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University of Dubrovnik, Croatia



Book of Proceedings

13th OFEL Conference 2025

Tech-Driven Governance: How AI is Redefining Corporate Oversight

Editors:

Darko Tipuric, University of Zagreb, Croatia
Karolina Kokot, University of Zagreb, Croatia



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Professor Darko Tipurić, Ph. D.

**A Tribute to Integrity, Knowledge, and Friendship:
Remembering Professors Marijan Cingula and Dejan Kružić**

Today, we gather with a unique blend of sorrow and pride. Sorrow, because we have lost two of our dear friends and distinguished members of the academic community, Professor Marijan Cingula and Professor Dejan Kružić; and pride – because we had the privilege to call them our friends.

Proud sorrow – if such a feeling exists – reflects the honour of having known them, worked alongside them, and learned from them. In this session, we wish to pay tribute to their outstanding professional contributions, their human virtues, and the enduring values they embodied. This is but a modest yet heartfelt expression of gratitude for the indelible mark they have left on our lives.

Professor **Marijan Cingula** was a leading expert in corporate governance and organisational studies, whose professional contribution is immeasurable. Through his work, he set high standards in the fields of organisation, strategic management, and corporate governance.

As a professor at the University of Zagreb, serving at both the Faculty of Economics and Business and the Faculty of Organisation and Informatics, he nurtured generations of students. His work spanned everything from theoretical foundations to practical application – he was a pioneer in introducing modern corporate governance standards in Croatia. Marijan made a significant contribution to the establishment of Croatia's first securities market in Varaždin, translating his academic expertise in capital markets and organisation into a concrete project of national importance.

Within academic circles, Marijan Cingula was regarded as an authority, an outstanding lecturer, and a mentor of distinction. He published numerous scientific and professional papers and participated in international research projects. He was an active member of the professional community and the first elected president of the HUCNO - Association of Certified Supervisory Board Members, where he strongly promoted ethics, knowledge, and accountability in corporate governance.

For his work, he received numerous accolades, including awards for his contribution to the profession and society. Marijan's influence extended far beyond the university – from participation in European research initiatives to engagement with the local community. He left an immeasurable legacy in the institutions where he worked and in the hearts of his colleagues.

With his enthusiasm, knowledge, and selfless dedication, he made a valuable entrepreneurial and scientific contribution to the development of more than a hundred international ESD conferences, leaving a distinct mark that remains visible today.

Yet beyond his impressive career, our dear Marijan was the embodiment of quiet, unobtrusive kindness, which radiated from his every action. His very presence brought peace, understanding, and genuine warmth to every situation. Marijan's greatness was not in grand words, but in small, powerful acts of care and attention for others.

In a time when superficiality and haste often became the norm, Marijan remained true to his values – patient, sincere, and always willing to help, never seeking recognition. His kindness was not merely a personal virtue, but a beacon that illuminated the path for all around him.

His example remains a lasting inspiration – a quiet strength that transcends words and lives on in every memory that holds him.

Professor **Dejan Kružić** will be remembered as an expert in entrepreneurship, management, and financial restructuring – a man who bridged academic excellence with practical engagement in the community.

Through his work at the Faculty of Economics at University of in Split, he nurtured an entire generation of young economists and entrepreneurs. As a university professor and researcher, he published numerous scientific and professional works and participated in conferences and projects, sharing his knowledge with colleagues in Croatia and abroad.

His academic career was impressive, but perhaps even more remarkable was his dedication to applying knowledge in practice. Alongside his academic and teaching roles, he built a managerial career – holding leading positions in business and advising companies and institutions. In doing so, he lived what he taught: the entrepreneurial spirit and the readiness to restructure for the greater good. Dejan seamlessly combined academic theory with action for public benefit, putting his economic expertise at the service of society.

It is no coincidence, then, that last year (2024), he was awarded the City of Split's Lifetime Achievement Award for his entire scientific oeuvre, his dedicated work, and his public engagement in protecting the interests of the city and its citizens. In this way, his beloved city honoured him for decades of tireless contribution.

As with Marijan, I wish to highlight the great human qualities of our Dejan.

Justice and truthfulness were among the first traits one noticed about him – he was never afraid to speak the truth or face challenges, no matter how complex. He possessed a sharp wit that brought cheer to every discussion. We all loved that smile of his that would emerge when he wittily commented on a situation – often, his humour was precisely what broke the tension and reminded us, amidst the seriousness of our work, not to lose sight of our humanity.

In addition to his humour, Dejan was marked by his directness and goodness. He communicated warmly and openly, without unnecessary formality, always getting straight to the heart of the matter. His openness created an atmosphere of trust – we knew we could always rely on his honest opinion and advice.

He was a truly fascinating man, and we deeply valued his inexhaustible energy and readiness to help. That combination of courage, spirit, and humanity made him truly exceptional.

Marijan and Dejan had different personalities, yet they shared fundamental values that made them great.

Above all, they were bound by their endless honesty. In a time full of challenges, they uncompromisingly upheld ethics and truth. Never did they put personal interests before principles – whether in student assessment, project management, or public service, integrity was always their guiding star. That honesty instilled trust in everyone who knew them: we could be certain that their words and actions were always aligned.

Their dedication to the community was neither fleeting nor superficial; they consistently gave of themselves without reservation, believing that true values are built through serving others and selfless contribution to the common good.

Marijan and Dejan were great men and true friends in the fullest sense of those words.

There was no rivalry or vanity in their dealings with others; on the contrary, they celebrated our successes as if they were their own. Their shared legacy is one of selflessness, evident in every act they undertook – always ready to invest extra effort, energy, and knowledge for the benefit of others, seeking nothing in return. How rare such a quality is!

This kind of friendship created a small circle of people around them who loved and valued them not only for their knowledge but for who they were as human beings.

We were proud to be part of their universe.

The OFEL Conference, to which they both contributed over many years and whose reputation they helped build, is also part of their legacy. Their ideas, standards, and spirit of collaboration are embedded in the very foundations of this gathering.

Allow me, finally, a personal note. Professionally, they taught me that a professor is not merely a lecturer and researcher, but also a role model – through their own conduct, they showed how knowledge carries responsibility and how one must approach that responsibility with honour and devotion.

On a human level, they taught me that kindness, noble behaviour, and integrity are worth just as much as all titles and bibliographies.

Their impact on my life has been profound; it is hard to imagine that I will no longer be able to hear Marijan's calm reflections and his wonder at the world we live in; or Dejan's witty and intelligent remarks that would turn any argument upside down and offer a new, unexpected perspective. I miss them both dearly, profoundly.

Two of my comrades who have departed from this fragile walnut shell on the stormy sea of life.

Marijan – always patient, would listen to me carefully, advise me, and stand with me without reservation through all of life's storms. "My dear friend," he would say, "everything will be alright."

And Dejan – with his comradeship, contagious enthusiasm, and humour, often with a touch of cynical commentary towards the boundless foolishness around us, would find a way to help us weather every storm with a smile. "Come on, my *supreme sharp observer*," he would call me in his distinctive, tobacco-scratched voice, "they're not worth a second of our time!"

Our world, without the presence of such people, such giants of selflessness, becomes increasingly impoverished and colder.

A world of ice, selfishness, malice, alienation, and hypocrisy. A maimed world.

A world where even a single grain of humanity and friendship, if it still exists, holds the weight of all the world's treasures.

Thank you, Dejan and Marijan, for your friendship. Thank you for making me a better man than I was.

(This address was delivered at a special memorial session of the OFEL Conference in honour of Professors Marijan Cingula and Dejan Kružić.)

Prof. dr. sc. Darko Tipurić

Posveta poštenju, znanju i prijateljstvu:

Sjećanje na profesore Marijana Cingulu i Dejana Kružića

Poštovani kolegice i kolege, dragi prijatelji i sudionici OFEL konferencije,

okupljeni smo danas s posebnom mješavinom tuge i ponosa. Tuge, jer smo izgubili dvojicu naših prijatelja i istaknutih članova akademske zajednice, prof. dr. sc. Marijana Cingulu i prof. dr. sc. Dejana Kružića, a ponosa - jer smo im bili prijatelji.

Ponosna tuga – ako takav osjećaj postoji – znači povlasticu poznavati ih, raditi s njima i učiti od njih. Danas na ovoj sesiji želimo odati počast njihovim iznimnim profesionalnim doprinosima, ljudskim vrlinama i trajnim vrijednostima koje su utjelovili. To je skroman, ali iskren izraz zahvalnosti za trag koji su ostavili u našim životima.

Profesor **Marijan Cingula** bio je veliki stručnjak za korporativno upravljanje i organizaciju čiji je profesionalni doprinos nemjerljiv. Svojim je radom postavio visoke standarde u područjima organizacije, strateškog menadžmenta i korporativnog upravljanja. Kao profesor na Sveučilištu u Zagrebu, radeći na Ekonomskom fakultetu u Zagrebu i Fakultetu organizacije i informatike, odgojio je generacije studenata. Njegovo područje rada obuhvaćalo je sve od teorijskih temelja do primjene u praksi – bio je pionir u uvođenju suvremenih standarda korporativnog upravljanja u Hrvatskoj. Marijan je dao velik doprinos osnivanju prvog hrvatskog tržišta vrijednosnica u Varaždinu, čime je svoje akademsko znanje o tržištima kapitala i organizaciji pretočio u konkretan projekt od nacionalne važnosti.

U akademskim krugovima, Marijan Cingula važio je za autoritet, odličnog predavača i mentora. Objavio je brojne znanstvene i stručne te sudjelovao u međunarodnim znanstvenim projektima. Bio je aktivan član struke i prvi izabrani predsjednik Udruge certificiranih članova nadzornih odbora, gdje je snažno promicao etičnost, znanje i odgovornost u korporativnom upravljanju. Za svoj rad primio je niz priznanja, među kojima i odlikovanje za doprinos struci i društvu.

Njegov utjecaj se osjećao i izvan sveučilišta – od sudjelovanja u europskim istraživačkim inicijativama do angažmana u lokalnoj zajednici. Marijan je ostavio nemjerljiv trag na institucijama u kojima je djelovao i u srcima kolega. On je svojim entuzijazmom, znanjem i nesebičnim angažmanom dao vrijedan poduzetnički i znanstveni doprinos u oblikovanju i razvoju preko stotinu međunarodnih ESD konferencija, ostavljajući prepoznatljiv pečat koji i danas vidimo.

No, osim dojmliive karijere, Naš dobri Marijan je bio utjelovljenje tihe, nenametljive dobrote koja je zračila iz svakog njegovog postupka. Njegova prisutnost unosila je mir, razumijevanje i iskrenu toplinu u svaku situaciju.

Posebnost Marijana nije bila u velikim riječima, nego u malim, ali snažnim djelima pažnje i brige za druge. U vremenu kada su površnost i žurba često postajale pravilo, Marijan je ostajao vjeran svojim vrijednostima – strpljiv, iskren i uvijek spreman pomoći, bez ikakve težnje za priznanjima. Njegova dobrota nije bila samo osobna vrlina, već svjetionik koji je osvjetljavao put svima oko njega.

Njegov primjer je naša trajna inspiracija – tiha snaga koja nadilazi riječi i ostaje živa u svakom sjećanju koje ga nosi.

Profesor **Dejan Kružić** ostat će upamćen kao stručnjak za poduzetništvo, menadžment i financijsko restrukturiranje, čovjek koji je spojio akademsku izvrsnost s praktičnim djelovanjem u zajednici. Kroz svoj rad na Ekonomskom fakultetu u Splitu odgojio je čitav naraštaj mladih ekonomista i poduzetnika. Kao sveučilišni profesor i znanstvenik, objavio je brojne znanstvene i stručne radove te je sudjelovao na konferencijama i projektima, dijeleći svoja saznanja s kolegama u Hrvatskoj i inozemstvu. Njegova akademska karijera bila je dojmliiva, no možda još primjetnija bila je njegova posvećenost primjeni znanja u praksi. Uz znanstveni i nastavni rad ostvario je menadžersku karijeru – radio je na rukovodećim pozicijama u gospodarstvu i savjetovao tvrtke i institucije. Time je živio ono što je predavao: poduzetnički duh i spremnost na restrukturiranje za opće dobro. Dejan je spajao akademsku teoriju s djelovanjem za javno dobro, stavljajući svoje ekonomsko znanje u službu društva.

Nije stoga slučajno da je prošle godine (2024.) dobio Nagradu Grada Splita za životno djelo *za cjelokupan znanstveni opus, predani rad i javno djelovanje usmjereno na zaštitu interesa grada i građana Splita*. Time mu se njegov voljeni grad odužio za desetljeća predanog rada.

Kao i kod Marijana, želim istaknuti velike ljudske kvalitete našeg Dejana. Pravednost i istinoljubivost bila jedna od prvih osobina koju ste primijetili kod Dejana – nije se bojao reći istinu niti suočiti s izazovima, ma koliko kompleksni bili. Imao je britki humor koji je unosio vedrinu u svaku raspravu. Svi smo voljeli taj njegov osmijeh koji bi se pojavio kada bi duhovito prokomentirao neku situaciju – često je upravo njegov vic razbijao napetost i podsjećao nas da unatoč ozbiljnosti posla ne zaboravimo ljudskost.

Uz humor, krasila ga je i neposrednost i dobrota. Dejan je komunicirao srdačno i otvoreno, bez suvišnih formalnosti, uvijek ravno u srž problema. Ta njegova otvorenost stvarala je ozračje povjerenja – znali smo da od njega uvijek možemo dobiti mišljenje i savjet. Bio je jako zanimljiv čovjek, cijenili smo jako njegovu nepresušnu energiju i spremnost da pomogne. Ta kombinacija hrabrosti, duha i ljudskosti učinila ga je doista posebnim.

Marijan i Dejan su imali različite osobnosti, ali dijelili su temeljne vrijednosti koje su ih činile velikima. Prije svega, obojicu je krasila beskrajno poštenje. U vremenu punom izazova, oni su beskompromisno držali do etike i istine. Nikada nisu svoje osobne interese stavljali ispred principa – bilo da je riječ o ocjenjivanju studenata, vođenju projekta ili služenju društvu, integritet im je uvijek bio zvijezda vodilja. Ta poštenost ulijevala je povjerenje svima koji su ih poznavali: znali smo da su njihove riječi i djela u skladu. Njihova predanost zajednici nije bila trenutna ili površna; dosljedno su davali sebe bez zadržke, vjerujući da se istinske vrijednosti grade kroz služenje drugima i nesebičan doprinos općem dobru.

Marijan i Dejan bili su veliki ljudi i dobri prijatelji u punom značenju tih riječi. Nije bilo rivalstva ni sujete u njihovom ophođenju; naprotiv, radovali su se našim uspjesima kao da su njihovi. Njihova zajednička ostavština obuhvaća nesebičnost koja se očitovala u svakom njihovom djelovanju – i Marijan i Dejan uvijek su bili spremni uložiti dodatni trud, energiju i znanje za dobrobit drugih, ne tražeći ništa zauzvrat. Kako je to rijetka osobina! Takvo prijateljsko ponašanje stvorilo je oko njih mali krug bliskih ljudi koji su ih voljeli i cijenili ne samo zbog znanja koje su imali, nego i zbog toga kakvi su bili kao ljudi. Bili smo ponosni dio njihova svemira.

OFEL konferencija, na kojoj su obojica godinama sudjelovali i doprinosili njezinom ugledu, također je dio njihovog naslijeđa. Njihove ideje, standardi i duh suradnje ugrađeni su u temelje ovog skupa.

Dopustite mi naposljetku i osobnu notu. Profesionalno, naučili su me da profesor nije samo predavač i istraživač nego i uzor – kroz vlastito ponašanje pokazali su kako znanje nosi odgovornost i kako se prema toj odgovornosti odnositi čestito i predano.

Ljudski, naučili su me da dobrota, plemenito ponašanje i integritet vrijede jednako kao i sve titule i bibliografija. Njihov trag u mojem životu ogroman je; teško mi je zamisliti da više neću moći čuti Marijanovo smireno promišljanje i njegovu začudnost o svijetu u kojem živimo; ili Dejanovu duhovitu i inteligentnu upadicu koja sve teze kreće naopačke i dovodi u neočekivanu perspektivu. Nedostaju mi jako, jako, njih dvojica. Dvojica mojih drugova koja su napustila ovu krhku orahovu ljusku na uzburkanom moru života.

Marijan – uvijek strpljiv, pažljivo bi me poslušao, savjetovao i uvijek bezrezervno sa mnom u svim mojim životnim olujama. „Dobri moj,“, govorio mi je, „sve će biti u redu“.

A Dejan – sa svojim drugarstvom, zaraznim entuzijazmom i šalom, često i ciničnim diskursom prema bezgraničnoj gluposti oko nas, pronalazio je način da prebrodimo zajedno sve nevere s osmijehom. „*Hajde moj vrhovni oštri motritelju*“ – tako me je zvao govoreći svojim prepoznatljivim, duhanom izgrebenim glasom „oni ne zaslužuju ni jednu sekundu našeg vremena!“.

Naš svijet bez prisutnosti takvih ljudi, takvih gromada sebedarja, postaje sve siromašniji i hladniji.

Svijet leđa, sebičnosti, zloće, otuđenosti i prijetvornosti. Svijet oklaštren. Svijet u kojem samo jedno zrnice ljudskosti i prijateljstva, ako postoji i opstoji, ima težinu svog bogatstva ovog svijeta.

Hvala Dejanu i Marijanu na prijateljstvu. Hvala im što su me učinili boljim čovjekom nego što sam bio.

(Ovaj govor održan je na posebnoj memorijalnoj sesiji OFEL konferencije u čast prof. Marijana Cingule i prof. Dejana Kružića.)

ASEAN CENTRALITY IN THE ERA OF GREAT POWER COMPETITION

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ABSTRACT

The Association of Southeast Asian Nations (ASEAN) was formed in 1967 with the Bangkok Conference as a bulwark against the spread of Communism in Southeast Asia. In its 57 years of existence ASEAN has proven to be a durable organization capable of organizational change. Furthermore, as the oldest and only standing regional organization with full membership of its region, or sub-region ASEAN has a large degree of credibility in international affairs. With the end of the Unipolar moment where the 'West' led by the United States exercised hegemony and beginning of a multipolar world ASEAN and its member states are entering into a new and dangerous period of great power competition. This holds both opportunities and perils similar in scope to the Cold War. This article will demonstrate using an historical and geopolitical approach that ASEAN will continue to play a pivotal and central role in East Asian international relations.

Keywords: ASEAN, ASEAN Centrality, Multipolarity, Great Power Competition, Small States

1. INTRODUCTION

With the establishment of ASEAN in 1967 the five original member states of Indonesia, Malaysia, Singapore, Thailand and Philippines marked a united beginning for international affairs of the sub-region of Southeast Asia (ASEAN, 1967). This brought an end to the period violence of Sukarno's foreign policy of *konfrontasi* between the newly independent states of Indonesia and Malaysia (Sutter, 1966). With the end of *konfrontasi* the five ASEAN member states could now engage in a united policy to put aside territorial disputes and push back against the spread of communism in the region (Poon-Kim, 1977; Wey, 2021). This allowed a period of relative peace to spread within the five ASEAN states. The regional peace was disrupted in December 1978 with the Vietnamese invasion of Democratic Kampuchea to oust the genocidal Khmer Rouge regime. This came on the heels of American withdraw from the region after losing the Vietnam (or American) War (Mohan, 1981; Morris, 1999). With the fall of Phnom Penh to communist Vietnam fear spread throughout the region of a communist push into ASEAN frontline states (Mount, 1979; Simon, 1987; Southgate, 2015; Stirling, 1980). ASEAN played a crucial role in the United Nations in supporting the ousted Khmer Rouge government in exile on Thailand's Eastern border. This support was military, political, financial and diplomatic in nature. ASEAN support for the Khmer Rouge government lasted throughout the 1980's in culminated in the Paris Peace Accords which brought to an end the 3rd Indochinese War (UNGA, 1991). It is well known that ASEAN states played a central role in keeping the Cambodian issue on the world stage throughout the 1980's, thus denying the occupation government of the People's Republic of Kampuchea international legitimacy (Alagappa, 1993; Jones, 2007; Sanglee, 2022). The ability of small and medium sizes ASEAN states all of which were developing countries still in early stages of nation-building to exercise this degree of influence gave ASEAN a high degree of credibility to deal with threats to regional security (Acharya, 2002; Jones & Jenne, 2015). The historical legacy of the Cold War and ASEAN's ability to deal with security issues and organize regional security and governance will be the focus of this paper.

In particular the central contention of author is to advance the notion that whilst the international relations is moving from an American Unipolar to a multipolar world the legacy of East Asian international relations will dictate that ASEAN continue to play an important role in wider East Asian affairs. The author will argue that increasing great power competition between China, Russia and the United States will not detract from ASEAN centrality. In fact given the constellation of relations between East Asian states *de facto* ASEAN will be the primary game in town for the great powers to exercise diplomacy and international politics.

2. ASEAN CENTRALITY: SOUTHEAST ASIAN SECURITY AND NETWORK INSTITUTIONALISM

The notion of ASEAN Centrality centers on three primary factors. First, is the historical legacy of ASEAN being the 2nd oldest regional organization surviving the Cold War and reinventing itself in the post-Cold War period. Second, is the fact that ASEAN is the only regional organization in East Asia that has a pan East to South Asian institutional architecture. Last, is the *de facto* position of the previous two factors that leads to ASEAN being the primary node for interaction between states of East Asia and the wider world on a multilateral basis. Amador has argued that ASEAN's position as a central node in East Asian Affairs was *de facto* in absence of any other viable alternative and has led to a hodgepodge of issue and general based institutionalization (Amador III, 2010). Ba provides nuance to this by arguing that institutions such as APEC which were led by Australia and Japan coupled with pressure by external powers for institutionalization led ASEAN to take the lead in creating the ASEAN Regional Forum (ARF) after a half dozen other proposals from external powers did not materialize (Ba, 2009 p. 385). Cabellero-Anthony understands centrality as the ability to lead. This is founding on three intersecting processes of multilateral institutionalism, and leading in terms of normative operating principles and structural institution building (Caballero-Anthony, 2014). The previous studies take the view that ASEAN Centrality is a facet of external environment forces. Beeson argues that East Asian regionalism, namely ASEAN can be seen through the lens of indigenous mobilization. Beeson takes an historical view to argue that the lack of regionalism in East Asia is largely due to the manner in which America dealt with the region via its foreign policy. During the Cold War the United States engaged on a bilateral basis through a hub and spokes model rather than a uniform integrative approach in Europe with NATO and the European Coal and Steel Community (Beeson, 2005). The crux of this approach lay the hegemon's method of engaging with ASEAN states which was on bilateral rather than multilateral basis. Implicit in Beeson's analysis is that ASEAN regionalism took place indigenously but also against America's policy seen in the undermining of Malaysia's attempt to establish the East Asian Economic Caucus of the early 1990's (Ibid, p. 979). Both of these factors point to internal and external motivations for ASEAN's centrality. ASEAN centrality can also be understood from the perspective of regional lattice of uneven networks of institutional frameworks. ASEAN's external institutionalization began in 1994 with the creation of the ASEAN Regional Forum to establish security dialogue in the greater Asia-Pacific region. In the aftermath of the Asian Economic Crisis of 1997-1998 regionalism took on tone of urgency and one of a twin characteristic by broadening security based issues to include traditional and non-traditional issues and also deeper economic integration. This was seen first in the ASEAN Plus Three formula with ASEAN reaching out to Northeast Asia. Then broadening its engagement with the East Asia Summit which brought together all of ASEAN's strategic partners. This was continually paralleled by the ASEAN Plus economic frameworks beginning with ASEAN-China in 2002 and encompassing Hong Kong by 2018.

Ba points to the ARF, ADMM and ADMM Plus initiatives as being emblematic of ASEAN's ability to 'socialize' parties and be a viable platform for strategic dialogue on issues such as transnational crime, terrorism to the South China Sea. The ability of ASEAN through its normative framework of equality and informality is credited with the success of being a platform for great powers such as China and the USA (Ba, 2017). This of course can be countered by the argument that socialization is 'skin deep' on some issues such as the SCS where the Code of Conduct has not been agreed in over two decades of dialogue (Parameswaran, 2023). ASEAN Plus Three was built on the success of the ARF to broaden the agenda from strictly security based issues to include economic agenda's with ASEAN three primary trade partners in Northeast Asia; China, Japan and Korea. This stemmed from the internal integrative process of ASEAN itself seen in the push towards the ASEAN Free Trade Area and economic liberalism to capitalize on the global free trade movement and place ASEAN as a critical global supply chain link (Beeson, 2002; Beeson, 2003; Nesadurai, 2009; Simon, 2008). The Western correlate to the APT is the Asia-Europe Meeting between ASEAN and European Union in 1996 which has expanding to include 53 countries (ASEM, 2023). The strategic dialogue between the two regional organizations is credited with expanding cooperation and two way socialization as 'liberal' norms of human rights and democracy are essentials of EU dialogue (Allison, 2015; Gaens, 2008; Murray, 2008; Robles, 2007)

Diagram 1: ASEAN Institutional Frameworks for Dialogue

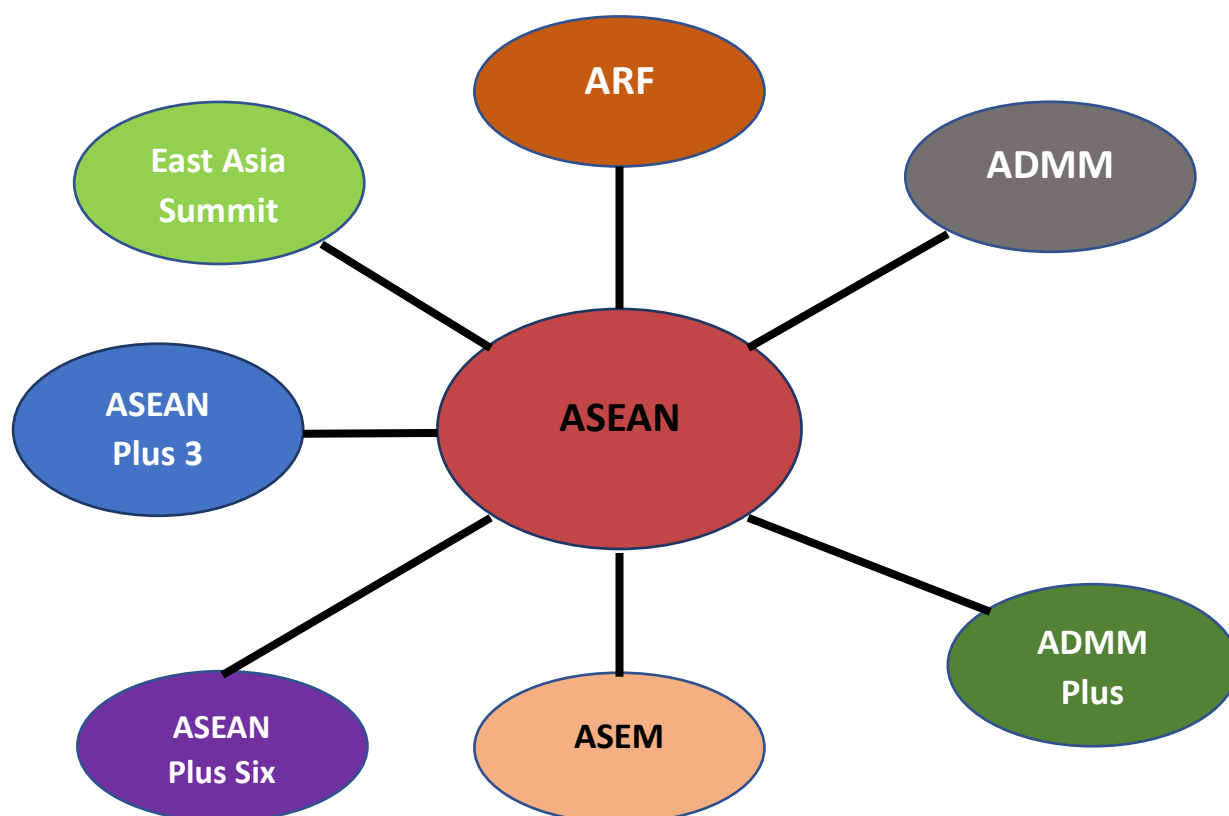


Table 1: ASEAN Mechanisms and Membership

ASEAN Regional Integrative Mechanisms		
Mechanism	Established	Members
ASEAN Regional Forum (ARF)	1994	ASEAN , Australia, Bangladesh, Canada, China , Democratic People's Republic of Korea, European Union, India , Japan, Mongolia, New Zealand, Pakistan, Papua New Guinea, Republic of Korea, Russia , Sri Lanka, Timor-Leste, United States
Asia-Europe Meeting (ASEM)	1996	ASEAN , European Union, Australia, Bangladesh, China , India , Japan, Kazakhstan, Republic of Korea, Mongolia, New Zealand, Pakistan, Russia , Switzerland, United Kingdom
ASEAN Plus Three (APT)	1999	ASEAN , China , Japan, Republic of Korea
East Asia Summit (EAS)	2005	ASEAN , China , India , Japan, New Zealand, Republic of Korea, Russia, United States
ASEAN Defense Ministers Meeting (ADMM)	2006	ASEAN
ASEAN Defense Ministers Meeting Plus (ADMM-Plus)	2010	ASEAN , Australia, China , India , Japan, New Zealand, Republic of Korea, Russia , United States
ASEAN Plus Six (APS)	2002-2018	ASEAN , Australia/New Zealand, Republic of Korea, China , Hong Kong, India , Japan

Source: ASEAN Secretariat <https://asean.org/our-communities/asean-political-security-community/outward-looking-community/external-relationships/>

Table 2: ASEAN Mechanisms and Major Power Membership

ASEAN Mechanisms and the Great Powers				
ASEAN Mechanism	China	India	Russia	USA
ASEAN Regional Forum (ARF)	✓	✓	✓	✓
Asia-Europe Meeting (ASEM)	✓	✓	✓	
ASEAN Plus Three (APT)	✓			
East Asia Summit (EAS)	✓	✓	✓	✓
ASEAN Defense Ministers Meeting (ADMM)				
ASEAN Defense Ministers Meeting Plus (ADMM-Plus)	✓	✓	✓	✓
ASEAN Plus Six (APS)	✓	✓		

Source: ASEAN Secretariat <https://asean.org/our-communities/asean-political-security-community/outward-looking-community/external-relationships/>

The diagram and tables articulate a form of networked institutionalism which has been created by ASEAN in the post-Cold War era. Whilst, all great powers are not members of all ASEAN external relations frameworks, all strategic powers are members in one or more of ASEAN's constellation of institutions. Each institution has its agenda which ranges from narrow of the ADMM Plus, to mid, ARF, to broad, East Asia Summit. At the center of all this network is the node of ASEAN member states.

3. THE ASEAN WAY: NORMS, SOCIALIZATION AND INTERNATIONAL AFFAIRS

ASEAN's principles mirror principles articulated in the UN Charter (United Nations Charter, 1945; Article 2.1, 2.3, 2.4, 2.6) and find their origins of the state system with the Treaty of Westphalia (Asbach and Schröder (2014)). These principles are sovereignty, non-intervention and peaceful settlement of disputes. Combined with the way ASEAN does business of consultation and consensus constituted the 'ASEAN Way' which informs all aspects of interaction, decision-making and regional integration within ASEAN (Acharya, 1997; Acharya, 2001; Acharya, 2005; Ba, 2009; Jones, 2011a; Jones, 2011b; Nischalke, 2002; Stubbs, 2008). These principles are embodied in ASEAN's constitutive institutional documents of the Treaty of Amity and Cooperation and are echoed in the ASEAN Charter (ASEAN, 1976 Article 2, 10, 11, 13; ASEAN, 2007 Article 2). Consultation and consensus as procedural norms dictate that ASEAN diplomacy always seeks to find a common denominator among its member states, which at times and in the case of AICHR 'a best that we could [was possible] result' (Narine, 1997 p. 365; Narine, 1999 p. 360; Sebastian and Lanti, 2010 p. 155). The ASEAN Way has at its core a few important characteristics that impact the manner in which ASEAN interacts with external partners. On a normative level the ASEAN Way denotes informality in relations between members and partners. Informality dictates that a non-confrontational approach to relations without formal voting procedures and produces a lack of standing institutional structures within ASEAN structures. This takes decision-making to policy makers on an interpersonal level. Acharya argues from a sociocultural perspective that this leads 'stickiness' whereby states and leaders that lack trust or familiarity can slowly build relations in a functional and non-threatening manner leading to further cooperation (Acharya, 2001). Haacke takes this further by arguing that the ASEAN Way has produced a diplomatic community which mediates disputes and bridges relations through a process of socialization within the context of ASEAN norms (Haacke, 2003). All of ASEAN's external institutions are guided by the ASEAN Way framework. Important to understanding the notion of credibility lay in ASEAN being the convenor of all these integrative measures. As such the ASEAN Chair (which rotates annually) convenes and chairs all the meetings of the different mechanisms. This allows ASEAN to bring together disparate perspectives and interests and find a common agenda which can set, thus putting ASEAN in the driver's seat. Second, are the ground rules which are emblematic of ASEAN writ large; non-antagonistic, non-accusatory, informal and consensus based (Acharya, 1997; Beeson, 2008; Jones, 2010; Jones, 2011; Roberts, 2012). Lastly, Whilst, some ASEAN states are security treaty partners with the United States, ASEAN is seen as a credible vector for constructive dialogue as all states are non-threatening small and medium size states. They also carry on peaceful relations with all dialogue partners on a non-partisan basis hence, ASEAN legitimacy.

4. GREAT POWER COMPETITION: FROM UNI TO MULTIPOLARITY

With the end of the Cold War geopolitical power shifted from a bipolar world to a unipolar world with America and the West in charge of global rule making. This is important as ASEAN states economic, hence political orientation is one of dependence on larger and more powerful external actors, historically North America, Europe, Japan and now China. With this in mind it is fundamental to understand the context of the period of time. With the end of the Cold War in 1991 and entrance into the "unipolar" moment the West led by the United States and its allies in Western Europe exercised heretofore unseen power and influence in all spectrums of interstate relations (Krauthammer, 1990). This conjuncture point of history was immensely profound for ASEAN states for two primary reasons; it ushered in the Unipolar moment whereby American and European interests became primary global interests.

Western countries, in particular, and their political elites for the first time engaged in an ideological foreign policy with the thought that “liberals want to spread liberal democracy not just to protect the rights of individuals but also because they believe it is an excellent strategy for causing peace (Mearsheimer, 2018 p. 132). It is taken for granted and argued by Ikenberry and Mastanduno who see American hegemony as a given in the post-Cold war world and hegemony as being central in terms of organizing world and regional order. They argue that American hegemony provides a reference point for organizing economic and political activity along liberal lines that will create stability and hierarchy (Ikenberry and Mastanduno, 2003 p. 8). The beginning of the end of unipolarity or the era of unbridled American dominance of international affairs is argued to have begun with the American military response to the September 11 attacks (Smith, 2002). The costs associated with America’s “Global War on Terror” is estimated at over \$8,000,000,000,000 and leading to the deaths of millions (Kimball, 2021). Other scholars pinpoint to the Russian military intervention in the Syrian civil war to halt American backed jihadi militants as the moment when American hegemony ceased to be omnipotent (Phillips, 2022; Weissman, 2022). Importantly, the GWT led the United States to focus on small wars and interventions to the detriment its broader regional interests in East Asia. Beginning in the Clinton Administration, American economic policy shifted to a global neoliberal approach. This entailed opening American markets to foreign competition, outsourcing industrial manufacturing and freeing capital flows, to Mexico and most importantly China (Goldman, 1995). The massive offshoring of American and European manufacturing jobs helped fuel China’s economic growth in the two decades following Clinton’s departure from office. The Chinese economy grew from a GDP of \$1,211.33 Trillion in 2000 to \$17,963.17 Trillion in 2020 (World Bank, 2021a) displacing America as the number 1 trade partner to over 120 countries (Green, 2023). China is the number 1 trade partner and largest export market for every ASEAN member states except the Philippines who still count the USA as the main export market, topping China by only \$300,000 (World Bank, 2021b). The rise of China is having a massive impact on ASEAN member states and many member states have seen foreign policy shifts due to China’s influence (Liu, 2023). China’s influence has led Brunei to give up its territorial claims in the South China Sea (Putra, 2024), Cambodia back China’s claim (Florick, 2021) and go so far as to have Chinese owned casino’s in Sihanoukville closed in response to request by President Xi (Turton, 2020). China’s rise coupled with the American foreign policy missteps in the Middle East and Ukraine (Collins and Sobchak, 2023; Mearsheimer, 2014; Ostergard, 2006) have now led to the emergence of a multipolar world (Diesen, 2019; Hadano, 2020; Acharya et. al., 2024). The two competing blocs can roughly be divided into two large blocs. The ‘Western’ bloc consisting of a US led NATO with Australia, Japan and New Zealand and an Eastern bloc led by China and Russia which is best exemplified in the BRICS countries which recently expanded membership (Kurecic, 2017; Paikin, 2023). The two blocs have been engaging in a seesaw of escalation beginning with the Trump tariffs on Chinese imports which began shortly after he took office (Pettis, 2021). This trend towards China of economic coercion has continued under the Biden administration with its attempts to stop Chinese high tech by reshoring high tech firms to America and a ban on semiconductors and lithograph machines sales to Chinese firms (Sheehan, 2022). The economic war coupled with American bellicosity surrounding Taiwan all point towards conflict at some point or at least a continued trajectory of tense relations (Maizland, 2023). Given Biden and Trump are the presumptive nominees of their parties in the upcoming election as both sounded resounding victories on Super Tuesday primaries, no matter which wins the policy will have continuity (Epstein & McCausland, 2024).

