

RELATIONSHIP BETWEEN INTRINSIC MOTIVATION AND GENDER IN THE CONTEXT OF X AND Y LEADERSHIP STYLES IN THE MACEDONIAN ELECTRICAL APPLIANCES SECTOR

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ABSTRACT

Leadership is one of the most researched topics in the contemporary business organisations. Over the decades, leadership and various leadership styles have proven to be key to successful organisations. As the world is currently experiencing many transformations and new generations of employees take over, the leadership styles evolve and leaders seek for new approaches to motivate and inspire employees in achieving growth both on individual and organisational level.

Accordingly, this paper explores two distinctive leadership styles, more specifically, democratic or transformational and autocratic or transactional. The research is based on the McGregors' Theory X and Theory Y of leadership. As such, X Theory argues that employees avoid tasks and responsibility, desire to be controlled and lack ambition, while Y Theory assumes that employees are creative and positive about their work, and take actions to accomplish the organisational goals.

Furthermore, the paper builds upon the theoretical concept of the previous research body on leadership styles and the importance of intrinsic motivation. The concept of intrinsic motivation is further enriched with the gender perspective.

The analysis anticipates quantitative research based on a previously validated instrument that was implemented among 187 employees in the biggest Macedonian electrical appliances retail company.

Findings suggest that there is positive relationship between Y leadership styles and intrinsic motivation. In addition, it was identified the both male and female demonstrate similar behavior relative to Intrinsic motivation.

This research endeavour, shall contribute towards understanding the current practices and desired leadership styles in a dynamic organizational setting that seeks physical interaction with the customers in a highly competitive setting such as the electric appliances retail industry in the Republic of North Macedonia.

It offers grounds for further research to overcome the limitations of this paper such as the sample size, male gender prevalence and generalisation for retail industry of electrical appliances as a whole given the administration of the instrument in a single company.

Keywords: Motivation, Gender, X/Y Theory, North Macedonia, Retail sector

1. INTRODUCTION

In the organizational context of managing people, most leaders build environment of understanding

and satisfying employees' needs. All organizations have both self-motivated and externally motivated employees, so motivation is crucial to organi-

zational success, loyalty, productivity and self-realization. Yet, keeping employees motivated and inspired is a big challenge for the contemporary organization given the latest developments in the business operations as well as the new generations of employees and their novel expectations. More specifically, business leaders face many challenges in managing, motivating and retaining their employees in highly competitive industries such as the electronic appliances retail sector.

This paper aims to determine the relationship between the desired leadership styles and intrinsic motivation from a gender perspective. The research has been conducted in one of the largest retail companies, with demonstrated sustainable growth in the past decade.

2. LITERATURE REVIEW

2.1 THE X THEORY VERSUS THE Y THEORY

In general, various managerial styles in the literature or in practice can be oriented towards the autocratic (traditional) or towards the democratic (modern) leadership style (Mohamed and Nor, 2013). In this context, there are studies that identify autocratic leadership style as commanding, comforting, transactional, directing, punitive-controlling (Richer and Vallerand, 1995) and exploitative-authoritative (Carson, 2005). On the contrary, the democratic style is recognized as transformational (Bass, 1985), charismatic (Conger and Kanungo, 1987), participating (Mohamed and Nor, 2013), visionary, autonomy-supportive (Richer and Vallerand, 1995) and flexible (Yukl, 2008). Yet, in the organizational context, many leadership styles are determined by the spirit of the corporate national culture (McLaurin, 2008) or international culture (Hofstede, 1994) while Bobic and Davis (2003) believe that the leadership styles are further shaped in accordance with the type of the organization.

McGregor (1957) in his *The Human side of the enterprises* offered a provocative theoretical foundation for X/Y leadership styles that is frequently applied and tested by the researchers and academicians. Managers that practice Theory X assume that employees are lazy, tend to avoid work and responsibility, lack ambition and need to be directed and controlled. So, McGregor's The-

ory X relates to direction, authority, and structure (Carson, 2005) under the assumption that people are not ambitious, yet seek for security (Bass and Avolio, 1994).

In contrast, the Theory Y applies to managers who believe that people have self-control and self-direction, work independently, demonstrate responsibility, along with creativeness in accomplishing the organisational goals. Therefore, Theory Y refers to change, adaptation, mutuality and commitment (Bobic and Davis, 2003), assuming that workers are self-starters, self-motivated, enjoy taking ownership of their work, seek and accept responsibility, and need little direction (McGregor, 1957). The transformational leadership style, associated with the Theory Y, implies motivational and people-oriented approach as well (Bass, 1985; Bass and Avolio, 1994). Transformational leaders motivate and engage the followers by building a shared organisational vision and goals, challenge their followers' abilities, and effectively listen to them (Bass, 1985; Bass and Avolio, 1994; Judge and Piccolo, 2004). According to Mohamed and Nor (2013), X leadership style generates less productivity, poor performance as well as less work effort, while Y leadership style generates high productivity as well as simultaneous fulfilment of personal and organizational goals. However, other authors have found that in some circumstances leadership style X prevails in the sense that some employees possess closer preferences to X rather than Y leadership style (Bobic and Davis, 2003). Some studies also claim that X leadership style is more appropriate in hierarchical (banks, governmental) organizations rather than in innovative organizations (high-tech industries), therefore, the adaptive management styles might be more appropriate in many organizations rather than the mere democratic or autocratic style (Bobic and Davis, 2003; Baesu and Bejinaru, 2015).

2.2 INTRINSIC MOTIVATION AND X/Y LEADERSHIP STYLES

In the literature, many studies examine the relationship between intrinsic motivation and employee's outputs. It has been proven that intrinsic motivation influences the employee's performance (Cerasoli et al., 2014; Menges et al., 2017),

creativity (Zhang and Bartol, 2010) as well as competence and self-determination (Deci and Ryan, 1980). Therefore, organisational leaders should support employees in their needs, interests and goals. Kulkarni (2015) claims that some environmental factors could provoke the intrinsic motivation, one of them being leadership style, also challenging work, opportunities to develop, recourses for professional development, and etc. Larsson et al. (2007) suggests that Y oriented leaders are more effective compared to the X oriented leaders as they contribute to better health and less absences, long tenures, and stronger organisational culture. Y oriented organizations were identified to stimulate the employees' intrinsic factors that later contribute to increased organizational identity and self-accomplishment (Ryan and Deci, 2000). Other authors, claim that demonstrated leader's passion stimulates achievement of personal and organizational goals via the notion of intrinsic motivation of the employees (Kulkarni, 2015). The demonstrated passion as inner energy influences others to achieve goals and followers are intrinsically inspired to follow their leader and commit to task accomplishment. As such, motivation occurs as result of external motives such as money, rewards, punishment or internal motives such as self-worth or joy. In addition, Bono and Judge (2003) argue that intrinsic motivation is generated by the self-concordance, that reflect in employee proactiveness. On the contrary, when environmental and organizational values are just words, they are being ignored in the practice (Kulkarni, 2015), and the employees' inner value system generates dissatisfaction and generates no results. Barbuto (2005) further concludes that if the type of work produces fun, enjoy, self-worth, embodies emotions and challenges work behaviour then employees' intrinsic motivation stimulates them to perform even better.

Number of studies explore the relation between the leadership styles oriented to Y Theory and employee motivation (Keegan and Hartog 2004; Buble et al., 2014; Aunjum et al., 2017). Thus, Fiman (1973) found that the employees of a large retail company are more satisfied and motivated with a manager whose orientation inclines towards the Y leadership style rather than X leadership style.

Regarding the intrinsic motivation, Buble (2014) found out that there is a relationship between leadership styles and managers' motivation where leadership style significantly determines manager's intrinsic motivation more than the extrinsic motivation. In addition, managers' leadership styles at the higher levels are softer authoritarian then the lower levels where the pure autocratic leadership style is more dominated. Richer and Vallerand (1995) have researched that subordinates' intrinsic motivation, self-determination and competence is significantly influenced by autonomy-supportive and non-punitive controlling management styles (Y oriented). In addition, autonomy-supportive generates more effects that are positive while the punitive-controlling style (X oriented) has more negative effects on subordinate's motivational feelings. In this regard, leaders should tend to create working environment that intrinsically motivates employees and their followers (Kulkarni, 2015).

