ORIGINAL ARTICLE

A study of preconditions and consequences of authenticity in leadership for healthcare educational SMEs, through the 5th wave theory and meta-analysis

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ABSTRACT

Background: Orchestrating personnel with different roles in healthcare sector using a proper leadership style is one of the main challenges in Iran. The coronavirus disease 2019 (COVID-19) pandemic, as a major threat to global public health, makes the leadership challenge in Iran healthcare sector bolder due the complexity of health industry as a service industry with twisted processes and aim of satisfying patients with proper service and managing healthcare personnel with increased workload and stress. As a result, to strengthen healthcare systems for unprecedented threats, a cohesive leadership is required. Authentic leadership is a method in which leaders are genuine, self-aware, and transparent. The aim of this paper is to clarify preconditions and consequences of authenticity in leadership of healthcare educational Small & Medium Enterprises (SMEs). **Methods:** The research is done in documentary research method, developmental research and descriptive correlation. Data collection in Meta-analysis phase is by library research method. Statistical society of the research is more than 38 articles written in the period of 2015 to 2022, from which collected data is codified and then analyzed by SPSS in order to describe research's specifications and CMA2 for statistical calculations. **Results:** Preconditions of authentic leadership, including organizational structure, EQ, relationship oriented organizational culture, rules and regulations, ethical reasons of the leader and Industry attributes as well as consequences of authentic leadership, including employees' bullying, extra-role behavior, work ethics, burnout, work productivity, product innovation, self-control, employees' mindfulness, optimism and personnel health, have been identified through the 5th wave theory based on future planning and Meta-analysis and the Doost Research Methodology (DRM). The results suggest that authentic leadership considering attributes of healthcare industry has positive effect on performance of healthcare companies.
Conclusions: As SMEs are formed more than 95% of businesses all around the World, they play indispensable role within developing economic and technical sustainability as well as seven pillars of sustainability (7PS) model. Identifying necessities and consequences of authentic leadership in healthcare companies can be used as a road map for modern managers. Investigating the effects of training, welfare, and health in improving the productivity of SMEs' HR simultaneously through the 5th wave theory is the main conclusion of this paper.

Key words: preconditions & consequences, authenticity, leadership, healthcare educational SMEs, the 5th wave theory, meta-analysis

INTRODUCTION

Healthcare industry is one of the world's largest and fastest-growing industry with different challenges in orchestrating human resources with different knowledge levels, providing best services to satisfy patients and managing goods and equipment. In addition to these challenges, a crisis like the coronavirus disease 2019 (COVID-19) pandemic

sharply disrupts the balance between supply and demand in healthcare industry which affects the resilience of even high-performing healthcare systems even in developed countries.[1] These challenges highlight the role of leadership in healthcare industry. Internally, the public health care sector is challenged by poor management structures. Leaders are essential in healthcare organization to achieve patient safety and healthy work environments. Although there are various leadership styles, choosing a suitable one depends on industry attributes and external environment.[2] Authentic leadership has proven to be effective in health industry[3] by enhancing positive attitude among employees.[4] Authentic leadership is rooted in humanistic values which are at the core of nursing and other health professions[5] and promotes a healthy work environment wherein everyone feels respected, trusted and appreciated for their contributions.[6] Moreover, authentic leaders facilitate higher quality relationships leading to active engagement of employees in workplace activities, which results in greater job satisfaction and higher productivity and performance.[7] Eeffective leaders support and encourage staff to identify what they require to practice safely, ethically, and responsively.[8] In the health care literature, educational level of staff members was related to their perceptions of leadership effectiveness. Morrison, Jones, and Fuller (1997) found that the amount of variance that transformational leadership accounted for in job satisfaction was much greater for less well-educated staff or nonprofessional staff (*e.g.*, clerks, secretaries, and nursing assistants) than for professional staff (registered nurses).[5]

THEORETICAL FOUNDATIONS

The term "authentic" has its origin in Greek philosophy with the meaning of "self-examination" and "self-acceptance". "Authentic Leadership" theory was proposed for the first time in 1990 in the field of sociology and education and it was warmly welcomed as a new concept in the society of leadership studies and Gallup Inc. determined its main framework.[9] This modern theory is mainly effective for inspiration and deployment of employees' psychological capacity[10] and help the whole organization to improve the personnel's emotional security by using ethical standards and loyalty.[11] Nowadays, authentic leaders are highly familiar with core values, self-confident, trustworthy and concentrated on empowering their followers in order to create an organization with engaged and positive employees.[12] The roots of authentic leadership are in all positive features such as positive emotions, hope, self-confidence and achieving goals for social and psychological welfare. In other words, authentic leader is deployment of positive characteristics in the field of leadership.[13] The leader's personal insight or self-awareness is the essential factor for development of an authentic leader, which will clarify core values, motivations, goals and emotional experiences.

Authentic leaders will make better decisions by knowing who they are and what should do, because they feel more confident and efficient.[14] Based on definitions, authentic leader is aware of values, knowledge, ethical principles and believes of him/herself and the whole team. Also he/she is trusty, optimist, hopeful and moralist.[15] They have a sense of purpose, knowing what they are about and where they are headed.[16] Because of that, self-awareness and clarity should be institutionalized in the leader in order to rationalize his/her relationship with followers and concentrate on their strengths.[13] So we can pretend that this method is trying to expand positive psychological capacities and positive moral atmosphere at the same time.[17] This type of leadership, as the newest approach in recent years consists of 4 main factors: self-awareness, internalized moral aspect, balanced processing and clear relationship. Authentic leaders are people with self-knowledge who are dominant on their thoughts and behaviors.[18] While almost all of the past researches on this subject are confirming the relation between these two factors, Wei *et al.* believe that based on this relation, followers are showing the imposed behavior by their leaders.[18] This reason will prove that leaders who know the importance of trust in the organization, try to encourage colleagues for helping each other and OCB by sincere helping and friendly behavior, so it's highly expected that the leader's etiquette directly affects the followers' actions.[19] Also Toor and Ofuri introduce these leaders as confident, hopeful, optimist, flexible, clear and moralistic. Researchers believe that they have a good comprehension of cultural sensitivity and they act with a great motivation and self-awareness with their followers.[20] Globalization, close competition and fast technological evolution are serious barriers for leaders on their way to create an innovative ambiance for personnel, so authentic leaders try to make the atmosphere creative and improve the creativity and positive thoughts within employees in order to support them.[21] This type of leaders will motivate their followers to do their job with more interest.[22] The eagerness of the employees would expand their scope of attention and knowledge, then potentially improve their creative activities.[23] Leaders with authentic style are highly engaged to their goals and their dare to act encourages their followers to go forward. Authentic leadership will communicate positively and based on values, his/her strengths and weaknesses, decisions and acts are visible for everyone, so the sense of trust and freedom of expression for new ideas will appear and make the organization more effective.[24] These leaders know themselves, their beliefs and move forward based on them, at the same time, they interact clearly and honestly with their followers. At the first step, authentic leaders should act by these characteristics.[25] Employees who are led by an authentic leader have a better psychological capital which will encourage them for act with more creativity and innovation.[26] In this regard, Awlio *et al.* affirm in their research named "Effects of authentic

leadership on employees' behavior'', that authentic leaders will affect the behavior of employees and improve their respect and trust by self-awareness, being honest, decision making based on ethical standards and ability to analyze.[27] Positive interactions with followers would be the reason of motivation for them, so they work eagerly. These positive emotions will attract the attention and improve creativity and innovation within employees. Self-awareness of the leader improves the independence and his/her ethical behavior is the most important reason for promote trust in the workplace. Also giving self-confidence to followers will encourage them to be risk-taking and dare to experience.[28] Though various studies are done about the role of leadership on mental and physical health within employees, there is no research about effects of authentic leadership on improvement of employees' health in a healthcare company. In this regard, authentic leadership is identified as one of the preconditions and one of the most effective factors on the creativity of personnel and led the organization to innovation.[29] Positive thinking, optimism and passion for what they do is the most distinctive feature of the authentic leaders which will gain the employees' trust and encourage them to actively enter dialogues and try to find innovative solutions for challenges.[30] Majority of theoretician in the field of leadership believe that these leaders have a high level of ethics in their behavior, pay attention to various aspects and consider all the beneficiaries; indeed, they do their best for making the best decisions, taking into account the needs of individuals.[31] Authentic leaders have 4 main characteristics as mentioned below:

Self-awareness
Self-awareness is the basis of authentic leadership and wants to show the interaction of an individual with his/her world around.[17] Based on the studies of Avlio and Gardner, self-awareness concludes values, cognitive identity, emotions and goals/motivations. Generally we can evaluate the high understanding of the leader from the strengths, weaknesses and motivations of their followers as his/her self-awareness. In fact, self-awareness embodies internal and external (references) aspects; internal reference means the understanding of the leader from believes, needs and emotion of the employees, while external reference shows the reflection of leader's image in the mind and imagination of followers. In authentic leaders with high level of self-awareness, both references improve their effectiveness[32], but non-authentic leaders act in a way that self-awareness of their followers are destroyed, so they are forced to accept a leader with altered values; this acceptance which is derived from ambiguity and contradiction in the behavior of leader toward their followers, will lead to hypocritical behavior within employees.[33] One of the most basic features of an authentic leader is that they never engage themselves in leadership activities for their personal interests, on the contrary, they believe in some valuable aims and goals for promoting which they accept

the role of the leader.[34]

Balanced processing
This means that authentic leaders process all related data before decision making, ask for comments and challenge themselves in various situations.[31] Leaders who ask others' opinion and challenge the situation, receive a better reaction and create stronger relations with their colleagues and followers. Balanced processing is the key of growth and development of authentic leadership.[35] Authentic leaders deploy informal methods and other's comments in analyzing data and then making decisions which leads to cultivate creative ideas in the organization. This means that authentic leaders are not necessarily special people with different characteristics. They could be similar to other leaders and followers while they are committed to their values, believes and goals not in a hypocritical way; but as an inner process based on their ability to analyze and experiences.[36]

Internal aspects of ethics
This point shows the behavior of the leader, conducted by his/her inner values and ethical criteria rather than external pressures. An authentic leader, as the main decision-maker of the organization, is committed to some principles which aims to get more benefits for employees, organization and society.[31] This feature emphasizes on the fact that leader's behavior is an internal ethical criteria and it's not affected by external factors such as colleagues, organization and society.[17] On the other word, it indicates the institutionalized form of self-regulatory. Self-regulatory is a process in which, individuals facilitate the self-control process by creating inner ethical standards, comparing and finding their differences and defining their outcomes.[37] Authentic leaders are persons who have self-knowledge and predominant on their behavior and thinking. They are so hopeful, flexible and committed to ethics. Their role as a leader is to improve and develop models of self-consciousness, internalization of ethics, transparency in relations, psychological capacities improvement and positive atmosphere.[38]

Transparency in relations
This aspect is actually presentation of authenticity to others, which improves the mutual trust by sharing data, expressing true thoughts and feelings and demonstrating these behaviors.[17] In fact, transparency in relations will tell to the employees that their leaders are so kind, sincere and reliable. Transparent relations with leaders is the sign of self-confidence and self-disclosure and shows that how much is he/she going to improve the open relationship with employees in order to know their ideas, comments and challenges in near future. This situation is a good opportunity for positive aspects such as optimism, hope and self-confidence to be developed and growing the leader and followers at the same time.[39] On the other hand, respect to followers' opinions improves the ability

of followers for expressing themselves and show their emotions. Transparency in the behavior of the leader is to act based on authentic values and beliefs; they do what they say.[40] Regarding that their behavior has its origin in their values, they are known as honest and integrated persons in whom people can trust, because they act for their beliefs, not for their personal interests. Also, integrity between their thoughts, their words and their acts will introduce them as transparent leaders.[41]

D3 Revolutions
Based on the 5th wave/tomorrow age theory or theory of comprehensive everything, at the beginning of the 21st century, three revolutions (D3 Revolutions) which are Decarbonization, Decentralization, and Digitalization took place, shape, change, and influence our century and as a result of digital sustainable economic developments, governments also changed.

These revolutions and technologies can make the businesses especially SMEs in economic sector successful for making high livability and quality of life for mapping the future, sustainable and make the world a better place for living. In today's fast-paced world, many factors, both internal and external, affect business and quality of life, and societies and organizations need a new definition of sustainability. To be able to understand the abilities and management of themselves and others for growth and development, to create processes different from the previous standard procedures in the organization and to be able to respond appropriately and promptly in the face of change. High sustainability adds cultural, educational, political, and technical dimensions to the traditional environmental, social, and economic dimensions that are required to address the anticipated issues, and all seven pillars must be developed equally. Figure 1 presents seven aspects of sustainability (7PS model) and its classification in addition PEACE, and LOVE.[42,43] This model is focusing on seven pillars of sustainability as below. Fundamentally,

we are settling in edge of future that confronts future shocks including tomorrow's economic challenges, new businesses' barriers, modern training style risks, and human competencies challenges and so on. the below figure presents the point that we are perched on: As in previous section was declared, solutions are required to deal

with ubiquitous and digitalization challenges to be able to apply them in different educational businesses and services towards creating modern areas. The 5th wave/tomorrow age theory or theory of comprehensive everything could be a comprehensive strategy to find out solutions to deal with such challenges, even to tackle future shocks for mapping the future business economy.

In recent decades, besides of sustainable development, digitalization (one of the D3 revolutions) is one of the most remarkable phenomena. While digitalization and smartness work together in a city, smart city is created. smart city is a combination of (1-) information city, (2-) digital city, and (3-) sustainable city. According to the above theories, smartness in economy, mobility, education, environment, society, people living, and governance are formed the super smart tomorrow's cities. These cities are to cope with the future demands of their citizen. In tomorrow's cities, the usage of new IoT facilitates, smart administration and good governance using tools such as U-governance and U-democracy. Figure 2 presents comprehensive strategic urban plan including three dimensions (1) Sustainability, (2) Impact, and (3) Ubiquitous.[44–47]

Main points of the 5th wave/tomorrow age theory or theory of comprehensive everything are listed below:

(1) The 5th wave theory is to measure the readiness to change into the new age/wave we are just entering.[48]
(2) The 5th wave theory is getting ready for tomorrow's concerns.
(3) Future crises/shock, Tomorrow's readiness.
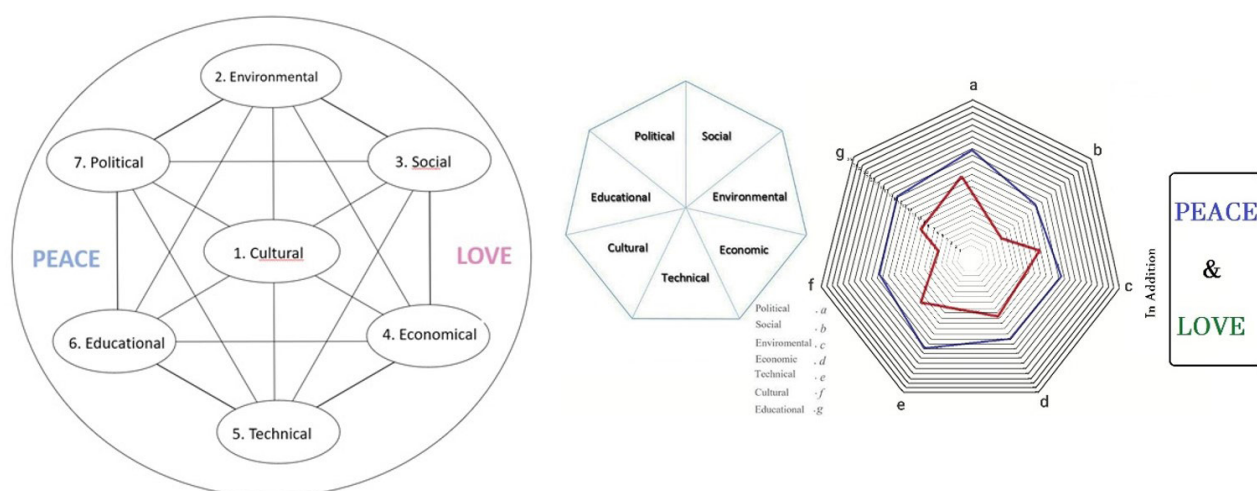
Figure 1. Seven pillars of sustainability model with Priority and Connections (7PS model).[42,43]
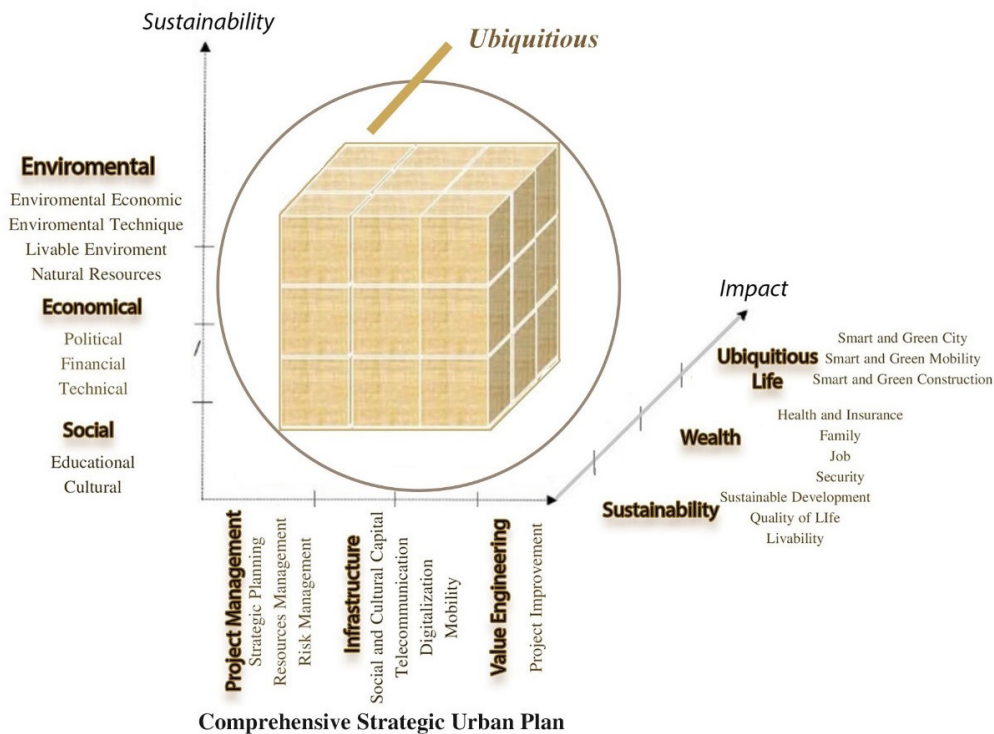
Figure 2. U-D-SDIC Model.[44–47]

(4) Modern business economy/Future of business economy.

(5) Edge of tomorrow (the first step of this edge 2020-2030).

(6) Combination of future of I4.0 (I5.0) as west cultural symbol and future of Society 5.0 (Society 6.0) as non-west cultural symbol to avoid gender differences in west and non-west cultures.

(7) Hybrid SMEs/SME 5.0/Tomorrow's SMEs as a new business economic concept.

(8) Human right, women, freedom, and equality.

(9) Balance for opportunities for leadership positions for men and women.

(10) Proceeding of future of I4.0 (I5.0) as a symbol for western culture: Industry 4.0 is a western concept same as digitalization; Industry 4.0 is about intelligent and smart networking of products based on 4th technology areas: Embedded systems, Smart factories, Strong networks, Cloud computing, Information Technology (IT) security.

(11) Proceeding of future of Society5.0 (Society6.0) as a symbol for non-west culture: Society 5.0 is non-western concept same as UBIQUITOUS; Society 5.0 is about being or seeming to be everywhere at the same time; in an intelligent society based on; real life + high tech. + virtual reality.

What: is invented, introduced, and improved to support all businesses especially SMEs to; forecast; prevent; face.

For the: today's challenges; tomorrow's crisis/shocks or future concerns.

Where: today's challenges and tomorrow's crisis have

impacted at level of: knowledge, technology, and business which called KTB model and illustrated in Figure 3.[49–51]

Why (Aims):

To provide societies:

(1) Blue-Green Sustainability (a new concept, Doost H. 2017)[52]

(2) Innovative digital readiness.

(3) Recovery and CSR 1.0, CSR 2.0, CG and CSE strategies

Why:

By leveraging on: CSR 1.0 which is Corporate Social Responsibility and CSR 2.0 which is Corporate Sustainability Responsibility, CG and CSE approaches .

How:

By using innovative digital infrastructures:

(1) Innovation.

(2) Implementation, Development, and Application of

(3) Future of the 4.0 technologies (5th technologies)

Which can influence, change, and improve business economy, education and training on digital infrastructure as well as our lives.

Background:

The 5th wave theory is based on some other theories,
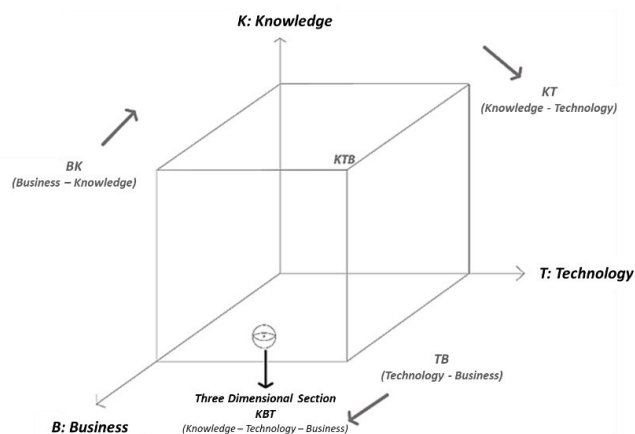
Figure 3. Today's challenges and tomorrow's crisis have impacted at level of: knowledge, technology, and business which called KTB model.[49–51]

concepts, methods, and models which are invented, introduced, and developed by Prof. Dr. Hamid Doost Mohammadian (2010-19) *e.g.*:

(1) i-Sustaianbility Plus Theory
(2) DCT theory (Doost Cultural Theory)[53]
(3) Seven Pillars of Sustainability model (7PS)
(4) Knowledge, Technology, & Busniess (KTB) model
(5) (5)3D Socio-Eco-Environment SMEs model
(6) DRM methodology (Doost Research Methodology)[54]
(7) D-SDIC model (Doost Sustainability Digitalization Impact Comprehensive Plan)[55]
(8) DRMM (Doost Risk Mitigation Method)
(9) SME 5.0/Hybrid SMEs/Tomorrow's SMEs concept
Impacts:
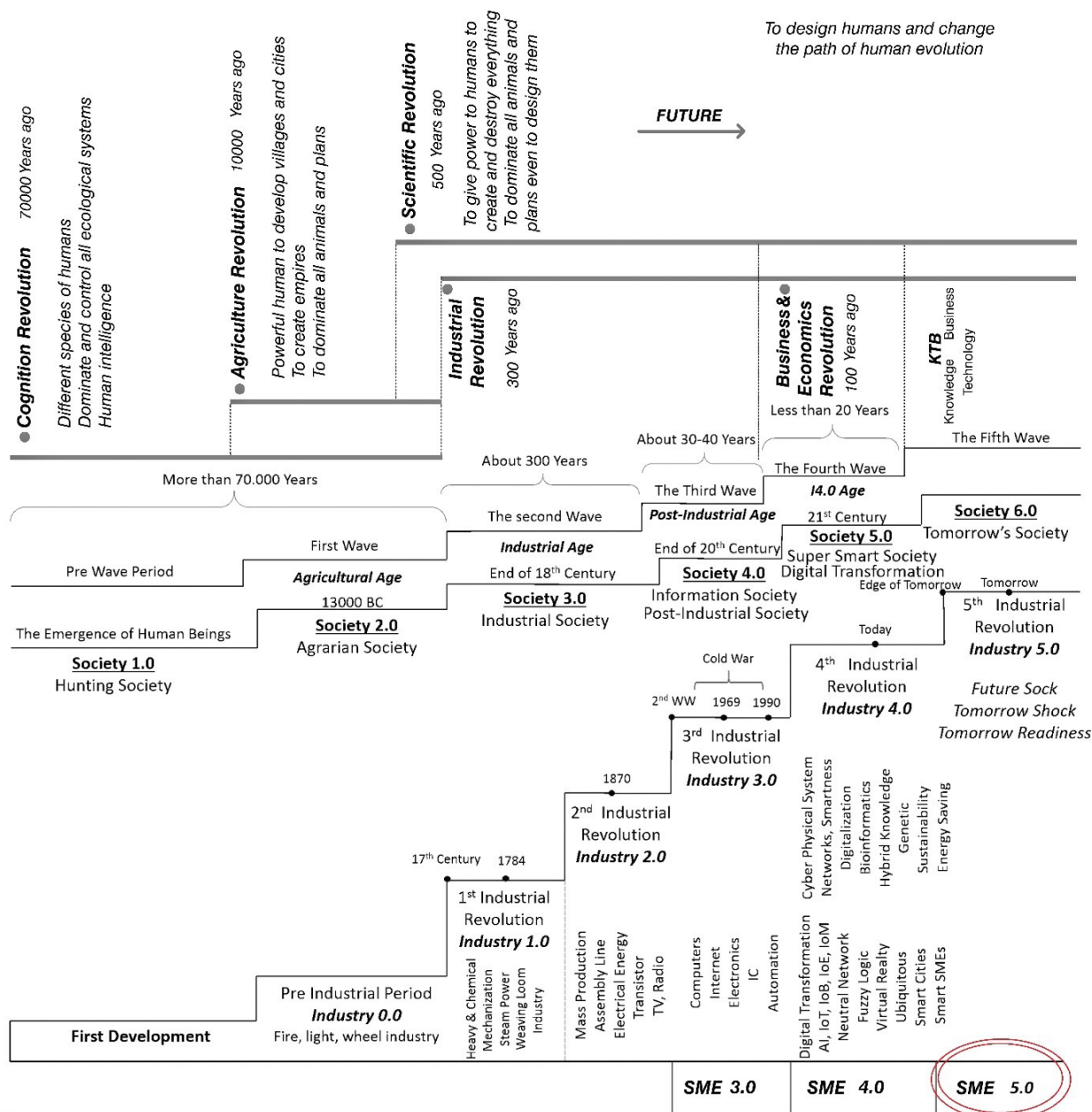
Figure 4. The 5th wave theory, ages, society, industries, and technologies.[52,56–62]
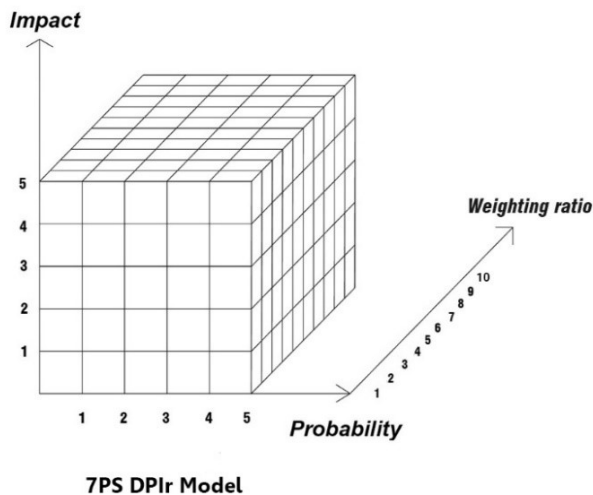
Figure 5. 7PS and DPIr Model.[43,55]

"The 5th wave theory" - expected impact:

(1) Education and Training with a focus on HR competencies, EQ and conversational intelligence
(2) Health-care systems reinforced (Welfare 5.0)
(3) New opportunities for affected citizens to be employed created
(4) Citizens' basic services enhanced (Urban 6.0/Utopia)
(5) World economies more resistant and sustainable
(6) Education engineering & vocational training with a focus on HR competencies, EQ, LQ, conversational intelligence and women
(7) Welfare 5.0 as a very good, sustainable, trustable social system
(8) Equal opportunities for both genders' citizens for the leader position
(9) Urban 6.0/Utopia for all gender community
(10) Human right, women, freedom, and equality
(11) Women sustainable innovative engineering Edu leadership and economies more resistant and sustainable
(12) New opportunities for women leadership in SMEs to achieve cultural sustainability
(13) Based on Prof. Hofstede's 6 cultural dimensions, masculinity and femininity make all these finding would be different in west because of being masculine culture and non-west culture because of being feminine culture
Results:

"The 5th wave theory" - expected results to create:

(1) Communities (Urban 6.0/Utopia), Societies (Society 6.0)
(2) Mapping women sustainable innovative business economy
(3) Tackling future concerns
(4) Make the World a better place for living
(5) Changing each and person and each person's life
(6) Human right, women, freedom, and equality
(7) Equal opportunities for women and men to obtain

leadership positions in organizations
(8) Cities (Tomorrow's Cities), Businesses (SME 5.0)

capable of:

1) Mapping a Sustainable Future
2) Tackling future concerns
3) Make the World a better place for living
4) Change each person mindset for changing the world

Conclusions in business economy especially SMEs:

In "The 5th wave theory" we have a new concept for SMEs named "HYBRID SMEs/SME 5.0/Tomorrow's SMEs" and based on the 3D Socio-Eco-Environment SMEs model whose priorities are (Based on the Figure 4):[52,56–62]

(1) Environmental responsibility,
(2) Social cohesion,
(3) Economic efficiency,

Based on the 7PS model, it is possible to measure the sustainability compass with using 7PS DPIr Model which presents in Figure 5[43,55] and Table 1.

Table 1 is presented how to measure the educational sustainability which is made of the trinity of Impact (I), Probability (P) and ratio (r).

This theory mentions that it is required to get ready for the edge of tomorrow, today's challenges and tomorrow's crises and shocks! In addition, this theory makes societies and urbans founded on high technologies, digitalization, appropriate HR, strategies concerned on sustainability which can create new concept of cities which tackled with future concerns and readiness for tomorrow shocks entitled: "Tomorrow's Society for Tomorrow's Cities".

Doost Mohammadian's concept of tomorrow's SMEs states that Hybrid SMEs should entail the sustainable development criteria such as environmental responsibility, social cohesion, and economic efficiency. In addition, SMEs should create innovative projects which focus on future planning, clean economy, and succession planning. HR talents, competencies, qualifications, skills, and training (focus on EQ and conversational intelligence). A utopia is an imagined community, society or urban space that possesses highly desirable or nearly perfect qualities for its citizens.

The 5th wave theory forecasted a crisis at the edge of tomorrow, which has led to the creation of communities, societies, cities, and businesses founded on high technologies, IoT, and on appropriate business strategies concerned with sustainability which can create new concepts and new businesses, societies, and cities which are capable of tackling future concerns. These are commonly known as "Tomorrow's Society and Business" and "Super-

Table 1: SME 5.0 healthcare educational sustainability measurement[42,63]

Index	Description	Row
Si	SME 5.0 Healthcare Educational Sustainability	1
Pi	Probability of Healthcare Educational Pillar	2
Ii	Impact of Healthcare Educational Pillar	3
ri Normal	Normalized ratio of Healthcare Edu Pillar	4

SME 5.0 Healthcare Educational Sustainability (Si) = $\sum$ (Pi * Ii * ri Normal)

Table 2: The article selection method in meta-analysis approach

| Data base	Criteria for entering meta-analysis	No. of articles	Criteria for entering meta-analysis criteria for exiting from meta-analysis	Eligible articles
Emerald	Title, Summary and key words	20	Unavailability of full-text articles, qualitative researches, out of field, non-confirmation of relation between variables	3
ScienceDirect		78		19
Springer		57		13
Total		155		35

Intelligent Society", and they function in a super-intelligent business environment.