5. ASEAN'S SECURITY RELATIONSHIPS WITH THE GREAT POWERS

Within the global split, East Asia is not uniform in terms of foreign policy leanings towards either bloc. The United States has a number of security arrangements. There are five primary treaty alliances in East Asia which join Australia/New Zealand 1951, Philippines 1951, Japan 1960, Republic of Korea 1953 (US Department of State, 2017). The Philippines under President Ferdinand Marcos Jr. has reversed its foreign policy of President Duterte and reconnected with its traditional ally and is now hosting the American Navy again (Arugay & Storey, 2023). These five treaty alliance members are the core of American strategic security in the Western Pacific. The US has extensive military bases and full spectrum cooperation in intelligence, military procurement, operations with Australia and New Zealand also being five eyes members.

The United States also has lower-level strategic security agreements with Singapore (Strategic Framework Agreement, 2005) and Thailand since 1954 with the Manila Pact of SEATO which is also a major non-NATO ally since 2003 (US Department of State, 2022) and Congressional Taiwan Relations Act of 1979 (Taiwan Relations Act, 1979). These consist of non-permanent basing of American military assets, training, military procurement, intelligence cooperation and non-traditional security cooperation such as counter terrorism. The security relationship between the United States, Thailand and Singapore deserves deeper analysis as there is more to the relationships of late. Whilst Thailand and America share an historical and treaty based security relationship it must be noted that since the coup of 2014 the once historic security relationship was downgraded significantly as America shunned Thailand under the Obama administration (Kittisilpa & Lefevre, 2016). The cooperation got to such a low level as to bring into question America's relationship in general as Thailand continued to lean heavily towards China (Abuza, 2020; Saballa, 2023; Rahman et al., 2024).

The lack of trust is evidenced by the US refusing to sell F35's to Thailand as it feels that Thailand has ingrained itself too much with China buy purchasing submarines and other military weapons (Detsch, 2022) (Strangio, 2023). This can be juxtaposed with Singapore who was openly offered and sold F35s, America's 5th generation and most advanced fighter aircraft (Zachariah, 2024). Implicit in this comparison is the look forward as Thailand is a shaky security partner to America and could go further to the side of China. Singapore alternatively will remain firmly in the American sphere of security influence. America also has increasingly dense security cooperation with Vietnam (Dung and Vu, 2024; Shoji, 2018). The United States also has lower-level defense cooperation with Brunei, largely in the realm of joint training and military procurement (US Department of State, 2021).

Vietnam has upgraded its relationship to a strategic one with the United States but this is largely a facet of rhetoric more than reality (The Whitehouse, 2023a). The nature of Vietnam-USA strategic relations is primarily in economics, trade, investment and technology cooperation. This does belie a less formal but nonetheless important and informal area of cooperation which is non-permanent basing. American navy vessels have been making visits to Vietnamese ports since 2016 in Cam Ranh Bay with the rise in tensions in the South China Sea between China and Vietnam (Hammond, 2020). It has to be stated that this is balanced with cooperation with China as well. In 2023 President Xi and President Thuong signed a strategic partnership for cooperation in a wide spectrum of relations including trade, technical, education and defense (Vu, 2023). This can be seen through the spectrum of Vietnam hedging is policy options between its northern neighbor and historical enemy through its policy of the Four No's.

Vietnam's Four No's foreign policy was formalized by the Vietnam Ministry of Defense in 2019 with the release of its White Paper which stated that Vietnam would not allow "no military alliance, no affiliation with one country to counteract the other, no foreign military base in the Vietnamese territory to act against other countries, and no force or threatening to use force in international relations" (Phan, 2019).

It has been argued that this is being tested with American navy vessels visiting Vietnamese ports and American attempts during the Trump administration to base missiles in Vietnam (Sang, 2022). Nonetheless, to date Vietnam has refused American missile bases and military cooperation is largely informal (Grossman, 2017). Indonesia is a traditional American military partner in Southeast Asia and had the security relationship formalized in a strategic partnership in 2023 (O'Brien, 2005; US Embassy, 2023). The relationship in the post 9/11 period dealt principally with counter terrorism and training and is now moving towards military procurement and joint training operations. There is push back and limits to the cooperation under President Widodo to try and balance the relationship with the burgeoning economic relationship with China (Rachman, 2023).

On the China side of the ledger Indonesia is the second largest recipient of investment with some \$8.2 Billion worth of investment entering Indonesia through the Maritime Silk Road (Song, 2023). It must also be noted that a great degree of good will was built between China and Indonesia during the Covid pandemic when China donated millions of doses of Sinovac and built factories to manufacture the vaccine indigenously (Wanyi & Mingjiang, 2023). Within this network is also the Quadrilateral Security Dialogue consisting of the United States, Australia, Japan and India (Tzinieris et al., 2023).

The Quad since its formalization during the Trump administration in 2017 has increasingly become more active and coherent in terms of policy direction. This is currently in the stage of maritime security cooperation for active engagement from the India Ocean to South China Sea (Szalwinski, 2023; Townshend et. al., 2023). This can be further bolstered by the AUKUS coalition when Australia finally receives its nuclear submarines from the United States in a decade or more (The White House, 2023b). The Quad is a cross cutting formation as it bridges South Asia, Northeast Asia and two members of the five eyes.

India whilst a member of the Quad carries on historical and close relations with Russia in defense procurement and now the sale of oil with India importing over 1 million barrels per day since the American and EU sanctions at the start of the Russia Ukraine War (Ministry of External Affairs, 2017; Rajghatta, 2023). India and China share a shaky relationship with border conflicts dating back their border war in 1962 which flared again and resulted in military deaths in the Himalayas in 2020 (Bonner, 2023; Kewalramani, 2024).

The Quad can be understood as a mechanism for the United States to expand its influence into South Asia with India, a country which it historically has loose security relations. For India, the Quad allows for strategic knowledge sharing and expansion of influence outside of its traditional area of influence into Southeast and East Asia.

Table 3: List of United States Security Partners in Asia

United States of America Asian Security Partners		
Partner	Year	Nature of Relationship
Australia	1951	Treaty partner (Deep full spectrum cooperation)
New Zealand	1951	Treaty partner (Deep full spectrum cooperation)
Philippines	1951	Treaty partner (Deep full spectrum cooperation)
South Korea	1953	Treaty partner (Deep full spectrum cooperation)
Japan	1960	Treaty partner (Deep full spectrum cooperation)
Thailand	1954	Strategic partner (Training, military procurement, counter terrorism, possible basing)
Taiwan	1979	Strategic partner (Training, military procurement, counter terrorism, possible basing)
Singapore	2005	Strategic partner (Training, military procurement, counter terrorism, possible basing)
Brunei Darussalam	1994	Low level partner (Training, military procurement)
India	2017	Formative stage partner (QUAD maritime strategic)
Indonesia	2023	Initial stage partner (Defense cooperation, technical and economic)
Vietnam	2023	Initial stage partner (Economic strategic, technical)

Source: US Department of State <https://2009-2017.state.gov/s/l/treaty/collectivedefense/>

This network lattice of security arrangements makes it clear that certain countries in East Asia will continue to be lodged firmly in the American sphere of influence (Australia, Japan, Philippines, South Korea, New Zealand and Singapore). Coupled with the dense dependency that ASEAN countries have to the Chinese economy ASEAN as an organization is well placed to navigate and hedge its relations between the two blocs and leading countries seeking to garner influence in the region. (Beeson, 2013; Beeson, 2016; Chen & Yang, 2013; Stubbs, 2014; Yoshimatsu, 2012). Non-strategic security partnerships of Thailand, Singapore, Brunei and Vietnam whilst being at varying levels of depth allow America a strong security hold in Southeast Asia. The only ASEAN countries which are firmly

6. ALTERNATIVE ASIAN REGIONALISM

There is only one East Asian regional organization which includes East Asia's important states which could in the future be a node of connectivity between the major powers and possibly rival ASEAN as a point of contact, the Shanghai Cooperation Organization. The Shanghai Cooperation Organization was established in 2001 by Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan and Uzbekistan (Shanghai Cooperation Organization, 2017). The primary focus of the SCO are security dialogue and cooperation. The SCO was formed in response to the spread of terrorist organizations in Central Asia, Southern Russia and Eastern China and deal with border dispute between its members to lessen the opportunity for conflict. Whilst, the SCO has expanded its scope of activities to include economic dialogue, security affairs continue to dominate its agenda (Blank, 2013). The membership has expanded to nine members, fourteen dialogue partners and 3 observers (Ibid). Current membership now includes India, Iran and Pakistan. In 2005 ASEAN became an observer. Pertinent to this discussion is the bloc coverage. China, Russia, Iran, India are now members of the BRICS grouping and are also members in the SCO.

The absence of any Western bloc countries signals an absence normative or interest-based inclusivity in the SCO and its agenda mirrors its membership. There are initiatives to expand cooperation with the Russian led Eurasian Economic Union and existing ASEAN connectivity the lack of an interregional scope of membership inherently is a limiting factor for the SCO to be a substantive mediator in great power competition (Alimov, 2018). It is also highly unlikely that Japan or South Korea would join the SCO as it a vestige of security cooperation between the United States competitors and adversaries in the region, China and Russia. As such the SCO whilst including India a Quad member is not a viable node of diplomatic, political or security connectivity between the Western bloc and its opposite the China/Russia led bloc.

7. ASEAN BETWEEN GREAT POWERS: HEDGING FOR SURVIVAL

It has been argued that that international relations has entered into a new Cold War (Abrams, 2022; Breuer, 2022; Schindler et. al., Online First). This puts ASEAN states into a dangerous position similar to the first Cold War, with added complexity. During the first Cold War there was a lack of economic interaction with rival blocs. This is the opposite in this iteration as countries can have their security arrangements with the leading country in a bloc and trade relations with the leading country from the opposing bloc. This is best seen with Japan and South Korea who are treaty allies with the United States but whose largest trade partner is China (World Bank, 2021a). The same is true to varying degrees with ASEAN member states which puts ASEAN states into a difficult predicament of survival (Acharya, 2018). Put simply national security can be linked to a strategic rival of the source of your national wealth and economic wellbeing. To this end many ASEAN states have engaged in the policy strategy of hedging (Gede & Karim, 2023; Gerstl, 2022).

A common analytical framework or strategic positioning perspective taken in the scholarly literature is one of hedging, deferred alignment or deferred bandwagoning. These are conceptually different but imply similar outcomes based on different reasonings. Many scholars have argued that ASEAN states have engaged in hedging which is a foreign policy strategy of not choosing alignment with a great power, instead a policy of engagement with both or all powers is engaged (Wang, 2021). Kuik (2008) has argued that Malaysia and Singapore do this out of perceived economic benefit. Kuik (2021) has further articulated from a broader ASEAN perspective that this is more in line with a wait and see approach with ASEAN states fearful of making enemies. Goh (2008) and Marston (2024) take the same approach of deferred alignment with ASEAN states not wanting to choose due to fears of choosing the wrong partner.

The reasons for hedging of course depend on the state and its leadership has argued that ASEAN states have engaged in hedging or deferred due to the above mentioned conundrum of not wanting to choose a side which undermines national security or undermines economic wellbeing (Yuzhu, 2021). Hedging in this sense can be understood as simply a reflection of reality. ASEAN states are small and one of two competitors, America has an unstable foreign policy (Narine, 2024). With American foreign policy shifting with regards to China, multilateral forums such as the WTO and in areas of previous stability such as free trade it is no wonder ASEAN leaders have adopted a wait and see approach (Thompson, 2024). To do otherwise would be irrational.

Table 4: ASEAN Countries Top 3 Trade Partners

ASEAN Countries Largest Export Markets (Ranked by Top 3)							
	China	USA	Japan	Singapore	Thailand	Vietnam	Malaysia
Brunei	3		3	1			
Cambodia	2	1	3				
Indonesia	1	2	3				
Lao PDR	2				1	3	
Malaysia	1	3		2			
Myanmar	1		3		2		
Singapore	1	3					2
Thailand	2	1	3				
Philippines	2	1	3				
Vietnam	2	1	3				

Source: World Bank, 2021 (World Integrated Trade Solution Database)

The rub with ASEAN lies at crosscutting points of national foreign policy preferences of ASEAN states in the two realms of security and economy and issues of contention between the great powers. A case in point is the South China Sea issue where China's rise has only emboldened its claims to the SCS and at times belligerence to an ASEAN member, the Philippines. This was seen in China's disregard for the ICJ ruling regarding territorial claims vis-à-vis the Philippines and the Philippines recent invitation to the US Navy to open once shuttered bases (Phillips et al., 2017; Rasheed, 2023). Furthermore, China has been able to leverage bilateral relations with ASEAN members to undermine ASEAN cohesion to where the notion of even reaching consensus over particular issues such as the SCS have been abandoned (Goh, 2021).

Additionally, no ASEAN state is large enough to exert influence over the great powers. ASEAN itself due to its informality and lack of substantive engagement has led to a reexamination and orientation by Western powers away from ASEAN institutions. This is evidenced by formation of the Quadrilateral Dialogue (Quad), which includes the United States, Australia, India, Japan. This parallels the AUKUS alliance, between the United States, Australia, and the United Kingdom. These minilateralisms are highly indicative of the United States taking it upon itself to shore up its security interests by bypassing established regional institutions such as the ASEAN Regional Forum (ARF) (Beeson, 2022). The minilateralism of the Quad whilst bypassing the ARF has had an interesting twist of late in that the Quad requested to formalize relations with ASEAN at the 2023 ASEAN Summit where it was later agreed at the ASEAN Foreign Minister's Retreat in February 2024 to indeed formalize relations with the Quad within ASEAN mechanisms of ASEAN Plus One, EAS and ARF in order to try and demonstrate ASEAN centrality (Ministry of Foreign Affairs, 2024).

The above has its correlate in the China's Belt and Road Initiative where in the Chinese view, its engagement creates the conditions for 'win-win' outcomes as China's vision overlaps with Southeast Asian needs for infrastructure (Jinping, 2013). The BRI dovetails with ASEAN's historical plans for connectivity which it was unable to realize on its own until China put forth its ambitious proposals (ASEAN, 2010). The reliance on Chinese funding was laid by Mueller's analysis which states:

“in the absence of functioning mechanisms to mobilize internal resources for the achievement of its objectives, ASEAN has to rely on external resources to fund the formulation of plans, the convention of meetings, and, most significantly, the implementation of projects related to its connectivity agenda. This is a pattern that is familiar to observers of ASEAN in the realms of security and trade. In connectivity, this pattern of ASEAN's external resource dependence is being replicated (Mueller, 2021).

Furthermore, with regard to China's economic leverage it has shown a willingness to use coercive economic measures on developed countries when policy disputes arise. This was seen in China putting hefty tariffs on Australian wine, barley, beef, cotton, lobsters and timber after Australia called for inquiries into the coronavirus origins from a laboratory in Wuhan (Choudhury, 2020). Given many ASEAN members dependency in politically sensitive areas of their economies it is difficult to see many ASEAN members openly engaging in any policy stance that may be considered hostile or threatening to Beijing's interests (Jones & Rhein, 2023). In addition to China's willingness to use leverage is the lack of American or European response to the China's BRI. In 2022 the United States through the G7 announced some \$600 Billion in infrastructure funding to counter the BRI (Shalal, 2022). The European Union also announced infrastructure plans of up to €300 Billion as part of its Global Gateway policy (Sacks, 2021). These plans while impressive on the surface have been heavily criticized and have not as of yet yielded any policy implementation. The plans rely heavily on both public and private financing and are stacked with traditional conditionality as seen in Asia Development Bank and World Bank loans (Barbero, 2023). It is argued that still dominant neoliberal thinking in the United States and Western Europe account for both the underwhelming implementation and lack of policy take up seen in the rollout of PGII (Yu, 2024). This is reflected in the approach taken by the public/private partnership philosophy where anywhere from 55% to 95% with an average of 82% of infrastructure loans from the G7 plan originating from private funding sources (Hameiri & Jones, Online First). Given the pace and implementation of the BRI over the previous decade and the lack of imagination brought by Western countries to counter the BRI there leaves little hope that any viable alternative to China's BRI will emerge. The implication of this Western policy failure is that ASEAN countries will continue to economically gravitate towards China and the physical linkages of the BRI as they expand will drain even more economic activity to the Middle Kingdom rather than to the Transatlantic zone.

8. DIRECTION FOR ASEAN AMONG THE GREAT POWERS

ASEAN as a collective of 10 independent member states which have different security relationships with China and the United States will have a very difficult time finding common ground on strategic foreign policy. ASEAN members such as Cambodia, Laos and Myanmar are fully within the sphere of influence of China whereas all other members are walking the foreign policy tightrope of hedging. In realist terms hedging is perhaps the only viable option for the remaining ASEAN members not within China's sphere. Looking towards China for national economic and investment vitality is now a regional reality that cannot be ignored with the decline of the West and American economic initiatives. The counter balance to this is looking towards America for strategic national security to balance against Chinese belligerence in the South China Sea and possibly other areas of contention. Cabellero-Anthony has argued that ASEAN's place between the two great powers is one of 'strategic neutral convenor' (Cabellero-Anthony, Online First). This is based on regional realities of ASEAN being composed of small weak states and of ASEAN's de facto position in the East Asian space.

The ability of ASEAN to have multiple institutional forums for interaction and integrative agenda formulation holds significant advantages for hedging relations. However, the more engaging question is what can ASEAN do or contribute when a great powers core interest is a point of contention? ASEAN's limitations have already been laid bare with the South China Sea dispute and its inability due to fracturing of members towards China. Concurrently, ASEAN is also suffering from a lack of credibility in dealing with the crisis in Myanmar with member states such as Thailand undermining the ASEAN 5-point consensus under the Prayut government. Implicit in the Thailand's undermining the lack of consensus in the 5-point consensus. Clearly, there are no easy options for ASEAN to engage other than the status quo of being an institutional nexus point for dialogue. Hedging will be a successful strategy insofar as the great powers do not consider an issue or issue area to be of core national interests. In which case they will bypass ASEAN or use divide and stagnate tactics. This does not bode well for ASEAN as will not necessarily play a key role in East Asian affairs but rather a second order convening power for dialogue and discussion.

9. CONCLUSION

There are no easy options for the Global South's oldest regional organization in the new era of great power competition. ASEAN has a developed institution framework for engagement with all major powers that no other organization has. ASEAN as a collective of small and medium size states is essentially a neutral actor, in that there are no possible threats that can emanate from any ASEAN member towards a great power. That being said ASEAN has critical weaknesses of an inability to deal with substantive issues in an 'open diplomacy' manner which relegates it to a dialogue based forum for discussion, socialization and talk shop. This has its benefits of course but it would be overstating to say that ASEAN has any ability to influence the great powers on core national interests. The open question is when a great power gets tired of ASEAN's hedging strategy and forces the hands of its members will ASEAN be able to manage security affairs? This is difficult to image at the moment as ASEAN cannot take care of crisis in its own backyard, namely the crisis in Myanmar. If left to its own and hedging continues ASEAN can play an important role as interlocutor between the major powers as a venue for injecting ASEAN interests into the great power competition agenda through its institutional formats.

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AI-DRIVEN CORPORATE GOVERNANCE: A GLOBAL PERSPECTIVE ON IMPLEMENTATION AND EFFECTIVENESS

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ABSTRACT

Artificial intelligence (AI) is transforming corporate governance by reshaping decision-making, risk management, and strategic oversight in organizations worldwide. This study examines the global implementation of AI-driven corporate governance, analyzing its effectiveness in different regulatory and economic environments. Through a cross-country comparative analysis, we investigated AI-driven management practices in leading AI economies (USA, China, and the EU) and emerging markets (Kazakhstan, Southeast Asia, and Latin America), identifying key trends, commonalities, and divergences in AI integration. The findings suggest that AI adoption in corporate governance enhances decision-making efficiency, regulatory compliance, and strategic foresight. However, significant variations exist due to differences in technological infrastructure, regulatory environments, workforce capabilities, and cultural influences. Empirical research demonstrates AI's positive impact on corporate governance through its ability to automate compliance processes, reduce financial reporting errors, enhance transparency, and minimize human biases in decision-making. Nevertheless, challenges remain, particularly regarding ethical concerns, algorithmic accountability, and AI's potential to reinforce biases. This research provides critical insights for business leaders, policymakers, and technology stakeholders aiming to leverage AI for enhanced governance structures, strategic innovation, and improved economic performance. As AI continues to redefine business landscapes, fostering collaborative AI governance models, knowledge-sharing networks, and regulatory harmonization across economies will be essential to ensuring sustainable, ethical, and effective AI integration in corporate governance worldwide.

Keywords: *AI adoption, AI-enabled management, AI readiness indexes, Digital economy*

1. INTRODUCTION

Artificial intelligence (AI) is transforming corporate governance by reshaping decision-making, risk management, and strategic oversight in organizations worldwide. AI-driven corporate governance integrates data analytics, machine learning algorithms, and automation to enhance regulatory compliance, financial forecasting, and operational efficiency.

As firms increasingly rely on AI to optimize governance structures, the role of human oversight and ethical considerations in AI decision-making becomes a critical area of study. AI-based governance systems process large volumes of structured and unstructured data to provide real-time insights, identify financial risks, and improve transparency in corporate decision-making (Papagiannidis & Truong, 2022). Companies leveraging AI for governance benefit from enhanced fraud detection, regulatory adherence, and predictive analytics, which contribute to more informed boardroom decisions.

However, the degree to which AI enhances governance effectiveness varies across industries and regulatory environments, particularly in emerging economies where digital infrastructure and AI adoption rates are still developing. Empirical studies highlight AI's potential to improve governance performance. A survey of major corporations utilizing AI for risk assessment and compliance found that firms employing AI-driven oversight mechanisms reduced financial reporting errors by 34% and improved regulatory compliance by 27% (Toner-Rodgers, 2024). Additionally, AI-powered corporate governance systems have been shown to enhance decision-making speed and accuracy while minimizing human biases, leading to a 22% increase in shareholder confidence (Filippucci et al., 2024). Despite these advantages, concerns remain regarding algorithmic accountability, transparency, and the unintended consequences of AI in high-stakes governance decisions.

A recent OECD report analyzing AI adoption in corporate governance across seven leading economies—Austria, Canada, France, Germany, Ireland, the United Kingdom, and the United States—indicates that 78% of executives believe AI enhances governance effectiveness (Lane, Williams, & Broecke, 2023). However, resistance to AI implementation persists, particularly in industries where regulatory frameworks lack clarity on AI-driven decision-making. Ethical challenges, including AI's potential to reinforce biases in hiring, investment, and strategic planning, raise further concerns about the unintended risks of AI in governance structures (Arroyabe et al., 2024). As AI continues to redefine corporate oversight, understanding its role in governance effectiveness, regulatory compliance, and ethical decision-making remains essential.

This study examines the global implementation of AI-driven corporate governance, analyzing its effectiveness in different regulatory and economic environments. By assessing AI's impact on governance transparency, risk management, and corporate accountability, this research contributes to the growing discourse on the intersection of artificial intelligence and corporate governance in a rapidly evolving digital economy.

2. ARTIFICIAL INTELLIGENCE AND CORPORATE GOVERNANCE: BIBLIOMETRIC ANALYSIS

The number of publications on the topic "artificial intelligence and corporate governance" has shown steady growth from 2010 to 2024. According to data from Dimensions.ai, fewer than 2,500 publications were recorded in 2010, while by 2024 this figure had surpassed 32,000. A particularly sharp increase is observed after 2017, reflecting the rising academic and practical interest in the intersection of AI technologies and corporate governance mechanisms.

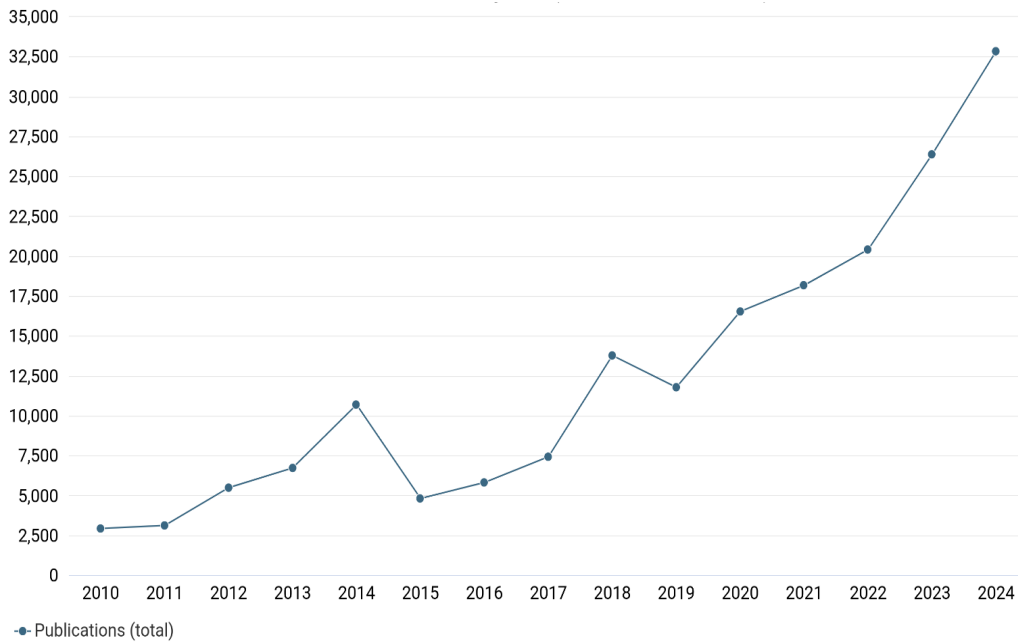


Figure 1: Publications in each year
 (Source: <https://app.dimensions.ai> Exported: March 11, 2025.
 Criteria: 'AI and corporate governance' in full data)

The analysis of disciplinary distribution reveals that research on "artificial intelligence and corporate governance" is highly interdisciplinary. The majority of publications are concentrated in Commerce, Management, Tourism and Services (56,476), followed by Information and Computing Sciences (33,734), Human Society (28,073), and Economics (15,747), with notable contributions also from Law, Philosophy, Engineering, and Health Sciences.

Table 1: Number of publications in each research category
 (Source: <https://app.dimensions.ai> Exported: March 11, 2025
 Criteria: 'AI and corporate governance' in full data.) – /Table ends on the next page

Category	Fields of Research (ANZSRC 2020)
35 Commerce, Management, Tourism and Services	56476
46 Information and Computing Sciences	33734
44 Human Society	28073
38 Economics	15747
48 Law and Legal Studies	12979
50 Philosophy and Religious Studies	10776
47 Language, Communication and Culture	9468
40 Engineering	7577
33 Built Environment and Design	5512
43 History, Heritage and Archaeology	5426
39 Education	5290
36 Creative Arts and Writing	5120
42 Health Sciences	4890

41 Environmental Sciences	3823
32 Biomedical and Clinical Sciences	3453
52 Psychology	1448
37 Earth Sciences	1443
49 Mathematical Sciences	1398
30 Agricultural, Veterinary and Food Sciences	1214
31 Biological Sciences	893
51 Physical Sciences	549
34 Chemical Sciences	283

The leading contributors to the field of "AI and corporate governance" include scholars from diverse institutions and countries. Yogesh Kumar Dwivedi (Swansea University, UK) leads in publication count (71 papers, 17,095 citations), while Naveen Donthu (Georgia State University, USA) and Debmalya Mukherjee (University of Akron, USA) show the highest citation impact with 3,280 and 6,514 citations per paper, respectively. This demonstrates both sustained and high-impact scholarly engagement across regions.

Name	Organization	Country	Publications	Citations	Citations per Publication
Yogesh Kumar Dwivedi	Swansea University	United Kingdom	71	17,095	240.77
Ramakrishnan Raman	Symbiosis International University	India	13	9,846	757.38
Nripendra Pratap Rana	Qatar University	Qatar	28	8,7	310.71
Raja Chatila	Sorbonne University	France	8	7,498	937.25
Satish Kumar	Sunway University	Malaysia	23	7,455	324.13
Arpan Kumar Kar	Indian Institute of Technology Delhi	India	40	7,268	181.70
Weng Marc Lim	Sunway University	Malaysia	10	7,199	719.90
Nitesh Pandey	Malaviya National Institute of Technology	India	7	6,764	966.29
Naveen Donthu	Georgia State University	United States	2	6,56	3,280.00
Debmalya Mukherjee	University of Akron	United States	1	6,514	6,514.00

*Table 2: Leading Contributors to the Field of AI and Corporate Governance
(Source: <https://app.dimensions.ai> Exported: March 11, 2025
Criteria: 'AI and corporate governance' in full data.)*

Based on literature review, we identify that the AI is redefining corporate governance and strategic frameworks. Kalkan (2024) and Moro-Visconti (2025) emphasize how AI reshapes risk management, ethics, and governance structures. Büber & Seven (2025) explore AI's synergy with traditional strategy schools, such as Classical and Resource-Based View,

enhancing analytics and responsiveness. Biloslavo et al. (2024) use the Cynefin framework to show how AI supports strategic planning in volatile and uncertain (VUCA) environments. AI significantly enhances operational processes and performance metrics. Korapati (2025) shows how AI-powered predictive analytics in ERP systems improve financial forecasting, inventory optimization, and customer behavior analysis. Liotine (2019) highlights real-time decision-making improvements in pharmaceutical supply chains enabled by AI automation and analytics. AI strengthens organizational alignment and efficiency through integration into enterprise architecture. Abu Bakar et al. (2024) explore how AI enhances frameworks such as TOGAF and SOA, while identifying challenges in implementation, ethics, and data governance. AI improves interdepartmental coordination and collaborative decision-making. Holloway (2024) demonstrates how AI supports demand forecasting and strategy alignment between supply chain and marketing through data analytics and personalization. Rane (2023) examines the role of ChatGPT and other generative AI models in business management, supporting customer communication, financial analysis, and decision-making, while also addressing ethical concerns like bias and data privacy.

3. ARTIFICIAL READINESS INDICES

Research conducted between 2018 and 2022 in Canada, Singapore, the United Kingdom, and the United States shows that the share of job postings requiring AI skills varies significantly across sectors. The highest demand was observed in manufacturing, construction, and business services, indicating that AI is reshaping professional requirements and increasing demand for AI-related expertise. Sectors with high AI intensity also face notable talent shortages, particularly in Electrical Equipment, Computers and Electronics, Pharmaceuticals, Scientific R&D, and Chemical Manufacturing (Calvino et al., 2024). The AI Index is an annual report published by the Stanford Institute for Human-Centered Artificial Intelligence (HAI). It is one of the most comprehensive and authoritative global resources tracking the progress and impact of artificial intelligence. The AI Index aims to provide rigorous, data-driven insights into AI development, use, and policy. It is designed for policymakers, researchers, industry leaders, and the public. The key dimensions of the global AI ecosystem:

1. Research and Development – Publications, patents, open-source contributions, and frontier models.
2. Technical Performance – Benchmark results of models on tasks like reasoning, coding, and language understanding.
3. Responsible AI – Ethics, transparency, and safety of AI systems.
4. Economy – Investment trends, labor market impacts, and AI adoption in industry.
5. Science and Medicine – AI's contribution to scientific discovery and healthcare.
6. Education – Trends in AI education, workforce training, and talent flows.
7. Policy and Governance – AI-related legislation, regulatory bodies, and national strategies.
8. Diversity – Demographics in AI research and education.
9. Public Opinion – Global sentiment and awareness of AI technologies.

The AI Index is based on data from numerous sources, including CSET, Epoch, McKinsey, LinkedIn, GitHub, and national governments. It is updated annually and available to the public. AI has surpassed human performance in specific tasks, demonstrating significant progress in video classification, visual reasoning, and language modeling. However, it still lags in tasks requiring competitive mathematics, complex logical reasoning, and planning. Research in AI is increasingly concentrated in the industrial sector, while the academic contribution is in decline.

In 2023, the industry produced 51 major machine learning models, whereas academia developed only 15, reflecting limited funding for academic research. Regulatory activity in the United States has intensified, with 25 new legislative acts related to AI passed in 2023—compared to just one in 2016—indicating a sharp rise in governance efforts. According to an Ipsos survey, the share of individuals who view AI as having a significant impact on their lives increased from 60% to 66%. Simultaneously, concerns about AI rose from 38% in 2022 to 52% in 2023. These trends underscore the growing societal role of AI, the urgency of robust regulation, and the onset of a new phase in technological advancement. Private investment in AI continued its steady growth in 2023, with the number of newly funded AI startups increasing by 40.6% to 1,812. The average size of private AI investments also rose slightly—from \$31.3 million to \$32.4 million—demonstrating growing investor confidence and sustained momentum in the sector.

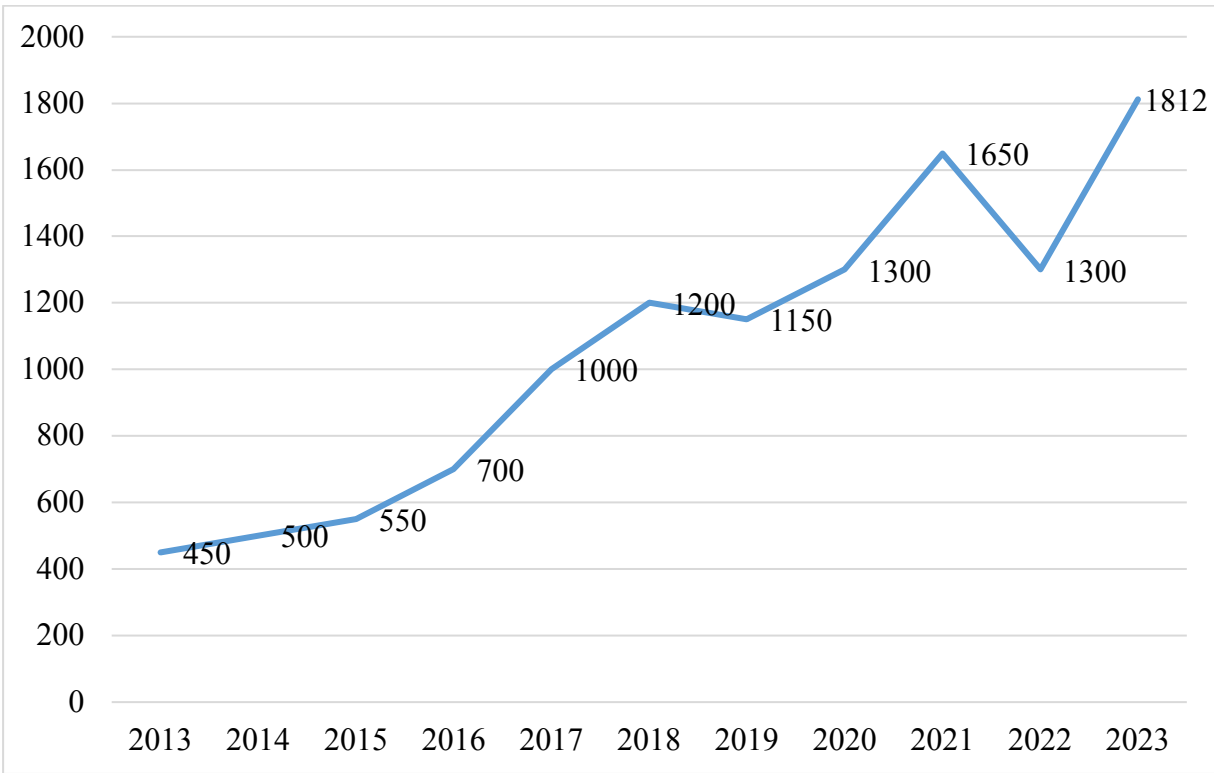
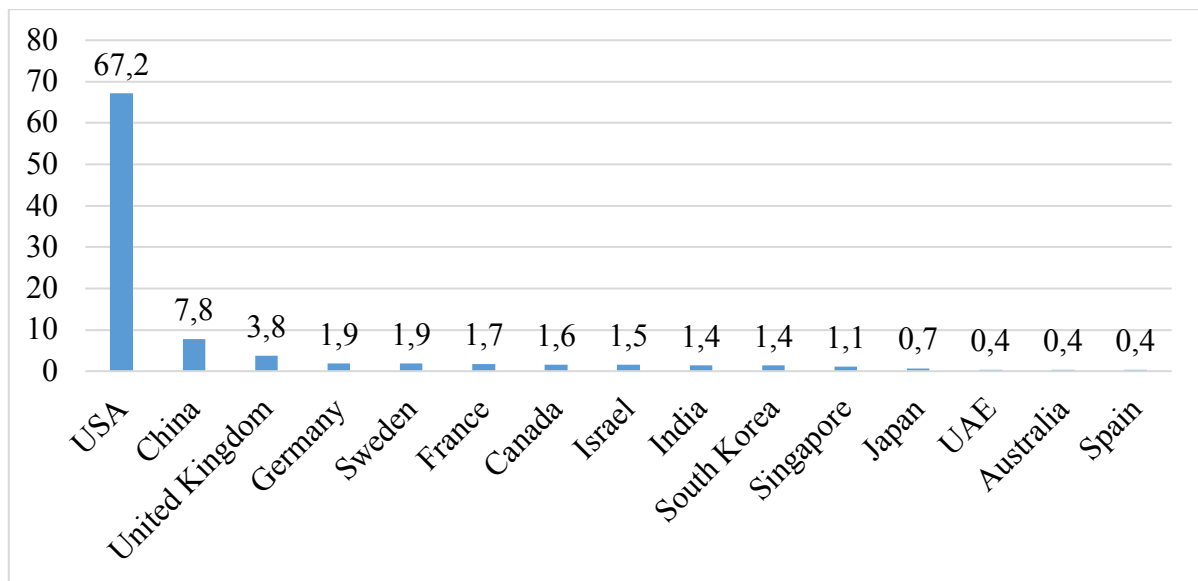


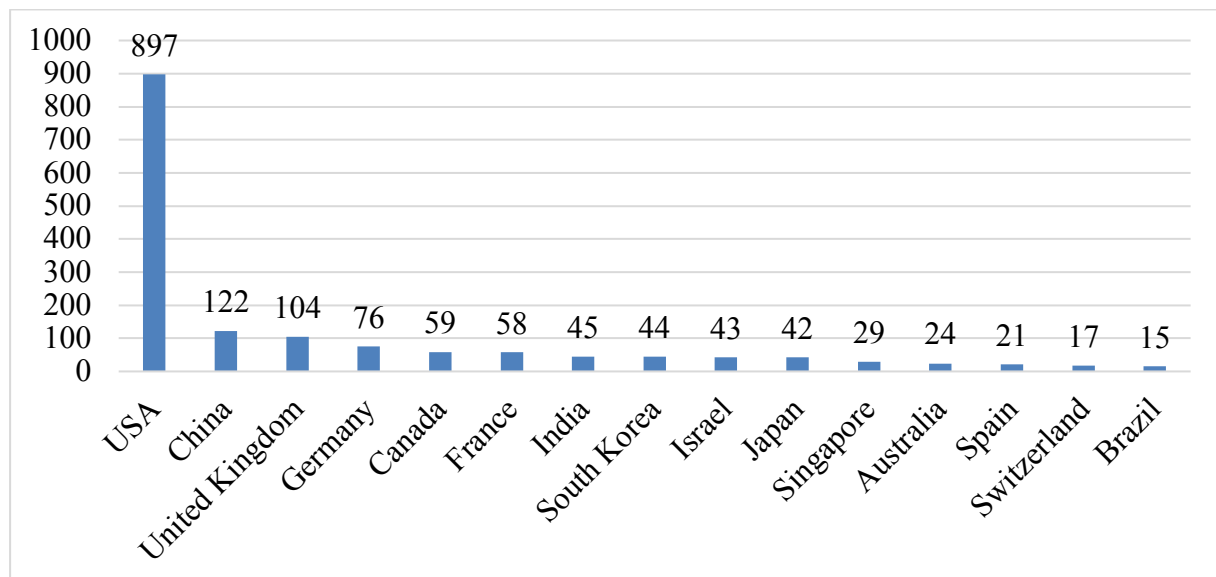
Figure 2: The number of funded AI companies worldwide (2013–2023)
(Source: AI Index Report, 2024)

In 2023, the United States remained the undisputed leader in attracting private investment in AI, underscoring its significant influence on the global development of the sector. The \$67.2 billion invested in the U.S. was 8.7 times more than in China and 17.8 times more than in the United Kingdom (Figure 3), reinforcing the country's position as a leading technological and financial hub in AI.