In addition, there are studies that indicate gender differences in personality and motivation, in general. Some studies for example indicate that female employees scored higher than males in internal and external motivation but have lower values in motivation (Vallerand et al., 1992; Orsini et al., 2015; Can, 2015; Barkoukis et al., 2008). In conclusion, in comparison with the other two areas of interest of this paper, there is significant lack of data explaining mechanisms of gender differences and disparities in relation to intrinsic motivation.

3. METHODOLOGY

The research anticipated both theoretical analysis of academic articles from relevant scientific journals, related to intrinsic motivation, X/Y Theory, gender perspective and a quantitative methods used to collect data by a convenience sampling. The research was conducted in the largest Macedonian retail company of electrical appliances for domestic use. The anonymous questionnaire was distributed among 427 employees, through the Human Resources Department, with prior approval by the management. 184 questionnaires were collected. The distribution of the questionnaire was in hard copy to employees from the head office and branches in Skopje and 10 loca-

tions throughout the Republic of North Macedonia. The employees included in the survey were informed of the scientific and research purposes of the study and the anonymous character of the questionnaire. The gathering of the data was completed in 10 days in March 2019.

The structured questionnaire consisted of 49 items divided into six groups, 43 statements and 6 demographic questions. Thirty-two out of 49 items were selected for the purposes of this paper. The statements included five-point Likert scale, whereas 1-strongly disagree, 2- disagree, 3-neutral, 4- agree, and 5-strongly agree. The 32 items were developed and organized in three parts. The first construct consists of 26 questions linked to the preferences of X or Y leadership styles, adopted from Kopelman et al. (2009). In particular, the statements with odd numbers from 1-26, were reverse coded as follows: 1-5, 2-4, 4-2 and 5-1. The constructs' Cronbach Alpha test was 0.71, considered as reliable consistency and acceptable for further research. We have used referent values from DeVellis (2012) for internal consistency of previous similar researches. The second part of the questionnaire (questions from 27-32) aimed at measuring employee's intrinsic motivation, validated instrument adopted from Kuvaas and Dysvik (2009). The Cronbach Alpha score of the internal consistency of the construct was 0.86, also indicating high reliability of the sample. The last part was designed to collect demographic data of the respondents within the company, such as gender, age, education, time in the company, position and department.

The collected data from the questionnaire was processed both Excel and IBM SPSS. Three composite variables were constructed, two separate for the employees of X and respectively Y leadership style preferences and Intrinsic Motivation. A correlation analysis was performed.

The demographic profile of the sample indicates that the typical respondent is male (74%), younger than 20 years (47%), along with an associate-level of education (36%), 1-3 years (46%) work experience in the sales department (60%). Its important to stress that a significant number of the respondents belongs to the age group between 20-29 years old (34%) indicating a rather young workforce in the company including Z gen-

eration employees and millennials.

4. HYPOTHESIS

For the purpose of identifying the relationship the X/Y Theory and employees' intrinsic motivation and the relationship between the intrinsic motivation and gender, the following hypothesis were developed:

- H0: There is no relationship between X theory and the intrinsic motivation of the employees in the electronic appliances retail industry.
- H1: There is positive relationship between X theory and the intrinsic motivation of the employees in the electronic appliances retail industry.
- H10: There is no relationship between Y theory and the intrinsic motivation of the employees in the electronic appliances retail industry.
- H11: There is positive relationship between Y theory and the intrinsic motivation of the employees in the electronic appliances retail industry.
- H20: There are no differences in the intrinsic motivation of the male and female employees in the electronic appliances retail industry.
- H21: There are differences in the intrinsic motivation of the male and female employees in the electronic appliances retail industry.

5. RESULTS AND DISCUSSION

The variables associated to X/Y Theory have mean value of the 3.27, indicating that the sample moderately prefers managers who exhibit Y type of leadership. So, respondents prefer for participative managerial style over autocratic allowing them to be actively included in the organisational planning and goal setting. Hence, there are 3 variables that have average value close to 2.5 suggesting that there are some employees that favour autocratic style and look for specific guidance and control at work and earn only because they have to settle bills. The responders who are closed to Theory X can be described as a personality who

has negative view of human nature, assuming that employees are lazy, unmotivated, and will do anything to avoid working. The findings are in line with previous studies (McLaurin, 2008). The fact that there are employees that also prefer X leadership style may be observed in retail's sector orientation towards hierarchy (Bobic and Davis, 2003; Baesu and Bejinaru, 2015).

We may also take into consideration the respondents' age in the sample. Namely, more than 90% of employees are under the age of 29 or belong to the Y, Z Generations and Millennials. As the retail sector operates in shifts, and over weekends, it attracts younger workforce especially in sales department. These employees seek fast lane careers, yet Y type of leadership correlates with the expectations and believes of the new generations that desire autonomy and participative management.

Table 1. Pearson Correlations between variables X style, Y style and Intrinsic Motivation.

Correlations				
		InMot	X	Y
IntMot	Pearson Correlation	1	-.026	.308**
	Sig. (2-tailed)	.730	<.001	
	N	184	184	184
X	Pearson Correlation	-.026	1	.222**
	Sig. (2-tailed)	.730		.003
	N	184	184	184
Y	Pearson Correlation	.308**	.222**	1
	Sig. (2-tailed)	<.001	.003	
	N	184	184	184

** Correlations is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient ($r = 0.308$) indicates a moderate positive degree of correlations between the employees' preferred Y leadership style and Intrinsic Motivation (Bono and Judge, 2003; Zhang and Bartol, 2010; Buble, 2014), at the level of significance $p < 0.01$ (Table 1). Thus, the hypothesis H11 is supported while H1 is rejected as employees who prefer X leadership style are not intrinsically motivated. Our findings related to the specific industrial type of organisation are similar to those of Fiman (1973).

To further explore if there are differences in the specific behaviour of male and female respondents relative to the Intrinsic Motivation, t-test was performed for each of the 6 items of the constructs. The outcome indicated there are no significant differences in the intrinsic motivation

of the two genders, thus H21 was rejected. This finding is in contrast with past studies that identified different level of motivation among the male and female employees (Orsini et al., 2015; Can, 2015). This finding may have occurred as consequence of dominance of the males in the research sample.

To sum up, the Intrinsic Motivation variable's average value was 3,46 indicating that the respondents consider their work as motivating, meaningful, enjoyable and exciting. To add, older employees have a higher average value of intrinsic motivation of 4,16, in comparison with the younger employees, showing 3,37 average.

We conclude that gender does not influence the prevalence of Theory Y in the electrical appliances retail industry represented with the largest company in the country. This claim is opposite of the current industry trends and theory where women favour mentoring and coaching roles associated with transformation leadership style (Theory Y), while men dictate and command position which translates into transactional leadership style (Theory X) (Merchant, 2012).

The study has few limitations that offers grounds for further research to tackle the shortfalls. The limitation refer to the sample size, male gender prevalence in the sample, and generalisation for retail industry of electrical appliances as a whole given the administration of the instrument in a single company. Interline spacing is suitably set to prevent overlapping but without leaving too much space.

CONCLUSION

This research tried to identify a correlation between the X/Y preferred leadership style and employees' intrinsic motivation. In addition, it searched for differences in the level of intrinsic motivation among female and male respondents in the largest electrical appliance retail company in the Republic of North Macedonia. The literature review and the theoretical models identify to predominant leadership styles. Both, the autocratic or transactional and the democratic or transformational leadership styles are theoretically backed up in the McGregor's X/Y theory of leadership. A validated questionnaire consisting

of 32 statements and later summed up in three variables was used to test the hypothesis. All variables were tested for internal consistency.

Research findings indicate a statistically moderate correlation between the Y leadership style and the Intrinsic Motivation, which is in line with previous findings. However, it was identified that there are not significant differences across the items that represent the Intrinsic Motivation among the female and male respondents, a finding contrasting the past studies.