Another theoretical basis is the "i-sustainability plus theory", which is made up of the trinity open innovation, sustainability, and 4.0 smart high technologies, *e.g.*, digitization and ubiquitous and super-intelligent society (Society 6.0).

This construct, which includes the idea of a sustainable ubiquitous and smart society and city, is evaluated as a new idea of urban living in tomorrow's business, and societies entitled URBAN 6.0.[44–46]

As shown in Figure 6, i-Sustainability Plus Theory comprises three characteristics: open innovation, sustainability pillars, and future 4.0 smart high technologies. This construct explores ideas derived from the combination of real life, high technology, and virtual reality, remarkable sustainable development drivers, to reach a higher quality of life. The i-Sustainability Theory allows communities to avoid impacts of global crises on sustainability, today's sustainability challenges, and tomorrow's sustainability shocks. Generally, there has been an increased interest in the quality of life by researchers who have made it a key concept in the field of global and human issues. Thus, today, along with the ideas of sustainable development, the concept of quality of life has become a priority. In other words, the quality-of-life index in today's community indicates the degree of achieving welfare and providing greater citizen satisfaction. Any community with a high score in the quality-of-life index is a desirable community for living. Instead of accelerating and moving forward, societies want more attention to the viability, quality of life of citizens, and sustainable development.

Histomap of 5th wave/tomorrow age theory is concluded
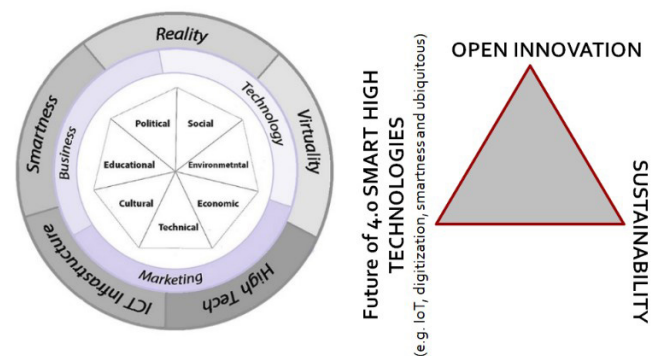
Figure 6. I-Sustainability plus theory.[47,48,64–66]]

as Figure 7.

RESEARCH METHOD

As shown in Table 2, this research is done by meta-analysis method which is defined as following: Present study is a documentary based research which has the analysis of construction companies' function as a goal.

Research is done by systematic review and meta-analysis method and comprehensive review is used for retrieve related studies and data extraction from eligible studies. After proposition and edition of questions and hypothesis, studies' inputs and outputs are classified in systematic and meta-analysis. Type of necessary data to be extracted is considered in order to achieve goals and test hypothesis. Statistical society in the part of meta-analysis is published researches in ScienceDirect, Wiley, Emerald and Springer journals from 2015 to 2022. It should be noted that chosen articles have the term of "authentic leader" in their title, summary and key word. Regarding that some of these researches are not eligible for meta-analysis because of lack of information, totally 35 articles are chosen as statistical

SME	Society	Industry	Waves/Ages	Revolutions			Year
	Hunting Society Society 1.0		Pre wave period	-)Cognition Revolution -)To Dominate and Control all ecological System -) Human Intelligence	The Emergence of Human Beings	-)First Development -)Different Spices of Human	70000 Years ago
	Society 2.0 Agrarian Society	-) Pre Industrial Period -) Industry 0.0 -) Fire, Light, Wheel Industry	-)The First Wave -)Agricultural Age	-)Agriculture Revolution -) Powerful Human to Develop Urban Areas -) To Create Emprises To Dominate All Animals, Plans and planets			13000 Years ago
				-) Scientific Revolution -)To Give Power to Humans to Create and Destroy Everything In the Planet -) Just one Human Specie			500 Years ago
	Society 3.0 Industrial Society	-)1st Industrial Revolution -) Industry 1.0	The Second Wave Industrial Age	Industrial Revolution			17th Centaury
		-) Heavy and Chemical Industry -) Mechanization -) Steam Power -) Wearing Loom					1784
		-)2nd Industrial Revolution -) Industry 2.0 -)Mass Production -)Assembly Line -) Electrical Energy -) Transistor, TV, Radio					1870
SME 3.0	-) Society 4.0 -) Information Society -) Post Industrial Society	Industry 3.0 • Computers • Internet • Electronics • IC • Automation	-) The 3rd Wave -) Post Industrial Age	-)Business and Economics Revolution1 *Future*	To Design Humans and Change the Path of Human Evolution	100 Years / 40 Years / The Cold War	2nd WW 1969 1990 2000
SME 4.0 Smart SME	-)Society 5.0 -) Smart Citizen	The 4th Industrial Wave • AI, IoT, IoB, IoE • IoM, Neutral Network • Fuzzy Logic • Ubiquitous • Networks	-) 4th Industrial Wave -) Digitalization Age -) Digital Transformation -) Virtual Reality -) Cyber Physical Systems -) Smartness -) Digitalization	-)Business and Economic Revolution 2 -)Hybrid Organization -)Cloud HR -)Greenhouse Gases Reduction -)Energy Saving -) CSR	Bioinformatics Hybrid Knowledge Genetics Sustainability	10 Years	2006 2011 Today
SME 5.0 SMEs for Tomorrows' Shocks	Society 6.0	Industry 5.0	-) The 5th Industrial Wave -) Tomorrow Age		KTM Model Future Shocks Tomorrow Shocks	*Edge of Tomorrow*	Tomorrow

Figure 7. Histomap of 5th wave/tomorrow age theory.[52,56–62]

society. Selection criteria for meta-analysis research are:

• To be quantitative, experimental and calculated with one of these criteria: the correlation coefficient, coefficient of determination, Beta coefficient and t test.
• To be done by valid methods and published in reputable journals.
• Each research should be related to preconditions or consequences of authentic leadership or both of them. Summary of articles related to meta-analysis is shown in Table 3.

In order to verify the validity, valid researches concerned preconditions and consequences of authentic leadership are going to enter the meta-analysis procedure (Tables 4 and 5). On the other hand, reliability of the research is assessed by measuring reliability of identification (by accordance between academic experts and health industry experts for selection and classification of researches), reliability of codification (by experts' accordance for using special terms for variables), and reliability of confidence level and effect size (by accordance for effect size calculation within 2 meta-analyzer with same experience in this field. In the present research, based on considered criteria for Meta-analyze and research's questions and aims, data collection form is prepared and desired data is collected. For data collection, secondary data are used by the title of past documents. These documents are articles about authentic leadership. In order to have more accuracy, a check list is prepared including research approach, hypothesis, aims, statistical society and sample, sampling method, research method, statistical method, validity and reliability of the research. Collected data from researches are codified and sent to SPSS software in order to define research specifications and CMA2 in order to do statistical calculations and meta-analysis. Taken actions and research's algorithm are shown in Figure 8.

FINDINGS AND RESULT

Regarding that this research is done with meta-analysis and Partial Least Squares method, in the first section, meta-analysis is presented for identification of preconditions and consequences of authentic leadership. After exact review of related articles to authentic leadership and selecting them based on selection criteria mentioned in Table 2, 38 of them are eligible for entering meta-analysis (shown in Table 3)

It should be noted that meta-analysis questions are:

• Which criteria are studied in the article?
• Which preconditions are reviewed in the article?
• Which consequences are reviewed in the article?
• Which are priorities of authentic leadership's preconditions based on effect size?
• Which are priorities of authentic leadership's

consequences based on effect size?

Regarding that in meta-analyzing of correlation coefficient, transformed amount of correlation coefficient to ZR Fisher equals to its effect size. In this research, meta-analyzing the correlation coefficient of Specific variables in selected articles is done as following:

• Calculation of ZR for each correlation coefficient.
• Calculation of effect size average and standard error of the estimate.
• Calculation of Statistical significance of effect size's average by Fisher's Z test.

Collected data from selected articles are analyzed after codification with 2 software; SPSS for description of studies and CMA2 for statistical calculation of meta-analysis. Procedure is done by combination of probability and effect size calculation, in a way that statistical tests in hypothesis are analyzed after transformation to effect size by provided formulas and composition of effect size and probabilities combination. Results are classified and shown in Tables 4 and 5 as preconditions and consequences.