*Figure 3: Private Investment in Artificial Intelligence, USD Billion
(Source: AI Index Report, 2024)*

In 2023, the United States was the clear leader in the number of newly funded AI companies, aligning with overall trends in private investment. A total of 897 new AI companies were established in the U.S., far surpassing other regions. China ranked second with 122 new companies, followed by the United Kingdom with 104 (Figure 4). This highlights the U.S.'s continued dominance as the central hub for AI innovation and investment, while other countries remain significantly behind.



*Figure 4: Number of Newly Founded AI Companies by Country, 2023
(Source: AI Index Report, 2024)*

The comparial study show that the leading economies such as the United States, China, and the European Union dominate global AI development through robust institutional governance, significant investment, and high-impact innovation.

The U.S. and EU have established comprehensive AI regulatory frameworks, while China maintains centralized, state-driven AI strategies. These countries lead in private investment—especially in generative AI—and are responsible for the majority of foundational model development and patenting activity. In contrast, emerging markets like Kazakhstan, Southeast Asia, and Latin America lack cohesive national AI strategies, with policy efforts often limited to general digital transformation. Investment capacity remains low, with most initiatives relying on international partnerships. These regions contribute little to AI patents or foundational models, focusing primarily on localized adaptation of existing technologies rather than original development (Table 3).

*Table 3: Comparative Analysis of AI Management Strategies in Leading Economies and Emerging Markets – /Table ends on the next page
(Source: developed by authors based on AI Index Report, 2024)*

Parameter	Leading Economies (USA, China, EU)	Emerging Markets (Kazakhstan, Southeast Asia, Latin America)
Institutional Leadership & Policy	The United States and the European Union are at the forefront of institutional AI governance. In 2023, the U.S. introduced 25 AI-related regulations and proposed 181 AI-focused bills in Congress. The EU adopted the landmark AI Act in 2024, setting comprehensive legal standards for AI use and development. China maintains a strong state-driven AI policy framework, with top-down coordination through national five-year plans and strategic guidance documents.	Kazakhstan and most countries in Southeast Asia and Latin America lack comprehensive national AI strategies. Policy activity is generally fragmented and primarily limited to digital transformation goals or ICT modernization efforts. There is minimal legislative activity dedicated specifically to artificial intelligence governance or risk management.
AI Investment	The U.S. leads global AI investment with \$67.2 billion in private funding in 2023, nearly nine times more than China. A significant share went to generative AI, which attracted \$25.2 billion worldwide. While the EU maintains active investment channels, it saw a 14.1% decline in 2023 compared to the previous year. China remains the second-largest investor but has shifted more funding toward industrial deployment rather than frontier model development.	Countries such as Kazakhstan, Vietnam, and Brazil have limited capacity for large-scale AI investment. Most AI initiatives depend on international development programs, multilateral cooperation, or private partnerships. These regions have not reported significant venture capital inflows or public-private investments in AI infrastructure comparable to leading economies.

Development & Patents	In 2023, U.S. institutions developed 61 frontier machine learning models, far surpassing China (15) and the EU (21). China, however, dominates in patenting activity, accounting for 61.1% of all granted AI patents globally, compared to 20.9% from the U.S. The EU emphasizes ethical and transparent AI systems, often promoting open-source models. These regions are the primary sources of both foundational research and high-impact innovations in the global AI ecosystem.	Emerging economies in this group have not produced any notable foundation models or frontier machine learning systems. Their contributions to global AI patents remain negligible. AI expertise is largely applied to localized implementation of foreign-developed technologies, such as through adaptation of open-source models or cloud-based solutions. Most innovation efforts are centered on application rather than original model development.
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South and Central Asia exhibit the lowest levels of AI readiness globally, primarily due to disparities in economic development, technological adoption, and governance structures (Figure 5). India and Turkey are regional leaders with relatively high global rankings in AI development but continue to lag in infrastructure and data readiness. Central Asian countries are increasingly seeking cooperation within the C5 format to harmonize AI policies. Turkey has launched an industrial and technology strategy aimed at fostering technological sovereignty and innovation, with a focus on data governance, content moderation, and competition policy. Central Asian nations are also advancing digital transformation: Tajikistan has adopted a national AI strategy, while Kazakhstan’s Astana Hub, in partnership with Google for Startups, is supporting regional startup ecosystems.

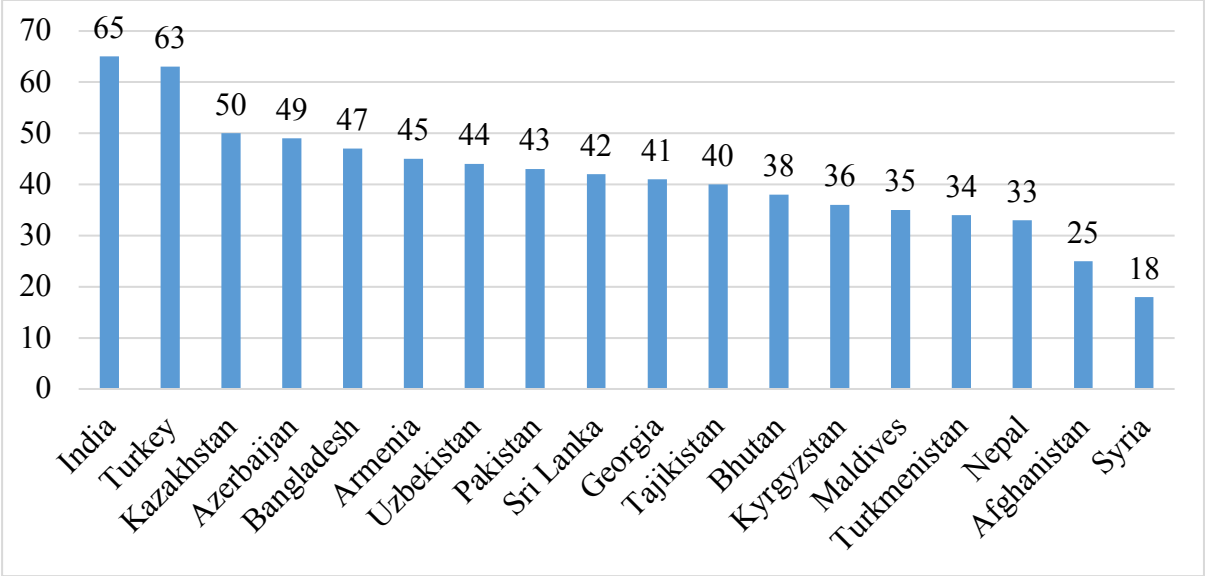


Figure 5: AI Readiness Levels of South and Central Asian Countries
(Source: AI Index Report, 2024)

The Government AI Readiness Index is a global benchmarking tool developed by Oxford Insights. It evaluates how prepared national governments are to implement artificial intelligence (AI) in public services. The index is widely used by policymakers, researchers, and international organizations. The overall score is composed of three sub-indices, each reflecting a key dimension of AI readiness:

1. Government Sub-Index measures the government's commitment to AI through national strategies, public sector innovation capacity, regulatory frameworks, and ethical guidelines.
2. Technology Sector Sub-Index assesses the maturity and competitiveness of the country's private tech sector, availability of skilled workforce, research output, and digital innovation ecosystem.
3. Data & Infrastructure Sub-Index evaluates data availability, quality of digital infrastructure, internet access, and cloud computing capabilities essential for AI deployment.

The index includes over 180 countries and is based on a mix of quantitative indicators and qualitative expert assessments. The AI Readiness Index assesses countries' preparedness to adopt and implement artificial intelligence. It incorporates indicators such as government policy, innovation capacity, data infrastructure, and the technological environment.

Kazakhstan ranks at a moderate level, indicating the need to strengthen its technological sector and human capital to advance AI development. Canada, France, South Korea, Germany, Japan, and the Netherlands complete the top ten, though significant differences remain across their technological sectors. For instance, South Korea scored 87.6 in government indicators but only 54.4 in the technology sector. Among middle-tier countries, the Croatia ranks 41th (61.7 points) and Turkey 47th (60.5 points), both demonstrating progress in digital governance but lagging in technological performance. Kazakhstan is ranked 72nd with an overall score of 48.6. While its digital governance score is relatively stable, the technology sector score is low at 31.0, pointing to the need for further innovation development. However, its data and infrastructure indicator is comparatively strong at 66.1. Following Kazakhstan are Azerbaijan (73rd, 48.2 points), Uzbekistan (87th, 43.8 points), and Kyrgyzstan (131st, 34.1 points), with Kyrgyzstan showing a particularly low technology sector score of 22.9.

Overall, the ranking highlights global disparities in digital development and underscores the need for Kazakhstan and neighboring countries to enhance technological capacity and digital transformation in public administration (Table 4).

Table following on the next page

Overall Rank	Country	Overall Score	Government Indicator	Technology Sector Indicator	Data & Infrastructure Indicator
1	United States	84.8	86.0	81.0	87.3
2	Singapore	82.0	90.4	66.2	89.3
3	United Kingdom	78.6	82.5	68.8	84.4
4	Finland	77.4	88.3	60.4	83.4
5	Canada	77.1	85.3	64.7	81.2
6	France	76.1	84.0	60.4	83.8
7	Republic of Korea	75.7	87.6	54.4	85.0
8	Germany	75.3	80.8	63.3	81.7
9	Japan	75.1	82.8	56.9	85.6
10	Netherlands	74.5	78.9	62.0	82.6
41	Croatia	61.7	72.6	41.6	69.1
47	Turkey	60.5	75.1	42.3	64.1
72	Kazakhstan	48.6	48.6	31.0	66.1
73	Azerbaijan	48.2	55.9	30.8	57.8
87	Uzbekistan	43.8	49.1	24.8	57.5
131	Kyrgyzstan	34.1	33.5	22.9	45.9

*Table 4: Government AI Readiness Index, 2023
(Source: <https://www.oxfordinsights.com>)*

4. CONCLUSION

Artificial Intelligence (AI) is fundamentally transforming corporate governance, strategic decision-making, and operational management across industries and countries. This study highlights the significant variations in AI adoption due to differences in technological infrastructure, regulatory environments, workforce capabilities, and cultural influences. Through a cross-country comparative analysis, we examined AI-driven management practices in leading AI economies (USA, China, and the EU) and emerging markets (Kazakhstan, Southeast Asia, and Latin America), identifying key trends, commonalities, and divergences in

AI integration. The findings suggest that AI adoption in corporate governance enhances decision-making efficiency, regulatory compliance, and strategic foresight. In developed economies, AI implementation is supported by strong regulatory frameworks, high investment levels, and advanced technological ecosystems, resulting in more structured governance models and a higher degree of automation in risk management, financial oversight, and policy implementation. In contrast, emerging markets face significant barriers, including limited AI infrastructure, fragmented policies, and lower investment in AI-driven business transformation. Nevertheless, these regions show growing engagement in AI adoption, with increasing interest in international collaboration and policy alignment to facilitate AI integration. Empirical research demonstrates AI's positive impact on corporate governance through its ability to automate compliance processes, reduce financial reporting errors, enhance transparency, and minimize human biases in decision-making. However, challenges remain, particularly regarding ethical concerns, algorithmic accountability, and AI's potential to reinforce biases. The study also highlights disparities in AI investment, where developed economies allocate substantial resources to AI innovation and foundational model development, while emerging economies rely more on international partnerships and the adaptation of pre-existing AI solutions. This research provides critical insights for business leaders, policymakers, and technology stakeholders aiming to leverage AI for enhanced governance structures, strategic innovation, and improved economic performance. The study underscores the need for a balanced approach to AI governance, integrating regulatory oversight, ethical considerations, and adaptive business strategies to maximize AI's potential while mitigating associated risks. Additionally, future research should explore longitudinal AI adoption trends, the effectiveness of AI-driven corporate policies, and the role of AI in shaping global regulatory frameworks. As AI continues to redefine business landscapes, fostering collaborative AI governance models, knowledge-sharing networks, and regulatory harmonization across economies will be essential to ensuring sustainable, ethical, and effective AI integration in corporate governance worldwide.

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DIGITAL SKILLS LEVEL IN CROATIA COMPARED TO EUROPEAN UNION: CHALLENGES FOR FUTURE DEVELOPMENT

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ABSTRACT

For the past decades, the digitalisation process is taking place in all areas of human activity. Given its speed and, generally, the speed of technological change (artificial intelligence, blockchain, etc.), digital skills and abilities are a fundamental element for participation in modern economy and the society, not just technical knowledge reserved for IT specialists. Consequently, in contemporary digital era of rapid changes, developing digital skills is considered to be crucial to keep pace with market demands as high digital literacy and knowledge help individuals and organisations to take advantage of the new opportunities coming with mentioned new technologies. The aim of this paper is to analyse the level of digital skills in the Republic of Croatia compared to the EU average and to identify areas where digital skills can be improved. The data used in this paper were collected from the Eurostat database and shows that Croatia has made significant progress in the area of digital skills and is often above the EU average. Although Croatia is making progress in developing digital skills and competences, there are areas where further improvement is needed, such as in the development of online safety skills.

Keywords: digitalisation, digital skills, Croatia, EU

1. INTRODUCTION

At a time of rapid technological change, the need to develop digital skills is being advocated due to the impact of digital technologies on employment and business operations of enterprises in various industries. The development level of digital skills depends on the digital transformation of the economy which creates socio-economic conditions and gives an impetus to mastering digital skills. According to Bondarenko (2023) the indices of skills development and skills activation in the labour market depend on the number employees who learned to use new software or computerized equipment at work. It is of great importance how willing employees are to learn and acquire basic digital skills that enable them to solve problems and collaborate effectively with business partners, which is crucial for their development especially for further professional success and the quality of the service provided. Digital skills that are important for business operations no longer only include communication skills, internet skills and online communication skills, but also require knowledge of various software applications

necessary for business, as digital technology has introduced changes in business strategies, as well as the use of cloud computing, which requires information and data literacy. The integration of digital technologies into the business world is inevitable, so the knowledge and understanding of various digital skills among employees and those who will become so in the future has become essential and crucial to address the various opportunities and challenges facing enterprises in all sectors. Developed countries have a more favourable environment for introducing digital technologies in business and education and improving the digital skills of employees, while less developed countries lack the necessary infrastructure and knowledge base for use in enterprises. Croatia is in the European average, but it is necessary to further encourage employees to improve and train the use of various digital skills, with a focus on new technologies. Given the diversity of digital skills required by employees, a prerequisite for the success of enterprises is their continuous training and, above all, the creation of the conditions through the necessary infrastructure, which is insufficient in Croatia despite the large number of ICT experts. It is also necessary to launch initiatives in enterprises to help employees retrain and qualify for the required digital skills. Therefore, the paper analyses the level of digital skills and compares it with the EU countries and the areas where the development of these very skills needs to be promoted.

2. THEORETICAL BACKGROUND

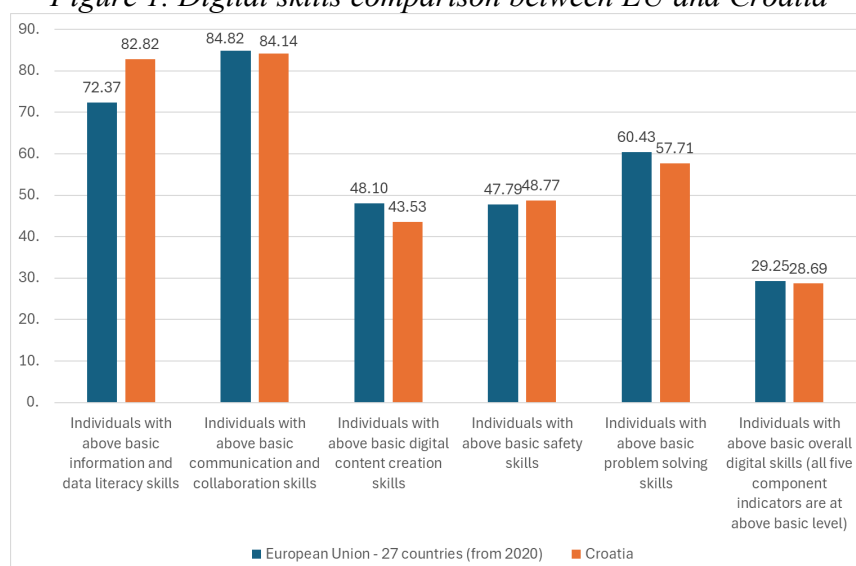
Digital skills are acquired over time through education and training, but also through the social use of technology, and as a concept are often described as a range of different competencies. According to Yugay (2023), digital skills are a set of skills based on conventional literacy, going beyond mere computer operations to encompass the nuanced understanding and application of digital information. Without basic digital skills, employment in most industries is unthinkable. Specialized occupations require more sophisticated knowledge of digital skills. Most enterprises are investing heavily in IT infrastructure, but the benefits of IT adoption can only be realised if the employees of these enterprises have a high level of digital literacy (Al-Mamary & Alraja, 2022). According to Buhalis and Law (2008), digital skills that are important for business management and operations include knowledge of and working with software applications, cloud computing, AI, computer programming, robotics, voice technology, data analytics and blockchain technology. In a digitally driven era, digital skills affect not only employment but also the everyday lives of the population and access to various information. The first survey in the EU Member States on the mismatch between digital skills and jobs has shown that 30% of European workers have skills that do not match the requirements of their job. 45% of workers believe that their skills can be developed and improved and used in their job (CEDEFOP, 2014). Measuring and comparing the ability to use and know digital skills among the population, but also among employees, requires the establishment of international standards that will enable policymakers to set goals and implement them in EU countries with the aim of increasing digital literacy. Matulcikova et al. (2024) have shown in their research that employees do not reach the level of digital skills required by employers and that the highest competence expectations are in the field of cybersecurity, where a statistical significance between the target and actual values was found, while the dependence of the employees' competence level on the level of education or professional position was not found. Croatia has made significant progress in digitising the economy and building connectivity and is well positioned among EU members. 59% of the population has basic digital skills, compared to the European average of 55.6%.

The proportion of those with digital content creation skills is 81.5%, well above the EU average of 68.3%. In the area of accessibility of digital public services for the population and businesses, Croatia is also above the EU average, reflecting a good level of use and knowledge of digital skills among the population. Croatia is among the EU leaders in the use of data analytics in businesses with 51.7%, compared to the EU average of 33.2% (EU commission, 2024).

3. COMPARISON OF DIGITAL SKILLS BETWEEN EU AND CROATIA

Gender differences in digital skills often depend on the level of education (Helsper, & Van Deursen, 2015), that is why education plays a key role in narrowing the gap between men and women in digital skills. The aim of the paper is to analyse the gender differences in Croatia and compare them with the EU. By comparing the data, it is possible to better understand the digital skills of the Croatian population and identify possible strategies for improving digital skills in the future. Eurostat provides data on the digital skills of the population using several key categories based on the Digital Economy and Society Index and surveys on the use of ICT in households and among individuals. These indicators are used to assess digital literacy in the countries of the European Union and to monitor progress in the digital transformation of society. The categories of digital skills used in this paper are information and data literacy, communication and collaboration, safety skills, digital content creation, problem-solving skills and overall digital skills. Information and data literacy includes searching, evaluating and using information from the internet, checking the credibility of sources and organising and storing data. Communication and collaboration as digital skills include the use of email and online messaging, the use of social networks and online tools for collaboration and document sharing. Digital content creation includes the use of basic word processing, spreadsheet and presentation programmes as well as editing photos, videos and other digital content. Safety skills are also very important in the online environment, including knowledge of privacy settings and protecting personal data, as well as recognising and protecting against online threats (e.g. phishing, malware). In addition, problem solving involves the use of digital services such as public administration or online banking. The data used in this paper comes from Eurostat for the year 2023 and all indicators show the share of individuals in the 24-65 population with above basic skills. Figure 1 shows comparison between EU and Croatia in all digital skills categories.

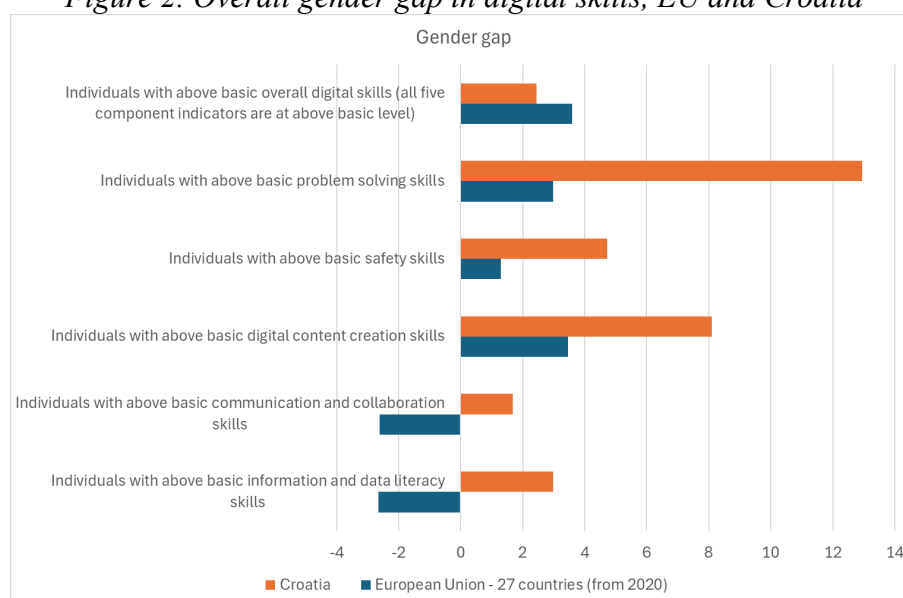
Figure 1. Digital skills comparison between EU and Croatia



Source: Eurostat

The figure above compares the level of digital skills between the European Union and Croatia and shows that Croatia performs better than the EU in certain skills categories, such as information literacy, while it lags in digital content creation and problem-solving skills. In the information and data literacy category, the proportion of people with advanced skills in the Croatian population is significantly higher (82.82%) than the EU average (72.37%). In the categories of communication and collaboration and security literacy, Croatia is almost on par with the EU average, while the EU performs better than Croatia in digital content creation and problem-solving skills. The next step is to analyse the gender gap in the level of digital skills in both the EU and Croatia. The gender gap in this paper is the difference between the proportion of individuals with more than basic digital skills in the male population and the proportion of individuals in the female population. Positive values are in favour of men, while the negative gap indicates the higher share of females. Differences may be due to a variety of factors, including education, social norms, economic opportunities and access to technology. Figure 2 shows gender gap in digital skills.

Figure 2. Overall gender gap in digital skills, EU and Croatia



Source: Eurostat

Figure 1 has shown that in both Croatia and the EU, the proportion of people with advanced digital skills is similar, but Figure 2 shows that the difference between the genders is pronounced, with the higher proportion of men having above basic digital skills. The gender gap in advanced problem-solving skills, digital content creation and security skills is extremely high in Croatia in favour of men, while it is significantly lower in the EU. In the communication and cooperation skills category, the situation is different in the EU and Croatia: in the EU there is a slight gender gap in favour of women, while in Croatia it is in favour of men. Overall, the data shows that the gender gap in digital skills is more pronounced in Croatia than in the EU. As research has shown, the level of education is linked to the development of digital skills (Martínez-Cantos, 2017) so our next step is to analyse gender gap by educational attainment, starting with low education. People with lower levels of education often have fewer opportunities to use computers and the internet during their school years.

Furthermore, sometimes they do not see digital skills as necessary for their professional development as many jobs that do not require higher education also do not require advanced digital skills, which reduces the need to acquire them. Kruskal-Wallis test is used to examine if there are statistically significant differences between educational groups in the share of digitally skilled population (Table 1).

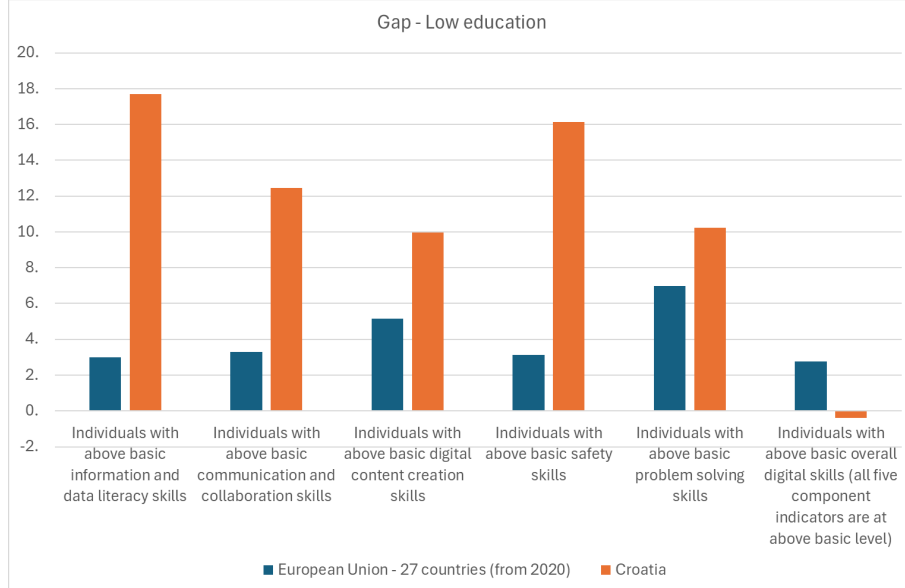
Table 1. Results of Kruskal Wallis test

Null-Hypothesis	Significance	Decision
The distribution of shares of population with above basic information and data literacy skills is the same across all educational levels	0.12	Reject null-hypothesis
The distribution of shares of population with above basic communication and collaboration skills is the same across all educational levels	0.07	Reject null-hypothesis
The distribution of shares of population with above basic content creation skills is the same across all educational levels	0.07	
The distribution of shares of population with above basic safety skills is the same across all educational levels	0.07	Reject null-hypothesis
The distribution of shares of population with above basic problem solving skills is the same across all educational levels	0.07	Reject null-hypothesis
The distribution of shares of population with above basic overall skills is the same across all educational levels	0.07	Reject null-hypothesis

Source Authors' calculations based on Eurostat data

Table shows that there are considerable differences in digital skills between the different levels of education in the case of EU and Croatia what confirms that education plays a key role in the development of digital skills. Turning to gender issues, the gender gap in digital skills may be more pronounced for those with lower levels of education because women are more likely to work in sectors where digital skills are not a priority (e.g. the service industry), while men are more likely to be employed in technical or manual occupations that may require some level of digital skills. Figure 3 shows the gender gap in the shares of population with above basic digital skills.

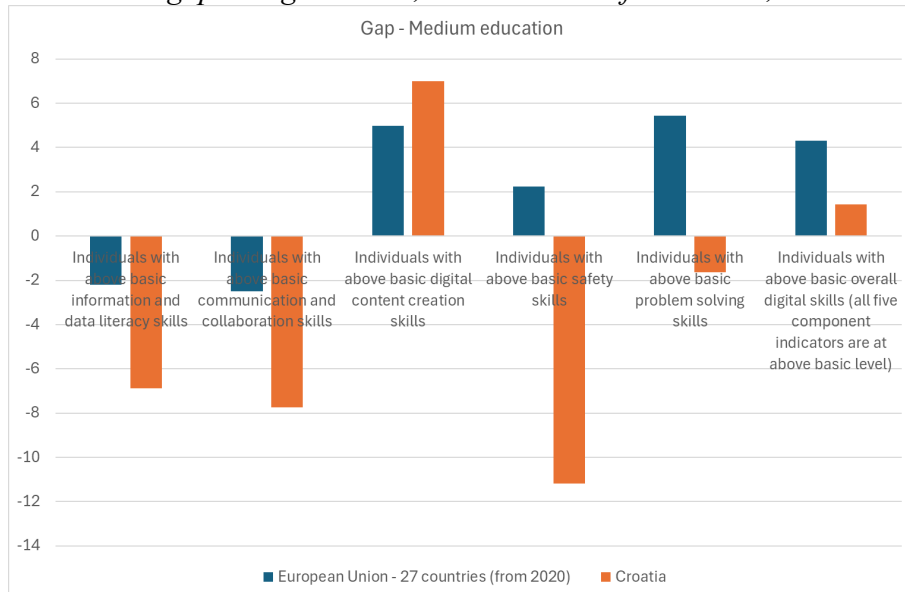
Figure 3. Gender gap in digital skills, low education, EU and Croatia



Source: Eurostat

The figure above shows the gender gap in the digital skills of people with a low level of education in the European Union and Croatia and illustrates that the proportion of men with higher digital skills is higher in both the EU and Croatia. The difference in Croatia is significantly greater than the EU average in all categories, with the biggest difference in the categories "People with above-average information and data skills" and "People with above-average safety skills". The gap reduces with the educational level and Figure 4 shows gender gap for medium level of education.

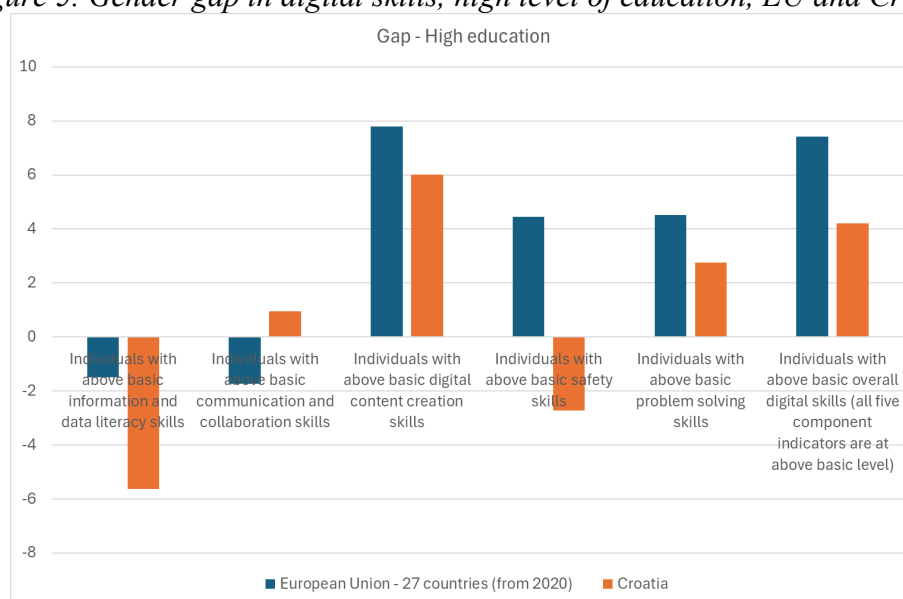
Figure 4. Gender gap in digital skills, medium level of education, EU and Croatia



Source: Eurostat

The figure above shows the situation in the population with a medium level of education, and it can be seen that the gap in this population group is reversed compared to the population with a lower level of education. Although the gap in Croatia is wider than in the EU in all categories, it is in favour of women in several types of skills, such as information and data literacy, communication and collaboration, security and problem-solving skills. A secondary school qualification implies a job in the administrative, service and education sectors, where digital skills (use of computers, communication tools and data processing) are crucial for the job. Finally, Figure 5 shows the gap among highly educated population.

Figure 5. Gender gap in digital skills, high level of education, EU and Croatia



Source: Eurostat

Figure 5 shows the difference in the digital skills of people with higher education between the European Union and Croatia. The gap has narrowed in many categories and the indicators for Croatia are even better than the EU average. Although education reduces the gender gap in digital skills, the gap still exists, sometimes in favour of men and sometimes in favour of men. Promoting STEM subjects, targeted training programmes and empowerment through education can further reduce this gap.

4. CONCLUDING REMARKS

Digital skills are acquired over time through education and training, but also through the social use of technology and are essential in today's world, both in the workplace and in everyday life. The EU recognises the importance of digital transformation and has made it one of its priorities to make the EU more digital. In this context, Croatia as a Member State is also investing great efforts in digitalisation and raising the level of digital skills in the country. The aim of the paper was to investigate the level of digital skills in Croatia and to compare it to EU as well as exploring educational and gender differences in digital skills. Findings show that in Croatia the proportion of people with advanced digital skills is similar to E but the difference between the genders is pronounced, with the higher proportion of men having above basic digital skills. The gender gap has narrowed with the higher levels of education and in many categories the indicators for Croatia are even better than the EU average for highly educated population.

The most important limitation of the paper results from the data used for the analysis, as only a short period of time was used and only EU and Croatia were compared. A longer-term data series and more countries included would have enabled a better understanding of the trends and the causes of the gender-specific differences. The limitations lead to recommendations for future research. Research should include broader social, economic and educational factors that influence the development of digital skills among women and men. Rather than one-off analyses, long-term research is needed to track changes in digital skills and the effectiveness of interventions to reduce the gender gap.

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THE PRICE OF LIFE IN HUMAN TRAFFICKING

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ABSTRACT

Although hidden, it seems that there are still slaves and free men each with their own price. Human beings are valued either for their workforce, what they can produce and offer to others, or their bodies/organs. The perpetrators of human trafficking act for profit but are sometimes themselves victims of inequalities and act under pressure. The victims often fall into their traps due to poor life conditions when they are not subject to threats and violence. Therefore we can define human trafficking as the exploitation of people's vulnerabilities for the profit of a few. The human trafficking highlights all the systems of domination that are shaping our society: capitalism, sexism, and racism. The most vulnerable individuals are the poor, women, children, and migrants, who are once again exploited. In this paper, we will list the different types of human trafficking and present the statistical data. Then, we will focus on women's situation to understand the system behind their exploitation. Finally, we will try to answer the question about the impact of human trafficking on the global economy.

Keywords: *Human trafficking, forced labor, sexual slavery, modern slavery, informal economy.*

1. INTRODUCTION

While trying to put a value on human life sooner or later you will stumble upon the website calculating the value of human beings (Humain à vendre, 2025). You would answer multiple questions regarding physical characteristics including ethnicity and sex, life habits, morals, religion and so on. At the end of the test, the website would give you your value, at what cost you could be bought. It would give the details of how each answer impacted the price without giving a comparison with other answers. Student's personal value according to that calculation is 6.069.900€. Of course, this website has nothing to do with slavery, it specifies that it has nothing scientific and that it is just "for fun". Still, the idea of giving the price of a human being seems immoral. On the other hand, far away from weird websites, political decisions indirectly give the price of life. According to an article in Ouest France (Peut-on calculer la valeur d'une vie humaine? On vous répond, 2023), a French regional daily newspaper, a human life, in France, is considered to be valued at 3 million euros. The article details how calculation has evolved. First of all, for companies, it would be based on indemnities linked to the death, so justice would define the price. To decide on public policies and regulations, other methods were applied. The first ones were inspired by utilitarianism. It would calculate the average cost of life based on the average revenue, supposed to reflect how much an individual contributes to society's well-being. A few years later, the individuals' capacity of consumption is taken into account. Nonetheless, this economic-only point of view has obvious limits.

In France, the value of life was evaluated with these methods at 550.000€ in 1994 and 650.000€ in 1999. In 2013, a whole change of technique occurred. The calculus is now based on how much the society is ready to give, to spend, in order to save a life. This leads us to the amount of 3 million euros. According to the 2013 report, there is another interesting value: 115.000€ to gain another year of lifetime, so 115.000€ for each year lost. This idea, of putting a price on life, does not come from nowhere. The price of body organs was clearly expressed in the Babylonian Code of Hammurabi. For example, for the eye damage of the lower class member the compensation was 1 mina (art. 198), and for the tooth it was one third of mina (art. 201). The value of the mina was 505 grams of silver (Davies 1848, 86). The first pieces of criminal law, prohibiting the *lex talionis*, put a price on the loss of an eye, an arm, a life; and these values fluctuated according to the victim (a woman or a man, foreigner or not, rich or poor...). The price of a life was well known. But it seems that the value of people in ancient time, that is, their price, with regard to some phenomena today (e.g. discrimination gap) once again sheds light on the question of that price. The price could be determined according to the price of damage that had to be paid for injuring one's body or taking one's life. For example, if the compensation (penalty) for the slave amounted to 50% of what it should have been pay for a free man then the price of the slave was 50%. In ancient codes the slaves were worth an average of 33% of a free person (Lindgren, 1995, p. 151). Here we can guess the need for such a price on life: giving justice to those who had suffered or to his/her family member and making public policies and regulations. We can also guess the moral limit of differentiations between individuals. The price of life of upper class member valued average at 4.65 times the value of the «ordinary free people» member. More than 2000 years later this ratio is compared with the people who do high prestigious jobs (e.g. corporate C.E.O.) and those that do low prestige jobs - e.g. unskilled jobs (Lindgren 1995, 204). If we mention all of this, it is to introduce the concept of evaluating the value of a life. It is crucial to understand the subject of human trafficking and to internalize the fact that humans value other humans at a certain amount of money.