The research implies that leaders and managers in the retail sector shall adopt participative environment with less supervision to grow and retain new generation employees. Finally, setting creative environment as well as more meaningful tasks motivates employees towards self-direction and self-control.

REFERENCES

1. Aunjum, H.A., Abbas, G. and Sajid, M. (2017). Transformational Leadership and Employee Motivation in Banking Sector of Pakistan. *Advances in Economics and Business* 5(9), pp. 487-494.
2. Baesu, C. and Bejinaru, R. (2015). Innovative Leadership Styles and The Influence of Emotional Intelligence. *The USV Annals of Economics and Public Administration*, 15, Special Issue, pp. 136-145.
3. Barbuto, E. J. (2005). Motivation and Transformational, Charismatic and Transformational Leadership: A Test of Antecedents. *Journal of Leadership and Organizational Studies*, 11(4), pp. 26-40.
4. Barkoukis, V., Tsorbatzoudis, H., Grouios, G. and Sideridis G. (2008). The assessment of intrinsic and extrinsic motivation and amotivation: Validity and reliability of the Greek version of the Academic Motivation Scale. *Assessment in Education: Principles, Policy & Practice*, 15(1), pp. 39-55, doi: 10.1080/09695940701876128.
5. Bass, B. M. (1985). *Leadership and performance beyond expectations*, New York, NY: Free Press.
6. Bass, B.M. and Avolio, B.J. (1994). *Improving organizational effectiveness through transformational leadership*, Sage Publications, Inc.
7. Buble, M., Juras, A. and Matić, I. (2014). The Relationship between Managers' Leadership Styles and Motivation. *Management*, 19(1), pp. 161-193.
8. Bobic, P.M. and Davis, E. W. (2013). A Kind Word for Theory X: Or Why So Many Newfangled Management Techniques Quickly Fail. *Journal of Public Administration Research and Theory*, 13(3), pp. 239-264.
9. Bono, E. J. and Judge, A. T. (2003). Self-Concordance at Work: Toward Understanding the Motivational Effects of Transformational Leaders. *Academy of Management Journal*, 46(5), pp.554-571.
10. Can, G. (2015). Turkish version of the Academic Motivation Scale. *Psychological reports*, 116(2), pp. 388-408, doi: 10.2466/14.08.PR0.116k24w5.
11. Carson, M.C. (2005). A Historical View of Douglas McGregor's Theory Y. *Management Decision*, 43(3), pp. 450-460.
12. Conger, A.J. and Kanungo, N. R. (1987). Toward a Behavioral Theory of Charismatic Leadership in Organizational Settings. *The Academy of Management Review*, 12(4), pp.637-647.
13. Cerasoli, C. P., Nicklin, J. M. and Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140(4), pp. 980-1008.
14. Deci, L. E. and Ryan, R. R. (1980). The empirical exploration of intrinsic motivational processes. *Advances in Experimental Social Psychology*, 13, pp. 39-80.
15. DeVellis, R. (2012). *Scale development: Theory and applications*, Los Angeles: Sage, pp.109-110.
16. Fiman, G.B. (1973). An Investigation of The Relationships among Supervisory Attitudes, Behaviors and Outputs: An Examination of McGregor's Theory Y'. *Personnel Psychology*, 26(1), pp. 95-105.
17. Judge, T. and Piccolo, R. (2004). Transfor-

- mational and Transactional Leadership: A Meta-Analytic Test of Their Relative Validity. *Journal of Applied Psychology*, 89(5), pp. 755–768. <https://doi.org/10.1037/0021-9010.89.5.755>.
18. Hofstede, G. (1994). Management Scientists Are Human. *Management Science*, 40(1), pp. 4-13.
 19. Larsson, J., Vinberg, S. and H. Wiklund, H. (2007). Leadership, Quality and Health: Using McGregor's X and Y Theory for Analyzing Values in Relation to Methodologies and Outcomes. *Total Quality Management*, 18(10), pp. 1147–1168.
 20. Keegan, E.A. and Hartog D.N.D. (2004). Transformational leadership in a project-based environment: A comparative study of the leadership styles of project managers and line managers. *International Journal of Project Management*, 22(8), pp. 609–617.
 21. Kopelman, R., Prottas, D. and Falk, D. (2010). Construct validation of a Theory X/Y behavior scale. *Leadership & Organization Development Journal*, 31(2), pp. 120–135. <https://doi.org/10.1108/01437731011024385>.
 22. Kuvaas, B. and Dysvik, A. (2009). Perceived investment in employee development, intrinsic motivation and work performance. *Human Resource Management Journal*, 19(3), pp. 217-236.
 23. Kulkarni, M.S. (2015). A Review on Intrinsic Motivation: A Key to Sustainable and Effective Leadership. *Review of Integrative Business and Economics Research*, 4(3), pp.74-88.
 24. McGregor, D. (1957). Human Side of Enterprise. *Management Review*, 46(11), pp. 41-49.
 25. McLaurin, J. R. (2008). Leader-effectiveness across cultural boundaries: An organisational cultural perspective. *Journal of Organizational Culture, Communications and Conflict*, 12(1), pp. 49-69.
 26. Menges, I.J., Tussing, V.D., Wihler, A. and Grant, M.A. (2017). When Job Performance is All Relative: How Family Motivation Energizes Effort and Compensates for Intrinsic Motivation. *Academy of Management Journal*, 60(2), pp. 695–719.
 27. Merchant, K. (2012). How Men And Women Differ: Gender Differences in Communication Styles, Influence Tactics, and Leadership Styles, CMC Senior Theses.
 28. Mohamed, H.M.K.R., and Nor, M.S.C. (2013). The Relationship between McGregor's X-Y Theory Management Style and Fulfillment of Psychological Contract: A Literature Review. *International Journal of Academic Research in Business and Social Sciences*, 3(5), pp.715-720.
 29. Orsini, C., Binnie, V., Evans, P., Ledezma, P., Fuentes, F. and Villegas, M.J. (2015). Psychometric validation of the academic motivation scale in a dental student sample. *Journal of dental education*, 79(8), pp. 971–981, doi: 10.1002/j.0022-0337.2015.79.8.tb05989.x.
 30. Ryan, M.R. and Deci, E.L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, 25, pp.54–67.
 31. Richer, S.F. and Vallerand, R.J. (1995). Supervisors' Interactional Styles and Subordinates' Intrinsic and Extrinsic Motivation. *Journal of Social Psychology*, 135(6), pp.707-722.
 32. Vallerand, R.J., Pelletier, L.G., Blais, M.R., Brière, N.M., Senecal, C. and Vallieres, E.F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52, pp. 1003–1017, doi: 10.1177/0013164492052004025.
 33. Yukl, G. (2008). The Importance of Flexible Leadership, 23rd Annual Conference of the Society for Industrial-Organizational Psychology, San Francisco, CA.
 34. Zhang, X. and Bartol, M.K. (2010). Linking Empowering Leadership and Employee Creativity: The Influence of Psychological Empowerment, Intrinsic Motivation and Creative Process Engagement. *Academy of Management Journal*, 53(1), pp. 107–128.

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A REGRESSIVE ANALYSIS OF RELATIONS BETWEEN INNOVATION AND BUSINESS SOPHISTICATION UNDER A QUALITY MANAGEMENT HOLISTIC APPROACH

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ABSTRACT

My goal in conducting this study is to present strong connections between innovation and business sophistication, worldwide, since innovation and business sophistication issues, related to quality and quality management too, have been subject to increasing interest all around the world.

The methodology of the research was collecting data and information about the innovation index and business sophistication worldwide and describing the newly introduced ISO 56000 family of standards, handling descriptive statistics for innovation index and business sophistication as well as a correlation and regressive analysis (inferential statistics) for relations between innovation index and business sophistication, which resulted on the main conclusion of this study that relations between innovation and business sophistication, statistically verified, are strong, so ISO 56000 standards family application is needed in the time of business sophistication, achieving competitive advantage.

The main recommendation is that application of ISO standards generally and the application of the ISO 56000 family of standards helps companies to strengthen their commitment to their clients, improving innovation and business sophistication activities, processes and procedures, and economies worldwide to achieve a competitive advantage.