As shown in Figure 9, preconditions of authentic leadership, including organizational structure, EQ,
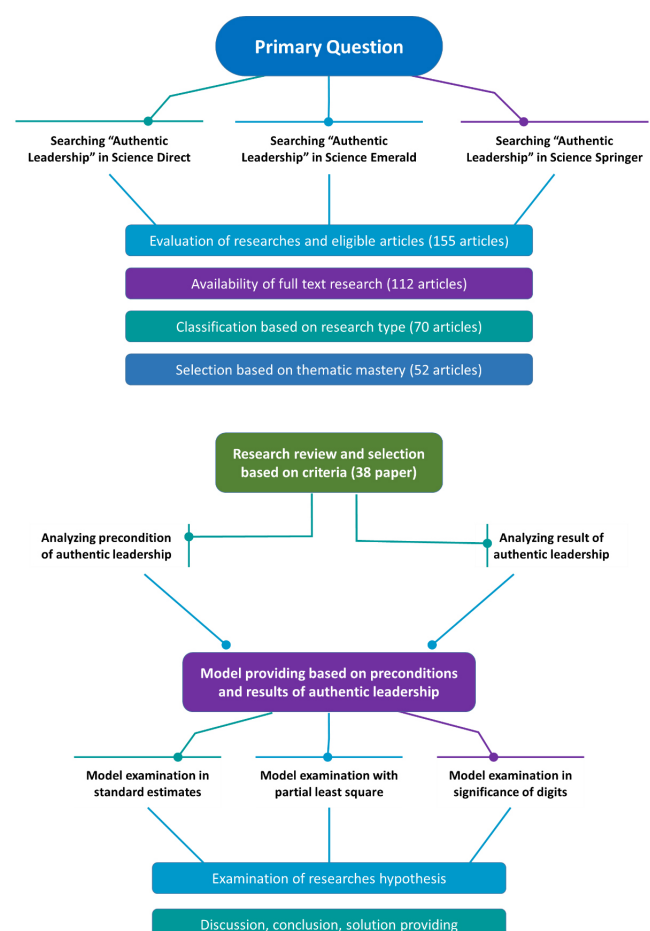

Figure 8. Taken actions and research's algorithm.

Table 3: Reviewed articles by meta-analysis approach

No.	Article's title	Statistical method	Sample amount	Publication date	Journal	Web address
1	Emotional intelligence and authentic leadership among Saudi nursing leaders in the Kingdom of Saudi Arabia	Regression	152	2020[32]	Journal of Professional Nursing	sciencedirect
2	Authentic leadership extends beyond work: A multilevel model of work-family conflict and enrichment	SEM	161	2020[34]	The Leadership Quarterly	ciencedirect
3	Linking authentic leadership to salespeople's service performance: The roles of job crafting and human resource flexibility	SEM	56	2020[35]	Industrial Marketing Management	sciencedirect
4	A reconceptualization of authentic leadership: Leader legitimation via follower-centered assessment of the moral dimension	SEM	198	2020[29]	The Leadership Quarterly	sciencedirect
5	Using theory on authentic leadership to build a strong human resource management system	SEM	241	2020[22]	Human Resource Management Review	sciencedirect
6	Authentic leadership and creativity in China: The role of students regulatory-focused behaviors and supervisors' power sources	SEM	820	2019[21]	Thinking Skills and Creativity	sciencedirect
7	The Impact of Authentic Leadership Behavior on Job Satisfaction: A Research on Hospitality Enterprises	Regression	276	2019[17]	Procedia Computer Science	sciencedirect
8	The influence of psychological capital, authentic leadership in preceptors, and structural empowerment on new graduate nurse burnout and turnover intent	Regression	136	2019[40]	Applied Nursing Research	sciencedirect
9	It is time to consider athletes' well-being and performance satisfaction: The roles of authentic leadership and psychological capital	SEM	224	2019[13]	Sport Management Review	sciencedirect
10	Inspiring prosociality in hotel workplaces: Roles of authentic leadership, collective mindfulness, and collective thriving	SEM	354	2019[67]	Tourism Management Perspectives	sciencedirect
11	The effects of authentic leadership on trust in leaders, organizational citizenship behavior, and service quality in the Chinese hospitality industry	SEM	205	2019[19]	Journal of Hospitality and Tourism Management	sciencedirect
12	Impact of Perceived Authentic Leadership and Psychological Capital on Burnout: Mediating Role of Psychological Ownership	SEM	500	2018[10]	Psychol Stud	springer
13	Antecedents, mediators, and outcomes of authentic leadership in healthcare:A systematic review	SEM	1036	2018[25]	International Journal of Nursing Studies	sciencedirect
14	Connectionism in action: Exploring the links between leader prototypes, leader gender, and perceptions of authentic leadership	Regression	272	2018[36]	Organizational Behavior and Human Decision Processes	sciencedirect
15	The Role of Workplace Authentic Leadership on Followership Behaviour and Psychological Capital in a South African Context	SEM	647	2018[33]	Palgrave Studies in Leadership and Followership	springer
16	How authentic leadership influences employee proactivity: the sequential mediating effects of psychological empowerment and core self-evaluations and the moderating role of employee political skill	SEM	340	2018[28]	Frontiers of Business Research in China	springer
17	Authentic leadership and employee job behaviors: The mediating role of relational and organizational identification and the moderating role of LMX	SEM	396	2018[41]	Current Psychology	springer
18	Six Sigma success: Looking through authentic leadership and behavioral integrity theoretical lenses	SEM	212	2018[27]	Operations Research Perspectives	sciencedirect
19	Authentic leadership and leaders' mental well-being: An experience sampling study	SEM	201	2018[39]	The Leadership Quarterly	sciencedirect
20	Influencing Factors and Consequences of Workplace Bullying among Nurses: A Structural Equation Modeling	SEM	301	2018[68]	Asian Nursing Research	springer
21	Fostering learning organisation in transitional economy – the role of authentic leadership and employee affective commitment	SEM	516	2017[9]	International Journal of Quality and Service Sciences	Emeraldsight

(Continued…)

No.	Article's title	Statistical method	Sample amount	Publication date	Journal	Web address
22	The Impact of Transformational and Authentic Leadership on Innovation in Higher Education: The Contingent Role of Knowledge Sharing	SEM	1020	2017[23]	Telematics and Informatics	springer
23	The Effects of Authentic Leadership, Organizational Identification, and Occupational Coping Self-efficacy on New Graduate Nurses' Job Turnover Intentions in Canada	SEM	374	2017[38]	Nursing Outlook	sciencedirect
24	Authentic Leadership and High-Performance Human Resource Practices: Implications for Work Engagement.	SEM	251	2017[14]	Au Research in Personnel and Human Resources Managemen	Emeraldsight
25	The effects of perceived authentic leadership and core self-evaluations on organizational citizenship behavior: the role of psychological empowerment as a partial mediator	SEM	500	2017[18]	Leadership & Organization Development Journa	Emeraldsight
26	Situation awareness as a determinant for unsafe actions and subjective risk assessment on offshore attendant vessels	SEM	844	2017[69]	Safety Science	sciencedirect
27	Effects of leadership style and psychological job demands on situation awareness and the willingness to take a risk: A survey of selected offshore vessels	SEM	281	2017[37]	Safety Science	sciencedirect
28	Authentic Leadership and Extra Role Behavior: a School Based Integrated Model	SEM	576	2017[70]	Curr Psychol	springer
29	The Interactive Effect of Authentic Leadership and Leader Competency on Followers' Job Performance: The Mediating Role of Work Engagement	SEM	248	2016[71]	J Bus Ethics	springer
30	What works for you may not work for (Gen) Me: Limitations of present leadership theories for the new generation	Regression	257	2017[11]	The Leadership Quarterly	sciencedirect
31	Crossover of Work–Life Balance Perceptions: Does Authentic Leadership Matter?	SEM	275	2018[30]	Bus Ethics	springer
32	Are Authentic Leaders Always Moral? The Role of Machiavellianism in the Relationship Between Authentic Leadership and Morality	SEM	70	2016[72]	Bus Ethics	springer
33	Authentic leadership and intrapreneurial behavior: cross-level analysis of the mediator effect of organizational identification and empowerment	SEM	212	2016[73]	Int Entrep Manag	springer
34	A Multi-level Investigation of Authentic Leadership as an Antecedent of Helping Behavior	SEM	487	2015[15]	Bus Ethics	springer
35	How authentic leadership influences team performance: The mediating role of team reflexivity	SEM	53	2015[24]	Bus Ethics	springer
36	Authentic leadership, performance, and job satisfaction: the mediating role of empowerment	SEM	280	2012[16]	Journal of Advanced Nursing	Wiley
37	Linking authentic leadership and management capability to public hospital performance: the role of work engagement	SEM	380	2021[12]	International Journal of Organizational Analysis	Emerald
38	Authentic leadership and job satisfaction among long-term care nurses	Regression	78	2020[20]	Authentic leadership and job satisfaction among long-term care nurses	Emerald