2. HUMAN TRAFFICKING IN GENERAL

2.1. Definition of human trafficking

Human trafficking *per se* can be defined as “the recruitment, transportation, transfer, harbouring or receipt of people through force, fraud or deception, with the aim of exploiting them for profit » In historical perspective it can be said that « the human life value concept in one segment of the general theory of human capital » (Hofflander 1996, 381). There are different forms (types) of human trafficking, and in this connection also different statistical data base on different evaluation methods. The United Nations Office on Drugs and Crime (UNODC) defines the crime of human trafficking *via* three elements: the act, the means, and the purpose. All these elements are linked to the trafficker's actions and incentives (UNDOC, 2025). The trafficker, to be considered as such, has to recruit, transport, transfer, harbor or receive people. At least one of the following means has to be used by them: threat, use of force, coercion, fraud, deception, abuse of a position of vulnerability, giving payments or benefits and abduction. Specifically, the trafficker can blackmail, sexually or physically abuse the victims, or take away their official documents. The main goal of this list of means, is to prove that there is a relation of domination (physical, emotional, economic, sociological) between the trafficker and the victim. The trafficker's purpose is unique: to exploit their victims. The term “exploitation” can be understood very broadly as “the act of using someone or something unfairly for your own advantage” (Cambridge, 2025). Due to the broad character of the definition, and thus even though it uses precise terms in the definition of the act and of the means, there are multiple forms (types) of human trafficking.

According to the UNODC there seem to be eight of them (*table 1*). The article 3 a of Annex II of the Protocol to the United Nations Conventions against Transnational Organized Crime, specifies that “Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs” (Annex II 2021, 42).

Table 1 : Forms (types) of human trafficking and their definitions

Form	Definition
Sexual exploitation	Any actual or attempted abuse of a position of vulnerability, differential power, or trust, for sexual purposes, including profiting monetarily, socially, or politically from the sexual exploitation of another. Includes exchanging money, employment, goods or services for sex (UNHCR 2025).
Forced labour	All work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily (ILO 2025). Type of enslavement capturing labour and sexual exploitation (End Slavery Now 2025a).
Debt bondage	When someone gives themselves into slavery as a security against a loan or a debt inherited from a relative. It can look like an employment agreement but the worker starts with a debt to repay only to find that repayment of the loan is impossible (End Slavery Now 2025b).
Domestic servitude	The practice of live-in help is used as a cover for the exploitation and control of someone. It is a form of forced labour and of slavery that presents peculiar contexts and challenges. As such, it needs to be addressed as a specific crime (End Slavery Now 2025c).
Organ removal	Victims have their organs removed and sold by the traffickers. Victims often appear to have given their consent but it is invalid when deception, fraud or abuse of a position of vulnerability is involved (UNODC 2024b).
Forced begging	Type of slavery, where persons are forced by various means to beg for the financial gain of another. Victims have to give some or all of the money they were given (IOM-Ireland 2025).
Child soldiers	The recruitment and use of children in an armed conflict. Includes being a combattant, a cook, a spy, a messenger, a sex slave, or used for acts of terror. ¹
Forced marriage	When a party did not express their full and free consent to the union. Linked to child marriage (a party is less than 18 years old) (OHCHR 2025).

¹ For more details see: Office of the Special Representative of the SG for Children and Armed Conflict (2023). Child Recruitment and Use.

As seen in the definitions, human trafficking encompasses slavery, sexual exploitation, the use of children as soldiers, organ removal, and forced marriage. Each of those forms can be divided and hold sub-crimes. It is important to mention that there are not any geographical limitations to the crime. It can occur in the victim's home country, in another country or during migration. Human smuggling, kidnapping and the existence of missing persons are not, *per se*, related to human trafficking. Nonetheless, they are sometimes linked to it (OHCHR, 2025).

2.2. Statistic data and their limitations

The latest data was released by the UN Office on Drugs and Crimes in the “Global Report on Trafficking in Persons, 2024” (UNODC 2024a). Most of the figures in this report are from 2022. The preface mentions an increase of vulnerabilities due to crisis whether they are due to climate change or conflicts. Three main trends are mentioned; The first one is that women and girls are the main detected victims and children account for an increased number of detected victims. The second one is that the global and transnational character of human trafficking is increasing; there are more nationalities and countries of destination detected. The last trend mentioned is that the biggest form in terms of share is forced labour, there is also a rise in trafficking for forced criminality. Statistics are from national authorities and EUROSTAT, national referral mechanisms statistics, court case summaries of UNODC GLOTIP (Global Report on Trafficking in Persons) and the data of UNODC. Other organizations like NGOs (whether national or international), often publish data too; this is the case of the Polaris Project or the International Labour Organization. Nonetheless, the clandestine nature prevents from having reliable statistics - data is only estimations and we often refer to “detected victims” instead of “victims” as we can not fully measure the scale of human trafficking. To collect data, national and regional institutions need to have proper instruments but also strong partnerships with multiscalar actors. This data is crucial in order to understand the phenomenons, analyze them better, and report precisely (UNODC 2024a, 33). Here, we will use the data from the Global Report on Trafficking in Persons as it seems to be the most detailed and complete document available. The increase in detection (25%) compared to 2019 could be explained by an increase in human trafficking after Covid, due to the economic crisis following the pandemic but also the ongoing climate crisis, especially in Africa (UNODC 2024a, 19). It could also be justified by an amelioration of instruments and, as a consequence, a better detection of human trafficking. The overall increase is widely due to the specific increase in the detection of child victims of human trafficking (31%). Both of these factors (an increase in real criminality and an increase in perceived criminality), often influence statistics jointly. There was also a shift in the, number-wise, most important, type of human trafficking. Indeed, “for many years, the sexual exploitation of women was identified as the main form of trafficking in persons” (UNODC 2024a, 30). However, sexual exploitation's share is 36% whereas trafficking for forced labour represents 42% of overall trafficking (6 points more). It seems important to highlight that both of these forms of human trafficking dominate the charts, together they represent more than three-quarters (78%) of it. This high representation can be explained by the fact that forced labour encompasses a lot of things such as debt bondage and domestic servitude alongside slavery. The same can be said for sexual exploitation, which includes any type of sexual aggression and rape. As mentioned in the preface, trafficking for forced criminality holds an important share (8%). Between 2020 and 2023, 202.478 victims were detected according to the GLOTIP (UNODC 2024a, 20). This number does not reflect the extent of human trafficking. According to the “Human Trafficking Institute”, the ILO (International Labour Organization) estimates that in 2016, there were 24.9 million victims of human trafficking: 20.1 million labour trafficking victims and 4.8 million of sex trafficking victims (HTI 2022).

2.3. Subjects of human trafficking

In the vast majority of crimes, there is at least one perpetrator and at least one victim; this is the case of human trafficking too. But who are the traffickers and who are the exploiters, the consumers? What can make you an easy prey for traffickers?

2.3.1. *Perpetrators and consumers*

Perpetrators are mostly adults, only 2% of persons investigated in 2022 were children. Among the rest (98%), 70% are men and 28% are women (UNODC 2024a, 20). Nonetheless, when the trafficker is intimate it is mostly a man when the victim is a partner, and mostly a woman when the victim is a child (UNODC 2024a, 17). This fact shows that sometimes, perpetrators are themselves in situations of high precariousness which leads them to make dangerous decisions. Three-quarters of detected traffickers operate within organized crime groups. Organized crime groups are groups of a minimum of three persons that exist for a certain period of time and act in concert, they can be governance-type² or business-type³. The remaining are so-called “non-organized traffickers”. They can be in an association which is a minimum of two traffickers acting together but not in concert or act as individuals which means they usually act on their own (UNODC 2024a, 55). The impact differs between both organized and non-organized criminals. Organized groups have a bigger impact than non-organized perpetrators and their methods differ. Between governance and business type, it is the business type that tends to traffic more victims (UNODC 2024a, 54-57). Who are the consumers in the two most prominent forms of trafficking: forced labour and sexual exploitation? Forced labour mostly occurs in the private economy (86%) shared between 63% in the private economy sectors in commercial exploitation and 23% in forced commercial sexual exploitation. It’s applied to all sectors that we can divide into five categories: services, manufacturing, construction, agriculture and domestic work (OHCHR 2025). As a consequence, consumers are the owners of the companies, factories and households. When products and services are sold, buyers are also indirectly complicit in forced labour. In the case of sexual exploitation, the “consumers”, are mostly clients of prostitution either in specific buildings (night clubs, massage parlors, hostels) either in apartments and sometimes in brothels or in the streets. Cyber-exploitation can also occur when victims are sexually exploited on the Internet (UNODC 2024a, 47).

2.3.2. *Victims*

According to the UN Office of the High Commissioner on Human Rights (OHCHR), there are multiple factors contributing to vulnerability. All those factors lead to “fewer and poorer life choices”, leading vulnerable individuals to take risks, sometimes only to fulfill their basic needs (OHCHR 2025). One of the risk factors is discrimination in the denial of economic and social rights. The root of this discrimination is often political, so a governmental answer is needed. All types of discrimination can lead to vulnerability, for instance, sexism and racism. Poverty and situations of conflict are obviously other factors. All of those factors can impact individuals but also communities or groups. Some groups are more vulnerable than others and additional protection for some of those, like women and children, can be required.

² Governance-type organized crime groups : which apply security governance in a community or territory by means of fear and violence and may be involved in multiple illicit markets (Global Report on Trafficking in Persons 2024a - UNODC, definitions, p. 55)

³ Business -type organized crime groups : involving three or more traffickers systematically working together to traffic persons as a core component of their criminal activities and not meeting criteria (Global Report on Trafficking in Persons 2024a - UNODC, definitions, p. 55)

In general, a person in danger, trying to survive by themselves or with their family, is more inclined to make dangerous choices and to fall into human trafficking. Traffickers usually take advantage of these vulnerabilities to trap their victims (OHCHR 2025). It makes women, children, members of minorities, and migrants vulnerable as groups.

Table 2 : Share of detected victims by sex and age, forced labour & sexual exploitation (UNODC 2024, 20)

Form / Victims	Men	Women	Boys	Girls
Forced labour	47%	23%	20%	23%
Sexual exploitation	3%	64%	3%	28%

Victims are different depending on the form of human trafficking. We can see that men are the most often victims of forced labour. The combination of their age and their sex seems to determine their strength and ability to work under hard conditions. For sexual exploitation, gender is the prevailing criterion which makes women and girls 94% of the victims.

Table 3 : Share of detected victims of trafficking by age and sex (UNODC 2024a, 20)

Age / Sex	Females	Males	Total
Adults	39%	23%	62%
Children	22%	16%	38%
Total	61%	39%	100%

As can be deduced, most victims are women, followed by men and girls, then boys. The majority are female over male and adults over children. The fact that women represent most of the victims is mostly due to their overall economic and social vulnerability compared to men.

3. THE PRICE OF LIFE IN DIFFERENT FORMS OF HUMAN TRAFFICKING

The price of life differs depending on a lot of factors including the form of human trafficking. Some researches underline that « the price of human life has never been properly assessed » and that « determination of material values of human's life is claimed to be immoral » (Vilks 2016). In their opinion, although immoral, the determination of the price of human life is essential. It is a part of legal proceedings, compensations in cases of bodily injuries and lethal cases. It is essential for life insurance and social security, planning and implementing health care and human security measures.⁴

5. 3.1. Organ trafficking

Organ removal is one of the steps of organ trafficking. It constitutes a form of human trafficking. We will here focus on how this form differs from others (3.1.1), before putting it in the broader context of capitalism, in order to understand it better (3.1.2).

⁴ See (Vilks, 2016). The price of a life can be determined by the cost of saving life, creating life or compensating for a life, as said by Kleeman (2024).

3.1.1. A particular form of human trafficking

Organ removal accounts for a small share of overall human trafficking (UNODC 2024a, 50). What makes it very particular is that it is quite ephemeral compared to other forms. Indeed, in other types of human trafficking like forced labour, debt bondage, sexual exploitation or forced marriage, the victim is unlikely to be freed. Organ trafficking impacts the victim during organ removal, which is a temporary action, not a situation that can last for an undetermined amount of time. Still, there are various negative consequences on the victim, after the removal ; physical because of the poor medical conditions and psychological because of the trauma that it can imply. Moreover, and in the same logical pattern, organ trafficking seldomly implies the movement of the victim. All other forms can lead to a movement of the victim towards or with the exploiter. Here, the object of the trafficking is not the human being or their workforce but their organs. Once the organ is removed, the victim of the organ removal is not useful to the traffickers anymore. Nonetheless, like in other forms of human trafficking, the victims often give their consent to their own exploitation. As we have seen before, this consent is not free, informed or even real. As a matter of fact, consent is given under deception, coercion, or promise of a reward by vulnerable individuals. Furthermore, organ traffickers usually operate in networks, in organized criminal groups and, as we have seen before, this is the prevailing profile (UNODC 2024b). To put it in a nutshell, the traffickers, like in any form of human trafficking, use the vulnerability of their victims to exploit them. They promise huge amounts of money without even paying them sometimes and have no care for the donors' health and situation. They only see them as a way to make more money, a living factory. They end up owning the victims' bodies, taking what they need to sell them back.

3.1.2. Organ trafficking as a continuation of capitalism

Organ trafficking answers to the worldwide lack of available organs for transplants. According to the UNODC, 150.000 transplants are performed each year upon the 1.500.000 needed. The black market compensates for the shortage in the legal market. This shortage is not going to decrease as the global population is aging and unhealthy lifestyles are increasing (UNODC 2024b). As a consequence waiting times for transplants are high and might increase, pushing people in need of transplants to look at black markets, regardless of the risks (ACAMS Today 2018). Moreover, organ trafficking is a highly lucrative activity/business. Indeed, it annually amounts to between 840 million and 1.7 billion USD. At the same time, capitalist social relations push people to enter those criminal groups and victims to accept the littlest amount of money in exchange for their organs. For instance, a kidney, which is the most traded organ on the black market (10.000 yearly according to the World Health Organization), can be removed for 1.000 USD and sold for up to 5.000 USD (ACAMS Today, 2018). The fact that the very base of our global economic system - capitalism or the so-called market logic - leads to illegal organ removal and organ trafficking makes policies inefficient. Moreover, the organization of these criminal groups makes detection and reporting difficult. Dismantling these networks would cost a lot in terms of international cooperation and financial means. Nonetheless, there have been some international answers. The United Nations Convention against Transnational Organized Crime or "Palermo Convention", signed in 2000, mentions organ removal as a form of human trafficking in its second annex. The Declaration of Istanbul (2008) and its related custodian group, the DICG aim to combat organ trafficking, transplant tourism, and commercialism while promoting effective and ethical practices. More locally, the Oviedo Convention of the Council of Europe also prohibits organ removal and trafficking. All national policies condemned the red market (black market of organs and other human products). Iran is the exception; its 1988 legislation authorizes its own citizens to buy and sell organs.

This renal transplantation programme funded and regulated by the government had two goals: to establish a regularised system of kidney donations and to eliminate the long waiting list of patients requiring kidney transplants. In 2000, the Organ Transplantation Brain Death Act was legislated by the Iranian parliament. It was followed by the establishment of the Iranian Network for Transplant Organ Procurement in 2002. This Act regulates the procurement of organs from clinically brain-dead patients (Centre for Public Impact 2016). So, if the market rules, how much does a human cost in spare parts?

Table 4 : Cost of organs depending if they are sold on the illegal or legal market in the USA (Mesko 2024)

Organ	Cost black market	Cost legal market
Kidney	50.000 - 120.000 USD ⁵	262.000 USD
Liver	99.000 - 145.000 USD	557.000 USD
Heart	130.000 - 290.000 USD	1.000.000 USD

We can see that the cost on the legal market, for the USA, is higher than the cost on the black market. However “If you could harvest every organ and chemical in your body, you could make a \$45 million. But in reality, as Medical Transcription estimates, the average price of a human dead body is more likely to fetch around \$550,000.” (Mesko 2024).

4. DOMESTIC SERVITUDE

Domestic servitude can be defined as when someone is “forced to work in private homes cooking, cleaning, washing laundry, taking care of children” for low or non-existent wage, in difficult conditions including no rest and violence (The Freedom Fund 2025). We will first of all see how it falls under the concept of forced labour, while having its own particularities. Then, we will see if this term should be applied to some situation of housework.

4.1. A particular form of forced labour

As we have seen before, forced labour encompasses “all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily”. According to the International Labour Organization, 27.6 million people were in a situation of forced labour in 2022, generating 236 billion USD in illegal profits every year. Almost 40% of the victims are females, 12% are children and migrant workers have 3 times more risk of ending up in forced labour (ILO 2025). Out of the 17.3 million forced workers, 1.4 million are concerned by domestic servitude which means their exploitation occurs in private households (Antislavery 2025). This is probably the key difference between forced labour and domestic servitude: the private character. Here, we don’t understand private as in “non-public sectors” (state forced workers) but as in privacy. The exploitation occurs within the walls of the house which makes it almost undetectable and even more difficult to perceive, report and prevent. Furthermore, because of the extreme privacy, intimate links can tie the victim and the exploiter, making it more difficult for the victims to escape the situation.

⁵ According some overviews kidney is the most commonly trafficked organ. Canadians point out the simmilar price for kidneys. Duguay, J-P., Hermon, B., Smith, A. (2020).

The differentiation between personal and professional life does not exist and the relationship with the exploiter can be multi-sided. Violence is unfortunately very usual; long days of work but also physical abuses and punishments by the exploiters. Domestic servitude, for females, can occur in the context of forced marriage. Domestic servitude can be combined with other forms of exploitation, for instance in the entertainment sector with sexual exploitation, in agriculture, in roadside selling and in food preparation (UNODC 2024a, 48). These combinations make preventing and reporting even more complex.

4.2. Housework as a form of domestic servitude

The difference between domestic work and domestic servitude may be subtle. Labour laws often exclude domestic workers which makes them more vulnerable to abuse from their employers. This legal vulnerability combines itself with the individual's characteristics, which can increase vulnerability to bad treatment, low wages, and servitude (Mercy Foundation 2019). The recognition of domestic work as domestic servitude and forced labour occurred in the European Court of Human Rights 20 years ago. In the case *Siliadin v. France* in 2005 Mrs Siliadin, a Togolese teenager was brought to France, as she was promised to receive an education. Instead of going to school, she was forced to work as an unpaid domestic servant for several years. This forced and unpaid work was considered by the Court as a violation of article 4.1 of the European Convention on Human Rights which states: "No one shall be held in slavery or servitude." Such judgment was repeated in 2015 in the case *C.N. v. UK* in a similar context. Here the lack of payment and contract combined with abuses make it obvious that it is a situation of domestic servitude. These judgements lead to the creation of positive State obligations: "to set in place a legislative and administrative framework that prohibits and punishes forced or compulsory labour, servitude and slavery" and "to take operational measures to protect persons in a situation of slavery, servitude and forced or compulsory labour" (ECHR-KS 2024). We can see here that it goes beyond the relationship between the exploiter and the victim, the State is involved as a responsible actor to prevent such situations for country nationals and foreigners. But what happens when there is a contract and abuses occur? Such a case happened in Australia. A former Sri Lankan Diplomat employed a domestic worker but did not pay her on time and made her work in abusive conditions (she had to work from 6am to 10pm). The employment relation was then exploitative even though the formal agreement was legal. As a result, the diplomat was ordered by the federal court to pay her 500.000 dollars for due wages + 100.000 dollars of fine for « entrapment » (The Australian 2024). This case, among others, shows the necessity for a protective legal framework for domestic workers that is equal to other workers. We can also wonder if the housework mostly done by women in traditional families should be considered domestic work, and if it is, should it be paid to not be considered domestic servitude. In this regard, we can use the Portuguese example. The Supreme Court "ordered a man to compensate his former partner for the domestic work she performed over almost 30 years of *de facto* union" as it impoverished the partner and unfairly enriched the man. Indeed, he didn't have to pay the costs that are normally implied with having a house worker. The goal of this judgment was to highlight the inherent link between justice and equality and here, the equality requirement was not fulfilled so justice had to act (Euractiv 2021). Economically wise, unpaid care work, including housework, constitutes approximately 9% of the global GDP which would equate to around 11 trillion USD annually if it was valued at an hourly minimum wage. Women are the most concerned as they perform 76.2% of the total hours dedicated to unpaid care work which increases social and economic equalities between women and men (ILO 2018).

5. CONCLUSION

“Grown-ups like numbers”, said the aviator in *The Little Prince*. We do agree. But behind numbers, amounts, statistics and prices there are lives, dreams, traumas, and emotions. To conclude, we have seen that humans are historically valued either for their workforce, what they can offer, produce and bring to others, or their bodies. Sources of greek legal history and chroniclers state that the „price of the slave was 5 to 6 minas, not less than 3“ (Demosthenes, *Against Aphobus I*, 27.9 ; 1 mina = 100 drachmas), and that an average wage for a soldier was 2 drachmas (Thucydides, *The Peloponnesian War* 3.17.4). For the skilled worker the wage was 1 drachma per day (Harris 2001, 79), around 377. BC it was 2, 5 drachmas (Engen, 2004). and for the jury man $\frac{1}{2}$ drachma (Takeshi, 2007, 33). For the comparison, Takeshi also stated that the chair cost 2 to 6 drachmas (Takeshi, 2). The price for the slave changed over time. If the Greek slave in 5th century BC was worth 500 wages (and if the wage was drachma per day) an average worker had to work 500 or more days. If we assume that today the daily wage in Croatia is 30 euros, 500 daily wages would amount to 15000 euros. But same slave in classical Greece are valued (e.g. goldsmith) higher than free man, as Lindgren stated (Lindgren 1995, 152.). Drachma was worth a little more than 4,3 g of silver in fifth century (Thompson, *Gold and Silver Rations at Athens during the fifth Century*, 1964.) so taking into account all the parameters we could therefore calculate and compare the price of human life then and now. The perpetrators act for profit but are sometimes themselves victims of inequalities and act under pressure. The victims often fall into their traps due to poor life conditions when they are not subject to threats and violence. Therefore we can define human trafficking as the exploitation of people’s vulnerabilities for the profit of a few. The human trafficking highlights all the systems of domination that are shaping our society: capitalism, sexism, and racism. The most vulnerable individuals are the poor, women, children, and migrants, who are once again exploited. Although hidden, it seems that there are still slaves and free men each with their own price. Human trafficking causes significant economic losses. The ILO (2024) estimates that forced labour only generates approximately US\$236 billion in illegal profits annually, highlighting a significant increase in these profits, rising by US\$64 billion (37%) since 2014. Trafficking victims frequently work illegally and for below minimal or any wage, which reduces potential tax income. Additionally, because trafficked people work in exploitative situations without legal safeguards or opportunity for skill development, they make minimal contributions to economic progress. Countries lose out on a productive labor force as a result, which might impede overall economic growth. Furthermore, fighting human trafficking comes at a high cost. Law enforcement, victim rehabilitation, and preventative initiatives require extensive and continued funding from governments, while taking financial and human resources away from other sectors including infrastructure, healthcare, and education. Additionally, it enables profit for organized crime, which can destabilize local economies and deter foreign investment owing to perceived risks. Human trafficking contributes to global inequity. Targeting vulnerable groups disproportionately frequently results in a vicious cycle of poverty that is hard to escape. Human trafficking hurts the world economy by restricting potential growth, diverting resources, and exploiting individuals. Its enormous economic cost to countries and the world market emphasizes the necessity of ongoing efforts to combat this crime and defend the rights and dignity of every person.

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THE IMPACT OF DIGITALIZATION ON SME PERFORMANCE: DRIVERS, BARRIERS, AND IMPLICATIONS FOR DIGITAL TRANSFORMATION

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ABSTRACT

This paper explores the relationship between digitalization and the performance of small and medium-sized enterprises (SMEs), analyzing key drivers and barriers to digital transformation. The study is based on a comprehensive literature review, synthesizing the latest research relevant to the topic. The objective of this workshop is to provide an insight into the factors influencing the success of digitalization processes, highlighting the role of technology adoption, organizational readiness, regulatory frameworks, and financial constraints. In addition, this workshop aims to offer recommendations that strengthen business resilience and support the implementation of national digital transformation plans. These recommendations align with the objectives of the EU Digital Compass (2021), emphasizing the need for targeted support mechanisms, improved digital infrastructure, and strategic investments in digital skills. Finally, this paper contributes to the ongoing discourse on fostering SME digitalization in an increasingly digital and competitive economy.

Keywords: digitalization, SMEs, technology adoption, EU Digital Compass

1. INTRODUCTION AND THEORETICAL FRAMEWORK

Digitalization and digital transformation (DT) are the most frequently discussed concepts among entrepreneurs and managers today (Von Leipzig et al., 2017). It is highly unlikely that any successful entrepreneur or manager has not contemplated what digital transformation means for their organization (Burić, 2020). Academic and industry experts emphasize the profound impact of DT on performance. Westerman, Bonnet and McAfee (2014) argue that DT is not about implementing new technologies but about rethinking strategies for creating competitive advantages. Similarly, Matt, Hess and Benlian (2015) highlight that successful DT requires a strategic alignment between technology, organizational culture, and leadership. For SMEs, digitalization and DT present both opportunities and challenges. Vial (2019) stresses that while digital transformation can drive efficiency, innovation, and customer engagement, it also demands adaptability and a clear vision from business leaders. Bharadwaj et al. (2013) further explains that companies embracing digital capabilities gain an advantage in rapidly growing markets. Ultimately, DT is not an option but a necessity to remain relevant and competitive in the digital age.

1.1. Definition of Digitalization and Digital Transformation

Digitalization and DT are frequently used in both academic and professional literature. Some authors, like Melo et al. (2023) proposed a framework for measuring the performance of SMEs undergoing the DT process, based on the theoretical results of their systematic literature review. Over the past decade, and especially following the COVID-19 crisis, digitalization of business processes and DT have played a crucial role in business existence and further development. The study on a sample of 247 managers confirms that DT and innovation positively affect SMEs' performance during the pandemic (Surahman, 2023).

However, despite their significance, these terms are often defined in various ways, sometimes lacking a universally accepted meaning. For the purpose of this paper, the following definitions is considered: Gartner's IT Glossary defines digitalization as *"the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business"* (Gartner Glossary, 2025). Similarly, Pellicelli (2022) describes digitalization as *"a process that utilizes digital technology to streamline work processes, enhancing efficiency in areas such as reporting, data collection, and analysis"*. Digitalization improves existing business operations without fundamentally altering their nature or creating new business models. On the other hand, DT represents a more profound shift. It involves changing the way business is conducted and, in some cases, creating entirely new types of businesses by leveraging innovative technologies and reimagining traditional processes (Pellicelli, 2022). One key aspect of DT is Industry 4.0, the fourth wave of industrialization, which is driven by the digitalization of manufacturing. This transformation is achieved through the seamless integration of information and communication technologies (ICTs) with production systems. Such interconnection enables machines, products, and devices to communicate and operate autonomously, fostering efficiency and innovation in industrial processes (Sarbu, 2021). The push for digital transformation is largely fueled by the belief that emerging technologies hold significant potential to drive innovation and enhance competitive advantage. As a result, businesses and industries are increasingly adopting digital solutions to streamline operations, improve efficiency, and remain competitive in a rapidly evolving market (Solberg, Traavik and Wong, 2020).

2. RESEARCH OBJECTIVES AND METHOD

This research is conducted with the following two objectives:

- O1. To analyze the literature on influential studies in SMEs, focusing on authors, topics, contexts, methodologies, and how digitalization impacts performance across various aspects such as financial, operational, and others.
- O2. To explore studies on the role of digitalization and digital transformation in SMEs, examining the effects on performance from multiple perspectives, including financial, operational, and other relevant dimensions.

This article is a review paper aimed at highlighting the latest research developments on the chosen topic. The methodology in this study consists of a data collection and article analysis approach. To ensure a comprehensive and up-to-date review, a structured search strategy was utilized to gather relevant academic sources from databases such as Scopus and Web of Science. Peer-reviewed journal articles, conference proceedings, and reports published within the last five years were prioritized to maintain the relevance and timeliness of the findings. The data collection process involved keyword-based searches. Following data collection, a thematic analysis was conducted to identify themes, trends, and gaps in literature. Overall, this methodological approach ensures a comprehensive review of the existing literature, providing valuable insights into the latest research advancements while identifying areas for future investigation.

3. RELATIONSHIP BETWEEN DIGITALIZATION AND SMES PERFORMANCE

SMEs account for 90% of businesses and 50% of global employment (SMEs Finance. <https://www.worldbank.org>, 10 March 2025). SMEs also play a significant role as consumers of strategic technologies, including digital tools. Within the digital landscape, their adoption of key enabling technologies like AI, cloud computing, and cybersecurity is crucial.

The European Commission's digital transition goals rely on SMEs becoming proficient users of these technologies. Furthermore, their engagement as consumers is vital for sustaining the domestic market for these innovations and driving their advancement (Katsinis et al., 2024). New digital technologies like AI, IoT, big data and Cloud computing are reshaping how SMEs innovate and compete what could have a big influence on firm performance (Clarysse, Fang He, and Tucci, 2022). By 2030, the EU aims for over 90% of SMEs reach a basic digital intensity, and 75% of companies use cloud computing, big data analysis, or AI. By 2022, 70% of EU businesses reached a basic digital intensity, with SMEs at 69%, 20 percentage points below the 2030 target, while large businesses were at 98% (Digitalisation in Europe – 2023 edition, <https://ec.europa.eu>). Digital technology underpins DT, with a strong positive link between its adoption and firm performance (Chen, Zhang and Wang, 2023). Through an empirical analysis of 201 Chinese SMEs, Wang and Zhang (2025) found out that digital push the relationship between digital adoption and innovation performance. Also, other studies show that digital transformation enhances operational, financial, and innovation performance of SMEs (Wang, Zhang, 2025). But still, despite the potential benefits, OECD report The Digital Transformation of SMEs (2021) shows that SMEs are lagging in DT. This is primarily due to “low awareness, insufficient internal resources, skill deficiencies, and financial limitations” (OECD. <https://www.oecd.org>, 09 March 2025). This report discusses the established-standing barriers to the digital transformation of SMEs, such as limited access to reliable, fast, and affordable digital infrastructure, and lack of digital skills. According to the OECD (2021), the technology adoption gap among SMEs becomes more pronounced as technology complexity increases or economies of scale become more significant. The largest disparities are observed in the integration of processes (ERP, CRM, SCM), the use of strategic planning tools such as big data analytics, and the procurement of cloud computing services.

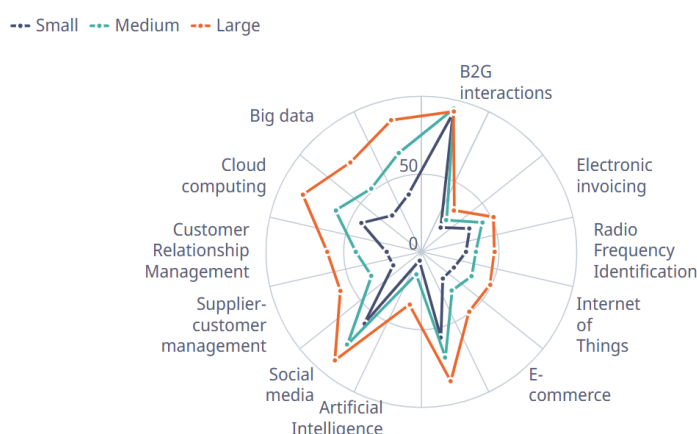


Figure 1. The barriers to digital transformation
Source: OECD, 2021

Luu et al. (2023) examine the impact of digitalization on the financial performance of SMEs in Vietnam (2005-2015). They find that investments in computers, email systems, internet, and e-trading significantly boost financial performance, productivity, and sales without increasing costs. The positive effects are particularly strong during the 2007-2009 global economic crisis, highlighting digitalization's role in mitigating economic shocks. Merín-Rodríguez, Dasí and Alegre (2024) find that digital transformation boosts SME performance. Teng, Wu, and Yang (2022) analyze digital transformation in 319 listed Chinese SMEs (2007–2020) using Excel and Stata.

Findings show a positive link with operational performance, an inverted U-shape with innovation performance, but no significant U-shape with financial performance. In the context of SMEs and DT, older generations may favor traditional hierarchies and values, while younger generations, influenced by global trends and DT, are more inclined to embrace modern leadership styles. These newer leadership behaviors often prioritize tolerance, freedom, and flexibility, which can drive innovation and adaptability within SMEs undergoing digital transformation (Bulog et al., 2024). Skare et al. (2023) find that DT enhances European SMEs' ability to address key business challenges, improving flexibility and reducing concerns about customers, competition, finance, costs, external shocks, and regulations. Pfister and Lehmann (2023) highlight the positive effects of data analytics solutions in German SMEs, revealing five key benefits: increased revenue, improved customer and employee satisfaction, and enhanced efficiency and productivity. The study presents 25 significant positive ROIs across various use cases, showing how data analytics improves revenue and reduces costs. Kádárová et al. (2023) analyze 135 observations from 27 European countries over five years using linear regression. The study finds that integrating digital technologies and increasing digital intensity significantly drive digitalization in European SMEs, leading to improved performance, like productivity improvement and customer experience. Šmaguc et al. (2024) highlight digital entrepreneurship as a new research context, where digital technologies offer a novel framework to explore and enhance understanding of entrepreneurial processes, emphasizing the need for qualitative research to build new theoretical insights. Roman and Rusu (2022) find that basic digital technology adoption can drive SME growth and performance. However, technologies with higher costs may reduce performance in the short term. Finally, several very recent studies have explored the impact of digitalization on SME performance, focusing on the drivers, barriers, and implications for digital transformation. Omowole et al. (2024) in their research paper provides a conceptual analysis of the barriers and drivers of digital transformation in SMEs. They identified key obstacles such as limited financial resources, insufficient digital skills, resistance to change, and data security concerns. Their study also proposes strategies to help SMEs “navigate the digital transformation process, including fostering a digital culture, upskilling employees, and leveraging external funding”. Restrepo-Morales et al. (2024) in their research study investigated the barriers and drivers of digitalization in SMEs, employing a fuzzy logic approach to analyze the factors influencing digital adoption. Omrani et al. (2024) in their study aim to identify and analyze factors influencing the adoption of digital technologies in SMEs. They highlight enabling factors from three distinct perspectives and propose hypotheses regarding their relationship with digital technology adoption. Zhao et al. (2024) found out that “that digitalization is not a one-size-fits-all phenomenon”.

4. RELATIONSHIP BETWEEN DIGITALIZATION AND CROATIAN SMES PERFORMANCE

SMEs play a pivotal role in Croatia's economy, contributing to employment and GDP. Recent studies have highlighted the growing integration of digital technologies among Croatian small and medium-sized enterprises (SMEs), underscoring both advancements and areas needing attention. In 2022, SMEs employed approximately 759,193 individuals in Croatia (Number of people employed by SMEs in Croatia 2008-2022. statista.com 09 March 2025). This figure underscores the sector's substantial impact on the national labor market. The Croatian economy has demonstrated robust growth in recent years. After a GDP increase of 3.1% in 2023, the economy continued its positive trajectory in 2024, with quarterly growth rates of 4% in Q1, 3.5% in Q2, and 3.9% in Q3. Projections for the entire year anticipate a GDP growth rate of 3.6%, outpacing the EU and euro area averages of 0.9% and 0.8%, respectively (How the

Croatian economy performed in 2024. croatiaweek.com 09 March 2025). Employment growth is expected to accelerate to 3.1% in 2024, driven by robust economic activity, which is projected to reduce the unemployment rate to 5.1% (Economic forecast for Croatia. economy-finance.ec.europa.eu 09 March 2025). This positive trend reflects the resilience and dynamism of the Croatian labor market. Despite these advancements, challenges persist in the realm of DT among SMEs. In 2023, 56% of Croatian SMEs had adopted digital technologies, a 6.3% increase from the previous year, yet still slightly below the EU average of 57.7% (Croatia 2024 Digital Decade Country Report. Digital Strategy, 09 March 2025). While Croatia excels in certain areas, such as enterprises using data analytics (51.7% compared to the EU average of 33.2%) (Croatia 2024 Digital Decade Country Report. Digital Strategy, 09 March 2025) there remains a need to enhance digital literacy and fully integrate digital business models across all SME operations. Addressing these digitalization challenges is crucial for maintaining the competitiveness of Croatian SMEs. By fostering comprehensive digital literacy and embracing advanced digital business models, SMEs can further bolster their productivity and continue to be a driving force in Croatia's economic growth. Despite these advancements, challenges remain. As of 2023, only 67.8% of Croatian households had access to very high-capacity networks, compared to the EU average of 78.8%. The disparity is more pronounced in rural areas, with only 25.5% coverage in Croatia versus 55.6% across the EU. This limited connectivity can hinder the full potential of digitalization for SMEs, particularly those operating outside urban centers (Croatia 2024 Digital Decade Country Report. Digital Strategy, 09 March 2025). To address these challenges, policy interventions are essential. Governments can play a crucial role by implementing awareness campaigns, providing training and technical assistance, facilitating access to finance, and supporting the development of SME-tailored digital solutions. Investments in digital infrastructure, such as expanding high-speed internet access, are also vital to support SMEs' digital transformation (Korez Vide, Hunjet and Kozina, 2022). On the other hand, research results Kokot, Đundek and Klačmer Čalopa (2023) shows that *“all the examined Croatian companies achieved their lowest results in relation to insight and their highest results in relation to technology, indicating that digital leaders recognize that technology is the most important element of digital transformation; however, other aspects such as insight are underestimated.”* In conclusion, while Croatian SMEs have made notable strides in digitalization, continuous efforts are needed to improve digital infrastructure and support services. Such measures will enable SMEs to fully harness the benefits of digital transformation, thereby enhancing their competitiveness and contribution to the national economy.