Keywords: Innovation, business sophistication, ISO standards, quality, quality management, competitive advantage.

1. INTRODUCTION

Discussing innovation and business sophistication we immediately think about new products and/or services, as well as new combinations that result in improved ones, new methods of processing, manufacturing, assembling, entering new markets, a new way of resources usage, innovated business models, etc., and this related to effectiveness and efficiency of processes, procedures, methodologies, methods, tools, technologies involved on the process of production of goods and services.

Innovation and business sophistication do not always require inventions, but easy implementation in practice problem-solving techniques and decision-making, implementation of individual and group activity-based ideas, etc.

Currently, there is an increasing interest in innovation and business sophistication, especially related to a quality culture and ISO standards. Quality culture serves as a guide for continuous improvement, belonging to all members of an organization(s), and forming a connection between internal clients and suppliers. The core value of quality culture is embodied in ISO standards, for which there is an increasing interest worldwide, aiming to achieve a competitive advantage. Between them, ISO 9000, ISO 14000, ISO 20000, ISO 22301, ISO 27000, ISO 45000, and ISI 50000 family of standards and especially the ISO 56000 family of standards, which is directly related to Innovation management, introduced in 2019, which clashes with the period of pandemics of Covid - 19 too, are the most required standards. Innovation, business sophistication, quality,

quality culture, quality culture management, and ISO standards, are becoming an important part of business models achieving competitive advantage, under the new reality and new normality.

1. LITERATURE REVIEW

Currently, literature for innovation, business sophistication, quality, ISO standards, the culture of quality, etc, has been improved all around the world, besides the country and level of economic development. This is because concepts of innovation, business sophistication, quality, quality management, and ISO standards, applied correctly, help private and public organizations to be more competitive in an open market when and where the offer is much higher than the demand, one of the main characteristics of last 50 years of the world economy.

1.1. INNOVATION

As per an OECD report (Nadim Ahmad and Richard G. Seymour 2006), since around 35 years ago, entrepreneurship has been defined as an act of innovation that involves endowing existing resources with new wealth-producing capacity (Drucker, 1985), with its core, which lies with the creation and exploitation of entrepreneurial opportunities regardless of the context (Shane 2003) and as a creative activity that takes place when neither the goal nor often the initial conditions are known at the start, but constructed during the process (Sarasvathy. 2001).

Innovation is defined by the Oslo Manual (OECD 2005) of the Organization for Economic Cooperation and Development (OECD) as “the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations”.

In economics, further to Schumpeter’s lesson, it is now part of mainstream thinking to consider innovation as the primary engine of economic dynamic: a process of “...industrial mutation that increasingly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one (Schumpeter. 1942)”.

This notion is particularly relevant in today’s globalized world and knowledge-based economies, which rely ever more on intangible resources.

Not surprisingly, innovation is widely recognized as one of the essential drivers of successful business and a key contributor to the productivity and economic and social development of nations.

Innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services (Schumpeter. 1993). ISO TC 279 on innovation management proposes in the standards, ISO 56000:2020 (ISO 2020) to define innovation as “a new or changed entity creating or redistributing value”.

According to the International Organization of Standards, “an innovation is a new or improved product or process that differs significantly from previous products or processes and is made available to users. This definition is in line with those found in ISO standards so that they can be useful tools for comparing and assessing innovation within and amongst organizations” (ISO. 2019).

Some common element in the different definitions is a focus on newness, improvement, and spread. It is also often viewed as taking place through the provision of more-effective products, processes, services, technologies, artworks business models that innovators make available to markets, governments, and society. Innovation is related to, but not the same as, invention: (Bhasin, Kim. 2 April 2012) innovation is more apt to involve the practical implementation of an invention (i.e. new/improved ability) to make a meaningful impact in a market or society (Morgan 2015), and not all innovations require a new invention (Schumpeter 1939).

The innovation system in any country consists of institutions, rules, and procedures that affect how the system acquires, creates, disseminates, and uses knowledge. Innovation in a developing country concerns not only the domestic development of frontier-based knowledge but also the application and use of new and existing knowledge in the local context. Innovation requires a favorable climate for entrepreneurs, which is free from bureaucracy, regulations, and

other obstacles (WB Institute, 2005).

Designing and developing cutting-edge products and processes to maintain a competitive edge requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, it means sufficient investment in research and development (R&D), especially by the private sector; the presence of high-quality scientific research institutions; extensive collaboration in research between universities and industry; and the protection of intellectual property (Porter & Schwab, 2008).

SOURCES OF INNOVATION

Innovation may occur as a result of a focused effort by a range of different agents, by chance, or as a result of a major system failure. According to Peter F. Drucker, the general sources of innovations are different changes in industry structure, in market structure, in local and global demographics, in human perception, mood, and meaning, in the amount of already available scientific knowledge, etc (Drucker, 2002).

The robotics engineer Joseph F. Engelberger asserts that innovations require only three things:

- a recognized need
- competent people with relevant technology
- financial support (Engelberger 1982).

As per current tougher and tougher competition, globalization of products, services, production mode, business models and markets, as well as the implementation of new technologies, it looks that the success of businesses is dependent on effectiveness, efficiency, and intensity of innovation, which is considered as a decisive condition of competitive advantage in entrepreneurship, as a process created through interactions between various actors, which represents an important element of a company's future success.

It is clear that the growth of output is not attributable to labor or capital but is deemed to be linked to innovation and technological change (Neil Robert Anderson, Kristina Potočnik, Jing Zhou, 2015).

Other authors stress the relationship between innovation, integrative creativity, entrepreneurship, leadership, and management too (Shung Jae Shin, Xiaomeng Zhang, and Kathryn M. Bartol (2015), Kris Byron and Shalini Khazanchi (2015), Lucy L. Gilson, Hyoun Sook Lim, Robert C. Litchfield, and Paul W. Gilson (2015), Jill Perry-Smith and Pier Vittorio Mannucci, (2015).

As per above, considering competitive advantage as one of the main driving forces for entrepreneurship, innovation, and creativity as key factors should be considered, requiring physical and nonphysical support for an optimal result.

Every crisis brings opportunities and room for creative disruption. One side effect of the current crisis has been to stimulate interest in innovative health solutions, naturally, but also for areas such as remote work, distance education, e-commerce, and mobility solutions. With growing attention to innovation as the way to build a sustainable and inclusive future, unleashing these positive forces may well support societal goals, including reducing or reversing long-term climate change. (GII 2021).

The unprecedented global crisis that resulted from the outbreak of COVID-19 has propelled us into reinvigorating the important dimension of innovation to mitigate the pandemic's profound adverse effects on the economy and restore growth, calling for nations to embrace innovation as never before. While the crisis has naturally stimulated interest in innovative healthcare solutions, it has also catalyzed other areas, such as remote working, distance learning, e-commerce, and mobility solutions (GII, 2021).

The COVID-19 pandemic has triggered severe health and economic crises that will have lasting impacts. Vaccine research and scientific investigation to prevent the spread of coronavirus have increased awareness of the pivotal role of science, technology, and innovation (STI) in economic and social development (GII, 2021).

Organizations that thrive on time of crisis have leaped ahead in the technological world moved away from traditional competencies (innov8rs, 2021), and there is a unique time now for companies to create, innovate and standardize excellent, meaningful products that customers

truly need and innovation is an instrument of development that plays an increasingly important role in global trade. Particularly over the past two decades, the arena of global trade has been changing, with economies of scale gradually being replaced by an innovation economy focused on high-value-added products and services (GII. 2021).

Innovation has long been argued to be the engine of growth. It is important to note that it can also provide growth, almost regardless of the condition of the larger economy. Economies are more likely to experience growth due to the development of products, such as new computer software or new pharmaceutical drugs than to reductions in prices of existing products, such as telephones or motorcars. Indeed, early observations suggested that economic development does not occur in any regular manner, but seemed to occur in bursts or waves of activity, thereby indicating the important influence of external factors on economic development. It was Marx who first suggested that innovations could be associated with waves of economic growth, and later others (Schumpeter, Kondratieff, Abernathy and Utterback, Domar, Harrod), have argued the longwave theory of innovation, stressing one of the most important influences on innovation seemed to be industrial research and development (Trott. 2015).