relationship oriented organizational culture, rules and regulations, ethical reasons of the leader and Industry attributes are chosen based on meta-analysis approach. On other hand, consequences can be considered as employees' bullying, extra-role behavior, work ethics, burnout, work productivity, product innovation, self-control, employees' mindfulness, optimism and personnel health. Conceptual model of the research based on preconditions and consequences is as following:

• Organizational structure has a meaningful effect on authentic leadership of construction companies.
• EQ has a meaningful effect on authentic leadership of healthcare companies.
• Organizational structure has a meaningful effect on authentic leadership of healthcare companies.
• Rules and regulations has a meaningful effect on authentic leadership of healthcare companies.
• Ethical reasons of the leader has a meaningful effect on

Table 4: Consequence of authentic leadership

No.	Consequences	Lower Limit	Upper Limit	Significance level	Z-statistic	Effect Size
1	Perceived Organizational Identity	0.121	0.348	0.021	2.648	0.241
	Positive Social Exchanges	0.248	0.451	0.034	3.657	0.393
	Self-Control	0.487	0.784	0	10.974	0.874
	Self-awareness					
	Enhancing Positive Emotions	0.362	0.514	0	3.321	0.287
2	Psychological Empowerment	0.218	0.462	0	3.451	0.315
	Organizational Citizenship Behavior	0.548	0.785	0	7.695	0.652
3	Organizational Commitment	0.32	0.541	0	3.784	0.402
	Learning	0.214	0.487	0.024	2.264	0.201
4	Job Satisfaction	0.311	0.598	0	3.364	0.341
5	Behavior Integrity	0.189	0.314	0.045	2.036	0.211
	Trust	0.412	0.741	0	5.654	0.402
	Job Dependency	0.364	0.621	0.012	3.364	0.341
6	Workplace Bullying	-0.541	-0.874	0	-12.987	-0.794
	Psychological Capital	0.374	0.621	0	4.364	0.341
7	Empowerment	0.148	0.421	0.019	2.654	0.201
	Organizational Identity	0.364	0.652	0.015	4.687	0.364
	Extra-Role Behaviors	0.532	0.874	0	13.654	0.784
8	Followers Performance	0.167	0.321	0.022	4.226	0.367
9	Strong Work Ethics	0.449	0.897	0	15.487	0.774
	Personal and Organizational Values Accordance	0.231	0.337	0	2.364	0.297
10	Human Resource Stability	0.294	0.521	0	2.654	0.164
	Human Resource Sympathy	0.247	0.421	0.006	7.784	0.378
	Human Resource Discrimination	0.298	0.468	0.007	2.451	0.209
11	Employees	0.362	0.547	0.009	2.984	0.121
12	Psychological Capital	0.417	0.741	0.012	3.741	0.314
13	Burnout	-0.507	-0.783	0	-11.954	0.831
	Preventive Psychological Ownership	0.321	0.478	0	4.654	0.208
	Promotional Psychological Ownership	0.348	0.597	0	2.541	0.147
15	Job Stress	-0.124	-0.321	0	3.365	0.294
	Job Dependency (Addiction)	0.198	0.341	0.047	2.451	0.221
16	Strong Work Ethics	0.601	0.941	0	2.215	0.146
17	Organizational Citizenship Behavior	0.369	0.621	0	7.362	0.678
	Improving Service Quality	0.158	0.384	0.041	2.514	0.127
18	Job Improvement	0.497	0.784	0.034	3.987	0.364
	Employees Innovation	0.461	0.721	0.037	2.451	0.164
19	Ethical	0.604	0.874	0	16.987	0.831
20	Team Flexibility	0.324	0.654	0	4.621	0.347
	Team Operation	0.547	0.821	0	5.451	0.451
	Team Effectiveness	0.451	0.637	0	4.652	0.421
21	Personal Identity	0.214	0.457	0.014	4.321	0.321
	Social Identity	0.451	0.741	0	4.651	0.451
22	Procedure Innovation	0.241	0.541	0.004	3.541	0.294
	Product Innovation	0.497	0.764	0	7.698	0.541
23	Task Performance	0.214	0.426	0.018	4.122	0.211
	Role Performance	0.281	0.441	0.023	4.312	0.251
	Job Performance	0.249	0.568	0.034	4.497	0.254
24	Personal Identity	0.374	0.657	0	4.698	0.341
	Organizational Identity	0.461	0.784	0	2.367	0.117

(Continued…)

No.	Consequences	Lower Limit	Upper Limit	Significance level	Z-statistic	Effect Size
25	Trust	0.147	0.348	0.041	2.321	0.192
	Organizational Citizenship Behavior	0.574	0.874	0	6.987	0.338
	Improving Service Quality	0.415	0.651	0	4.264	0.375
26	Trust	0.147	0.348	0.041	2.321	0.192
	Organizational Citizenship Behavior	0.574	0.874	0	6.987	0.338
	Improving Service Quality	0.415	0.651	0	4.264	0.375
27	Burnout	-0.554	-0.806	0	-9.697	-0.621
28	Unsecure Action	0.451	0.674	0	8.698	0.745
29	Organizational Identity	0.321	0.684	0.018	5.364	0.657
30	Work Life Balance of Employees	0.354	0.597	0	7.694	0.447
	Work Life Balance of Manager	0.348	0.574	0	2.264	0.167
	Job Satisfaction	0.364	0.606	0	4.365	0.266
31	Job Involvement	0.264	0.457	0.021	2.982	0.214
	Organizational Citizenship Behavior	0.547	0.778	0	8.983	0.632
32	Optimism	0.678	0.874	0	10.986	0.744
33	Trust in Leadership	0.351	0.541	0.031	6.387	0.567
	Leader-Member Exchange	0.412	0.745	0	7.451	0.638
34	Self-Control	0.547	0.876	0	7.698	0.774
	Self-Management	0.613	0.891	0	7.913	7.953
35	Moral Health	0.491	0.784	0	10.974	0.811
	Physical Health	0.511	0.791	0	11.345	0.832
	Emotional Exhaustion	0.534	0.834	0	11.654	0.843

Table 5: Preconditions of authentic leadership

| Article No.	Preconditions	Significance level	Lower limit	Upper limit	Z-statistic	Effect Size
6	Relationship oriented organizational culture	0	0.254	0.541	4/587	0.64
	Organizational structure	0	0.151	0.432	3/847	0.47
8	rules and regulations	0	0.327	0.674	6/324	0.75
14	EQ	0	0.32	0.647	6/214	0.69
19	Ethical reasons of leader	0	0.221	0.521	-	0.59
Authors	Industry Attributes	0	0.311	0.632	6/223	0.71

authentic leadership of healthcare companies.
• Industry attributes has meaningful effect on authentic leadership of healthcare companies.
• Authentic leadership has a meaningful effect on employees' bullying in healthcare companies.
• Authentic leadership has a meaningful effect on Personnel health in healthcare companies.
• Authentic leadership has a meaningful effect on employees' extra-role behavior in healthcare companies.
• Authentic leadership has a meaningful effect on employees' work ethics in healthcare companies.
• Authentic leadership has a meaningful effect on employees' burnout in healthcare companies.
• Authentic leadership has a meaningful effect on employees' work productivity in healthcare companies.
• Authentic leadership has a meaningful effect on product innovation in healthcare companies.