The Croatian Digital Index (HDI) is a study that analyzes the readiness of Croatia's economy for digital challenges. From 2019 to 2021, it was conducted by the consulting firm Apsolon to measure the state of digital transformation in the country (<https://apsolon.com/publikacije/>, 03 March 2025). According to 2021 data, the digitalization of the Croatian economy was rated an average of 2.59, showing a slight increase compared to 2020 (2.52). Although there is a positive trend, the overall level of digitalization remains unsatisfactory, and progress is slow, highlighting significant room for improvement in the future (Table 1). The availability of e-services for citizens and businesses received an average rating of 2.78 in 2021, a minor increase from 2.73 in 2020. One of the key indicators of digital transformation progress is the growing number of companies with a developed digital strategy. In 2021, 24.2% of companies had such a strategy, compared to only 17.7% in the previous year. For Sebastian et al. (2024), *“a digital strategy is valuable only if it drives resource allocation and capital investments”*.

Table 1.

Indicator	2019	2020	2021	Trend
Average digitalization score	2.00	2.52	2.59	↗ Gradual increase
E-services rating		2.73	2.78	↗ Slight increase
Companies with a digital strategy	15.0%	17.7%	24.2%	↗ Significant increase

Source: <https://apsolon.com/publikacije/>, 03 March 2025

Although there is a positive trend, the overall level of digitalization remains unsatisfactory, and the progress is slow. The data indicates a significant room for further improvement in digital transformation. To achieve better digitalization results, Croatia needs to accelerate the digital transformation process and encourage companies to adopt digital strategies.

5. CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

Based on insights from existing research, methodologies, and the impact of digitalization and digital transformation on SMEs, the aim of future studies is to examine, identify, and describe the potential drivers and barriers to digitalization in Croatian SMEs within selected industries and compare them with the financial results. The plan is to conduct research at the level of industry, firm, and entrepreneur, and to identify the significance and extent of the impact of these factors on the degree of digitalization in SMEs. Further research should analyze the long-term effects of digital transformation on firm competitiveness, as well as the specific support needs of entrepreneurs in the digitalization process. This would contribute to the development of more effective strategies and policies to promote DT in the SME sector, which we consider a gap in the current study.

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EXAMINING OPPORTUNITIES AND AREAS OF SPECIALIZATION: RETHINKING DESTINATIONS IN THE FIELD OF RESILIENCE AND SUSTAINABILITY

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ABSTRACT

The paper emphasizes the research of diversification and opportunities for tourism specialization provided by contents of providers in the destination, while examining travel motives, activities, analysis of the offer of tourist products of organizers (duration of the trip, travel motives, activities of the participants on the trip). In doing so, the views of experts - representatives of foreign operators - were evaluated with regard to the individual level of specialization of the offer in the destination and the added value that the destination offers. The paper contribution is contained in the qualitative analysis and accompanying elements contained in the analytical approach to studying the phenomenon of tourism and the framework of specialization in which it takes place. The results of the focus group indicate a clear position in favor of promoting the protection of goods of public interest of the local community for deepening the relationship with the environment through protection, an active relationship with the environment, upgrading existing products, prevention in the area of attractions, shaping strategic models to encourage the development and adaptation of public tourism infrastructure. These building blocks create a solid framework of responsible and professional behavior and actions of participants, stakeholders. They are a respectable foundation for a marketing-oriented destination that inherits culture and tradition as comparative advantages and with an abundance of innovative market measurement opportunities.

Keywords: *Attractions, Motives, Tourism, Products, Activities, Destination*

1. INTRODUCTION

Numerous studies on the level of specialized tourism supply in destinations have been validated through research on the specificity of travel motives using an analytical approach to travel organizers' product offerings (trip duration, travel motives, participant activities). This has proven to be a key driver of the existing supply. A qualitative analysis, evaluating organizers' perspectives regarding potentials and added value — which served as a good example in this study — demonstrates that destinations aiming to achieve this general goal must engage all local community stakeholders. They should focus on responsible behavior aligned with local governance, pivot strategic orientations by fostering public interest within the local community, and deepen environmental awareness through protection measures and a more agile approach. This approach supports tourism sector recovery and resilience through public investments aimed at enhancing the attractiveness of less developed tourism destinations, contributing to reducing overtourism in the most developed areas, and improving destination quality while enabling season extension. The dispersion of tourist overconcentration, promotion of sustainable tourism forms, and the development and/or adaptation of public tourism infrastructure in line with existing potentials — such as attractions — are crucial guarantees for

development continuity. This requires adapting public tourism infrastructure, which this study emphasizes, supported by qualitative analysis results using the example of a specific and diversified tourism product offering in Montenegro. This product must be strategically marketed and positioned within the destination. Many authors, in exploring the level of authenticity and consistency of spatial tourism offerings, examine destination positioning in the context of tourism competitiveness. This is assessed based on attributes, know-how, and specialized education, which shape the deserved perception in the minds of tourists and providers of substitute products.

2. LITERATURE REVIEW

2.1. Destination as a basic marketing unit

Researching content diversification through the analysis of travel motives and product offerings serves as the primary tool for guiding destination supply specialization. This approach fosters a more competent understanding of the environment, collaborative relationships among local community partners, and the development of credibility — which the local population perceives as part of an innovation and improvement model for tourism offerings. Supporting investments in green and digital transitions, alongside the enhancement of public tourism infrastructure, must also prioritize sustainable tourism development. More balanced regional development, investments in diversifying tourism offerings in less developed destinations, and stimulating local employment contribute to reducing overtourism. These efforts serve as recovery drivers, addressing regional disparities and promoting demographic revitalization. The identity of a tourist destination reflects a complex blend of emotions, symbols, experiences, memories, and activities. While inherently personal, these elements are continuously shaped and validated through social structures and enriched by social interactions. In other words, a destination's identity is a relative construct — shaped not only by the views of diverse individuals and local social groups but also by deep-rooted historical connotations, comparisons to other (similar) destinations, and the collective perceptions and beliefs of external, non-local stakeholders.

As a result, the established identity of a tourist destination is shaped by the dynamics of power relations among different groups of involved stakeholders and is not a fixed category. Thus, due to occasional shifts in these power relations, spaces communicate through activities with users, creating emotional experiences whose perceptions shape and define attitudes and preferences. By generating experiential attributes, spatial uniqueness—embodying emotional connections to the space—forms a solid foundation for the development of tourist destinations, despite the pressures of market-driven changes.

In connection with the concept of destination identity — which reflects a set of specific characteristics within the real environment of the tourism market — the meaning of a product is defined through associations that shape the images the product produces in the minds of users. This refers to the image and impression of the product in the minds of potential users and consumers. Starting from an analytical approach and the terminological definition of what a destination is (and what it is not), key questions arise: who defines the constitutive elements of the space, what are the rights to upgrade it, and what is the maneuvering space that allows business behavior while respecting ethical and moral principles? These are central topics advocated by numerous theoretical discussions and research in the field of tourism destination marketing, which until recently followed practices and experiential insights.

However, the evolution of marketing thought and ideas has often been approached in a fragmented way, focusing on individual determinants separately. Many authors in their research have emphasized differences rather than similarities, even though a consensus on perspectives could actually facilitate and unify the reach of scientific contributions. Such consensus would help establish concepts that underpin the development of marketing thought — viewing the destination not merely as a spatial or value category, but as a sociological, cultural, economic, and civilizational phenomenon. This approach calls for consensus and inclusivity in addressing ideas about the attractiveness of tourism destinations. Influential works such as Wang & Fesenmaier (2007), Baloglu & McCleary (1999), and Buhalis (2000) highlight this shift. Buhalis (2000) explores marketing competitive destinations of the future, while Buhalis & Spada (2000) discuss success criteria for destination management systems. These studies provide foundational insights into managing and marketing destinations as complex, dynamic, and multidimensional constructs.

Dolnicar, S., & Mazanec, J. A. (2000). emphasize emerging concepts, while Buhalis, D. (2000) contributes with a strong scientific argument about destinations in the context of the digital environment. Furthermore, Heath, E., & Wall, G. (1992) and Mihajlović, I., & Koncul, N. (2016) highlight the need for specialization as a focal point of research interest. The fragmented approach to destination perception, characterized by overgeneralization, often undermines the holistic understanding of space as a core marketing unit. Conceptually, adopting a holistic perspective supports the creation of a destination's identity as a coherent product, addressing the complexities posed by dynamic market conditions. Pestana, M. H., et al. (2020), emphasize the need for a more integrated and agile framework in destination marketing management to effectively align with these challenges. This involves designing destination marketing management models where the primary role of destination marketing is to serve as an instrument for optimizing tourism impacts and achieving strategic goals, aimed at satisfying the needs and desires of all stakeholders within a specific tourism destination. Considering the perspectives of various authors addressing this issue, the priorities of destination marketing strategies revolve around:

1. Management activities of coherent groups of providers — offering diversified products with a recognizable imprint of the specific destination, enhancing the integrity of the overall tourism offering through interconnected experiences that highlight the destination's uniqueness.
2. Distinctive tourism products as independent entities — delivered through service providers operating within a framework of partnership and networking, rather than as fragmented, self-sufficient offers. Such fragmented approaches fail to encourage loyalty or create a connection to the authentic local heritage product.

From this, it emerges that the main challenge of destination marketing is operating within a “multi-supplier environment where decision-making power rests with individual entrepreneurs” (Dolnicar & Mazanec, 1998). This means navigating a setting where diverse destination stakeholders — visitors, local communities, hospitality enterprises, tour operators, and the public sector — often with conflicting interests, collaboratively participate in the development and production of destination tourism products (Buhalis, 2000, p. 98). The orchestration of destination marketing becomes evident through an analytical approach to the destination product, built upon key drivers embedded within the management model outlined by Morrison (2018). This model relies on the coordination of four essential components of the destination product: physical products, people, programs, and organized activities — all

interconnected to form a cohesive and meaningful visitor experience within the destination. In some cases, a complete organizational reengineering is necessary — a regeneration of existing resources, revitalization, and even raising awareness among the local population. Here, specialization relies heavily on education and information, fostering motivation, deeper engagement, and a stronger connection within the local community. This encourages participation in a transformation that carries both social and cultural significance. Among the four key elements contributing to restructuring: the reorganization of tourism products, the workforce, the spatial reorganization, and the transformation of tourism products, Urry (2005) highlighted their pivotal role. Leveraging comparative advantages to secure a stronger market position is essential, driving economic recovery and improving the destination's competitiveness in dynamic market conditions. It's crucial to implement a developmental orientation rooted in know-how values, utilizing multiple benefits of comparative advantages. This approach fuels the creation of new value and supports the emergence of innovative tourist destinations — capable of adapting to market changes while preserving their unique identity and fostering long-term resilience.

2.2 Cultural Heritage and the Local Community

The structure of vision as a guiding concept for destination development would generate arguments within the descriptive framework of tourism — outlining its direction, type, and quality — alongside management strategies that define goals and spatiotemporal governance. This approach emphasizes identifying pull factors within heritage resources, positioning tourism not only as a product of global discourse but also as an active participant in shaping it. Franklin and Crang (2001) highlight how tourism operates within broader cultural and economic systems, while Jaworski and Pritchard (2005) and Thurlow and Jaworski (2010) explore the language and narratives that frame tourist experiences. In this sense, tourism becomes a discursive lens, reflecting and influencing globalization and cultural exchange. The local community plays a critical role in preserving and promoting heritage, not merely through promotional campaigns, but through awareness-building, education, and the advocacy of authentic values. This extends beyond marketing, fostering intercultural dialogue and cross-border collaboration, moving past market-driven perceptions of space. The destination is thus envisioned as a living, regenerating entity, evolving through professional and expert-led initiatives aligned with heritage and traditional identity principles. Cultural heritage itself embodies the traditions of a cultural environment — encompassing ways of life, technological and organizational practices, and the legacy embedded within a specific territory. It adapts to influences over time, ultimately contributing to a more complete representation of national identity through its cultural foundations. A nation's culture comprises everything retained and preserved within its living space, transcending physical and political borders (Escobar-Farfán, M. et al., 2024; Reinhold, C. et al., 2015). The local community must embrace its members as 'cultural citizens', fostering a renewed, organic connection to their environment — not by imposing a static identity, but by enabling an evolving, lived relationship with their surroundings (Urry, J., 2002). This approach goes beyond reconstructing ties to the past; it positions culture as an ongoing process of exploration and innovation, paving the way for new, locally-driven economies. In this reframed context, a renewed sense of identity emerges — yet the designation of residents as 'cultural citizens' inevitably raises a crucial question: What truly defines a community? Urry's (2002) notion ties directly to the narratives constructed around destinations, shaping visitor expectations and influencing how places are experienced and consumed — reflecting not only the destination's identity but also how it's perceived in the global arena.

A comprehensive critical analysis (Hallett, R.W., & Kaplan-Weinger, J., 2010) explores the discourse surrounding the relationship between tourists and destinations, particularly examining its implications for national identity. Academic interest in the narrative structures of travel remains relatively scarce, especially in understanding how identity construction shapes the interpretation of destination experiences. The local population's perception forms the foundation of this dynamic, where the participatory impact is measured through personal engagement — from delivering value in the form of authentic, locally-produced goods (e.g., gastronomic heritage, rural products) to fostering spatial connections that promote cultural heritage. This set of unique characteristics becomes a key tool for differentiating substitute destinations, collectively forming what we define as identity. For a destination, identity is more than a static concept — it reflects its historical legacy, shaped by cultural processes and sustained as living heritage. Culture continuously evolves and grows, with its integrity emerging as a reflection of historical heritage, where people and their environment remain the central protagonists. Many scholars emphasize the multi-structured nature of destination experiences, highlighting the role of tourist interactions (Dredge, D., 1999). Murphy, Pritchard, and Smith (2000) argue that a destination can be understood not as a singular entity, but as a collection of individual products and experiences, which, when combined, form the holistic perception of the visit. Would you like me to expand on how this ties into modern destination marketing strategies or community-based tourism development? Culture affects us all, as does heritage, two concepts that are calibrated with space.

Networking and a high level of cooperation on a partnership basis in the local community are extremely important. For this purpose, research is being carried out into the potential and possibilities of specialization based on insight into the level of existing specialization and activities of products that are placed on the Budva market. The examination of possibilities and additional maneuvering space is contained in the elements of value created by human labor, lifestyle, cultural expression, gastronomic heritage, and presentation through ceremonial or folk festivities. The modality interprets heritage and values it for the benefits of the local community, especially through tourist events.

3. SPECIALIZATION

Specialization in production processes, specialization primarily revolves around human labor and other factors within the production process. According to Baletić (1995), it is rooted in "acquiring knowledge in a specific field" and emphasizes education aimed at producing particular products, providing specific services, or executing distinct operations as part of a complex workflow. Specialization enhances intellectual stimulation and advancement through the acquisition of knowledge and skills. McFarlane (1994) categorizes levels of involvement among participants within an activity based on motivations, which include:

1. Belonging-oriented (social) motivations.
2. Achievement-oriented (skill) motivations.
3. Esteem-oriented (affective) motivations.

Specialization aligns closely with inquiry processes, transitioning from low involvement to high involvement activities. This shift includes the establishment of clear metrics, narrowly defined required activities, and specific competencies. These are linked to crucial attributes such as commitment, attachment, trust, and motivation. As a driver of tourism supply, specialization is an orientation, a driven idea that values the loyalty and effort of tourists to return to the same destination.

As a prerequisite for superior service, market leadership and destination competitiveness, specialization implies the differentiation of one tourism product from other similar tourism products, without significant possibilities of horizontal substitution. Mihajlović, I., & Koncul, N. (2016). As a key driver of tourism development (Hall and Weiler, 1992), innovations and specialization are faced to mass production customized to individual customers and their interests (Weiler, B., & Hall, C. M. 1992). Specific interests encourage the emergence of additional market niches, and at the same time, differences between similar products become more pronounced. What is the way of development of business with maximum use of opportunities? Mihajlović, I., & Koncul, N. (2016). As Hall and Weiler defined the specialization in tourism providers' offerings and the potential development of travel organizers' products, this specialization is rooted in motivations driven by specific interests, whether focused on a single activity or multiple activities.

Two key aspects of specialization could be identified in terms of tourists' innovative experiences or innovative activities at the destination. Also, organizers are faced with tailor-made products, very flexible and personalized, created to meet the unique needs of particular groups of tourists.

3. RESEARCH METHODOLOGY

The data used in this study have been based on the semi-structured focus group method, which supported the qualitative research of the work by finding compromise solutions in accordance with the views, agreements and suggestions of the participants of the two groups of participants. As a rule, content validity is also about capturing the relevant experience of respondents. Content validity refers to the accurate representation of relevant experiences and perspectives of respondents. According to Guion (1977), criteria for content validation include: a) consensus among experts regarding the components, elements that define the concept; b) clarity and precision in the definition of the construct; c) alignment of the content of the elements with the proposed construct; d) adequate testing and comparability in consensus with subject matter experts. Content validity serves as a fundamental prerequisite for revision and re-examination for final validation. Reliable observation and re-evaluation of the content of expert responses minimizes potential errors in the initial stages of instrument design, and is also crucial for increasing the likelihood of achieving strong construct validity later in the process (Shrotryia & Dhanda, 2019). The result is a general guiding idea whose goal was to investigate the level of specialization in the destination and, if possible, to obtain the outlines of two clusters as two key attractive areas of the destination mountain-continental and coastal regions on the territory of Montenegro.

A foreign agency whose mission is to market the products of travel organizers from the Scandinavian countries (Sweden, Denmark, Norway) and an intermediary in tourism that operates internationally and cooperates with the markets of France, Poland and the UK as generators of tourist demand. The aim of this qualitative analysis is to encourage the dynamics of the debate on the topic of specialization through the adopted levels of specialization and consequently, as a response to it, the valorization of spatial wealth, which is a valuable potential for product diversification, recognized in the area of the mountainous-continental region and the coastal region.

Issues	Focus group A	Results
	Focus group B	
1. tourist profile (socio-demographic and geographic aspects)	A: Segment of the classic emitting market: French, English, Polish Dominant target group: Middle-aged individuals - families; retirees: 65+ B: Scandinavian market (dominantly Sweden, Denmark, Norway) 65%; 1/6 consists of the Bosnian and Herzegovinian market. 1/5 consists of others. Dominant target group: Retirees: 65+ MICE segment: 18 – 67 years.	The analytical approach to profiles from the perspective of age groups highlights different groups of active participants in tourism flows, with regard to the representation of the younger population and their interests in incentive travel, as well as the increasing involvement of the older generation, motivated by leisure tourism.
2. structure of the travel package and dominant packages offered as an organizer	A: - Cultural cruise tours - Excursions - VIP packages - Tailor-made packages - Incentive travel - Booking of individual service providers... - approach, flexible packages, and modular travel options B: - Cruise travel - Training trips for older individuals; MICE - Day trips, tailor-made packages that can be combined and structured according to the "Lego" production principle Adjustment of packages based on affinities with a personalized	The dominance of cruise travel arrangements, the representation of the MICE segment, customization of arrangements according to affinities with a personalized approach, flexible arrangements, and modular travel options.
3. Duration of their trip	A: Cruise trips 8 days / 7 nights B: - MICE 3-4 days / 2-3 nights - Cruise trips 7-8 days / 6-7 nights - Combo trips 3-4 days / 2-3 nights	The dominance of cruise travel lasting 7-8 days/6-7 nights and shorter, intensive business trips from the MICE segment (3-4 days/2-3 nights).
4. Which service has the greatest impact on the increase in the package price?	A: Hotel services B: Airfare prices	Starting from the fact that 80% of the total cost structure of the travel package consists of transportation and accommodation, respondents reached a consensus in their answers.
5. What are their travel motives, and highlight the dominant motives for tourists' trips?	A: I. Cultural heritage II. Nature III. Climate	From the perspective of traditional emitting markets (dominant demand generators), the main motivations are cultural and historical aspects, heritage interpretation through organized cultural tours, while secondary motivations focus on natural resources and landscapes

	B: I. Natural attractions II. Cultural-historical heritage III. Gastronomic heritage IV. Storytelling	defined as part of the destination's spatial identity. The Scandinavian market traditionally favors motives in the domain of natural heritage – as confirmed by respondent opinions – with secondary motivations based on anthropogenic factors, cultural and gastronomic heritage. Significant potential lies in activities that enhance these values, such as storytelling and the seventh art (cinema).
6. Dominant tourist activities during trips within the package?	A: Visiting - Natural wealth - Cultural heritage - Museums - Restaurants B: Visiting - Natural reserves - Historic cities - Museums - Restaurants, wineries, prosciuttos, olive oil producers, rose hip beer...	Both groups highlighted sightseeing, heritage presentations, tours, city breaks, active participation of tourists in organized tours, and co-creation of experiences through tourism products. These enhance the natural and cultural-historical heritage of the local community.
7. The most dominant types of content or individual products that serve as tools for creating the spatial identity of the local community (based on your experience)?	A: Boka Kotorska due to its nature and cultural heritage B: Njeguški prosciutto – production method and hospitable approach to guests – a traditional approach. - Šipčani – smart transition from a military facility to a wine cellar. - King Nikola Museum and Cetinje – Unexpected cultural center and royal palace. - Boat tour of Boka from Kotor – unique beauty of the bay with Perast and Kotor as small architectural wonders. - Old town of Bar – a unique atmosphere of the Mediterranean and the Orient.	The combination of tangible and intangible heritage through clearly defined artifacts that require prevention and preservation, many of which are on the UNESCO representative list. A consensus is needed at the local community level between an informed and educated local public, households, management authorities, and investors.
8. The most frequently requested service or content (based on your experience) in a classic incentive package?	A: Most common is cruising the Bay of Kotor B: - Kayaks are requested for employee races, - Bicycles for cycling tours, - Races around the walls of Kotor...	The paradigm of the polarization of interests between different segments is confirmed, with one group focused on passive forms of stay at the destination, while the other group focuses on active engagement and activities within the destination.
9. Attitude towards the role of digitalization in business.	A: - Digitalization has helped in comprehensive business operations. - It is dominant as it transforms the work and distribution framework with increasingly widespread operations in an interactive digital environment. - It has transformed distribution channels, with a focus on booking, sales, and promotion. - Partner networking and cooperation. - How present is digitalization in your business? - Do you use any modern digital tools when creating your packages?	Digitalization has assisted in defining decision-making priorities through the application of innovative technological solutions (through data accessibility, data processing, delivering value through quality information in comparison with others, and operationalizing activities) while ensuring time rationalization.

	B: - Digitalization helps. The speed of communication is improving and becoming more efficient. By applying primary digital technologies, such as cloud, social media, and the internet, as the foundation of infrastructure, innovative business models are built. - Resource constraints and lower levels of financial capabilities for investing in know-how leave very little maneuvering space for intense challenges in foreign markets	
10. What are the main sources of information for your tourists about the trip?	A: Tour operator and agency chain	The results indicate that loyalty and trust in the selection of this travel organization modality confirm the effects of word-of-mouth as an amplifier of the selection process.
	B: Recommendations/suggestions from previous arrangement users, the internet, social media. The largest network is of agencies.	
11. Have you encountered disintermediation?	A: Yes, but it doesn't have a major impact on our business.	Digital technology, which has created disintermediation, correlates with the size of the travel organizer, their interests, narrative, and the savings that are advantages in direct contact with clients and individual preferences in choosing travel.
	B: Yes, for over 15 years.	
12. Your recommendation for the destination and evaluate its specialization? - Your future guidelines regarding organized travel?	A: The destination is generally moderately specialized. Recommendations: - VIP inspection of luxury services in higher-category hotels. - Additional amenities and services, more events, and specialized happenings outside of accommodation. - Innovative activities combined with authentic traditional products. - Reorganization of the service delivery system (coordination of activities at the destination level).	Consensus is reached regarding the state of infrastructure and innovative products in line with sustainable tourism developmental trends that support environmental protection that contribute to and the green transition of tourism products.
	B: Coastal city – specialized. Areas in the planned continental region – unspecialized. Outdoor tourism – specialized. Recommendations: - Accessibility and connectivity of the destination. - Improvement and revitalization of infrastructure, as well as the necessary reconstruction of the road section Kotor - Cetinje. - Eco-friendly products. - Green travel, which is also defined by the sustainability and resilience policy, along with recommendations for the green transformation of the destination.	

Figure 1: Results of qualitative analysis
Source: Author's own work

4. CONCLUSION

The research method used in the next phase would represent a clear base and framework for quantitative research, as the results of this research included the practical experience and knowledge of the participants who, based on numerous iterations, crystallized and standardized their answers. With valuable suggestions and guidelines regarding the issue of specialization and topics, they deepened their understanding of the direction of product diversification in accordance with the wealth of existing potential, either natural heritage or cultural-historical attractions, which is a guideline by which their contribution could be capitalized in the next phase. The results of the research clearly indicate additional efforts for local community stakeholders, who must concentrate in the domain of investments in knowledge, education, partnerships, reorganization and transformation of the existing concept of the global understanding of the destination. According to the consensus of views, the destination is not in harmony with the environment, the space, but is based on a fragmented and disjointed offer that deviates from the diversified products that make the tourist's living space attractive and unique. Also, redefining the tourist experience as an illusory value, implies that its meaning stems from a perceived contrast of standard tourism product related to the more authentic value of the same. This notion perpetually challenges the standard interpretation of products and destinations within the framework of conformity. Such discussions the most frequent highlight the tension arising from the dichotomy between the traveler and the tourist. Achieving consensus in this context requires exploring the narratives that shape the discourse on travel, travelers and tourism. These results are also guidelines for the future of master planning, which would primarily be based on the education of community stakeholders such as the local population, investors or economic entities. The common denominator for all of them is euk knowledge and experiential marketing.

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ELDERLY PEOPLE OF VIROVITICA-PODRAVINA COUNTY AND THEIR ATTITUDES TOWARDS TRUST IN THE MEDIA: CHALLENGES IN ERA OF DISINFORMATION

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ABSTRACT

Today's society is aging, and according to data from 2021 in the Republic of Croatia, 23% of the population is over 65 years old. Such a demographic composition impacts the biological, psychological, economic, and social aspects of society, requiring older individuals to adapt and become literate in new trends, particularly those related to digital technology and media literacy. The advancement of technology and the internet has brought numerous advantages in information exchange, but it has also led to various negative and unwanted phenomena. For instance, due to the unregulated nature of media and communication, anyone can now easily and swiftly fall victim to false or intentionally manipulated information, specifically misinformation, particularly on social networks. While legal solutions are still being sought for regulating the Internet space, which has evolved beyond state and organizational control in recent years, establishing its own norms, experts are now raising awareness about the media environment and its implications. For this study, a survey was conducted on individuals over 65 years old from Virovitica-Podravina County, with a sample size of 168 respondents, where, based on the conducted research, the profile of the respondents was analyzed using socio-demographic questions, their knowledge of terms related to misinformation and fake news. The main goal was to investigate attitudes towards trust in the media and the news they publish. Based on the obtained results, certain recommendations were given regarding further research and whether the elderly should be educated further regarding misinformation and fake news.

Keywords: *elderly individuals, Disinformation, Virovitica-Podravina County*

1. INTRODUCTION

In today's digital age, the media plays a key role in shaping the opinions and attitudes of individuals. Given the speed of information dissemination via online platforms and social networks, the issue of trust in the media is becoming increasingly important. Older people, as part of the population facing digital literacy challenges, are often exposed to the risk of fake news and disinformation. According to data from 2021, almost 23% of the population of the Republic of Croatia is over 65 years old, which highlights the importance of understanding their attitudes towards the media. The aim of this paper is to investigate the attitudes of people over 65 years old towards trust in the media and their exposure to disinformation in Virovitica-Podravina County. The paper also addresses the importance of media literacy and the need for educating the elderly to increase their ability to recognize fake news and assess the credibility of information sources. Their attitudes towards different types of media, level of trust, and perception of the dangers of disinformation were analyzed based on a survey conducted on a sample of 168 respondents. Given the demographic situation in Croatia, a large number of media users who require greater attention than before are precisely the "silver surfers"—people over 65—who belong to generations that grew up in a world and time where it was generally known who created the news and information.

However, these learned patterns are now outdated because the world of media has changed drastically compared to that of ten or fifteen years ago. So much so that, for example, we already refer to newspapers, radio, and television as "old media." Of course, if (some) media are old, this does not mean (and must not mean) that the knowledge available to the older population must also be outdated. In fact, it is absolutely necessary to constantly educate ourselves about new or modern media and media platforms. This could involve working on educational initiatives and delivering numerous expert lectures to residents of homes for the elderly and infirm or members of pensioner associations. Practical exercises and tasks, in particular, are of great importance, as they would also encourage media inclusiveness among the elderly. Data from the European Commission's Digital Economy and Society Index (DESI) for 2020 (European Commission DESI, 2020) showed that as many as 91% of internet users in Croatia read news online, compared to 72% in the rest of the European Union, placing Croatia in second place, behind Lithuania. The results of the DESI 2022 report (European Commission DESI, 2022) show that Croatia ranks 21st out of 27 EU member states, a slight decline compared to the previous year when it was in 19th place. Positive developments include good results in digital skills and the state of open data at the national level. Croatia is making progress in developing digital skills, as evidenced by the fact that around 63% of citizens possess basic digital skills, placing the country third on the list, while the European average is 54%. Citizens of the third age, who make up a significant part of the Croatian population, contribute significantly to this statistic (the 2021 census determined that the share of the population aged 65+ is almost 23%).

2. LITERATURE REVIEW

Levak and Zekić Ebarhard (2022) state that it is precisely people aged over 65 who need education as a guide to navigate the current era of abundant information and rapidly evolving technology, which is becoming increasingly difficult to keep up with. While the development of technology and the Internet has brought numerous advantages in transmitting and receiving information, it has also resulted in many negative and unwanted phenomena. For example, due to still unregulated relations in the media and communication fields, today each of us can much more easily and quickly become a victim of false or deliberately manipulated information—more precisely, disinformation. While states and their institutions are still searching for appropriate solutions to regulate the internet space—which, as we can see, has outgrown every state and organization in recent years and established its own rules—experts have begun focusing on media literacy, or more precisely, raising awareness of the media environment, primarily among children and young people who are beginning their independent entry into the world of media. Thus, in recent years, media literacy in Croatia has increasingly been taught and introduced to young people at multiple levels—from kindergartens to schools and universities—through various educational activities and projects (although still mostly outside the formal education system). This should eventually lead to more media-literate generations who are more aware of how they can and should engage with media and the media environment. However, in designing the concept and content of the manual, the authors drew on previous theoretical and practical experiences, knowledge, and materials, primarily acquired and used in the preparation and implementation of two educational projects aimed at improving media literacy among the elderly. Recently, there has been an increasing number of articles and research studies addressing discrimination against older people in the context of modern communication platforms (Levak and Zekić Ebarhard, citing Xu, 2021; Vasil and Wass, 1993) or evaluating how people over 60 or 65 navigate the modern technological environment (Levak and Zekić Ebarhard, citing Dhar, 2017).

This is a logical consequence of current trends in the media environment. The term "silver surfers" can also be found in the literature, referring to older people who use information and communication technologies. According to Eurostat data, in 2016, in some European Union countries, every second person over 64 years of age belonged to the group of silver surfers. Nekić, Tucak Junaković, and Ambrosi-Randić (2016) showed in their research that silver surfers most often access the internet to read news and other interesting content on portals, chat with friends and relatives via Skype (a platform for instant online correspondence, video chat, or telephone calls), and use social networks such as Facebook. On the other hand, the results of several recent studies (Levak and Zekić Ebarhard, 2022, citing Grinberg et al., 2019; Guess, Nagler, and Tucker, 2019) have warned that older people spread disinformation and fake news significantly more often than younger people—up to seven times more. The most common reason cited is insufficient knowledge of how the internet and social networks work. Furthermore, the question arises: which social networks do seniors use the most? According to Statista.com (2023) for the United States, 88% of people over 65 are present on the internet, a finding also confirmed by research conducted by the AARP Organization (2023). Meanwhile, Pew Research (Faverio, 2022) states that 8% of the population aged 65+ is constantly online. AARP research found that people aged 65+ use Facebook (71%) and YouTube (51%) the most, while Instagram and TikTok have seen a slight rise in usage, and Pinterest has experienced a 5% decline. Telebuh et al. (2016) state that old age and aging have always been subjects of interest, whether from a biological, psychological, social, or economic perspective. The aim of their paper was to show the frequency of internet and social network use among elderly people, which was examined using a questionnaire conducted through random selection in Zagreb, Bjelovar, Nova Gradiška, and the area of Varaždin County, with 46 respondents (28 female and 18 male). The results showed that older people play an important role in the development of stereotypes about older individuals through their attitudes and behavior. They do not use all types of media in their everyday lives, especially newer ones such as the internet and online social networks (only 8.69% stated that they tend to use the internet, while 56.52% reported a very low tendency; social networks are used by only 4.34% of respondents). However, they do consume daily information through local media and television, which plays a major role in shaping their attitudes. The conclusion was that the low use of new forms of media is the result of a worse economic situation and other factors.

3. Disinformation, fake news and trust in the media

Throughout the entire history of human society, the concepts of truth and lies—or in this case, information and misinformation—have been indispensable parts of communication and have thus become essential components of human knowledge. According to Tuđman (2008), the information space, or the space of public knowledge, is intertwined not only with relevant information but also with semi-information and disinformation, which then impact society as a whole. Nenadić and Vučković (2023) state that disinformation is most often understood as incorrect information intentionally created to mislead the public. It includes any information used to harm a person, organization, social group, state, or goal, often to achieve some interest (e.g., economic or political). The same authors point out that content which is controversial, sensationalistic, surprising, confirms existing beliefs or prejudices, stimulates emotions, or is visually striking captures people's attention more quickly and easily—traits that disinformation often possesses. Such content often appears more attractive than credible information, making it easier for people to notice and share. Tuđman (2008:129) explains: "The quality of information is determined by the language of information exchange and the completeness, objectivity, accessibility, and reliability of the information."

If or when some of these conditions are not met, communication errors occur, and incorrect information and/or disinformation are broadcast. It is widely believed that incorrect information is not the result of deliberate disinformation or misinformation. Disinformation is 'produced' with the intention of causing the opponent to change their mind and make decisions and judgments to their own detriment." The decline in the influence of traditional media and the incredible growth in the influence and number of online information sources have created increasing opportunities and tools for the spread of disinformation, making it an extremely effective and inexpensive way to exert influence. Most disinformation has so far been spread in the form of text articles and information, sometimes accompanied by images or audiovisual recordings taken out of context to give them a different meaning or to present them in a misleading light. However, with the advent of advanced image and sound manipulation technologies, disinformation is becoming increasingly convincing, allowing for the creation of entirely false audiovisual content with no basis in reality. Once created, disinformation is rapidly spread and amplified through social networks and other online platforms. Many legitimate sources use computer algorithms to manage the display of information to users, aiming to show each user the content they are most likely to find important and share with others. By facilitating the sharing of information among like-minded individuals, these algorithms indirectly increase opinion polarization and unintentionally strengthen the effects of disinformation. Users gather in interest groups, and by tailoring the content and style of disinformation to align with their beliefs—and because it reaches them through others who share their interests or opinions—disinformation becomes more convincing, and its likelihood of spreading increases (CERT, 2019). Regarding research on trust in the media in Croatia, the last large survey on media habits and trust in the media and journalists was conducted in December 2020 (Media Literacy, 2021) as part of the "Jourlab" project. The data revealed that audiences expect better and higher-quality content from the media but, for the most part, do not trust it. This distrust is also reflected in their attitudes toward politics. A report by the Reuters Institute for Journalism (Peruško, 2021) states that in 2012, citizens' trust in the media increased by 6%, with the two foreign-owned national television stations, Nova TV and RTL, enjoying the highest trust in Croatia. However, a review of available reports and research found no emphasis on older people and their trust in the media, despite the fact that older individuals, along with children and young people, belong to vulnerable population groups.

4. RESEARCH METHODOLOGY

The purpose of this paper is to examine the current knowledge of elderly individuals in Virovitica-Podravina County regarding the concepts of disinformation and information, their level of trust in the media, and the content provided through media channels. The main objective is to investigate the trust of people over 65 in the media and to analyze the level of trust that older residents of Virovitica-Podravina County have toward different types of media (traditional media, online media, and social networks). The secondary objectives are:

1. To examine attitudes toward fake news and disinformation (including the perception of older people about the dangers of fake news and disinformation, as well as the extent to which respondents feel exposed to these phenomena).
2. To analyze how respondents perceive the news presented by the media (investigating their opinions on how the media select news, particularly with regard to political preferences and sensationalism).
3. To determine the importance of media literacy education (including examining attitudes toward the need for educating the elderly on recognizing fake news and improving their ability to assess the credibility of information sources).

These objectives are aimed at understanding the perceptions of older people about the media, disinformation and their educational needs in the area of media literacy.

The following research questions emerged from the objectives:

- What are the attitudes of respondents toward trust in the media and the news they disseminate?
- How important do respondents believe education in the area of disinformation and fake news is?

To answer these questions, an empirical study was conducted on a sample of 168 people over 65 years of age from Virovitica-Podravina County. According to the 2021 Census (State Bureau of Statistics, 2021), Virovitica-Podravina County has a total population of 70,368, with 15,446 individuals aged 65 and over, representing 21.95% of the county's population. Data was collected from 1 to 30 June 2024 using a survey method. The data collection form consisted of 8 closed-ended questions and 18 closed-ended statements. Scales were used as a special type of closed-ended question, requiring respondents to express their opinions, attitudes, and feelings based on a five-point Likert scale: completely agree, mostly agree, no specific opinion, mostly disagree, and completely disagree. The questions and statements were grouped according to the research questions. Data analysis was conducted using descriptive statistics.

