness of Sorghum Small Scale Agri-enterprises in Kenya. The insignificant indirect effect is as a result of process innovation not being a predictor of quality management. These results contradicts the work of Godinho et al., 2017 who investigated the relationship between innovation and total quality management and the innovation effects on organizational performance and concluded there is a statistical significant relationship between innovation and the implementation of TQM practices.

Based on the results of the test of mediation through the Baron and Kenny approach, market innovation does not affect the competitiveness of food processing companies in Cameroon through the partial mediation of quality management (Table 6). That is, quality management positively and insignificant affect process innovation and competitiveness. These results are in contradiction of the work of Kipchumba et al. (2021) who conducted a study on the effects of production and market innovations on the level of competitiveness of Sorghum Small Scale Agri-enterprises in Kenya and they should integrate different innovations on product, process, and market in enhancing competitiveness. There is also no presence of a direct effect on

market innovation on competitiveness which also contradicts the work of Kiveu, Namusonge and Muathe (2019) assessed effect of innovation on firm competitiveness: the case of manufacturing SMEs in Nairobi County, Kenya.

Finally, based on the results of the test of mediation, organisational innovation does not affect the competitiveness of food processing companies in Cameroon through the mediation of quality management (Table 7). That is, through the mediation of quality management, there is a positive but insignificant effect of organisational innovation on competitiveness. There is a positive and significant direct effect of organisational innovation on competitiveness. The results of the direct effect are in line with the work of Kipchumba et al. (2021) conducted a study on the Effects of Production and Market Innovations on the Level of Competitiveness of Sorghum Small Scale Agri-enterprises in Kenya. The insignificant indirect effect is as a result of organisational innovation not being a predictor of quality management. These results contradicts the work of Rew et al., 2020 who examined the relationships between innovation, quality, productivity and customer satisfaction in Pure Service Productivity and customer satisfaction in Pure Service Companies. It was recommended that managers should therefore design innovative systems that enable customers to participate in service production.

5. Recommendations

This study recommends that the management of food processing companies in Cameroon should create an environment that encourages innovations in all, it types (product, process, market and organizational) in order to be competitive. Also, this study recommends that when innovation is put in place, attention should be paid to quality management as a means of achieving competitiveness in this sector. This is because it was observed that through quality management, innovation could lead to competitiveness of a company.

Conflict of Interest: The authors reported no conflict of interest.

Data Availability: All of the data are included in the content of the paper.

Funding Statement: The authors did not obtain any funding for this research.

References:

1. Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108
2. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173
3. Godinho, C., Marques, J. T., Salgueiro, P., Catarino, L., de Castro, C. O., Mira, A., & Beja, P. (2017). Bird Collisions in a Railway Crossing a Wetland of International Importance (Sado Estuary, Portugal). In L. Borda-de-Água, R. Barrientos, P. Beja, & H. M. Pereira (Eds.), *Railway Ecology* (pp. 103–115). Springer International Publishing. https://doi.org/10.1007/978-3-319-57496-7_7
4. Kiveu, M. N., Namusonge, M., & Muathe, S. (2019). Effect of innovation on firm competitiveness: The case of manufacturing SMEs in Nairobi County, Kenya. *International Journal of Business Innovation and Research*, *18*(3), 307. https://doi.org/10.1504/IJBIR.2019.098251
5. Kipchumba, E.K., Porter, C., Serra, D., Sulaiman, M. (2021). Influencing youths' aspirations and
6. gender attitudes through role models: *Evidence from Somali schools*. Working Papers 20210224-002, Texas A&M University, Department of Economics
7. Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement.
8. Moen, Ø., Tvedten, T., & Wold, A. (2018). Exploring the relationship between competition and innovation in Norwegian SMEs. *Cogent Business & Management*, *5*(1), 1564167. https://doi.org/10.1080/23311975.2018.1564167
9. Rew, D., Jung, J., & Lovett, S. (2020). Examining the relationships between innovation, quality, productivity, and customer satisfaction in pure service companies. *The TQM Journal*, *33*(1), 57–70. https://doi.org/10.1108/TQM-10-2019-0235
10. Rogers, E.M. (1962) Diffusion of Innovations. Free Press, New York.
11. Mohsen, P., Fatemeh, J. G. & Nasrin, S. (2021). Groundwater Quality and Suitability for Different Purposes in the SirjanPlain. *Desert Ecosystem Engineering Journal*, 10 (6) 43-58.http://deej.kashanu.ac.ir

12. Oral, M. & Kettani, O. (2009). Modeling Firm competitiveness for strategy formulation. Sabanci
13. Porter, M.E. (1996) What Is Strategy? Harvard Business Review, 74, 61-78.
University, Istanbul Turkey
14. Schumpeter, J.A. (1911). The Theory of Economic Development. *Harvard University Press, Cambridge*.
15. Schumpeter, J. 1934. Depressions. In Economics of the Recovery Program, ed. D. Brown et al. New York: McGraw-Hill.
16. Schumpeter, J. 1942. Capitalism, Socialism, and Democracy. New York: Harper & Bros.
17. Seyoum, A., et al. (2019) Evaluation of Sorghum (Sorghum bicolor (L.) Moench) Genotypes for
18. Grain Yield and Yield Related Traits in Drought Prone Areas of Ethiopia. *Advances in Crop Science and Technology*, 7, 1-10.
19. Shilei, Z., Kun, Z., & Fuwen, W. (2020). Microstructure and Phase Transition Characteristics of NiTi Shape Memory Alloy. *Journal of Physics: Conference Series*, *1653*(1), 012045. https://doi.org/10.1088/1742-6596/1653/1/012045
20. Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, *43*(2–3), 172–194. https://doi.org/10.1016/j.lrp.2009.07.003
21. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z
22. Teece, D., & Pisano, G. (1994). The Dynamic Capabilities of Firms: An Introduction. *Industrial and Corporate Change*, *3*(3), 537–556. https://doi.org/10.1093/icc/3.3.537-a
23. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. https://doi.org/10.1002/smj.4250050207