The success or failure of an innovation or a new product¹ in the marketplace is determined by how well it is accepted by customers, how fast it diffuses among the adopter population, and how large a market it creates over a period of time. New product entry strategy and competitor responses to the entry also play important roles in the success or failure of the innovation. Thus, customer adoption, diffusion, market growth, product life cycle, new product entry strategy, and competitor responses all help to shape the market evolution process for an innovation (Shane. 2009).

1.2. INNOVATION AS AN ISO FAMILY OF STANDARDS. ISO 56000

Innovation is the fuel that drives a successful business. And organizations that give their managers and employees the tools to respond to and make the most of opportunities, both internal and external, are well placed to grow

profits and improve the health and well-being of their employees and, thereby, the wider society. With effective innovation management systems in place, organizations – both large and small – can not only be in a better position to achieve their business growth goals but also be more agile and better prepared in their response to unexpected challenges and disruptions (Ann Brady. 2021).

An innovation management system helps organizations capture the best ideas and continually improve to keep up with the competition. The latest standard in the ISO innovation management series has been published in 2019 (Clare Naden. 2020).

Alice de Casanove, Chair of the ISO technical committee responsible for the standard, says all organizations, whatever their nature or size, need to continually evolve to survive, and the ISO 56000 series will help them to do that in a structured and effective way. “Innovation is about creating something new that adds value; this can be a product, a service, a business model, or an organization. And the value that is added is not necessarily financial, it can also be social or environmental, for example,” she says. “The ISO 56000 family will help organizations significantly improve their ability to survive in our changing and uncertain world. They allow organizations to permanently reinvent themselves.” (Clare Naden. 2020).

The ISO series on innovation management includes the following published documents:

- ISO 56000:2019 - Innovation management — Innovation management system — Guidance
- ISO 56002, Innovation management – Innovation management system – Guidance
- ISO 56003, Innovation management – Tools and methods for innovation partnership – Guidance
- ISO/TR 56004, Innovation management assessment – Guidance
- ISO 56005, Innovation management – Tools and methods for intellectual property management – Guidance
- ISO 56006, Innovation management – Strategic intelligence management – Guidance
- ISO 56007, Innovation management – Idea management
- ISO 56008, Innovation management – Tools

and methods for innovation operation measurements – Guidance (ISO. 2019)

It is clear that even for International Standards Organization, relations between Innovation and Creativity are strong, since the ISO 56000 family of standards of innovation expresses the connection clearly, saying that, the application of ISO standards generally and the application of the ISO 56000 family of standards helps companies to strengthen their commitment to their clients, improving innovation and creativity activities, processes and procedures, and economies worldwide to achieve a competitive advantage.

1.3. BUSINESS SOPHISTICATION AND ITS RELATIONS WITH INNOVATION

The economic management agenda in many economies around the world is the transition from an efficiency-driven economy to an innovation-driven one. To this end, their economic policy-making should benefit from valid orientation and indicators for this transition. Utilizing a comparative approach and benchmarking from successful economic experiences around the world can help policymakers and business leaders manage the economy and achieve a higher level of prosperity. In this regard, improving national competitiveness is a key factor (Vares et al., 2011).

According to the International Organization of Standards “Innovation is not just about shiny new inventions or discoveries. Innovation is a crucial business need as it relates to a company’s ability to identify and pursue new areas of opportunity while understanding and responding to changing conditions in its environment. It also helps organizations to create value while managing uncertainty by leveraging the knowledge and creativity of the people who work there. It is a fundamental factor in business sustainability and economic viability, as well as a key contributor to the development of society as a whole. Innovation is essential because the world never stays still. Innovative organizations also contribute to many of the United Nations’ Sustainable Development Goals, including Goal 9, which aims to “build resilient infrastructure, promote inclusive and sustainable industrialization and foster the innovation”.

ISO has developed a large portfolio of International Standards and guidance documents that enable an organization to align all its systems and processes to undertake innovation activities and initiatives. They address all factors that contribute to an organization being innovative, right down to the implementation of an effective innovation management system (ISO. 2019).

In research that intended to investigate the relationship between “Innovation” and “Business sophistication”, authors using the Global Competitiveness report data in 2011-2012, activated secondary analysis research, with 142 countries’ data, evidenced that there is a meaningful relationship between “Innovation” pillar and “Business sophistication” pillar; and “Innovation” pillar has a positive effect on “Business sophistication” pillar (Razavi, Abdollahi, Ghasemi, Shafie. 2011).

In research that intends to investigate relations between innovation and business sophistication and their indication on entrepreneurship, authors have explored the relationship between entrepreneurship, the entrepreneurial ecosystem, and global competitiveness, identifying the role of innovation and business sophistication in achieving global competitiveness by fostering the entrepreneurship ecosystem, a strategic theme that has drawn the attention of various stakeholders such as business players, regulators, and related coworking organizations to promote a healthy environment for entrepreneurship. This research has offered a valuable understanding of the relationship between global competitiveness and factors of the entrepreneurship ecosystem on the one hand, and innovation and business sophistication on the other.

As per this research, “entrepreneurship has been considered as a key driver in fostering the economic development of the countries”. This study uses the 2013-14 country-level data from the World Bank - WB, World Economic Forum (WEF), and the Global Entrepreneurship Monitor Consortium - GEM. The key finding of the study shows that innovation and business sophistication play prominent roles and are linked with entrepreneurship in promoting global competitiveness, recommending that “countries

should think of innovation and business sophistication in designing the entrepreneurship program to achieve higher competitiveness” (Gandhi, Maria, Catharina Badra. 2020)

In a paper published about economic and business perspectives including the developing countries, one main conclusion that comes up by a group of experts was “that changes by globalization will affect the SMEs and entrepreneurs in a different type of economies both on a national and regional perspective. The world is globalized so is the world for entrepreneurs and innovations. All types of companies will be affected by the changes that one nowadays could observe, not only SMEs or innovative entrepreneurship but of course also the behavior of multinationals and large firms, and the relations between large and small firms. More or less every type of firm could in the future be an actor in a global market. One reason is the new technology which means that even very small local firms will have such a possibility; a factor which is analyzed in this report. On the other hand, this means increased competition from many more firms than one is used to realizing (SGC. 2009), which requires business sophistication too.

In a paper about relations between innovation, business sophistication and economic growth, authors stated improvement in business sophistication triggers innovation capacity and support macroeconomic stability. Innovation capacity would also need to be expanded in the long-run, which positively leads to advanced business sophistication that has a cyclical effect. If policymakers intend to accelerate business sophistication, then their attention should be directed towards maximizing the economic indicators in the long-run (Kirikkaleli & Ozun. 2019).

Business sophistication is conducive to higher efficiency in the production of goods and services. This leads, in turn, to increased productivity, thus enhancing a nation’s competitiveness. Business sophistication concerns the quality of a country’s overall business networks as well as the quality of individual firms’ operations and strategies. This is particularly important for countries at an advanced stage of development when the more basic sources of productivity improvements have

been exhausted to a large extent. The quality of a country’s business networks and supporting industries, as measured by the quantity and quality of local suppliers and the extent of their interaction, is important for a variety of reasons. When companies and suppliers from a particular sector are interconnected in geographically proximate groups (“clusters”), efficiency is heightened, greater opportunities for innovation are created, and barriers to entry for new firms are reduced. Individual firms’ operations and strategies (branding, marketing, the presence of a value chain, and the production of unique and sophisticated products) all lead to sophisticated and modern business processes (Porter & Schwab, 2008, p.8).