4.1. Description of the research and sample

The first part of the questionnaire focused on the socio-demographic characteristics of the respondents. Of the participants, 61% were women and 39% were men. In terms of age, 22% were aged 65 to 74, 67% were aged 75 to 84, and 11% were aged 85 and over. Regarding education, 11% had completed primary school, 56% had a secondary education, and 33% were highly educated. In terms of marital status, the highest percentage were widows/widowers (56%), while 22% were married and 22% were single. Geographically, most respondents came from urban areas (79%), 6% lived in suburban areas, and 15% lived in rural areas. If a profile of the respondents who participated in this research were to be created, it would describe a female, aged between 75 and 84, with a secondary education, a widow, and living in an urban area. The first part of the survey also sought to determine whether respondents had heard of the term "disinformation." It was found that 94% had heard of it, while 6% had not. Importantly, the survey explored how respondents had encountered the term. The largest percentage (61%) had heard of it through the media (television, radio, newspapers, or internet portals), followed by 22% through private conversations, and 17% through various educational programs and lectures. The survey included 168 older respondents (over 65 years of age) from Virovitica-Podravina County, who expressed their agreement or disagreement with 18 statements (P1, P2, ..., P18) regarding trust in the media and the news they publish, as well as the importance of media literacy education related to disinformation and fake news. The statements are provided in Appendix 1 of this paper. The levels of agreement with the statements were as follows:

- 1 - I strongly disagree
- 2 - I disagree
- 3 - I neither agree nor disagree
- 4 - I agree
- 5 - I strongly agree

The degrees of agreement with each statement form an interval variable that can take values from 1 to 5.

In accordance with the research questions, the statements can be divided into the following groups:

I1: Trust in the media:

Statements:

- P1 1. I believe that I can trust most media.
- P2 2. I believe that I can trust the media that I personally use.
- P3 3. I believe that I can trust traditional media (e.g. print, television, radio)
- P4 4. I believe that I can trust online media (e.g. Internet portals)
- P5 5. I believe that I can trust social media (e.g. Facebook, YouTube, WhatsApp, etc.).

I2: Attitudes towards fake news

Statements:

- P6 6. I believe that fake news and disinformation are dangerous to others.
- P7 7. I believe that I have been exposed to fake news recently.
- P8 8. When I think about the news, I personally find it difficult to determine what is true information.
- P9 9. I always try to check the accuracy of news and information.
- P13 13. Two people can interpret the same news in completely different ways.

I3: News that the media distributes

Claims:

- P10 10. Media companies choose to report on topics that will attract the largest audience.
- P11 11. Audiences will pay more attention to news that matches their political beliefs.
- P12 12. News about conflicts is more likely to attract more attention.
- P16 16. The role of the media is to inform citizens about topics that are important to society.

I4: The importance of education in the field of disinformation and fake news

Claims:

- P14 14. I believe that I have enough skills to evaluate true news.
- P15 15. I believe that I have enough skills to evaluate the quality of sources of information.
- P17 17. Media literacy is important for critical understanding of news
- P18 18. In order to be able to recognize fake news well, we need to educate ourselves on the topic

Based on this, a table was created summarizing the results, grouped into four main categories of statements:

1. **Trust in the media (P1–P5)**
2. **Attitudes about fake news (P6–P9, P13)**
3. **News that the media distributes (P10–P12, P16)**
4. **Importance of education (P14, P15, P17, P18)**

Table 1 summarizes the key results from the analysis of statements about the attitudes of older people toward the media, fake news, and education.

Table 1. Results by groups of statements with the most frequent rating

Group of statements	Most frequent rating (Mod)
IU1: Trust in the media (P1-P5)	4
IU2: Attitudes about fake news (P6-P9, P13)	4
IU3: News that the media distributes (P10-P12, P16)	4
IU4: Importance of education (P14, P15, P17, P18)	4

Source: Author

For all statements, there is a high proportion of respondents who neither agree nor disagree (from 13.69% to 25%). For all statements about trust in the media, over 85% of respondents either do not have an explicit position on trust in the media, or they trust the media (more than 50%) or they trust completely. It is interesting to note that the largest number of respondents (14.29%) do not trust traditional media (print, television, radio). For the second group of statements, which express respondents' positions on fake news, the response frequencies are similar to those for statements about trust in the media. Specifically, 20.24% of respondents completely agree that they have been exposed to fake news in the recent period, and 22.02% of respondents completely agree that, when thinking about the news, it is personally difficult for them to determine what is true information. Regarding the statements about the news that the media distributes, 61.9% of respondents agree and 10.71% strongly agree that the audience pays more attention to news that aligns with their political beliefs. Additionally, 56.14% of respondents agree and 13.69% strongly agree that news about conflicts is more likely to attract attention.

Finally, for the last group of statements about the importance of education in the area of disinformation and fake news, a high percentage of respondents (over 80%) either do not have an explicit position on the importance of education or agree/strongly agree with the importance of education.

4.2. Descriptive statistical measures for summary variables

To gain a better overview of the respondents' views regarding each group of claims (I1, I2, I3, I4), the degrees of agreement for the claims within each group were summed up, and aggregated scores per respondent were calculated. These scores reflect attitudes toward:

1. Trust in the media (I1),
2. Attitudes about fake news (I2),
3. Attitudes about the news that the media distribute (I3), and
4. Attitudes about the importance of education in the field of disinformation and fake news (I4).

This process resulted in discrete numerical variables I1, I2, I3, and I4, which can take on values depending on the number of claims they cover. Basic descriptive statistical measures for these variables are given in Table 2.

Table 2: Descriptive statistical measures for summary variables I1, I2, I3, I4 (N=168)

	Number of statements	Summary variable	Median	Mode	Arithmetic mean	Standard deviation	Asymmetry	Kurtosis	K-S test
I1	5	10-25	19	20	18.7	2.7	-0.21	0.13	.123**
I2	5	10-24	18.5	18	18.5	2.7	-0.32	-0.04	.101**
I3	4	8-20	15	16	14.8	2.0	-0.28	0.49	.137**
I4	4	8-20	15	15	14.8	2.1	-0.37	0.49	.140**

* $p < .05$

** $p < .01$

Source: Author

Table 2 lists the following information for each group of statements:

- The number of associated statements,
- The range of values of the summary variable,
- The median (the value below which 50% of the data falls),
- The mode (the most common value in the data),
- The arithmetic mean,
- The standard deviation (the average deviation from the arithmetic mean),
- Measures of asymmetry (skewness) and flattening (kurtosis) of the distribution, and
- The result of the Kolmogorov-Smirnov test (K-S test), which tests the hypothesis of a normal data distribution.

For all groups of statements, the results of the Kolmogorov-Smirnov test indicate that the data are not samples from a population with a normal distribution ($p < \alpha = 0.05$). However, the data distributions are slightly negatively skewed (as indicated by the measure of asymmetry), meaning that higher values are more prevalent in the data. For such distributions, the following relationship holds: **Arithmetic Mean $\leq$ Median $\leq$ Mode**.

If the medians from Table 3 are divided by the corresponding number of claims, the average value of the median per claim for each group of claims can be obtained.

Table 3. Average Median per Statement Within Groups of Statements I1, I2, I3, I4

Group of Statements	Average Median per Statement
I1: Trust in the Media	3.8
I2: Attitudes About Fake News	3.7
I3: News That the Media Distributes	3.75
I4: Importance of Education in the Area of Disinformation and Fake News	3.75

Source: Author

More than 50% of respondents gave an average score of more than 3.8 for the statement about trust in the media. More than 50% of the respondents gave an average rating of more than 3.7 for the statement about the attitude towards fake news. More than 50% of the respondents gave an average score of more than 3.75 for the statement about the news that the media publishes. More than 50% of the respondents gave an average rating for the statement about the importance of education in the field of disinformation and fake news higher than 3.75

4.3. Recommendations for further research

Based on the results of this study and the observed patterns in older adults' attitudes toward the media, fake news, and disinformation, several recommendations for future research can be formulated:

- 1. Expanding the Geographical Scope of the Study**

Future research should cover a wider geographical area to enable comparisons of attitudes toward the media between urban and rural areas. This would help identify specific needs for media literacy in different parts of the country, especially given the differences in access to information and digital resources.

- 2. Comparing Age Groups**

Research involving younger generations, particularly in relation to attitudes toward fake news and trust in the media, could provide deeper insights into the differences between older and younger populations. This would highlight generational differences and the need for tailored approaches to media literacy.

- 3. Investigating the Impact of Digital Education on Reducing Disinformation**

Future studies should investigate the effectiveness of educational programs aimed at older adults in recognizing fake news and disinformation. Using experimental methods, researchers could assess how education contributes to a better understanding of media content and enhances critical thinking.

- 4. Analysis of Trust in Different Types of Media**

Further research should examine in more detail the trust of older people toward different types of media (traditional media, online media, and social networks). This would provide a clearer picture of the specific challenges and risks for older adults regarding misinformation across these media channels.

- 5. Longitudinal Research on Changes in Attitudes**

It is recommended to conduct longitudinal research to monitor changes in the attitudes of older adults toward the media and misinformation over time. Such research would allow for a better understanding of the impact of technological developments and changes in the media landscape on the trust of older people in the media.

These recommendations can help further develop strategies to increase media literacy and reduce exposure to misinformation among the older population.

5. CONCLUSION

With a significant percentage of respondents neither agreeing nor disagreeing with the statements, the majority of older respondents exhibit high trust in the media, despite believing that they have been exposed to fake news recently and finding it difficult to determine what constitutes true information. Additionally, a high percentage of respondents (>50%) believe that the media pander to the audience, with the audience more likely to pay attention to news that aligns with their political beliefs and news about conflicts, which tends to attract more attention.

Respondents value education in the field of disinformation and fake news, yet they also believe they possess sufficient skills to assess the truthfulness of news and the quality of information sources. This may be key to understanding their trust in the media. The survey results show that the majority of older people in Virovitica-Podravina County have a moderately high level of trust in the media, even though they are aware of the presence of fake news and disinformation. Despite this trust, respondents recognize the importance of media literacy education, highlighting the need for further education in recognizing false information. It is particularly notable that respondents perceive the media as often attracting audiences with news that aligns with their political beliefs and sensational topics. Further research should focus on expanding the population sample geographically, as this study primarily included respondents from urban areas. If future research were divided into two criteria—urban and rural areas of Virovitica-Podravina County—with a sample of the same population (65+), and using methods such as analysis of variance, a linear comparison of the relationship between these two criteria could be made. This would confirm or refute whether there are differences in trust in the media and media content among people aged over 65 living in rural areas compared to those in urban areas. The importance of educating older people in digital literacy is crucial for their ability to navigate an increasingly complex media environment. This paper highlights the need to develop programs that enable older individuals to think critically and better filter information, thereby reducing their exposure to misinformation.

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GENDER EQUALITY IN CORPORATE GOVERNANCE: A KEY TO SUSTAINABLE DEVELOPMENT AND COMPETITIVENESS

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ABSTRACT

This paper investigates gender inequality in corporate governance in Croatia, where women hold only 19% of management board positions and 25% of supervisory board roles. Through qualitative analysis of secondary sources, the study analyses company-level practices, legislative initiatives, and theoretical approaches including Diversity Theory and Agency Theory. Case studies from Hrvatski Telekom, Atlantic Grupa, and Podravka illustrate progress at the firm level, while comparisons with the EU average (34.7%) highlight Croatia's structural lag. Despite the adoption of Directive (EU) 2022/2381, the findings indicate that declarative support alone is insufficient without enforceable mechanisms and cultural transformation. The paper concludes that achieving gender-balanced governance is essential not only for fairness but also for corporate resilience, sustainable development, and long-term competitiveness.

Keywords: Competitiveness, Corporate governance, Gender equality, Management, Sustainable development

1. INTRODUCTION

Gender equality in corporate governance is becoming an increasingly important issue not only in the field of human rights, but also in the context of economic efficiency, sustainability and competitiveness of companies. Although some progress has been recorded in recent decades, women are still underrepresented in management and supervisory positions, both at the European Union level and in Croatia. According to data from the European Institute for Gender Equality (EIGE), women make up just over 30% of board members in the EU, while the number of women in leadership positions is even lower, which points to structural barriers and gender inequality in access to economic resources and decision-making power (EIGE, 2023). In the context of the Republic of Croatia, the situation is further aggravated by long-standing social stereotypes, the lack of systematic support for women in their careers, and the slow implementation of European guidelines and standards. Although there are positive examples of companies that are recording progress in increasing the share of women in management, these cases are still exceptions, not the rule. This paper analyses the current state of gender equality in corporate governance in Croatia, identifies examples of good practice and highlights the importance of integrating Directive (EU) 2022/2381 on gender balance among directors of listed companies into the national legislative framework. This contributes to the understanding of how institutional changes, along with changes in organizational culture, can enable fairer, more efficient and more competitive governance in the business sector. The corporate governance system, as a key mechanism for ensuring management accountability to shareholders and other stakeholders, includes a number of internal and external instruments, including the composition and work of supervisory boards (Tipurić, 2006; Tipurić, 2008).

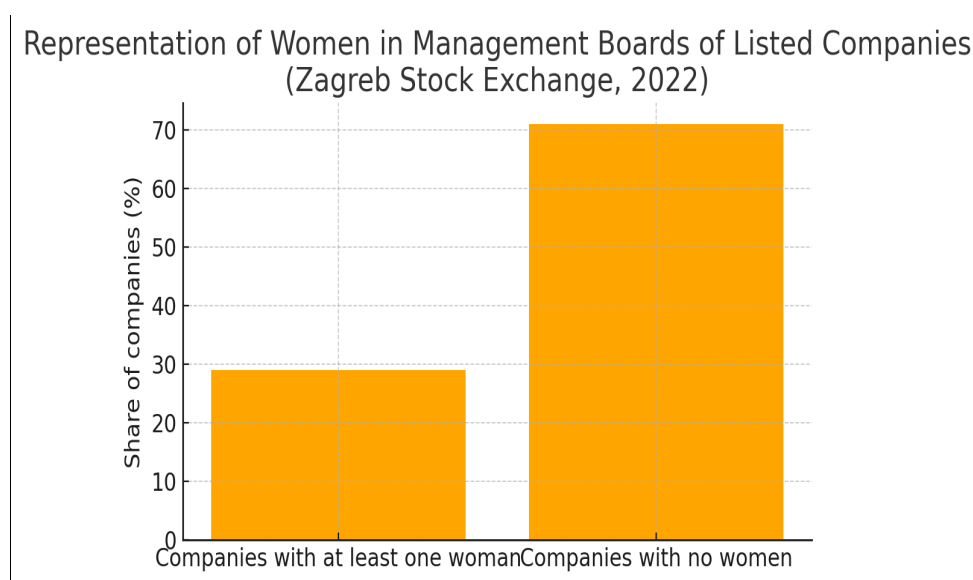
In the Croatian context, authors such as Tipurić particularly emphasize the importance of governing bodies as instruments for protecting the interests of owners and ensuring business efficiency. In accordance with the Corporate Governance Code (HANFA and Zagreb Stock Exchange, 2020), diversity in boards – especially gender – is increasingly highlighted as an important component of quality and responsible corporate governance, although in practice it is still rarely institutionalized through quotas or binding mechanisms (Dubrovski, 2023). Understanding the problem of gender equality in corporate governance requires a theoretical framework that encompasses different approaches. Diversity Theory emphasizes that diverse board compositions bring a broader perspective, greater creativity and better adaptation to the market. For example, Atlantic Grupa's strong representation of women in leadership illustrates how diversity in management can lead to broader perspectives and improved adaptability. On the other hand, Social Exchange Theory suggests that the inclusion of women in management structures increases trust among employees and contributes to social cohesion within the organization. Agency theory, which deals with the relationship between owners and managers, is also used to explain the role of supervisory boards and management boards – it is suggested that the inclusion of women can reduce agency costs through greater accountability and ethics in management.

2. LEGAL AND CULTURAL BARRIERS TO GENDER BALANCE IN CROATIA

The report concludes that, while there are positive examples and will at the declarative level, the EU needs to make further efforts to ensure that gender balance does not remain just a strategic objective, but becomes an integrated part of all policies, budgets and practices. In this sense, Directive (EU) 2022/2381 on gender balance on management boards represents a step forward – as it introduces measurable targets and time frames – but only synergy between legislation, financial instruments and cultural change will enable true transformation (ECA, 2021). They also cite the fact that gender analysis is often neglected in the programming of funds from the European Social Fund and the European Regional Development Fund. Only a small number of Member States systematically include gender indicators and commitments in their plans and reports. Croatia, unfortunately, belongs to those countries where the institutional framework is still weak, and implementation is fragmented and left to the enthusiasm of individuals rather than a systematic approach (ECA, 2021). One of the main challenges highlighted by the report is the lack of binding targets and monitoring mechanisms. In many cases, efforts towards gender balance have relied on recommendations rather than binding quotas or rules. This has reduced the effectiveness of EU strategies, despite well-established targets, such as the inclusion of 75% of women in the labour market or the reduction of the gender pay gap (European Commission, 2020). In the report, the auditors concluded that the European Commission's policies and measures in the field of gender equality were partially effective, but also insufficiently integrated into EU budgetary policy and funds. Although there were programmes and financial resources dedicated to promoting gender equality, the gender perspective was often not systematically included in the design and implementation of policies – especially in areas such as employment, innovation and regional development (ECA, 2021). The European Union has formally advocated gender equality as a fundamental value and objective of its policies for more than two decades (European Court of Auditors, 2021). Despite numerous strategic documents, declarations and programmes, the actual impact at the Member State level remains limited, as confirmed by the European Court of Auditors' Special Report No. 10/2021, "Gender equality in the EU – more work needed on the ground" (ECA, 2021).

National-level research confirms this gap between legal efforts and concrete practice. Vrdoljak Raguž, Krželj-Čolović and Milić Beran (2018) point out in their paper that, despite the adoption of policies and strategies aligned with European guidelines, women in Croatia still encounter structural obstacles when entering boardrooms. Their analysis shows that efforts to increase the share of women are most often declarative and insufficiently accompanied by concrete measures and implementation mechanisms, especially in the private sector. According to data from the Zagreb Stock Exchange, the share of women on the management and supervisory boards of companies listed on the stock exchange remains extremely low. As many as 71% of these companies do not have a single woman on either the Management or Supervisory Board, despite the fact that more than 60% of highly educated people in Croatia are women. This disparity points to deep-rooted decision-making patterns and a systematic neglect of gender balance in corporate structures. The following graph illustrates this worrying data:

Figure 1. Representation of women in the management boards of companies listed on the Zagreb Stock Exchange (2022)



Source: Processed according to data from the Zagreb Stock Exchange, 2022.

Table 1. Share of women's representation in management and supervisory boards

Category	Share (%)
Companies with at least one woman on the board or supervisory board	29%
Companies without a single woman on the board or supervisory board	71%

Source: Zagreb Stock Exchange, 2022.

3. THE ROLE OF THE EUROPEAN UNION IN PROMOTING GENDER BALANCE: BETWEEN STRATEGY AND REALITY

The European Union has formally committed to gender equality as a fundamental value and objective of its policies for more than two decades (European Court of Auditors, 2021). Despite numerous strategic documents, declarations and programmes, the actual impact at Member State level remains limited, as confirmed by the European Court of Auditors' Special Report No 10/2021, "Gender equality in the EU – more work needed on the ground" (ECA, 2021). In that report, the auditors concluded that the European Commission's policies and measures in the field of gender equality were partially effective, but also insufficiently integrated into EU budgetary policy and funds. Although there were programmes and financial resources dedicated to promoting gender equality, the gender perspective was often not systematically integrated into policy design and implementation – particularly in areas such as employment, innovation and regional development (ECA, 2021). One of the main challenges highlighted by the report is the lack of binding targets and monitoring mechanisms. In many cases, efforts towards gender balance have relied on recommendations rather than binding quotas or rules. This has reduced the effectiveness of EU strategies, despite well-established targets, such as the inclusion of 75% of women in the labour market or the reduction of the gender pay gap (European Commission, 2020). As an illustration, they cite the fact that gender analysis is often neglected in the programming of funds from the European Social Fund and the European Regional Development Fund. Only a small number of Member States systematically include gender indicators and commitments in their plans and reports. Croatia, unfortunately, belongs to those countries where the institutional framework is still weak, and implementation is fragmented and left to the enthusiasm of individuals rather than a systematic approach (ECA, 2021). The report concludes that, while there are positive examples and will at the declarative level, the EU needs to make further efforts to ensure that gender balance does not remain just a strategic objective, but becomes an integrated part of all policies, budgets and practices. In this sense, Directive (EU) 2022/2381 on gender balance on boards represents a step forward – as it introduces measurable targets and time frames – but only synergy between legislation, financial instruments and cultural change will enable a true transformation (European Parliament and Council of the EU, 2022). In many EU Member States, soft forms of regulation such as corporate governance codes have played an important role in promoting board diversity. Although such codes do not have legally binding force, they often operate on a "comply or explain" basis, whereby companies are expected to explain in their reports the reasons for deviations from recommended practices (Tipurić, 2008). However, the absence of mandatory quotas and insufficiently precise guidelines in many codes reduce their real impact (Gargantini and Siri, 2023). According to Klettner (2016), soft regulations such as codes may have the potential to transform corporate culture more profoundly than traditional legal measures, especially when combined with internal organizational initiatives. However, the challenge is that the effectiveness of these measures varies across member states, depending on the national context and corporate will for change.

4. RECOMMENDATIONS AND GUIDELINES FOR STRENGTHENING GENDER BALANCE IN CORPORATE MANAGEMENT

Further progress in the field of gender balance requires a shift from declarative support to implementation mechanisms and a strategic approach within organizations (EIGE, 2023). In this context, recommendations can be directed towards three key dimensions: institutional commitments, organizational practice and changing social perceptions.

At the institutional level, it is recommended to introduce mandatory and standardized reporting on gender representation in management bodies for all subjects of public interest (European Commission, 2022). Such reporting should become part of corporate reporting practices, which would enable greater transparency and comparability between companies. Also, it is advisable to consider the introduction of mechanisms for monitoring and evaluating the impact of legislative measures, especially after the implementation of directives at the national level. Within the framework of organizational practices, it is important to develop internal policies that enable the identification and development of female personnel, with an emphasis on mentoring programs, work-life balance, and systems for objective evaluation of potential when selecting managerial personnel (Catalyst, 2020). Incorporating gender equality issues into human resource management strategies can ensure the sustainability of positive changes in the long term. Finally, it is crucial to encourage a change in perception and break down deeply rooted social stereotypes about the role of women in the business world (EIGE, 2021). Public campaigns, media visibility of successful women in leadership positions, as well as educating young people about the importance of equality can have a powerful transformational effect. Establishing gender-balanced structures in the economy cannot be viewed solely as a regulatory obligation, but as an opportunity to empower organizations and society as a whole.

5. CONCLUSION

Although it could be assumed that the issue of gender equality in management positions in modern society has already been resolved, reality reminds us that the road to equality is still long. The need for legal regulations and prescribed quotas, such as those of 33% and 40% prescribed by the EU Directive, indicates that changes do not come spontaneously. The fact that such measures are still needed, despite declarative support for the principles of equality, shows that institutional will is not enough without a deeper cultural and organizational transformation. The regulatory framework undoubtedly plays a key role in guiding change, but true change only occurs when organizations themselves recognize the importance of inclusiveness and diversity as part of their own vision and responsibility to society. This is precisely why it is necessary to raise awareness of the importance of gender-balanced management bodies – not only for the sake of compliance with regulations, but also for the sake of contributing to a fairer, more resilient and more socially responsible economy. This paper is based on a qualitative analysis of secondary sources, including policy documents, legislation, statistical databases, corporate reports, and academic literature. This methodological approach allowed for a comprehensive and contextual understanding of the challenges and progress related to gender equality in corporate governance in Croatia.

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IMPLICATIONS OF EMOTIONAL INTELLIGENCE IN THE WORKPLACE ON JOB PERFORMANCE AND WELL-BEING

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ABSTRACT

This paper investigates the pivotal role of emotional intelligence (EI) in enhancing job performance and well-being within modern workplace environments. Drawing on established theoretical models and empirical evidence, the study examines how the abilities to perceive, express, and manage emotions can directly influence professional effectiveness, interpersonal relationships, and overall psychological health. By exploring the connections between emotional intelligence, employee productivity, and psychological well-being, this study aims to contribute to the understanding of factors influencing workplace dynamics and employee outcomes. A quantitative research design employing structured surveys was implemented across diverse industries. Statistical analyses revealed that higher levels of EI are positively associated with superior job performance and enhanced well-being. The results suggest that developing emotional competencies can foster a supportive work culture, reduce stress, and drive organizational success. The implications extend to talent management, training initiatives, and future research on employee development.

Keywords: *Emotional Intelligence, Job Performance, Well-Being, Workplace*

1.INTRODUCTION

In today's rapidly evolving business environment, the significance of human capital has expanded beyond technical skills and cognitive capabilities. Increasingly, organizations are placing emphasis on the role of emotional intelligence—the ability to understand, interpret, and regulate emotions—in shaping workplace dynamics. The increasing emphasis on emotional intelligence in the work environment stems from the realization that technical skills and cognitive intelligence alone are insufficient to ensure job success and employee satisfaction. Effectively managing emotions, communicating proficiently, and addressing interpersonal challenges are crucial factors in cultivating a favorable work environment and improving the overall performance of an organization. This paper delves into the multifaceted construct of EI, examining its influence on job performance and overall well-being. By integrating theoretical perspectives with empirical findings, the study explores how emotional competencies contribute to improved decision-making, enhanced leadership, and effective stress management.

The research not only addresses the academic discourse on EI but also offers practical recommendations for organizations seeking to cultivate a more adaptive and resilient workforce. Emotional intelligence is often perceived as a complex amalgamation of competencies and general dispositions that facilitate adaptive personal functioning and effective coping with the demands of the environment. This construct encompasses a wide array of emotional and personal aspects that are not strictly limited to emotions alone. It encompasses various factors such as motivation, personality traits, temperament, character, and social skills, all of which play significant roles in shaping an individual's overall emotional intelligence (Zeidner, Matthews & Roberts, 2004). Within the framework of EI, individuals draw upon their emotional knowledge and awareness, in combination with these diverse personal characteristics, to navigate life's challenges and interactions successfully. These elements, although loosely related to emotion, collectively participate to an individual's emotional intelligence and their ability to manage, understand and utilize emotions for effective decision-making, problem-solving, and overall well-being (Zeidner, Matthews & Roberts, 2004). The integration of various emotional and personal components within the concept of emotional intelligence highlights its multidimensional nature and underscores the significance of a broader perspective when exploring the impact of emotional intelligence on human behavior and functioning. As researchers and practitioners delve further into this multifaceted construct, a comprehensive understanding of its intricate components and their interplay can be achieved, yielding valuable insights into enhancing personal development and fostering positive interpersonal relationships. (Zeidner, Matthews & Roberts, 2004). At its core, emotional intelligence refers to the ability to process emotional information and use it effectively in reasoning and problem-solving (Prins, Van Niekerk & Weyers, 2018). Early conceptualizations of EI were significantly influenced by the work of Salovey and Mayer (1990), who defined it as the capacity to perceive, understand, and regulate emotions in oneself and others. Their ability model laid the groundwork for a systematic exploration of emotional processes, emphasizing that emotional information is just as critical as cognitive data when making decisions and navigating complex social interactions (Kerr et. Al., 2005). In contrast, Daniel Goleman's research in 1998 further popularized EI by framing it as a set of competencies essential for success in both personal and professional domains. Goleman argued that traditional measures of intelligence, such as IQ, are insufficient to predict performance in real-world scenarios. Instead, abilities like self-awareness, self-regulation, motivation, empathy, and social skills play a crucial role in effective leadership, teamwork, and stress management. This multidimensional perspective underscores that EI is not merely about understanding emotions but also about applying that understanding to foster positive outcomes in the workplace and it has profound implications for workplace training and development. Organizations that invest in EI training programs may help employees enhance their self-regulation and interpersonal skills, ultimately leading to improved job performance and better stress management (Gagari & Chatterjea, 2018).

2. EMOTIONAL INTELLIGENCE IN THE WORKPLACE

Historically, success in the workplace was attributed largely to cognitive intelligence and technical expertise. However, the advent of globalization and the increasing complexity of work environments have necessitated a broader skill set. Emotional intelligence has emerged as a critical factor in navigating interpersonal conflicts, managing change, and fostering a collaborative culture. Organizations that prioritize EI in their leadership and training programs have reported improvements in team cohesion, customer satisfaction, and overall productivity.

This research contributes to the growing body of literature on emotional intelligence by bridging theoretical constructs with practical outcomes. The findings aim to provide insights that can inform organizational practices, such as recruitment, training, and performance evaluation (Prins, Van Niekerk & Weyers, 2018). By understanding the mechanisms through which EI influences workplace dynamics, organizations can better tailor interventions to boost employee performance and satisfaction. Different models of EI have been proposed over the years. One study concluded that sales professionals need to acquire the level of emotional intelligence necessary to apply appropriate emotions in sales situations. Results also showed that sales professionals with higher levels of emotional intelligence achieve better sales results compared to those with lower levels of emotional intelligence. (Buneta, Ćosić & Ćorluka, 2022). Other research explored the enhancement of emotional intelligence in the workplace and its impact on employee performance. Findings underscore that emotional intelligence and work-life balance significantly contribute to organizational success by fostering adaptability, empathy, leadership, and teamwork. Recognizing the importance of this competence, the study recommends regular workplace programs facilitated by the training and development team to elevate emotional intelligence, ultimately enhancing workplace performance. (Kannaiah & Shanthi, 2015). Furthermore, in his research Goleman acknowledged that some capable executives or managers could face setbacks in their professional journeys because of their struggles with handling stress or building effective interpersonal connections. (Cherniss et. al., 1998). The recognition of the value of emotionally intelligent employees led business leaders to appreciate the importance of these competencies within an enterprise. However, uncertainty arose regarding whether adults without these emotional competencies could develop and enhance them. Certain business leaders raised doubts regarding the possibility of enhancing emotional intelligence in adults, believing that these skills were predominantly developed early in life and challenging to modify in adulthood. (Cherniss et. al., 1998).

The reality exists somewhere between these opposing perspectives. An increasing volume of studies on emotional learning and behavioral change indicates that nurturing emotional intelligence among individuals across all age groups in a professional setting is indeed achievable. However, the efficacy of such programs depends on recognizing the distinction between two types of learning - surface learning and deep learning (Cherniss et. al., 1998). In the dynamic landscape of the information economy, the retention of talent has emerged as a paramount concern for organizational leaders. Empathy, a fundamental human quality, has always been integral to nurturing and retaining valuable personnel. However, in today's context, the significance of empathy has grown exponentially. Embracing empathy is no longer a choice; it is a strategic necessity that can determine an organization's resilience and competitiveness in the modern business landscape. (Achor, Goleman & McKee, 2017). In addition, emotional intelligence contributes significantly to improved decision-making. By acknowledging and understanding their emotions, individuals can make more informed choices and avoid impulsive reactions driven solely by feelings. Emotionally intelligent decision-makers weigh emotional input alongside rational analysis, leading to more balanced and thoughtful judgments (Neale, Spencer-Arnell & Wilson, 2009). Ultimately, the development of emotional intelligence empowers individuals to harness the potential of their emotions as valuable resources, driving them toward greater motivation and achievement in the workplace. The ability to leverage emotions effectively fosters a more resilient, adaptive, and successful professional trajectory, enriching both personal growth and organizational outcomes. (Neale, Spencer-Arnell & Wilson, 2009)

2.1. Emotional Intelligence and Job Performance

Since its beginning, the concept of emotional intelligence has risen to prominence as a significant framework for comprehending excellent job performance and effective leadership in life. Empirical evidence has consistently supported the notion that enhancing emotional intelligence equips individuals with increased efficiency, productivity, and overall success. Concurrently, organizations can also benefit by recruiting emotionally intelligent individuals and providing opportunities to develop these skills in the workplace, thereby enhancing overall productivity (Chakrabarti & Chatterjea, 2018). Goleman (1998) conducted research highlighting the importance of self-awareness skills in explaining the job performance of financial planners. Furthermore, the ability for precise self-assessment has been recognized as a common trait among managers in various organizations (Boyatzis, 1982) and among top achievers in knowledge-based sectors (Kelley, 1998). Noteworthy research conducted by Boyatzis (1982), Holahan and Sears (1995) and Saks (1995) has emphasized the pivotal role of self-confidence in influencing job performance. (Chakrabarti & Chatterjea, 2018)

Furthermore, scholars like, Boyatzis and Burrus (1995), Lusch and Serkenci (1990), Spencer and Spencer (1993), Rahim and Psenicka (1996) and Boyatzis (1982) have identified emotional self-regulation as a significant contributing factor to outstanding job performance. These investigations collectively underscore the crucial importance of emotional intelligence skills, including self-awareness, self-evaluation, self-assurance, and emotional self-regulation, in promoting exceptional performance across various professional fields (Chakrabarti & Chatterjea, 2018). The development and enhancement of emotional intelligence (EI) skills, such as empathy and impulse control, play a crucial role in fostering successful job performance and can significantly impact workers' ability to cope with their emotions effectively. As individuals develop these crucial Emotional Intelligence competencies, they gain increased skill in comprehending and controlling their own emotions as well as the emotions of those around them, leading to more effective interpersonal interactions and decision-making. (Oginska-Bulik, 2015)

Emotional competence plays a pivotal role in the success of executives and the profitability of organizations. According to the Center for Creative Leadership, deficiencies in emotional competence are among the top three causes of career derailment for executives. These deficiencies encompass challenges in handling change, teamwork, and interpersonal relationships. Notably, the influence of emotions can even be quantified in terms of financial outcomes. (Oginska-Bulik, 2015)

2.2. Emotional Intelligence and Well-being

Psychological well-being is understood to flourish when individuals possess a sense of independence, which fosters feelings of control, effectiveness, self-motivation, self-confidence, and competence. This sense of independence provides a conducive environment for individuals to express their authentic selves, live according to their values, and fulfill their life purposes, consequently influencing their spiritual well-being positively (Prins, Niekerk & Weyers, 2011). Ahmadi et.al. investigated the relationship between emotional intelligence and psychological well-being among 800 employees in 70 branches of Mehr Eqtesad Bank in Tehran, Iran. The research reveals that emotional intelligence significantly and positively influences the psychological well-being of employees. Employees in the study demonstrated satisfactory levels of both emotional intelligence and psychological well-being.

These findings emphasize the importance of enhancing emotional intelligence, particularly in areas such as self-awareness, self-regulation, self-motivation, social awareness, and social skills, to promote positive outcomes in the workplace (Ahmadiya, et. al., 2014). Furthermore, Gondal & Husain in their research did the investigation of the impact of Intelligence Quotient (IQ) and Emotional Intelligence (EI) on employees' performance within Pakistan's telecom sector. The research, involving 300 employees, reveals that IQ alone is not significantly related to performance, highlighting that cognitive intelligence is not a strong determinant of employee success. In contrast, Emotional Intelligence exhibits a significant positive correlation with performance, emphasizing its crucial role in the workplace. The study suggests that organizations can enhance their overall effectiveness by incorporating emotional intelligence measures alongside traditional IQ assessments in their human resource practices, recognizing the pivotal role of emotional intelligence in achieving organizational success. Ultimately, this research underscores the importance of emotional intelligence as a key predictor of success, surpassing traditional IQ measures in the workplace. (Gondal & Husain, 2013)

On the other hand, Dr. Reuven Bar-On's groundbreaking research focused on emotional and social intelligence, which was assessed using EQ as a measurement tool, has revealed the vital role of emotional competencies in various aspects of life, particularly in professional settings. Enhancing EQ can lead to numerous positive outcomes, ranging from increased productivity and better relationships to improved mental abilities and overall well-being. Recognizing the importance of emotional intelligence is becoming increasingly prevalent worldwide, even though understanding and managing emotions effectively can still present challenges for individuals. Furthermore, Bar-On's research suggests that emotional and social intelligence and personality traits represent distinct constructs with limited correlations. (Singh, 2006)

In professional settings, EI is recognized as a key driver of interpersonal effectiveness. Research indicates that employees with high emotional intelligence can better navigate stressful situations, engage in constructive conflict resolution, and foster positive relationships with colleagues and clients. The integration of EI into everyday work processes has been associated with higher productivity, increased job satisfaction, and lower turnover rates. Organizations are increasingly incorporating EI assessments in their selection and development processes, highlighting its growing importance in human resource management.

3. RESEARCH METHODOLOGY - RESULTS AND FINDINGS

This study adopts a quantitative research design to explore the relationship between emotional intelligence, job performance, and well-being in the workplace. Data were gathered using structured questionnaires. The quantitative approach allows generalization of findings across the target population. A purposive sampling method was employed to capture a representative mix of employees from sectors such as food and beverage, telecommunications, and banking. The final sample consisted of 50 participants with varied demographics, including a balanced distribution of age, gender, and work experience. This diversity was crucial to ensuring that the results reflect a broad range of professional experiences and perspectives. Three main instruments were utilized: (1) Emotional Competence Questionnaire (ECQ-45): Designed to measure the three dimensions of EI—perception, expression, and management of emotions (UEK-45; Takšić, 2002); (2) Job Performance Scale (JPS): Adapted from the Individual Work Performance Questionnaire (IWPQ), this scale assesses various aspects of job performance including problem-solving, communication, initiative, and teamwork; (3) General Health Questionnaire (GHQ): Modified from the WHO-5 Well-Being Index, this tool measures overall

well-being and stress levels. In the next table, general and demographic data about the respondents are presented. It is noticeable that the majority of respondents are females, specifically 70%, while the percentage of male respondents is 30% ($p < 0.001$). Also, table contains data on the distribution of participants according to their age and length of work experience.

		n (%)	p*
Gender	Male	35 (70)	< 0,001
	Female	15 (30)	< 0,001
		SD ± AM	
Age		27.8 ± 9.99	
Work experience		12.9 ± 9.60	
AM - arithmetic mean, SD - standard deviation			

Table 1: Presentation of general data of respondents

The analysis of the UEK-45 revealed that participants scored highest on the ability to perceive and understand emotions, indicating a strong capacity for recognizing emotional cues. However, scores in emotion management were comparatively lower, suggesting an area for potential intervention. Detailed analysis showed that while respondents generally reported positive self-assessment in expressing and labeling emotions, there was noticeable variability in their ability to regulate negative emotional responses.