• Authentic leadership has a meaningful effect on employees' self-control in healthcare companies.
• Authentic leadership has a meaningful effect on employees' mindfulness in healthcare companies.
• Authentic leadership has a meaningful effect on employees' optimism in healthcare companies.

CONCLUSION

Leadership is the most powerful pillar of the organization. Since ethical and functional challenges related to working environments reveals the need for an innovative leadership approach, importance of authentic leadership is emerged as an effective and innovative style of leadership. Regarding that authenticity is no a zero-sum concept, people would be authentic in different level. Various studies in the field of leadership and necessity of handling
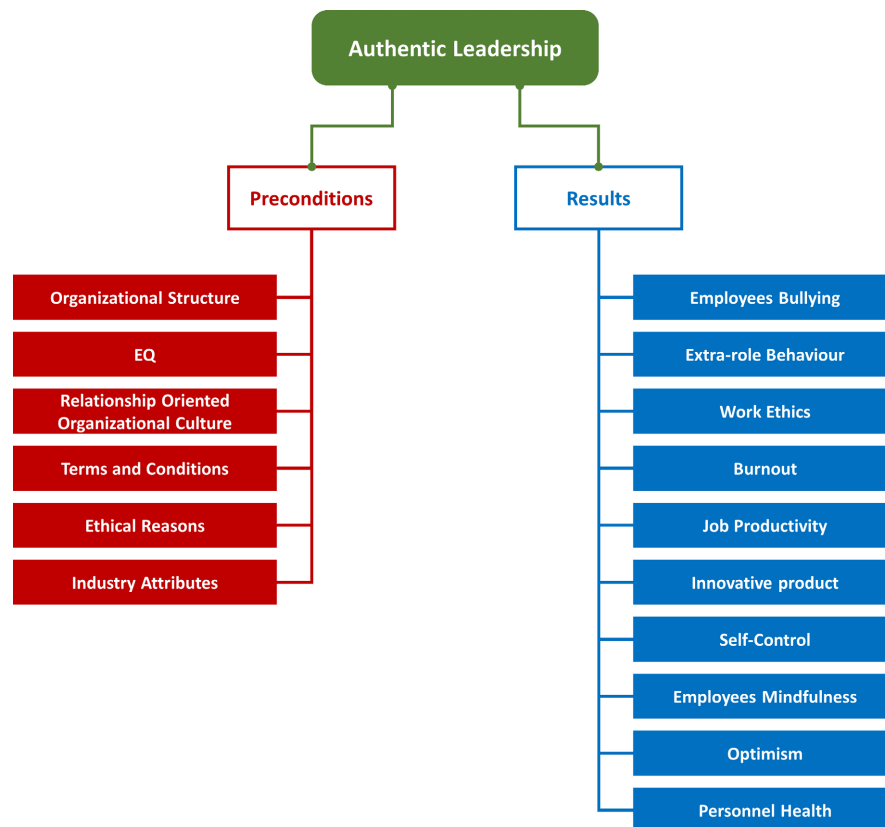
Figure 9. Conceptual model of the research based on preconditions and consequences.

organizational problems made us to analyze the role of authenticity in leadership and ways of its improvement in organizations. In almost all studies related to authentic leaders, their characteristics are identified as behavioral model, but the fact is that imitation won't create great leaders; they can learn good points and ideas but blind imitation will make no success. So leaders should have in mind that authentic leaders who don't imitate others are trustworthy, because they insist on their values, make significant and long-term relationships and act with their own discipline to get results. Also, as they believe in themselves, they have the inner power for facing crisis and challenges, so they make appropriate decisions which are more effective compared to inauthentic leaders. Considering that leader plays an important role in career advancement of employees, making appropriate decisions is one of the main tools used by him/her in order to prepare good working environment in which efficacy and organizational ethics are priorities. In this regard, some suggestions are presented to improve the leader's effectiveness in the work environment:

• Holding courses in order to develop authentic leaders' behavioral models for managers (in all levels).
• Using modern methods for leaders' development such as storytelling and mindfulness for improving managers' self-awareness.
• Using coaching method for development of positive behaviors in employees and managers.

• Encourage employees by appreciating them for their effective decisions in order to maintain their efficacy.
• Constructive interaction with followers and colleagues, welcoming feedbacks (specially negative ones), developing cognitive domain, having appropriate evaluation of his/ her position, having awareness about global issues, considering effects of their decision making on others, opinion poll and using efficacious ones in the organization.
• Considering attributes of the industry will facilitate choosing the appropriate coaching method in authentic leadership.
• Monitoring physical and mental health of personnel especially in healthcare companies will reinforce the power of authentic leadership.

The conclusion of this paper is to investigate the effects of training, welfare, and health in improving the productivity of SMEs' HR simultaneously through the 5th wave theory. One of the impacts of the 5th wave theory would be on health-care systems reinforced which is called "Welfare 5.0". The word health refers to physical and mental health. The important point is that training should not be only theoretical, but should also cover professional, practical and operational aspects. Based on the report of the institute for research on SMEs in Bon Germany, more than 82% of the SMEs' employees are from vocational training due to the emphasis on competencies, practical skills, and training. The backbone of the 5th wave theory is humanity, human being and HR health style.

These education, training, and learning; however, barriers cause challenges to apply these three different and create SMEs' HR Productivity higher. It is required to indicate these barriers and find out solutions to apply them and change humans' life to maintain the world. Based on the 5th wave theory and related theories, models and concepts, today's challenges and tomorrow's crises have been discussed that in our world of that educational and welfare development and rapid growing made ever-quickening change, the human mind is threatened by shattering. Proper solutions and policies could make people to deal with new challenges for the future education, welfare, and health. Prof. Doost as theoretician of the 5th wave theory believes that sustainability has more pillars than the three from UN. He contends that seven pillars are required to develop sustainability.

These aspects make a puzzle in which all the segments are directly or indirectly related to each other. Figure 1 presents seven aspects of sustainability (7PS model) in addition PEACE and LOVE and its priorities, connections, and classification. This model is focusing on seven pillars of sustainability as below:

Fundamentally, we are settling in edge of future that confronts future shocks including tomorrow's family life challenges, new welfare problems, social issues, new businesses' barriers, modern lifestyles risks, and human relationships challenges and so on.

As in previous section was declared, solutions are required to deal with social, educational sustainability regarding welfare and health challenges to be able to apply them in increasing SMEs' HR productivity and health and welfare services towards creating modern lifestyle. The 5th wave/tomorrow age theory or theory of comprehensive everything could be a comprehensive strategy to find out solutions to deal with such challenges, even to tackle future shocks for mapping the future education and health on SMEs' HR.

As mentioned before welfare 5.0, could influence the health-care systems reinforced. Health should be considered in training because the motivation of human resources increases with both education and health. The purpose of human resources productivity is to examine the effects of both total productivity and partial productivity. In fact, the mission of the research is to train the human resources of SMEs so that they can control the technology and not allow them to deviate from the standard conditions. The effectiveness of training should be such that employees acquire the ability to develop SMEs, increase their maturity level, recognize the domestic and export market, adjust their relationships with different stakeholders such as suppliers, vendors, customers, and banks, and create a sustainable business.

Based on the 7PS model, education and social sustainability play a vital role on welfare and health-care systems for the SMEs. Based on the 5th wave theory Prof. Doost had introduced a new concept in this case which is called: Tomorrow's SMEs (SMEs 5.0/Hybrid SMEs). Generally, smart education and digital health could be tools and motivation to improve SMEs' HR competencies by using modern education and learning systems and health-care systems towards modern hybrid SMEs/tomorrow's SMEs (SME 5.0) that are able to participate, compete and survive in markets as well as cultivating sustainable development. The 5th theory founded on HR education/training and utilizing high health-care and welfare to create modern innovative SMEs concerned on CSR strategies, educational social sustainability, and sustainable development as well as successful business that are able to conquer future concerns towards more sustainable and livable world.

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Conflicts of interest

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