Business Process Management and ISO are typically addressed as two different endeavors, but they can be brought in alignment to improve the quality of businesses. A wide range of systems, including BPM and ISO, have been introduced in the past decades and have been explored and tried by organizations all over the world to attain best business practices. A company that is process-oriented and ISO-certified benefits when there is an alignment of BPM with the ISO standards (Breyfogle. 2015)

Business sophistication (GII. 2021) includes:

- Knowledge workers
- Innovation linkages
- Knowledge absorption
- Knowledge workers include:
 - ~ Knowledge-intensive employment
 - ~ Firms offering formal training
 - ~ GERD performed by business
 - ~ GERD financed by business
 - ~ Females employed w/advanced degrees
- Innovation linkages include
 - ~ University-industry R&D collaboration
 - ~ State of cluster development and depth
 - ~ GERD financed abroad
 - ~ Joint venture/strategic alliance deals
 - ~ Patent families

- Knowledge absorption includes:
 - ~ Intellectual property payments
 - ~ High-tech imports
 - ~ ICT services imports
 - ~ FDI net inflows
 - ~ Research talent (GII. 2021)

1.4. MEGATRENDS OF 2020 - 2030

Five main megatrends for the next 10 years shall be (1) Population growth, as the heart of the shift in economic power. (2) The impact of global warming is all around us, significantly impacting yield and coastal regions. (3) We're in the midst of a fourth industrial revolution, which will become known as the digital revolution, with the rapid advancement of technology, AI, and machine learning. (4) Changes in global demographics (world population, density, ethnicity, education level, and other aspects of the human population) will bring about significant social change, and therefore, challenges and opportunities for government and business. These megatrends underpin structural shifts, technological development, shifting economic power, etc., having a profound effect on local and global markets and societies. (Peter Fisk. 2019).

In response to these big changes/megatrends the World is going towards (1) information revolution, (2) flexible & learning organizations and innovation systems, (3) explosion of skills, knowledge, and competencies, (4) improving systems of creation, production, and distribution, (5) usage and expand of innovation systems, creativity, and quality management culture, etc.

1.5. QUALITY AND CULTURE OF QUALITY

The core definition of quality, as a group of values that helps on how improvement is done on the daily practice of works and outputs related, a group of applications taken for granted that forms the philosophy of organizations or working groups, has been identified by several authors, which in paraphrasing that has defined quality

culture as “social attack that supports people in the organization to stay together” (Robbins, 1999).

Products and services features and improvement of them thrive. This is a culture expressed in several issues: (1) improvement individually, (2) tolerance and respect, (3) entrepreneurship (4) having proven capacity.

“Culture of quality is a group of common, respected and integrally formed approaches of features of products and services, identified on the culture of organizations and systems of management” (Vlăsceanu, Grünberg & Pârlea, 2007).

“The importance of quality culture, quality management culture on doing business, achieving competitive advantage, relating them with corporate social responsibility, sustainable business, business ethics, diversity issues, international, cross-cultural management, national/international organizational culture, culture and sectors of the economy in a country, as well as currently as an important part of history of economic thought (related to business management culture)” (Gordon and Owen, 2008), Harvey and Stensaker, 2008), (Schein, 2010, 2013).

ISO standards, their importance, their use of them in practice, etc. have been described in several publications (Harrington & Mathers, 1997).

Main ISO standards required then most currently are:

- ISO 9000 Family – Quality management system
- ISO 10244:2010- Document management — Business process baselining and analysis
- ISO 14000 – Environment protection
- ISO 20000 – Information technology
- ISO 22301:2019- Security and resilience — Business continuity management systems — Requirements
- ISO 27000 – information security management
- ISO 45000 – Health and safety at work
- ISO 50000 – Energy efficiency

- ISO 56002:2019 - Innovation management — Innovation management system — Guidance Etc.

According to ISO, there are three main types of benefits from using standards (ISO, 2014):

Key benefit 1: Streamlining internal operations

One main finding is that standards can be used to streamline the internal processes of a company, for example by reducing the time needed to perform specific activities in the various business functions, decreasing waste, reducing procurement costs, and increasing productivity. The case studies consistently report that the contribution of standards to the gross profit of companies ranges between 0.15 % and 5 % of the annual sales revenues.

Key benefit 2: Innovating and scaling up operations

Some case studies provide examples where standards served as the basis for innovating business processes, allowing companies to expand their suppliers' network or to introduce and manage new product lines effectively. In other instances, standards helped mitigate the risk to companies of introducing new products onto national markets.

Key benefit 3: Creating or entering new markets

Standards have been used as the basis for developing new products, penetrating new markets (both domestic and export), supporting the market uptake of products, and even creating markets. In exceptional cases, the impact of standards far exceeded the figure mentioned above, with companies achieving a gross profit contribution of up to 33 % of their annual revenue, which helped them position themselves as leaders in their field, at least over a certain period (ISO. 2014).

2. RESEARCH FRAMEWORK, THE PURPOSE OF THE CASE STUDY

The framework of the research has been the level of innovation and business sophistication and relations between them in a global entrepreneurship ecosystem.

Given the lack of numerical, statistical, and algebraic arguments on the relations between innovation and business sophistication, this study adopts a theory-building mode and aims to investigate the following research questions:

- 1 *RQ1*: There is any relation between innovation and business sophistication?
- 2 Based on this, two hypotheses have been built:
- 3 *Ho*: There is no connection between Innovation and business sophistication.
- 4 *H1*: There is a connection between Innovation and Business sophistication.

... considering that, there are few types of research on relations between innovation and business sophistication, listed in the literature review of this paper research, and considering that theoretical approaches to relations between innovation and business sophistication exist, but numerical, statistical, and algebraic arguments on relations between innovation and business sophistication don't exist.

3. METHODOLOGY

Specifically, while acknowledging the importance of innovation, business sophistication, and quality management in doing business and entrepreneurship ecosystem, prior empirical research does not explain how innovation and business sophistication influence and connect quality management, besides the fact that few serious theoretical studies are showing the strong connection between innovation and business sophistication, but not numerical, statistical and algebraic studies. Thus, a theory building is needed, supported by analysis and evidence. An exploratory approach should be adopted using a single in-depth case study approach, appropriate for building an in-depth understanding of a phenomenon and allowing closer investigation of theoretical constructs.

3.1 CASE SELECTION

The case was selected based on three main criteria: a theoretical approach, suitability of relations, and practical positive impacts on relations

between innovation and business sophistication, considering innovation as a property of the ISO 56000 family of standards.

The case project ran in stages: (1) identifying needs for innovation and business sophistication, (2) identifying needs for quality management, and (3) identifying the rank of the countries for innovation and business sophistication.

DATA COLLECTION

Data for innovation has been gathered from the Global Innovation Index Report 2021 (World Intellectual Property Organization, 14th Edition). The Global Innovation Index (GII) is an annual ranking of countries by their capacity for, and success in, innovation.

Data for business sophistication has been gathered from the Global Innovation Index Report 2021 (World Intellectual Property Organization, 14th Edition) too.

DATA ANALYSIS

1. Worldwide data about innovation was taken from the Global Innovation Index Report 2021 (World Intellectual Property Organization, 14th Edition)
2. Worldwide data about business sophistication was taken from the Global Innovation Index Report 2021 (World Intellectual Property Organization, 14th Edition).
3. Descriptive statistics for the Innovation index and Creativity output and a correlation and regressive analysis (inferential statistics) between Innovation Index and Business sophistication for 132 countries worldwide were performed.