UEK-45		Job Performance Scale (JPS)
The ability to perceive and understand emotions.	r	0.50
	P	<0.001
The ability to express and label emotions.	r	0.41
	P	0.003
The ability to manage emotions.	r	0.38
	P	0.007

Table 2: Relations between UEK-45 and Job Performance Scale (JPS)

The results from Job Performance Scale indicated high self-rated scores in teamwork, communication, and initiative. A moderate positive correlation was observed between the ability to perceive emotions and job performance ($r=0.50$, $p<0.001$), highlighting that employees who are more attuned to emotional cues tend to perform better in collaborative tasks. Additionally, weaker but statistically significant correlations were found between the expression and management of emotions and job performance, suggesting that these facets, though important, may require further development through targeted training programs.

UEK-45		General Health Questionnaire (GHQ)
The ability to perceive and understand emotions.	r	0.62
	P	<0.001
The ability to express and label emotions.	r	0.45
	P	0.001
The ability to manage emotions.	r	0.36
	P	0.009

Table 3: Relations between UEK-45 and General Health Questionnaire (GHQ)

The General Health Questionnaire data demonstrated that participants generally perceive their well-being positively, with an average score indicating satisfactory mental health. Nonetheless, some respondents reported higher stress levels, particularly in balancing work and personal life. A significant positive correlation between EI and well-being ($r=0.62$, $p<0.001$ for perception; $r=0.45$, $p=0.001$ for expression) reinforces the idea that emotional competencies can serve as protective factors against workplace stress and burnout.

Beyond correlation analysis, subgroup comparisons were performed to explore differences across age groups and levels of work experience. Results illustrate that younger employees tended to score higher on measures of emotional perception, while more experienced employees demonstrated better emotion management skills. These nuanced findings suggest that developmental and experiential factors play a role in shaping different aspects of EI.

4. CONCLUSION

This paper has provided a comprehensive exploration of the critical role of emotional intelligence in enhancing job performance and well-being. The findings confirm that EI is a multidimensional construct, influencing not only individual performance but also the overall organizational climate. By developing emotional competencies, employees are better positioned to manage stress, collaborate effectively, and drive innovation. This research provides a comprehensive snapshot of the respondents' general demographics. Notably, a gender imbalance is evident, with 70% female and 30% male participants, signifying a potential gender-related trend within the surveyed organizations or industries. The results of this study shed light on the significant relationship between emotional intelligence, as measured by the UEK-45 constructs, and job performance as assessed by the Job Performance Scale (JPS). The findings reveal a consistent pattern of positive correlations between the three components of emotional intelligence and job performance. Furthermore, the findings emphasize the relevance of emotional intelligence in the context of job performance. Enhancing emotional intelligence skills, encompassing the ability to perceive, understand, express, label, and manage emotions, can potentially contribute to improved job performance and overall workplace success. Organizations and individuals alike may benefit from recognizing and nurturing these skills as a means of enhancing their professional effectiveness and productivity. This research underscores the value of continued exploration into the interplay between emotional intelligence and job performance, which could inform strategies for personal and professional development in the workplace. As well, results provide valuable insights into the relationship between emotional intelligence, as measured by the UEK-45 constructs, and general health as assessed by the General Health Questionnaire (GHQ).

The results indicate that there is a significant positive correlation between the ability to perceive and understand emotions, the ability to express and label emotions, and the ability to manage emotions, with scores on the GHQ. This study collectively underscore the importance of emotional intelligence in contributing to overall well-being and health. Enhancing one's emotional intelligence skills, particularly in perceiving, understanding, expressing, labeling, and managing emotions, may be a valuable asset for promoting better mental and physical health. This research highlights the need for further exploration of the complex interplay between emotional intelligence and health outcomes, which could have implications for personal development and workplace interventions aimed at improving emotional competence. Despite the valuable insights provided, the study has some limitations. The reliance on self-report questionnaires may introduce subjective bias, and the cross-sectional design limits causal interpretations. Future research could incorporate longitudinal designs and objective performance measures to further validate the observed relationships. Thus, future studies should examine the long-term effects of EI training on employee outcomes and consider the impact of organizational culture on the development of emotional competencies. The organizations that foster EI are likely to see improvements in productivity, reduced stress levels, and higher employee satisfaction. Future research should continue to investigate the pathways through which EI impacts work outcomes, with an eye toward developing robust training programs and supportive organizational policies.

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THE INFLUENCE OF EDUCATION AND RELIGION ON ECONOMIC DEVELOPMENT

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ABSTRACT

The paper examines the influence of education and religion on economic development and analyses the key challenges and opportunities that can be exploited in achieving development. It is emphasized that a quality education system can contribute significantly to increasing productivity, developing high-tech industries and strengthening a country's global competitiveness. Particular attention is paid to the modernization of the curriculum, teacher training and the integration of STEM subjects into the education system. Equal access to quality education for all citizens, regardless of socio-economic status, is recognized as key to reducing social inequalities and promoting social mobility. On the other hand, it is recognised that non-economic factors, such as religion, can play an important role in the development of the economy. Religion is considered to be one of the most important non-economic factors that form the basic institutional infrastructure of a society. The economic thought about religion and economic development is not new; it is even mentioned as early as the Middle Ages in the 13th century. More recently, in the last three decades, a new discipline of religious economics has been founded, applied and developed. The purpose of this paper is to determine the influence of education and religion on economic development and to establish the relationship between education, religion and economic development or economic growth. In this paper, literature review is used as a research method. By synthesizing the research findings on the relationship between education, religion and economic development, it becomes clear that this area is increasingly becoming an issue. According to the literature analysed, the studies argue that education has a positive impact on economic growth, while religion can have both a positive and negative impact on the economic development of a particular country.

Keywords: *economic growth, education, non-economic factor, religion*

1. INTRODUCTION

Education is recognized as one of the key factors for economic development and social progress. It not only enables individuals to acquire the knowledge and skills they need for their personal and professional development, but also contributes to the development of innovation, increased productivity and the creation of a competitive workforce.

In the modern globalized world, a high quality education system becomes the foundation for achieving any country's economic goals. On the other hand, it is also recognised that non-economic factors, such as religion, can play an important role in the development of the economy. The Republic of Croatia faces numerous challenges in its economic development, including challenges in the labour market, slow economic growth and the need for technological innovation. In this context, the education system plays a key role in creating the conditions for sustainable and inclusive economic growth. The question of how the education system can be more effectively aligned with the needs of the labour market and economic priorities is becoming increasingly important. The purpose of this paper is to determine the influence of education and religion on economic development and to establish the relationship between education, religion and economic development or economic growth. The paper is based on a review of existing literature, including examples of good practice from other countries, as well as a critical review of current policy and practice in the Croatian education system. Recommendations for improving education policy will provide guidelines for achieving sustainable economic growth and Croatia's long-term competitiveness in the global market.

2. INTERDEPENDENCE BETWEEN ECONOMIC DEVELOPMENT AND THE EDUCATION SYSTEM

This chapter examines the interdependence of education systems and economic development, with a particular focus on the role of education as a driver of technological progress, innovation and social mobility. It analyses the link between education and the labour market as well as the impact of the education system on reducing economic inequality and discusses how education can foster the development of new economic activities. It also addresses the importance of developing education in STEM (science, technology, engineering and mathematics) subjects, which are key to modern economic growth and global competitiveness. It shows how the education system can become the foundation for long-term economic progress through strategic investment and reform.

2.1. Education as a driver of technological progress and innovation

Education plays a key role in promoting technological progress and innovation. Historically, industrialization in the 19th century showed that science is the most important lever for technological progress and thus for social development. Every technological innovation is essentially the application of new scientific knowledge, which makes education a necessity for access to and use of this technology (Šundalić, Mičić, 2005). Economic growth and development are inconceivable without new knowledge. Education and knowledge create a better, more promising future for generations to come, a future based on new attitudes and values. Investing in knowledge is an integral and necessary part of any development strategy (Cerović, Maradin, 2011). By developing critical thinking, creativity and analytical skills, the education system lays the foundation for innovation that can lead to significant technological discoveries. Students who are exposed to modern scientific and technological methods often become pioneers of innovation in their field. Innovations in education, such as the use of digital technologies and interactive learning methods, can also significantly improve learning outcomes and increase students' ability to apply their knowledge to practical problems (Winthrop et al., 2017). In today's level of economic, social and scientific and technological development, education is becoming the most important source of human capital needed to stimulate further societal development. Investment in intellectual capital contributes directly to the progress of many human endeavours, be they intellectual, social, economic or cultural.

The efficient use of human resources and continuous investment in their quality are considered essential for the development of every economy and its individual segments (Šundalić, Mičić, 2005).

2.2. Education and the labour market

Education plays a key role in shaping the labour market and the economic opportunities of individuals. In economic theory, education is seen as an important element in the development of human capital, leading to higher productivity and earnings during working life. This relationship is based on the neoclassical theory of human capital, according to which education increases a worker's productivity and the labour market rewards this productivity with higher wages (Bečić, 2014). The neoclassical theory of human capital, which was developed through the work of Gary Becker, Theodore Schultz and Jacob Mincer, assumes that individuals are rational actors who invest in education in anticipation of future economic benefits. By increasing their level of education, individuals acquire knowledge and skills that make them more competitive in the labour market. These individuals earn higher incomes over time, which represents a positive return on the investment in education (Schultz, 1961; Mincer, 1974; Becker, 1975). However, the economic models also point to alternative theories that emphasize other aspects of the labour market. Michael Spence's "screening" theory, for example, assumes that education serves as a signal to employers of an applicant's potential productivity. According to this theory, employers use educational attainment as an indicator of an applicant's skills and reliability, which helps them make hiring decisions under uncertain conditions (Spence, 1973). Lerner Thurow's theory of job competition emphasizes that education does not necessarily increase the productivity of workers, but rather helps determine their position in the labour market. Individuals compete for jobs, and those with higher education are at an advantage because they have lower training costs that employers must bear (Thurow, 1979). In addition, labour market segmentation theories and radical theories add a social dimension to the observation of education and the labour market. These theories show how the education system can maintain or even reinforce social inequalities. According to these theories, education can serve as a tool to reproduce existing class structures, with individuals from higher social classes having greater opportunities to acquire education and consequently better paid jobs (Reich et al., 1973; Bowles, Gintis, 1976). It is clear that education has a direct impact on the labour market by preparing individuals for different occupational roles. Quality education increases employability and enables individuals to acquire skills that are in demand in the labour market. Collaboration between educational institutions and the business sector is crucial for adapting educational programs to the needs of the economy, ensuring a constant flow of skilled workers (UNESCO, 2021a). Such an approach helps to reduce unemployment and support economic growth by creating a skilled workforce.

2.3. Education and economic inequality and social mobility

Education plays a key role in reducing economic inequality and promoting social mobility. It is also noted that the education system faces numerous challenges that contribute to maintaining or even increasing social inequalities. These inequalities are often the result of structural, intentional or unintentional barriers that limit access to education or success in the education system, and are a consequence of socioeconomic conditions, background and other factors beyond the control of the individual (Farnell, 2022). By ensuring access to quality education for all social groups, the education system enables people from less privileged backgrounds to improve their economic and social conditions. Through education, individuals can acquire the skills and knowledge they need to advance in their careers and raise their standard of living,

thereby reducing social inequalities and promoting a more inclusive society. One of the most important aspects of educational inequality is the link between the socio-economic status of families and the educational success of children. Children from poor families often have limited access to quality educational resources, which affects their educational aspirations and achievements. Studies confirm that poor children lag behind their peers from economically stable families at all levels of education. They have a higher risk of poorer health and premature death and are twice as likely to live in poverty as adults. The education system can serve as a means of reducing social inequalities by ensuring equal access to quality education for all social groups. A public education policy that focuses on the accessibility of education from an early age is an important mechanism for preventing social exclusion. In this way, education becomes a key tool for improving the economic and social conditions of people from less privileged backgrounds, offering them better opportunities for career advancement and a higher standard of living (Farnell, 2022). Despite efforts to improve the education system, there are numerous barriers that limit its effectiveness in reducing inequalities. These include the unequal funding of local governments, which leads to different working conditions in schools across the country. Also, the lack of specialised and support staff in schools makes it even more difficult to provide adequate support to the students who need it most (Farnell, 2022). The causes of inequalities in education are complex and varied, stemming from value systems and behaviours that are not always aligned with the best interests of the child. This manifests itself in rigid regulations and inflexible educational programmes that do not take into account the different opportunities and needs of disadvantaged children. For example, non-compliance with educational standards, such as excessive group sizes, can significantly affect the quality of education (Farnell, 2022). Although higher education can be a tool for reducing economic inequalities, it can also contribute to increasing them, depending on the structure and accessibility of the education system. In the US, for example, the increase in economic inequalities since the 1980s shows that higher education has not prevented inequality from rising, and stratification within higher education has often reflected broader social inequalities. Wealthier families are more likely to enroll their children in elite universities, widening the gap between rich and poor (Marginson, 2017). Marginson (2017) also notes that social mobility, defined as the ability of individuals to improve their socio-economic status through education, varies from country to country and depends on several factors. In Scandinavia, where public investment in education is high and education systems are relatively equal, social mobility is higher. In the USA, on the other hand, where private investment is substantial and the higher education system is highly stratified, social mobility is lower. In East Asia, higher education is developing rapidly and participation in higher education is widening. In China and South Korea, education is an essential prerequisite for entering the middle class and securing economic opportunities. However, access to elite institutions is often restricted by family socio-economic status, which can limit relative social mobility. In China, for example, social stratification within the education system remains a major challenge despite increasing participation in higher education (Marginson, 2017). Higher education has the potential to reduce economic inequalities and promote social mobility, but only if education systems are designed to be inclusive and equitable. Public policies that ensure equal access to education and reduce stratification within the system are essential to achieving these goals. Without such policies, education systems can become instruments that maintain or even reinforce existing social inequalities. Reducing inequalities in education and promoting social mobility therefore requires coherent education policies, flexible regulations, adequate training and continuous professional development of education staff. Collaboration between different stakeholders and systems is also important to ensure support for children and their families and to enable the creation of an inclusive educational

environment that promotes equality and diversity (Farnell, 2022). In summary, the education system can only play a crucial role in reducing economic inequalities and promoting social mobility if a systematic approach is taken to remove existing barriers and challenges. Despite efforts to improve, existing problems such as unequal financial resources, lack of qualified staff and inflexible educational programs continue to limit its effectiveness. For the education system to truly become an instrument of social change, more inclusive and equitable education policies and continuous support for all those involved in the education process must be ensured. This is the only way to achieve a significant reduction in social inequalities and enable greater social mobility.

2.4. The influence of education on the development of new activities

Education stimulates the development of new activities by creating innovative ideas and solutions that can be applied in different industries. Through research projects and cooperation with industry, educational institutions contribute to the creation of new products, services and business models. In this way, the education system not only supports existing economic sectors, but also opens up opportunities for the development of new areas that can become drivers of economic growth. Therefore, investment in education is crucial for the long-term development of the economy (UNESCO, 2021a). Kreiterling (2023) emphasizes that education plays a key role in stimulating the development of new activities, especially through the integration of digital innovation and entrepreneurship. Indeed, the author points out that digital innovation significantly increases economic growth and productivity of companies, leading to the creation of new business opportunities and markets. Similarly, Galindo-Martin et al. (2019) state that digital innovations, such as the adoption of Internet technologies, cloud computing and social networks, allow companies to reduce operating costs and improve services and interactions with customers. This leads to an increase in sales and market expansion. Digitalization enables entrepreneurs to enter new markets and expand existing markets, creating a positive feedback loop between innovation and entrepreneurship (Galindo-Martín et al., 2019). In addition, digital transformations are key to creating added value and triggering entrepreneurial activity. Indeed, digital innovations contribute to economic growth by creating new entrepreneurial opportunities and increasing competition in the market. Such changes lead to further innovation and transformation in the digital space (Galindo-Martín et al., 2019). It is also important to note that digital technologies play a key role in maintaining the growth and competitiveness of companies. The integration of information and communication technologies stimulates socio-economic growth and increases the ability of regions to absorb innovation. This ability to absorb innovation ultimately leads to improved economic indicators and higher GDP growth rates (Cunningham et al., 2015). In summary, education, which includes digital innovation and entrepreneurial skills, is key to creating new activities and markets. Investment in digital infrastructure, training and skills development enables companies to take advantage of digital technologies, leading to higher productivity and economic growth. Regulatory policies that support digital innovation also play an important role in creating a favorable environment for entrepreneurship and innovation.

2.5. The development of education in the context of the STEM sector

The development of education in STEM subjects is critical to the modern economy. STEM education prepares students for careers in high-tech industries, which are often the drivers of innovation and economic growth. By encouraging interest in STEM subjects from an early school age, the education system can increase the number of experts in these fields, supporting the development of new technologies and solutions that are critical for competitiveness in the

global marketplace (Li et al., 2020). Integrating STEM subjects into the education system requires a comprehensive approach that includes modernizing curricula, training teachers and providing appropriate resources and infrastructure. An effective STEM program should emphasize an interdisciplinary approach that integrates science, technology, engineering, and mathematics into individual lessons (Honey et al., 2014). In this way, students can develop critical thinking, problem-solving and collaboration skills that are essential for success in the 21st century. There are several examples of good practice in the implementation of STEM education around the world. Singapore, for example, is known for its successful STEM education model that emphasizes the early identification and development of talent. The Singaporean education system utilizes advanced labs and technological tools to provide students with hands-on experiences and foster their skills to innovate (Tan, Ponnusamy, 2018). In the US, programs such as the STEM Academies offer specialized curricula that focus on developing skills in science and technology. These programs also include collaborations with industry, giving students access to the latest technological advances and practices (Means et al., 2016). Although STEM education offers many benefits, there are also significant challenges to its implementation. One of the biggest challenges is the lack of qualified teachers who are able to teach STEM subjects in an innovative and integrated way. According to research by the National Academies of Sciences, Engineering and Medicine (2019), it is necessary to invest significant effort in the professional development of teachers to ensure the quality of STEM education. Another challenge is the unequal availability of resources, especially in less developed regions and schools with lower socio-economic status. These schools often lack access to modern technology and laboratories, limiting students' opportunities for hands-on learning and STEM skills development (OECD, 2019). Introducing initiatives that combine STEM education with entrepreneurship can further strengthen the impact of these disciplines on economic growth. Encouraging students not only to acquire technical skills but also to develop an entrepreneurial spirit can lead to the creation of new high-tech start-ups and innovative business models. In this context, programs such as those in Finland, which combine STEM education with entrepreneurial skills through project-based learning and collaboration with local businesses, have proven to be highly successful in preparing young people for the rapidly changing labour market (Korhonen et al., 2019). Such approaches not only increase employment, but also stimulate job creation and competitiveness in the global market. In summary, the development of education in STEM subjects is crucial for future economic growth and innovation. Through strategies that include modernizing curricula, training teachers and providing resources, the education system can prepare students for the challenges and opportunities prepare for the 21st century. Examples of good practice from countries such as Singapore and the USA show how STEM education can be successfully implemented despite the existing challenges. It is therefore important to continue investing in STEM education to ensure global competitiveness and sustainable economic development.

3. PERSPECTIVE ON THE INFLUENCE OF RELIGION ON ECONOMIC DEVELOPMENT

The economic idea about religion and economic development is not new; it is even mentioned as early as the Middle Ages, in the 13th century. More recently, in the last three decades, a new discipline of religious economics has been founded, applied and developed. It is recognised that non-economic factors, such as religion, can play an important role in the development of the economy. Religion is considered one of the most important non-economic factors that form the basic institutional infrastructure of a society (Qayyum et al., 2020).

Religion is a prominent dimension of culture that can be a significant factor in one's quality of life. However, it is often overlooked as a potential determinant of economic growth. Economic research has therefore attempted to fill this gap (Korman, 2015). The literature specializing in the study of the relationship between religious beliefs and economic development is diverse. Religion can influence economic performance as long as it orients people towards honesty, discipline, hard work or education. However, it can also have a negative impact on economic development if the practices and religious norms interfere with the free market. It can therefore be concluded that religion can influence economic activity positively or negatively (Sanda, Smarandoiu, 2015). One of the most important studies dealing with the influence of religion on the determinants of economic growth is certainly the study by Barro and McCleary (2003), which uses international survey data on religiosity for a broad panel of countries to examine the effects of church attendance and religious beliefs on economic growth. The results show that economic growth responds positively to religious beliefs, especially belief in heaven and hell, but negatively to church attendance. In this sense, growth depends on the extent of believing relative to belonging. Another study examines the indirect channels through which religion can influence economic growth, such as ethics, poverty reduction, political participation, social capital and mental health. The results show that religion has a positive and statistically significant direct impact on economic development and the informal (shadow) economy (Qayyum et al., 2020). Campante and Yanagizawa-Drott (2015) examine the economic impact of religious practices in the context of the observance of Ramadan fasting, one of the central tenets of Islam. The results show that prolonged fasting during Ramadan has a negative effect on output growth in Muslim countries and increases the subjective well-being of Muslims. Moreover, increased strictness of fasting screens out the less committed members, while the more committed ones respond with an increase in their relative levels of participation. In conclusion, religion can play an important role in developing and maintaining a vital and just economy. This is because a healthy economy requires that all people treat each other with dignity and not as objects of exploitation. Treating each other with dignity means to respect labour and property. Competition ensures that wages and prices adequately reflect a fair representation of the labour embodied in a product (Davies, 2004).

4. CRITICAL OVERVIEW OF THE INFLUENCE OF EDUCATION ON THE ECONOMIC DEVELOPMENT OF THE REPUBLIC OF CROATIA

Education plays a key role in the economic development of any country, and the Republic of Croatia is no exception. Quality education ensures the development of skills, knowledge and competencies necessary for competitiveness on the global market. This chapter analyzes the impact of education on Croatia's economic development, taking into account the existing challenges and opportunities, and provides recommendations for improving education policy.

4.1. A perspective for the economic development of Croatia based on education

Croatia faces challenges in the labour market, especially among young people, and relatively low economic growth. One of the key factors in overcoming these challenges is improving the education system to create a workforce that is able to innovate and adapt to changes in the labour market. In addition, the problem of labour shortage in Croatia, which is trying to be solved by importing foreign workers from third countries, is becoming very important (Bubnić et al., 2024). The digital transformation of education is becoming increasingly important in a globalized world. The COVID-19 pandemic has accelerated the need to integrate digital technologies into the education process, which has highlighted gaps in the digital infrastructure of many educational institutions. Increased investment in digital infrastructure, including high-

speed internet, computers and software tools, is crucial for the quality of education and equal opportunities for all students. According to research by the World Economic Forum (2020), countries that invest in education and skills development experience significant economic growth. A high-quality education system in Croatia can stimulate the development of high-tech industries, increase productivity and ensure long-term competitiveness. Public-private partnerships are an effective instrument for linking the education system with the needs of the labour market. Establishing such partnerships enables educational institutions to receive financial and technical support from the private sector, while private companies benefit from a well-trained and qualified workforce. Successful real-life examples show how collaboration between educational institutions and private sector companies can lead to the development of innovative curricula, provide internships for students and increase employability. The European Union has been promoting the establishment of public-private partnerships for years through various funds and initiatives such as Erasmus+ and Horizon Europe, which enable the implementation of joint projects between universities and industry (European Commission, 2021). Furthermore, the experiences of other countries shows the importance of linking education with research and development (R&D) as a key component for economic growth. Croatia has the opportunity to further stimulate innovation capacity by intensifying cooperation between educational institutions and the private sector. The establishment of research centers and incubators within universities can enable students to apply their knowledge directly in the creation of new technologies and business models. According to OECD (2021), countries such as Germany and South Korea, which have invested heavily in research and development in the education system, have significantly increased their global competitiveness and the emergence of high-tech industries. Modern education requires the introduction of innovative pedagogical approaches that promote active learning, collaboration between students, problem solving and creative thinking. Methods such as project-based learning, problem-based learning and the use of simulations and real-life business cases allow students to develop practical skills that are essential in the labour market. Students who participate in programs that use innovative pedagogical approaches show greater success in acquiring skills such as critical thinking and teamwork, which ultimately makes them more competitive in the labour market. Therefore, it is necessary to include these methods in educational programs throughout Croatia in order to promote the development of necessary skills for future generations. In a dynamic and changing economic environment, continuous education and training is becoming increasingly important for maintaining the competitiveness of the workforce. Online education platforms offer flexible ways to acquire new knowledge and skills, either through formal courses or self-taught learning. Croatian educational institutions should invest more in the development and promotion of online courses, especially in areas such as digital skills, management and innovation. Examples from around the world, such as the Coursera and edX platforms, have shown how online education can help to significantly improve access to education and reduce educational inequalities (Johnson et al., 2020). Entrepreneurship plays a key role in economic development as it stimulates innovation, job creation and economic growth. Including entrepreneurship education in school and university curricula can help students develop the skills they need to start and run their own businesses. Introducing incubators and startup accelerators into educational institutions gives young people access to mentorship, funding and networks that are essential for entrepreneurial success. Students who participate in entrepreneurship programmes have a greater chance of starting a successful business and contributing to the local and national economy. As a member of the European Union, Croatia has the opportunity to use European funds for the development of its education system. Strategies such as the European Strategy for Smart, Sustainable and Inclusive Growth emphasize the importance of investment

in education as a key factor for economic growth and competitiveness. The implementation of these strategies can help Croatia to create an education system that is adapted to the needs of the labour market. Improving the education system in Croatia requires comprehensive reforms that include modernising curricula, improving infrastructure and professional development of teachers. Special attention should be paid to STEM subjects, which are crucial for the development of the high-tech industry. Investing in STEM education can help create a workforce capable of innovating and developing new technologies. One of the biggest challenges for Croatia is to ensure equal access to quality education for all citizens, regardless of their socio-economic status. Unequal access to educational resources can lead to greater social inequalities and limit economic growth. It is therefore important to invest in education infrastructure, especially in rural and less developed areas. In addition, it is necessary to promote lifelong learning and continuous professional development of the workforce. In a dynamic economic environment, the ability to adapt to new technologies and work processes is crucial for maintaining competitiveness. Adult education and vocational retraining programs can contribute significantly to increasing the employability and productivity of the workforce. In summary, it can be said that education is a fundamental factor for the economic development of the Republic of Croatia. Through targeted reforms and investments in the education system, Croatia can create a competent workforce ready to face the challenges of the 21st century. Improving the curriculum, investing in STEM education, ensuring equal access to education and promoting lifelong learning are important steps towards achieving long-term economic growth and Croatia's competitiveness in the global market.

4.2. Recommendations for policies and practices that promote the positive impact of education on economic development

The education system, as the foundation for human capital development, plays a key role in shaping the future workforce and strengthening the country's innovation capacity. This section analyzes the main guidelines and initiatives that can ensure that education becomes an effective tool for achieving sustainable economic growth, taking into account the specific needs and challenges of the Croatian education system. To ensure the positive impact of education on economic development, several important reforms need to be implemented (Darling-Hammond et al., 2017; UNESCO, 2021b; European Commission, 2023): 1) modernization of the curriculum, 2) the professional development of teachers, 3) linking education and industry, 4) investment in research and development, 5) improving access to education.

The curriculum must be adapted to the needs of the modern labour market. This includes the integration of STEM subjects, the promotion of critical thinking, creativity and entrepreneurial skills. According to the OECD (2019), countries that have successfully modernised their curricula have higher rates of innovation and economic growth. Curriculum modernization also includes the use of digital tools and resources that can increase interactivity and student engagement. Introducing coding and robotics in primary and secondary schools, for example, can prepare students for careers in high-tech sectors. Teachers play a key role in the educational process. They need continuous training so that they can apply new teaching methods and technologies. According to Darling-Hammond et al. (2017), continuous professional development of teachers is directly linked to better educational outcomes. Teachers should have access to regular workshops, seminars and mentoring to improve their pedagogical skills and knowledge of the latest educational technologies. It is also important to create networks for collaboration between teachers to share experiences and best practices.

Collaboration between educational institutions and industry can ensure that educational programs are aligned with the needs of the labour market. This includes internship programs, dual training and joint research projects. In Germany and Switzerland, for example, there are successful models of dual training that combine education and practical work, resulting in low unemployment rates among young people. Building partnerships with local companies can help schools and universities to adapt their programs to the actual needs of the labour market and thus increase the employability of graduates. The promotion of research activities at universities and institutes can lead to innovation and the development of new technologies. Adequate funding and incentives must be provided for research projects that have the potential to stimulate economic growth. This includes investment in laboratories, equipment and research teams. According to a study by Li, Wang, Xiao and Froyd (2020), countries that successfully integrate STEM education into their education system see a significant increase in the number of innovations and technological patents. It is also important to promote collaboration between universities and industry to commercialize research results faster. Ensuring equal educational opportunities for all citizens, regardless of socio-economic status, is crucial for long-term economic development. This includes investment in infrastructure, scholarships for students from disadvantaged groups and the promotion of lifelong learning. Investment in infrastructure, particularly in rural and less developed areas, can ensure that all students have access to quality education. Building and renovating schools, equipping them with modern classrooms and technology, and providing transportation for students from remote areas are just some of the key steps. Providing financial support to students from socio-economically disadvantaged backgrounds through scholarships, subsidised loans and other forms of aid can significantly increase their chances of continuing their education and reaching their full potential. This reduces the risk of social exclusion and increases social mobility. Lifelong learning is becoming increasingly important in a dynamic and rapidly changing economy. Promoting adult education through courses, vocational retraining and online programmes can help workers remain competitive in the labour market. Adults who continue their education are better able to adapt to technological change and the demands of new jobs, which contributes to the overall productivity and innovation of the economy. To summarize, the positive impact of education on economic development can be achieved through comprehensive reforms and strategic investments. Modernizing the curriculum, professional development of teachers, strengthening cooperation between educational institutions and industry, investing in research and development and improving access to education are important steps towards an education system that promotes economic growth. Through these measures, Croatia can ensure that its workforce is highly skilled, innovative and ready for the challenges of the future, which will contribute to the country's long-run competitiveness and prosperity.

5. CONCLUSION

By synthesizing the research findings on the relationship between education, religion and economic development, it becomes clear that this area is increasingly becoming an issue. According to the literature analysed, the studies argue that education has a positive impact on economic growth, while religion can have both a positive and negative impact on the economic development of a particular country. Finally, this paper has shown how crucial education is for Croatia's economic development and competitiveness and how systematic reforms and investments can help realise the vision of a prosperous and sustainable society. A quality education system not only improves individual opportunities and living standards, but also acts as a catalyst for broader social and economic change.

In this way, education becomes a cornerstone of development, offering individuals the opportunity to advance personally and contribute to the overall economic development of the country. Therefore, continued commitment to improving the education system must remain a priority in order to ensure sustainable development and the well-being of all Croatian citizens.

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EXPLORING THE CURRENT LANDSCAPE OF TECHNOLOGICAL INNOVATION ADOPTION IN SMALL AND MEDIUM-SIZED ENTERPRISES: LITERATURE REVIEW

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ABSTRACT

Small and medium sized enterprises are the backbone of many economies. Namely, small and medium sized enterprises maintain the economic stability of the country, join networks around large enterprises, which leads to significant changes in the economic structure, develop the technological potential of the country by applying various technologies in business, and influence large enterprises by encouraging their adaptations and consequent changes in the market. Various events over time, among which the recent COVID-19 pandemic stands out, have influenced increased and accelerated investment in adopting and applying various innovations in information and communication technologies. Namely, many changes in the enterprises operations needed to be supported by new technologies to maintain business continuity. Since small and medium-sized enterprises are one of the key drivers of technological development in most European Union member states, it is not surprising that there will be further pressure for the faster and more efficient adoption of new technological achievements, which will be aimed specifically at small and medium-sized enterprises. For this reason, this paper aims to investigate what occurs with technological innovations and their adoption by small and medium sized enterprises after the pandemic. Consequently, the paper uses a quantitative bibliometric analysis of literature, which involves a literature search and quantitative analysis of all the works published on the mentioned topic since the end of the pandemic. For this purpose, two databases of scientific papers were searched: Web of Science and Scopus. Both databases of scientific papers were searched according to predefined keywords and search restrictions. The research findings were derived from a detailed analysis and subsequently discussed. Accordingly, recommendations for future research were given, and limitations of the research were identified and presented.

Keywords: *innovation, literature review, small and medium sized enterprise, technology*

1. INTRODUCTION

Small and medium- sized enterprises advance ideas, technologies, and major forces behind a nation's economic success (Chatterjee et al., 2022; Massey et al., 2004; Stieglitz et al., 2019). Such enterprises are crucial in bolstering a country's economy, accounting for 90% of enterprises globally and 50% of workforces on average (Chatterjee et al., 2022; World Bank 2020a, World Bank 2020b). According to their many contributions, which include exports, technical advancements, and the generation of jobs, small and medium sized businesses are

seen as a significant engine of contemporary economies. The capacity to innovate stands out among these contributions because, according to modern economic theory, creativity is essential to the development of industries (Bala Subrahmanya, 2012; Becheikh et al., 2006). Small and medium sized enterprises depend on various technologies for their internationalization needs and for financing startups, hence, using various equipment and tools that improve their business operations. On the other hand, the development of new and valuable goods, services, processes, and organizational frameworks drives innovation (Rahman, Yaacob, & Radzi, 2016). The COVID-19 pandemic has affected the vast majority of businesses, but SMEs have been particularly vulnerable due to their size and resource constraints (Chatterjee et al., 2022; Dua et al., 2020; Kraus et al., 2020). Increasing the resilience of small and medium sized enterprises and improving their supply chains depends on the application of modern technologies such as Industry 4.0 technologies (Chatterjee et al., 2022; Bartik et al., 2020). Therefore, the adoption of new technological solutions has been very important for the survival of businesses, especially SMEs, in times of pandemic (Abed, 2022). Accordingly, this paper is structured as follows. After the introduction, the theoretical background of the topic is provided, which explains the theoretical concepts of the selected topic, such as technological innovation and small and medium-sized enterprises and their connection during the COVID-19 pandemic, along with a review of relevant literature. The third chapter describes the methodology of this paper, which also presents the results and a discussion of the results. The paper ends with the fourth chapter, which provides the conclusions of the paper, its limitations, and recommendations for future research.

2. THEORETICAL BACKGROUND

It is commonly recognised that competitive and knowledge-based economies are driven and enabled by innovation, research and technology (Wiedenhofer, 2012). According to Popa, Preda and Boldea (2010), there is a widespread belief that the manner in which an organisation has defined innovation will play a significant role in determining which activities will be carried out inside the organisation and which will be contracted out to various third parties. Although there are many different definitions of innovation, some authors define it as “a new or an improved product, process, or organisational structure, that is perceived as new by the innovator and is successfully implemented in the organisation or at least once successfully introduced into the market” (Lorenz, 2010, p. 72). Similarly, technological innovation is defined as the implementation of a novel concept in order to create a new product or service, as well as a new methodology for enhancing an organization’s manufacturing process or service operation, executed via an adoption procedure (Efendi & Amri, 2021). Key drivers of technological innovation include management attitude and support, government rules, teamwork and professional expertise of employees, and the use of cutting technologies such as artificial intelligence (Wiedenhofer, 2012; Hariastuti, Santoso & Tama, 2022). On the other hand, technological innovation itself is a key driver of sustainable development, shaping environmental, social, and economic aspects of it (Wang et al., 2022), which is extremely important in current digital, global and post-COVID-19 pandemic economy, especially since businesses and sectors of all kinds have been profoundly affected by COVID-19 pandemic which left them struggling to maintain sustainability (Alraja et al., 2022). By matching innovation processes with sustainability objectives, key technological innovation drivers can be used to promote sustainable development by guaranteeing that technical developments support environmental and social well-being (Anadon et al., 2016).

As previously mentioned, small and medium-sized enterprises are very important for economies all around the world, particularly having in mind their contribution to employment and economic development (Etuk, Etuk & Michael, 2014; Algan, 2019; Varga, 2021). They are especially important for local economies because they promote innovation and operate as engines of regional growth and development. For example, by representing 99% of all businesses and employing two-thirds of the private sector workforce, they form a backbone of the European economy, while in developing countries, they provide around 45% of total employment (Algan, 2019; Cordina, 2024). Such facts emphasize the importance of small and medium-sized enterprises. In the context of adoption of technological innovations in small and medium-sized enterprises in the post-COVID-19 context, it is important to understand the role both technological innovations and COVID-19 pandemic had on them. During the COVID-19 pandemic, small and medium-sized enterprises have faced numerous challenges, but, at the same time, they have also demonstrated adaptability and resilience. Nowadays, it is a well-know fact that the pandemic accelerated the digital transformation of many small and medium-sized enterprises, pushing them to use digital platforms and technologies that enabled remote work in order to maintain operations and relationships with their customers (Khurana, Dutta & Ghura, 2022). According to Lewandowska, Berniak-Wozny and Ahmad (2023), small and medium-sized enterprises are required to adopt a culture of flexibility and agility in the context of the new post-pandemic business environment, while their capacity to use digital technology for the purpose of enhancing decision-making, customer engagement, and operational excellence becomes an essential component of their competitiveness. In that sense, technological innovation has a vital role in advancing small and medium-sized enterprises and fostering their sustainable development (Pu et al., 2021). According to Gómez and López (2024), technological innovations improve efficiency, reduce costs and simplify procedures, hence enabling small and medium-sized enterprises to properly compete with bigger companies.