RELATIONS BETWEEN INNOVATION AND BUSINESS SOPHISTICATION (132 COUNTRIES WORLDWIDE)

Table 1. Innovation index and Business sophistication ranking (GII, 2021)

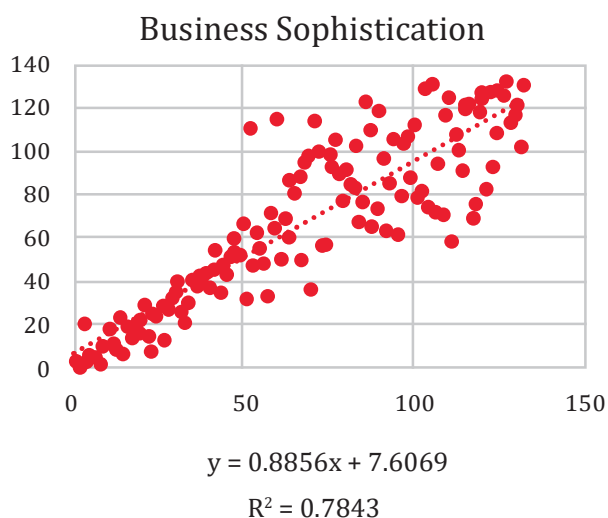
No	Country	Innovation Index	Business Sophistication Index
1	Switzerland	1	4
2	Sweden	2	1
3	USA	3	2
4	UK	4	21
5	Rep Korea	5	7
6	Netherlands	6	5
7	Finland	7	6
8	Singapore	8	3
9	Denmark	9	11
10	Germany	10	12
11	France	11	19
12	China	12	13
13	Japan	13	10
14	Hong Kong	14	24
15	Israel	15	8
16	Canada	16	20
17	Iceland	17	18
18	Austria	18	15
19	Ireland	19	17
20	Norway	20	23
21	Estonia	21	29
22	Belgium	22	16
23	Luxembourg	23	9
24	Czech Rep.	24	25
25	Australia	25	26

A REGRESSIVE ANALYSIS OF RELATIONS BETWEEN INNOVATION AND BUSINESS SOPHISTICATION UNDER A QUALITY MANAGEMENT HOLISTIC APPROACH

26	New Zealand	26	30
27	Malta	27	14
28	Cyprus	28	28
29	Italy	29	32
30	Spain	30	35
31	Portugal	31	41
32	Slovenia	32	27
33	UAE	33	22
34	Hungary	34	31
35	Bulgaria	35	42
36	Malaysia	36	39
37	Slovakia	37	43
38	Latvia	38	40
39	Lithuania	39	45
40	Poland	40	38
41	Turkey	41	46
42	Croatia	42	55
43	Thailand	43	36
44	Viet Nam	44	47
45	Russian Fed.	45	44
46	India	46	52
47	Greece	47	60
48	Romania	48	54
49	Ukraine	49	53
50	Montenegro	50	67
51	Philippines	51	33
52	Mauritius	52	111
53	Chile	53	48
54	Serbia	54	63
55	Mexico	55	56
56	Costa Rica	56	49
57	Brazil	57	34
58	Mongolia	58	71
59	N. Macedonia	59	65
60	Iran	60	115
61	South Africa	61	51

62	Belarus	62	69
63	Georgia	63	61
64	Moldova	64	87
65	Uruguay	65	81
66	Saudi Arabia	66	89
67	Colombia	67	50
68	Qatar	68	96
69	Armenia	69	98
70	Peru	70	37
71	Tunisia	71	114
72	Kuwait	72	100
73	Argentina	73	57
74	Jamaica	74	58
75	Bosnia & Hrzg	75	99
76	Oman	76	94
77	Morocco	77	105
78	Bahrain	78	90
79	Kazakhstan	79	78
80	Azerbaijan	80	92
81	Jordan	81	85
82	Brunei	82	84
83	Panama	83	103
84	Albania	84	68
85	Kenya	85	77
86	Uzbekistan	86	123
87	Indonesia	87	110
88	Paraguay	88	66
89	Cabo Verde	89	74
90	Tanzania	90	119
91	Ecuador	91	97
92	Lebanon	92	64
93	Dominic.Rep	93	86
94	Egypt	94	106
95	Sri Lanka	95	62
96	El Salvador	96	80
97	Trnd & Tbg	97	104

98	Kyrgyzstan	98	107
99	Pakistan	99	88
100	Namibia	100	112
101	Guatemala	101	79
102	Rwanda	102	82
103	Tajikistan	103	129
104	Bolivia	104	75
105	Senegal	105	131
106	Botswana	106	73
107	Malawi	107	95
108	Honduras	108	72
109	Cambodia	109	117
110	Madagascar	110	125
111	Nepal	111	59
112	Ghana	112	108
113	Zimbabwe	113	101
114	Côte d'Ivoire	114	91
115	Burkina Faso	115	120
116	Bangladesh	116	122
117	Lao	117	70
118	Nigeria	118	76
119	Uganda	119	118
120	Algeria	120	124
121	Zambia	121	83
122	Mozambique	122	127
123	Cameroon	123	93
124	Mali	124	109
125	Togo	125	128
126	Ethiopia	126	126
127	Myanmar	127	132
128	Benin	128	113
129	Niger	129	116
130	Guinea	130	121
131	Yemen	131	102
132	Angola	132	130



Graphic 1. Correlation between Innovation index and Business sophistication (drawn by authors, using GII 2021 data) where at X axes is the innovation index and at Y axes is business sophistication

SUMMARY OUTPUT	
<i>Regression Statistics</i>	
Multiple R	0.885611
R Square	0.784307
Adjusted R Square	0.782648
Standard Error	17.83218
Observations	132

ANOVA		
	<i>df</i>	<i>SS</i>
Regression	1	150314.8
Residual	130	41338.25
Total	131	191653

<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept b	7.61	3.1	2.44	0.016	1.43	13.8	1.43
Innovation Index a	0.89	0.04	21.7	3.94E-45	0.81	0.97	0.80

$$Y = ax + b$$

$$y = 0.8856x + 7.6069$$

$$R^2 = 0.7843$$

$$r = 0.885611$$

With these results, we have verified that There is a connection between Innovation and Business sophistication (Hypothesis 1).

- Implications for theory and practice

About the theory, based on the final results of this research, a new window has been opened for further research on the field of relations between innovation and business sophistication, considering them as a tool for a stronger competitive advantage approach for individual businesses and as a country's economy too.

<i>MS</i>	<i>F</i>	<i>Significance F</i>
150314.8	472.7079	3.94E-45
317.9865		

In terms of practice, the new shape of organizations as part of innovation processes has shown up currently, accompanied worldwide by new and improved products and services, as well as new business models, and besides other factors, the ISO 56000 family (innovation) helps organizations significantly improve their ability to survive in our changing and uncertain world, and allow them to permanently reinvent themselves.

- Limitations and further research

This research has been undertaken using plenty of data about the Innovation index and Business sophistication for the period of 2021.

Further research is needed to verify if these relations exist for other periods.

CONCLUSIONS AND RECOMMENDATIONS

1. Towards fixedness of natural resources and restrictions on boundless economic growth approach, the direction of innovation and creativity is important in overcoming resource constraints.
2. There is a tendency for innovations to save on scarce resources. If technological progress will be fixed-factor saving, then fixed factors may not be a large barrier to growth. The same argument and logic can be applied to business sophistication and quality management, since both of them are not fixed resources, and are strongly connected with innovation.

3. Achieving competitive advantage requires a positive approach towards innovation, business sophistication, and quality management requiring improvement of innovation, business sophistication, quality management, and business climate in SMEs, seeing this as a general microeconomic perspective too, while, in a broader context, this study extends the general understanding of the innovation, business sophistication, and quality management relations to be used for a future managerial approach/mechanism in real-world situations, suggesting future research could focus on developing and validating the proposed framework and investigate the issue in more contexts and settings.
4. There is a strong connection between the Innovation index and Business sophistication, not only in theoretical aspects but verified through a regressive analysis.
5. Application of ISO standards generally and the application of ISO 56000 family of standards helps companies to strengthen their commitment to their clients, improving innovation and business sophistication activities, processes and procedures, and economies worldwide to achieve a competitive advantage.
6. The new shape of organizations as part of innovation processes has shown up currently, accompanied worldwide by new and improved products and services, as well as new business models, and besides other factors, the ISO 56000 family (innovation) helps organizations significantly improve their ability to survive in our changing and uncertain world, and allow them to permanently reinvent themselves.
7. The success of businesses is dependent on effectiveness, efficiency, and intensity of innovation, a decisive condition of competitive advantage.
8. Innovation is an instrument of development that plays an increasingly important role in global trade, and economies of scale are gradually being replaced by an innovation economy focused on high-value-added products and services.
9. Business sophistication is conducive to higher efficiency in the production of goods and services. This leads, in turn, to increased productivity, thus enhancing a nation's competitiveness. Business sophistication concerns the quality of a country's overall business networks as well as the quality of individual firms' operations and strategies. The quality of a country's business networks and supporting industries, as measured by the quantity and quality of local suppliers and the extent of their interaction, is important for a variety of reasons. When companies and suppliers from a particular sector are interconnected in geographically proximate groups ("clusters"), efficiency is heightened, greater opportunities for innovation are created, and barriers to entry for new firms are reduced. Individual firms' operations and strategies (branding, marketing, the presence of a value chain, and the production of unique and sophisticated products) all lead to sophisticated and modern business processes.
10. Improvement in business sophistication triggers innovation capacity and supports macroeconomic stability. Innovation capacity would also need to be expanded in the long run, which positively leads to advanced business sophistication that has a cyclical effect. If policymakers intend to accelerate business sophistication, then their attention should be directed toward maximizing the economic indicators in the long-run.

REFERENCES:

1. Ann Brady (24 June 2021) Innovation, sustainability. A blueprint for sustainable innovation. Covid-19, Sustainable Development. ISO 56000 Family
2. Bhasin, Kim (2 April 2012). "This Is The Difference Between 'Invention' And 'Innovation'". Business Insider.
3. Clare Naden (19 February 2020). Inspiring successful innovation with new international standard
4. Dervis Kirikkaleli, Alper Ozun (2019)

- Innovation capacity, business sophistication and macroeconomic stability: empirical evidence from OECD countries. *Journal of Business Economics and Management* 20(2):351–367 DOI:10.3846/jbem.2019.9602
5. Drucker. P. (1985) *Innovation and Entrepreneurship: Practice and Principles*. New York, USA: Harper Business.
 6. Drucker. P. (August 2002). “The Discipline of Innovation”. *Harvard Business Review*.
 7. Engelberger, J. F. (1982). “Robotics in practice: Future capabilities”. *Electronic Servicing & Technology* magazine.
 8. Forrest Breyfogle. (10 April 2015). *Business Process Management and ISO Standards Alignment. Shifting the paradigm*. <https://www.qualitymag.com/blogs/14-quality-blog/post/92562-business-process-management-and-iso-standards-alignment>. Visited 19 March 2022.
 9. *Global Innovation Index Report 2021* (World Intellectual Property Organization, 14th Edition)
 10. Gordon, G.; Owen, C. (2008). *SHEEC on Management of Quality: Cultures of Enhancement and Quality Management Systems and Structures* [online], [cited 31 January 2020]. Available from Internet: <http://www.enhancementmesac.UK/docs/report/-management-of-quality-cultures-of-quality-enhancement.pdf?sfvrsn=12>
 11. Harrington, H. J.; Mathers, D. D. (1997). *ISO 9000 and Beyond: From Compliance to Performance Improvement*. New York: McGraw-Hill.
 12. Harvey, L.; Stensaker, B. (2008). *Quality Culture: Understandings, Boundaries, and Linkages*, *European Journal of Education: Research, Development, and Policy* 43(4): 427–442.
 13. ISO Central Secretariat. 2014. *Economic benefits of standards*. ISBN 978-92-67-10620-5
 14. ISO Secretariat. October 2019. *ISO and Innovation*. ISBN 978-92-67-11087-5
 15. “ISO 56000:2020(en) Innovation management — Fundamentals and vocabulary”. ISO. 2020.
 16. Jacob Morgan. (10th September 2015) “What’s the Difference Between Invention and Innovation?”, *Forbes*.
 17. Jill Perry-Smith and Pier Vittorio Mannucci (2015) *Social Networks, Creativity, and Entrepreneurship* (2015) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford University Press, ISBN 978-0-19-992767-8
 18. Kris Byron and Shalini Khazanchi. (2015) *Rewards’ Relationship to Creativity, Innovation, and Entrepreneurship at The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, (2015) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford University Press, ISBN 978-0-19-992767-8
 19. Lijster, Thijs, ed. (2018). *The Future of the New: Artistic Innovation in Times of Social Acceleration*. *Arts in society*. Valiz. ISBN 9789492095589. Retrieved 10 September 2020.
 20. Lucy L. Gilson, Hyoun Sook Lim, Robert C. Litchfield, and Paul W. Gilson (2015). *Entrepreneurial Creativity: The Role of Learning Creativity in Teams: A Key Building Block for Innovation and Entrepreneurship* (2015) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford University Press, ISBN 978-0-19-992767-8
 21. Neil Robert Anderson, Kristina Potočnik, Jing Zhou, (2014) *Innovation and Creativity in Organizations: A State-of-the-Science Review, Prospective Commentary, and Guiding Framework*. *Journal of Management* 40(5), DOI: 10.1177/0149206314527128
 22. OECD, 1996, *The Knowledge-Based Economy*, OECD Paris.
 23. OECD (2005). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*, OECD Publishing, ISBN 92-64-01308-3, Paris, France

24. Paul Trott (2015) *Innovation Management and New Product Development*. Sixth Edition. Portsmouth Business School. p. 7
25. Pawitan, Gandhi; Widyarini, Maria; Nawangpalupi, Catharina Badra (2020). The moderating effects of innovation and business sophistication on the relationship between entrepreneurship, ecosystem and global competitiveness: national level analysis. <https://repository.unpar.ac.id/handle/123456789/11387>. Visited 19 March 2022
26. Peter Fisk. 2019. <https://www.peterfisk.com/2019/12/mega-trends-with-mega-impacts-embracing-the-forces-of-change-to-seize-the-best-future-opportunities/>
27. Porter, M. E., & Schwab, K. (2008). *The Global Competitiveness Report 2008-2009*. Geneva: World Economic Forum.
28. S. Mostafa Razavi, Behzad Abdollahi, Rohollah Ghasemi, Hessam Shafie. 2011. Relationship between "Innovation" and "Business Sophistication": A Secondary Analysis of Countries Global Competitiveness. *European Journal of Scientific Research*. Vol.79 No.1 (2012), pp.29-39. ISSN 1450-216X
29. Sarasvathy, S., N. Dew, S. R. Velamuri and S. Venkataraman (2003). Three views of entrepreneurial opportunity. In *Handbook of entrepreneurship research: an interdisciplinary survey and introduction*, ed. Z. Acs and D. Audretsch, 141–160. New York: Springer.
30. Shane, S. (2003). *A General Theory of Entrepreneurship. The Individual–Opportunity Nexus*. Cheltenham, UK: Edward Elgar.
31. Shane, S (2009). *Handbook of Technology and Innovation Management*. Case Western Reserve University. 978-1405127912
32. Schumpeter, Joseph A., (1939). *Business Cycles*. 1. p. 84. Innovation is possible without anything we should identify as an invention, and the invention does not necessarily induce innovation.
33. Schumpeter, Joseph. 1942. *Capitalism, Socialism, and Democracy*.
34. Schumpeter, Joseph A., 1883–1950 (1983). *The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle*. Opie, Redvers, Elliott, John E. New Brunswick, New Jersey. ISBN 0-87855-698-2. OCLC 8493721.
35. Shung Jae Shin (2015) *Leadership and Creativity: The Mechanism Perspective*. (2015) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford University Press, ISBN 978-0-19-992767-8
36. Shung Jae Shin. Xiaomeng Zhang and Kathryn M. Bartol (2015) *Empowerment and Employee Creativity: A Cross-Level Integrative Model*, (2015) *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, Oxford University Press, ISBN 978-0-19-992767-
37. Sweden's Globalisation Council (2009). *The Role of SMEs and Entrepreneurship in a Globalised Economy*. Expert report no. 34. ISBN 978-91-85935-33-8 ISSN 1654-6245
38. *The innovators handbook*. 2021. P. 13.
39. *The World Bank Institute*, 2005
40. Vares, Hamed; Parvandi, Yahya; Ghasemi, Rohollah; and Abdullahi, Behzad (2011). "Transition from an Efficiency-Driven Economy to Innovation-Driven: A Secondary Analysis of Countries Global Competitiveness", *European Journal of Economics, Finance and Administrative Sciences*. Issue 31.
41. Vlăsceanu, L.; Grünberg, L.; Pârlea, D. (2007). *Quality Assurance and Accreditation: A Glossary of Basic Terms and Definitions*. Seto, M.; Wells, P. J. (Eds.). Bucharest: UNESCO-CEPES.

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