3. METHODOLOGY

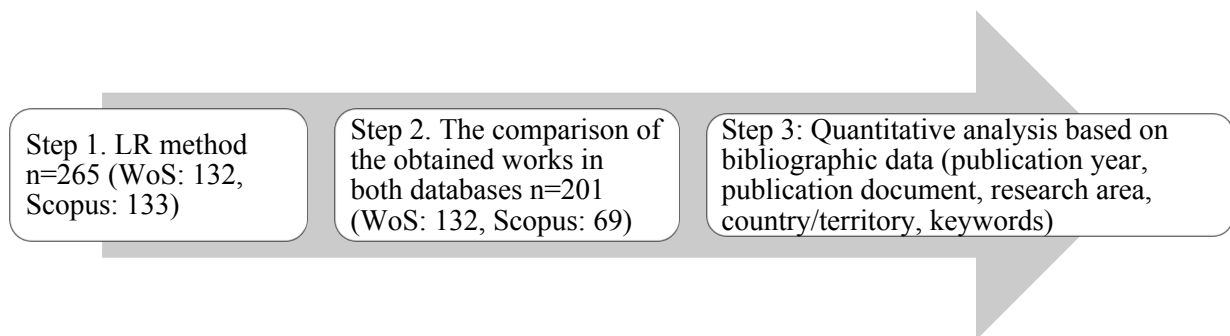
In this paper, a quantitative bibliometric approach to the analysis of works from two databases of scientific works is carried out with the aim of researching the scientific discourse on the acceptance of technological innovations in small and medium-sized enterprises after the covid-19 pandemic. That is why only works published after the end of the COVID-19 pandemic were taken into account in the analysis, and the whole concept of the analysis of works is based on the idea that the COVID-19 pandemic acted as a kind of catalyst that helped accelerate the adoption of new technologies in small and medium-sized enterprises. Rather than engaging with the substantive findings of individual contributions, the analysis centers on publication dynamics – specifically publication frequency, document publication types, geographic background, and disciplinary distribution.

The structure and criteria used in the literature search process are shown in Table 1. Two prestigious academic databases, Web of Science and Scopus, were used for the investigation, which concentrated on publications published after 2023. Only English-language publications classified as conference proceedings or peer-reviewed journal articles met the inclusion requirements. Keywords like "technological innovation*" and "small and medium sized enterprise*" were included in the search strategy since they were selected to match the terms used in scholarly discourse. To ensure thematic relevance, further restrictions were used, particularly to choose papers published after 2023 that expressly look at small and medium sized enterprises' adoption of innovation in the post-COVID-19 environment.

Database	Keywords	Limitations
Web of Science	"technological innovation*" (All Fields) and "small and medium sized enterprise*" (All Fields)	Document type: Article and Conference Paper Language: English Year: 2023 till now
Scopus	(TITLE-ABS-KEY ("technological innovation*") AND TITLE-ABS-KEY ("small and medium sized enterprise*"))	Document type: Article and Conference Paper Language: English Year: 2023 till now

*Table 1: Literature search strategy
(Source: Authors' work, 2025)*

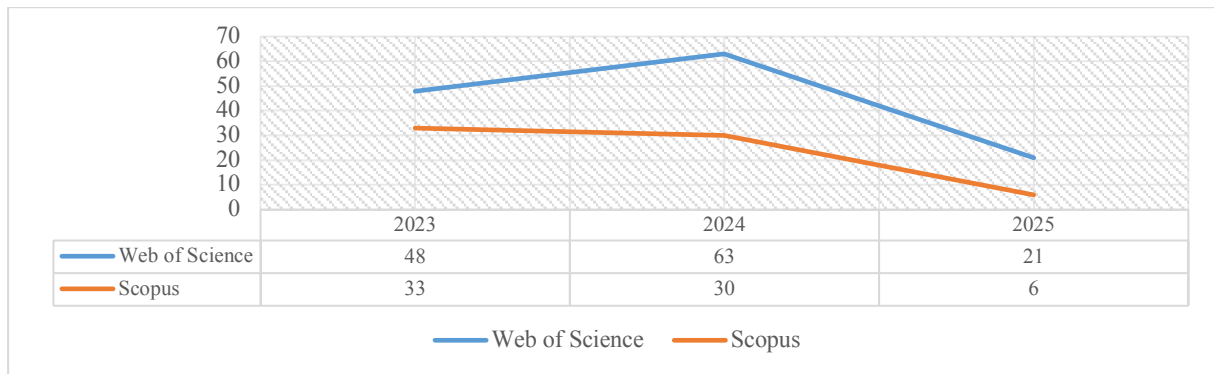
The three primary phases of the literature search procedure are summarized in Figure 1. In the first step, publications were chosen and filtered according to predetermined standards, such as keywords, document type, language, and year of publication. In the second stage, all papers found in both databases were compared to identify duplicate papers. Therefore, 64 papers were excluded from the Scopus database since they had already been considered within the Web of Science database. The third stage analyzed the dataset regarding geographic distribution, disciplinary focus, document typology, and publication frequency. Using the bibliometric program VOSviewer, the final step visualized the intellectual structure of the literature. It allowed for identifying subject clusters and recurrent keywords related to technical innovation in SMEs. This methodical, multi-phase process made creating a visual depiction of the current academic environment and a quantitative evaluation easier.



*Figure 1: Literature search procedure
(Source: Authors' work, 2025)*

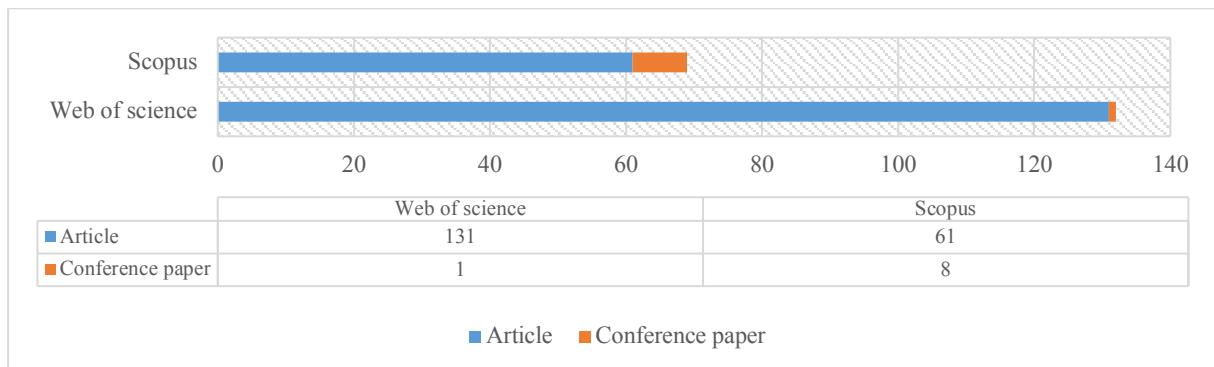
3.1. Results and discussion

In the quantitative analysis of the found papers, an analysis of the obtained papers by year was first made. As seen in Figure 2, the Web of Science scientific papers database recorded an increase in published papers on the selected topic from 2023 to 2024. Scopus database recorded an equal publication of papers, with a slightly smaller number of papers in 2024 compared to 2023. However, it is evident from the many scientific papers databases that research interest in technological innovations in small and medium-sized enterprises is present even after the COVID-19 pandemic.



*Figure 2: Number of papers per year
(Source: Authors' work, 2025)*

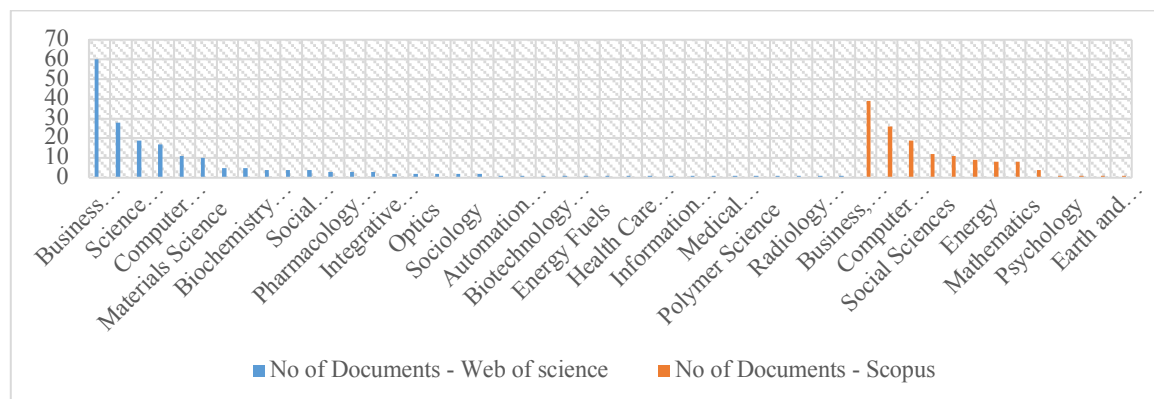
After that, the found papers were analyzed according to the type of publication in which the work was published. According to the obtained results presented in Figure 3, it is evident that in both databases of scientific papers, most papers were published as papers in scientific journals (95,52%), while a smaller number of papers were published in proceedings of scientific conferences (4,47%). This result of the distribution of papers according to the type of publication document may suggest that the selected topic is not only scientifically confirmed by peer review, but that there is still a need for active discussion on the specified topic at scientific conferences. Moreover, such results mean that the research is reliable and up-to-date. Also, the results show that the topic is relevant for academic discussion and practical application. Conferences help rapidly exchange new ideas, while journals provide in-depth research. In addition, the data consistency in both databases indicates a consistent pattern of results obtained in both databases of scientific papers.



*Figure 3: Document publication type
(Source: Authors' work, 2025)*

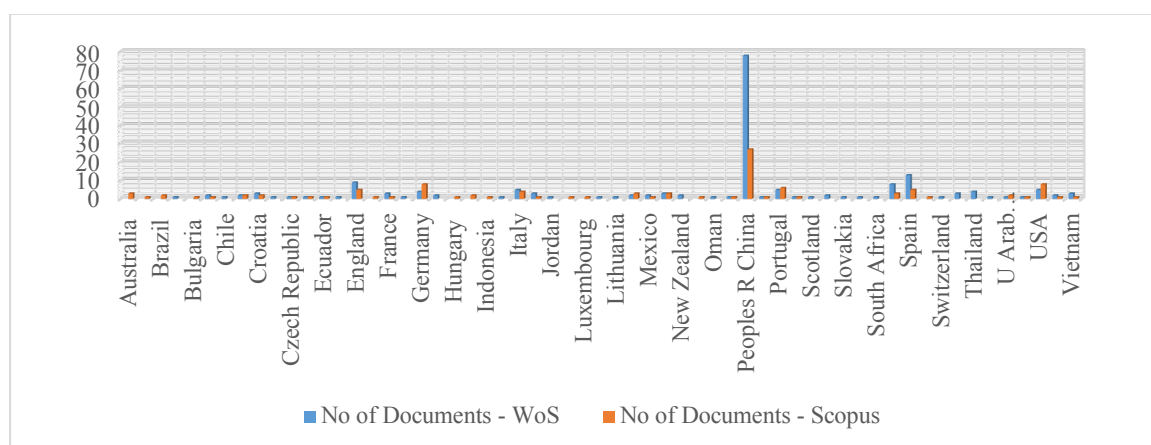
Next, the papers were analyzed according to the research areas in which the papers were published. According to the results presented in Figure 4, the papers that deal with the chosen topic and are found in the Web of Science database are mainly classified as papers published in research areas as business economics, engineering, and other social sciences. Similarly, the scientific papers in the Scopus database are primarily classified as papers from business, management, accounting, engineering, computer science, and environmental and social sciences. Such results indicate the multidisciplinary nature of the observed topic in the research context.

Accordingly, we can view the issue of adopting technological innovations not only as a technological problem but also as an economic, environmental, and social problem that is important to investigate from these perspectives.



*Figure 4: Research area of published papers
(Source: Authors' work, 2025)*

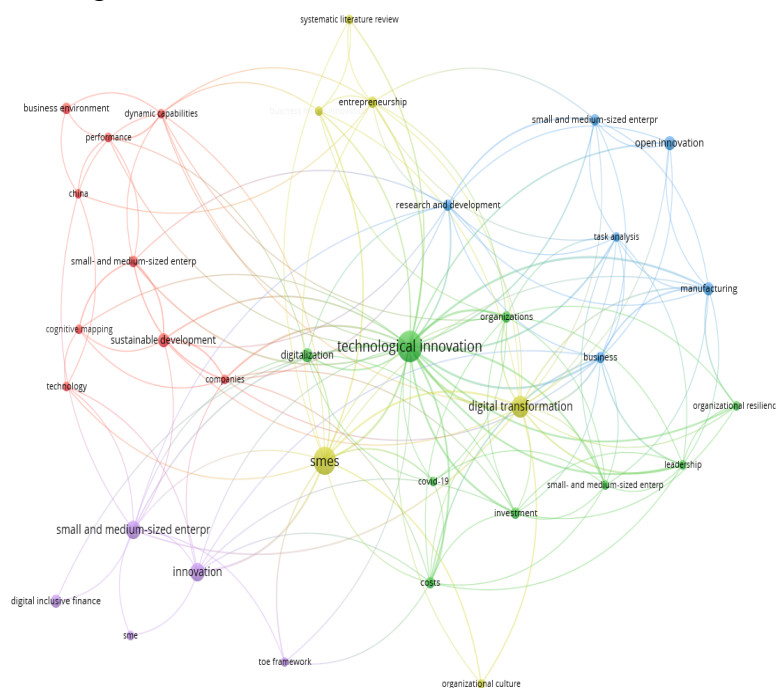
Furthermore, an analysis of the geographical area of the authors of the published papers was made. As can be seen from the results shown in Figure 5, the published papers come from different countries, but they are primarily from developed countries. Countries such as China, the United States, England, Germany, and Spain certainly lead the way in the number of authors dealing with this area of research. However, in both databases of scientific papers, a contribution to the topic is also visible among authors from developing countries. Such results indicate the interest of authors worldwide in technological innovations in small and medium-sized enterprises, which confirms the internationality of the chosen area of research. In addition, digital transformation and adopting new technologies are a global process that cannot be limited to just one region.



*Figure 5: Country/territory of published papers
(Source: Authors' work, 2025)*

Finally, for analysis in this work, the VosViewer tool was used to analyze the keywords listed with the found works. The most used keywords are "technological innovation", "digital transformation", and "small and medium-sized enterprises". These three identified keywords

show a high frequency and centrality in many works, which confirms their fundamental role in this field. As shown in Figure 6, the identified keywords created the following five clusters: (i) strategic innovation, (ii) technical applications, (iii) sustainability, (iv) entrepreneurship, and (v) theory. The first cluster is a network of keywords such as technological innovation, digital transformation, COVID-19, organizational resilience, leadership, and costs. This cluster refers to the research of strategic and managerial aspects of the adoption of technological innovations in small and medium-sized enterprises, even after the crisis caused by the COVID-19 pandemic. The second cluster is a network of keywords such as Open innovation, research and development, manufacturing, and task analysis. This cluster indicates a technological-production approach to researching technological innovations in small and medium-sized enterprises. The third cluster comprises a network of keywords: Sustainable development, performance, business environment, and dynamic capabilities. This cluster refers to works investigating how innovation contributes to small and medium-sized enterprises' long-term sustainability and competitiveness. The fourth cluster is a network of keywords such as entrepreneurship, organizational culture, and systematic literature review. Papers from that cluster refer to research on how small and medium-sized enterprises' entrepreneurial spirit and organizational culture influence the acceptance of new technologies. The last fifth cluster, which consists of a network of keywords: innovation, TOE framework, and digital inclusive finance, refers to works that apply the theoretical approach and theoretical models to analyze the acceptance of technological innovations in small and medium-sized enterprises. In addition, these results indicate that the selected topic, which investigates technological innovations in small and medium-sized enterprises, can be studied from different perspectives, such as technological, organizational, theoretical, and cultural. Namely, the identified keyword network shows that the literature on adopting technological innovations in small and medium-sized enterprises is structured around several thematic cores. The visualization presented in Figure 6 shows how the keyword analysis indicates the persistence of multidisciplinary in the approach to this topic and a strong foundation that connects diverse research interests.



*Figure 6: Analysis of the keywords of the papers
(Source: Authors' work, 2025)*

4. CONCLUSION

In this paper, a quantitative analysis of works found in two scientific databases, Web of Science and Scopus, was carried out, investigating the impact of technological innovations in small and medium-sized enterprises after the end of the COVID-19 pandemic. According to the results of the quantitative analysis, the scientific community continues to show interest in this topic even after the COVID-19 pandemic. The increase in the number of works is still visible, indicating that the digital transition of small and medium-sized enterprises is perceived as a long-term strategic problem, not only as a reaction to the crisis caused by the COVID-19 pandemic. Also, the analysis showed the combination of scientific papers published in journals and conference proceedings (although a smaller number), which showed that the scientific community discusses the topic for rapid exchange of ideas from this area and further theoretical development. In addition, the research results showed that the research interest shows how the digital transformation of small and medium-sized enterprises is viewed from the technological, managerial, social, and environmental aspects, which is essential due to the possible creation of applicable innovation models for small and medium-sized enterprises.

The research results showed that most authors from developed countries support the studied area, but that authors from developing countries also contribute to the topic, which shows the global recognition of the chosen topic. This also suggests that adopting new technologies and digital transformation becomes a priority worldwide, even after the COVID-19 pandemic. Keyword analysis showed that the pandemic triggered a significant shift in this area, as COVID-19 was frequently mentioned with words such as "technological innovation" and "SMEs". In addition, this result also suggests that digital transformation and the adoption of new technologies became priorities worldwide and remained so after the COVID-19 pandemic ended. Given that the keywords "technological innovation" and "SMEs" are frequently mentioned with COVID-19, as shown by the keyword analysis, it can be concluded that the pandemic also made a shift in this area. The results thus indicated that the pandemic cannot be viewed only as a temporary challenge faced by small and medium-sized enterprises, but as a long-term driver of innovation for small and medium-sized enterprises. Following the above, it could be concluded from the analysis that scientific circles are interested in researching technological innovations in small and medium-sized enterprises even after the COVID-19 crisis. It also indicates the possibility that digital transformation has become a strategic process for such enterprises rather than an extraordinary measure. Furthermore, it can be assumed that the interest in technological innovations by small and medium-sized enterprises is not only reactive, so that such enterprises can survive the crisis, but also proactive in planning new technologies and thinking about sustainability. In addition, it can be confirmed that small and medium-sized enterprises are still perceived as essential players in innovation in different economies.

Although this paper provides valuable macro insights into the trends of published papers on the chosen topic, it also has its limitations, which should be stated. Since in this paper only a quantitative analysis of the found works was carried out without a more detailed insight into their content, it is not possible to gain a deeper insight into the specifics of the works' topics and thereby determine the most dominant issues from the chosen field. Consequently, the recommendation for future research is to conduct a qualitative analysis of the found papers, so that the content of the papers, the methods used, and the results of each paper are analyzed in depth.

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DECISION-MAKING SHORT-TERMISM AND CORPORATE SUSTAINABILITY: THE CASE OF BOARDS OF DIRECTORS

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ABSTRACT

Boards of directors are charged with the complex task of balancing the often-conflicting interests of diverse stakeholder groups. Therefore, examinations of the ethical foundations guiding their prioritization of organizational objectives are consistently warranted. The relatively recent emergence of corporate sustainability as a salient concern on board agendas has even further amplified scrutiny of the ethical considerations confronting these bodies. Specifically, the long-term strategic orientation of boards, in contrast to the prevalent managerial short-termism, represents a crucial, yet under-explored, ethical dimension potentially pivotal in achieving the equilibrium in corporate decision-making necessary for advancing corporate sustainability initiatives. This review paper investigates the role of board ethics in facilitating the implementation and success of corporate sustainability strategies. Key research findings include the incompatibility of short-termism and corporate sustainability which is affirmed by the board's obligation to act in the best interest of the company, and not the shareholders or any one stakeholder group.

Keywords: *board of directors, short-termism, ethics, corporate sustainability*

1. INTRODUCTION

Corporate short-termism can be broadly defined as *a managerial preference for the short term that undermines a firm's long-term interests* (Wiersema et al., 2025: 1). From a financial markets perspective, short-termism can also be defined as *the application of a time rate of discount which exceeds the firm's opportunity cost of capital, and/or the foreshortening of the time horizon to exclude relatively distant revenues* (Demirag, 1998: 195). This phenomenon is, *inter alia*, fueled by rising shareholders activism disrupting business as usual in search for immediate results, and increased trading frequency in the stock market indicating a shift from individuals investing for the long-term to institutional investors demanding quick positive returns (Roe, 2022). Under that kind of pressure from the shareholders, it is hardly surprising that both the managers and their compensation packages often reflect this preference for the immediate over the distant. On the other hand, boards of directors, who's interest are not perfectly aligned with either the shareholders or the managers (Boychuk and Fried, 2003) seem to be able to better balance their temporal preferences. Corporate short-termism stands at great odds with the concept of corporate sustainability. Analysis of some of the most significant corporate sustainability definitions concluded that *one of the definitional components of CS (corporate sustainability) relates to the long-term perspective* (Montiel and Delgado-Ceballos, 2014: 122). Preference for the long-term is also undeniable in the most significant definition of sustainable development, clearly referring to the secular when mentioning the *ability of future generations to meet their own needs* (Brundtland, 1987: 16).

Moreover, in the sense that current generations must favor the benefits of future generations over their own current consumption, the fight against climate change, probably the most significant aspect of sustainable development and corporate sustainability, is also strongly dependent on decision-making long-termism. Therefore, exploring the ethics driving the behavior of corporate boards seems to be especially important, as it is these ethics, i.e. the proclivity of boards towards the long-term, that potentially make them corporate sustainability champions. Therefore, the goal of this paper is to explore the boards' ethics contributing to corporate sustainability implementation. This paper is organized as follows. After this short introduction, key theoretical assumptions concerning board ethics, more specifically their temporal preferences, are presented. The next segment of the paper describes the research methodology and provides basic bibliometric analysis of the sample. The central part of the paper is a narrative review of empirical and conceptual scientific literature on short-termism and the board of directors. The last part of the paper is a discussion of the findings highlighting the most important conclusions and proposing the most promising future research avenues.

2. THEORETICAL BACKGROUND

Where does the short-term stop and the long-term begin, especially when considering issues brought about by corporate sustainability? Many corporate finance and strategy practitioners consider the long-term period as anything over 5 years, while some define the long-term as a period longer than a year. On the other hand, long termism is a perspective that posits that *in the most important decision situation faced by agents today, our acts' expected influence on the value of the world is mainly determined by their possible consequences in the far future* (Kosonen, 2023: 2). The far future here denotes the time from *say, 100 years* (Greaves and MacAskill, 2021: 4) into the future onwards. Some discard the idea of the future as a timeline altogether, blaming such a mental model for *seeing the passage of time—not actions—as the cause of events* (Polchar, 2023: 18). Therefore, when engaging in the short-long debate, caution is highly warranted from the get-go. But the more important question however is what makes the long-term perspective superior to the short-term one? Even in our earliest traditions, short-termism has carried the label of inferiority. Judeo-Christian tradition posits that *the plans of the diligent lead to profit as surely as haste leads to poverty* (Proverbs 21: 5). Very similarly, through their oral constitution dating back to the 12th century, Native Americans of the Iroquois Confederation reminded their leaders of their responsibility to *ensure the survival for the seventh generation* (Clarkson et al., 2000: 3). Despite these traditions, and many more like them, even our modern-day leaders, such as Secretary-General of the UN Antonio Guterres, still warn us that *the gravitational pull of short-term thinking is strong and growing* (UN, 2021: 44). The beginning of the *short-long debate* can be traced back to 1917 and Walther Rathenau's¹ thoughts on the perils of shareholder short-termism urging companies to *produce returns at the expense of long-term development and the public interest* (Afsharipour and Gelter, 2021: 11). This kind of economics has later been labeled *quarterly capitalism* (Barton, 2011: 1) referring to the mechanism by which the companies' stock prices decline if the management is not able to meet the average estimate of quarterly earnings and revenues of stock market analysts who provide research coverage on the stock. The short-long debate is still ongoing and neither camp is yet ready to surrender. On the one hand, there is some empirical evidence of managers regularly *sacrificing long-term economic value* (Graham et al., 2005: 67) to satisfy the expectations of capital market analysts.

¹ Walther Rathenau (1867-1922) - German industrialist, writer and politician

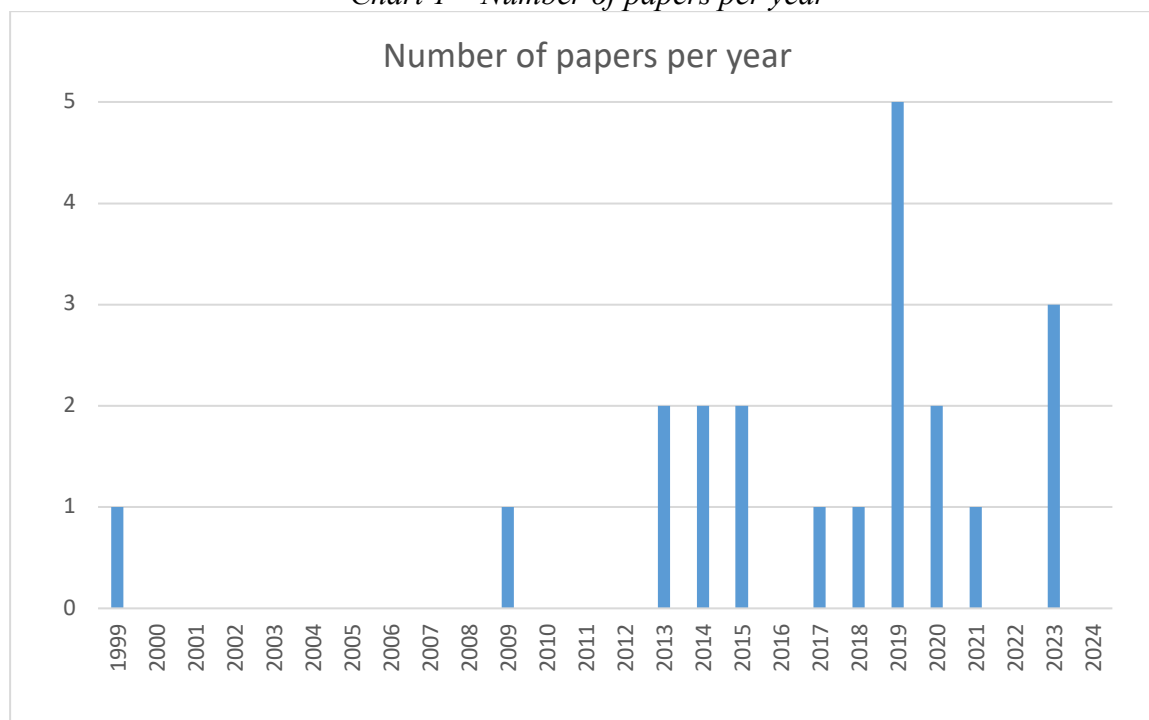
However, most authors recognize that *the most far-reaching challenge to advancing the debate consists in research approaches to observation and measurement of inter-temporal choice* (Laverty, 1996: 851). On the other hand, it is also claimed that *if the short-term orientation were true and such a bad thing, its effects should have shown up by now* (Kaplan, 2018: 17) and the US economy, plagued by short-termism, wouldn't have outperformed most global economies in the last 50 years. Still, short-termism is found to be one of the main culprits for the ongoing environmental degradation, and a covert phenomenon undermining social cohesion (Böhme, 2023). Therefore, many negative effects of short-termism are apparent in the non-economic aspects of business success: people and planet. Ever since the problem of separation between ownership and control of companies has been recognized (Berle and Means, 1932) and agency theorists defined companies as *legal fictions which serve as a nexus for a set of contracting relationships among individuals* (Jensen and Meckling, 1976: 310) in which exists a divide in interests between shareholders, as principals, and managers, acting as agents (Fama and Jensen, 1983), boards of directors have been set up by the principals as monitoring and ratification mechanisms tasked with decision control. Even if agency theorists clearly advocate for shareholder wealth maximization as the basis for corporate governance, empirical work suggests that interests of boards of directors are sometimes not perfectly aligned with the interests of principals. Some examples include single-tier boards dominated by insiders or supervisory boards dominated by dependent directors, both interested in keeping their employment and thereby averse even to favorable takeover bids. Also, board of directors are sometimes staffed with labor representatives, with a clear mission of primarily protecting the interests of employees. Finally, there is empirical evidence that only 40% of non-binding majority-vote shareholder proposals get implemented by boards of directors (Ertimur et al., 2009), clearly indicating that boards have minds of their own, and are not simply shareholders puppets. Therefore, there is no impediment in agency theory to boards assuming a long-term perspective.

Stewardship theory, generally promoting a *long-term orientation* (Hernandez, 2012: 20), assumes that the interests of managers and boards of directors are fully in line with those of shareholders (Davis et al., 1997). Board of directors are therefore expected to assume a long-term approach and much emphasis is put on their strategic role. Resource dependence theory points to the problem of maintaining the necessary *coalitions of support* (Pfeffer and Salancik, 1978: 20) while faced with incompatible demands, such as are those of short-term profits and long-term sustainability. This theory proposes that boards of directors are key resource provision instruments in the sense that they help the managers in accessing resources that would otherwise be unavailable to the company. The stakeholder perspective offers concrete evidence of boards decision-making focusing away from pure shareholders interests. To stakeholder theorists, a company is *a constellation of cooperative and competitive interests possessing intrinsic value* (Donaldson and Preston, 1995: 66). So, instead of maximizing shareholders returns, normative stakeholder theory promotes optimizing the interests of all stakeholders – employees, customers, suppliers, communities etc. (Freeman, 1984). Boards of directors therefore *act as impartial corporate coordinators between stakeholders* (Squires and Elnahla, 2020: 10). Interests of most stakeholders are long-term oriented: employees require continuous salaries, customers are interested in the long-term availability of products, communities rely on company resources in perpetuity and so on. Therefore, boards of directors, acting as coordinators between stakeholders, must also assume a long-term perspective.

3. METHODOLOGY AND SAMPLE

This systematic literature review focuses on examining the role of the board in advancing corporate sustainability through the lens of the short-long debate. An initial bibliographic search was conducted in February 2025, utilizing the Scopus database. The search strategy encompassed peer-reviewed journal articles, books, and conference proceedings published in English. The search terms "board", and "short-termism" were applied to the title, abstract, and keyword fields. This yielded an initial corpus of 43 documents. The second phase involved a rigorous refinement process to establish the final sample. Initially, abstracts of the retrieved documents were screened for relevance to the research objective, specifically identifying papers that explored the role of the board of directors in dealing with short-termism. This initial screening resulted in the exclusion of 21 documents. Subsequently, full-text reviews of the remaining documents were performed. A further 8 documents were removed, and the process resulted in a refined sample of 14 documents. To enhance the comprehensiveness of the sample, a snowball sampling technique was employed, leading to the identification of an additional 7 relevant papers. The final sample consisted of 21 documents. In the third phase, a structured data extraction process was implemented. For each document in the sample, the following attributes were systematically recorded: author(s), title, publication year, publisher, research questions, key research findings, and sample (where available). The extracted data were then synthesized, facilitating the identification of thematic clusters and the development of a coherent narrative addressing the research question. The final phase entailed the reporting of the research findings, which included a basic bibliometric analysis of the identified literature. Chart 1 presents a temporal distribution of the publications included in the sample, illustrating increasing scientific interest in the subject in the twelve years, with 2019 being the most productive year in terms of scientific output with five papers.

Chart 1 – Number of papers per year



Source: authors

Table 1 shows a list of 5 most cited scientific papers from the sample. It is very interesting, and characteristic of this ongoing debate, to see a contrarian view, put forward by Roe (2013) in his paper titled “Corporate Short-Termism—In the Boardroom and in the Courtroom”, topping the citations chart. It is however hardly surprising to see a review paper being the close second, but the number of citations in only a two-year period denotes an extremely high scientific interest in corporate sustainability.

Table 1 – Top 5 most cited papers from the research sample

NO.	AUTHOR(S)	TITLE	YEAR	PUBLISHER	CITATIONS
1	Roe, M. J.	Corporate Short-Termism—In the Boardroom and in the Courtroom	2013	The Business Lawyer	60
2	Kavadis, N., Thomsen, S.	Sustainable Corporate Governance A Review of Research on Long-Term Corporate Ownership and Sustainability	2023	Corporate Governance: An International Review	52
3	Kleinknecht, R.H.	Employee participation in corporate governance: Implications for company resilience	2015	European Journal of Industrial Relations	25
4	Benton, R.A., Cobb, J.A.	Eyes on the horizon? Fragmented elites and the short-term focus of the American corporation	2019	American Journal of Sociology	24
5	Gonzalez, A., Andre, P.	Board Effectiveness and Short Termism	2014	Journal of Business Finance & Accounting	23

Source: authors

4. OVERVIEW OF THE RESEARCH AREA

Two main clusters in scientific research can be distinguished: a group consisting mainly of empirical scientific papers dealing with root causes and practical manifestations of short-termism in the boardroom, and a group consisting mostly of conceptual papers focused on proposing different corporate governance reforms aimed at reducing short-termism.

4.1. Scientific papers investigating the link between boards and short-termism

The first group of scientific papers, many of which empirical, is focused on determining if boards of directors promote or discourage short-termism. Conducting an inquiry into whether boards of directors influence investment time horizons, Nicholson and Cook (2009) oppose the idea of boards being agents of shareholders. They posit that boards will act in the best interest of the company only if total transparency exists between the shareholders and the board. Should the level of transparency in this relationship decrease boards will focus on short-term outcomes. They also find a positive link between the proportion of institutional investors and short-termism. Gonzalez and Andre (2014) examine the influence of board effectiveness, as measured by board size, directors’ experience, directors’ shareholding, and board independence, on short-termism and conclude that effective boards should lower short-termism. Kleinknecht (2015) provides strong empirical evidence from 726 European firms between 2006 and 2008 of

employee representation on boards of directors being a counterbalance to short-termism. Thanassoulis and Somekh (2015) explore effects of short-term stock ownership. They create a model explaining that boards make decisions aimed to maximize the value of shareholders who own the company at the time the decision is being made. Therefore, short-term ownership signals to the board to make decisions for the sake of a quick rise in share prices, usually at the expense of long-term company value. Stating that board interlocks act as channels of information between companies, Ramaswamy (2018) posits that boards interlocks spread short-termism practices, such as earnings management, through the corporations in the network. Choi et al. (2019) investigated whether CEOs in their first and last year in office manifested greater short-termism than in other periods and found significant evidence of short-termism, i.e., reduced corporate social responsibility performance, in the CEO's last year. They concluded that good governance, such as higher board meeting frequency and board diversity, decreased the CEO's tendency to underinvest in corporate social responsibility in his last year as CEO. Investigating what motivates boards to pursue long-term company interest, Shaikha et al. (2019) deduce that financial rewards can promote short-termism and that intrinsically motivated outside directors should have more independence in decision-making. Therefore, all efforts should be made to create a regulatory environment which would empower directors to make decisions in favor of long-term interests of the company. Christie (2019) argues that hedge funds securing board representation might even help alleviate short-termism as they may prolong their investment horizons once they become involved in boardroom discussions on corporate strategy and closer monitoring of the company. Investigating the effects of board interlock networks on corporate short-termism, Benton and Cobb (2019) conclude that directors serving on boards of multiple companies create networks that provide resistance against short-termism by creating boardroom counter-narratives refocusing the company to the long-term. Donaldson et al. (2020) develop a dynamic model of board decision-making. They posit that long-term directors can exacerbate short-termism by creating voting deadlocks in anticipation of a long tenure. They posit that a staggered board, consisting of directors in different stages of their terms, can alleviate these problems. Investigating short-termism as a decision bias arising from the boards decision-making process, Alzoubi et al. (2021) find that directors deviate from rational choice when making investment decisions and therefore posit that a temporal investment decision inconsistency is an alternative source of short-termism. Exploring the influence of co-opted directors on earnings management practices, Harris and Erkan (2023) conclude that they greatly reduce managerial short-termism and explain this by managers increased perceived job security. In their already well cited review paper, Kavadis and Thomsen (2023) posit that long-term ownership is an enabling but not sufficient condition for corporate sustainability. They find positive effects of institutional and state ownership, seen as long-term oriented, on corporate sustainability, while family ownership, while also perceived as long-term oriented, yielded mixed results. Finally, analyzing the effect of dividend payout on corporate social responsibility, Sun et al. (2023) find no support for the premise that dividend payout is a manifestation of short-termism and conclude that dividend paying companies exhibit superior corporate social responsibility performance in subsequent years.

4.2. Conceptual papers proposing solutions for alleviating short-termism

The second group of scientific papers are in effect conceptual papers proposing different corporate governance solutions for dealing with short-termism. Latham (1999) posits that the link between shareholders and boards is broken. He proposes that shareholders choose an outside agency to nominate directors which would improve corporate governance and reduce short-termism. In his highly influential paper investigating corporate law reform as means to

solve the problem of short-termism in American corporations, Roe (2013) argues against the idea of longer directors' election periods aimed at protecting the board from the influence of shareholders. Roe explains that that key short-termism impulses originate from within the company (managers compensations having shorter durations than shareholders investment horizons) and therefore that the short-termism argument can't be used to further insulate boards from shareholders. Fusso (2013) lists investors pressure, managers compensation packages, deficiencies in corporate governance and regulatory policy as the most often mentioned causes of short-termism and proposes a systems thinking analytical framework for solving short-termism. He posits that decreasing information asymmetries between boards and management and increasing board powers can help alleviate short-termism, but also points to the fact that most such ideas have been around for a long time. Analyzing corporate governance in the context of short-termism, Clarke (2014) points to the fact that most corporate laws worldwide state that boards duties lie with the company and not the shareholders. Barton (2017) is explicit in his view that boards have no responsibility to maximize short-term shareholder value. Quite the opposite, the board's duty is to ensure the long-term sustainability of the company. Examining the board's role in promoting short-termism, Paquette (2019) propose that boards cannot refocus the company on the long-term by themselves. Still, boards might be instrumental in eliminating short-termism if a legal fiduciary duty is imposed on the directors to act in the company's long-term interest and if boards would then restructure management compensation packages to be aligned with those long-term interests. Needle (2020) proposes a three-person observing board consisting of an employee representative, a creditor representative, and a minority shareholder representative, as a solution to short-termism. Such an observing board would replace a shareholder-centric view with a stakeholder-centric one.

5. DISCUSSION AND CONCLUSIONS

Doing business while also protecting the environment and ensuring that no one is left behind transitioning to this new economy requires long-term thinking. The ability of boards of directors to prioritize stakeholder interests and influence intertemporal preferences possibly make them the most important corporate sustainability implementation mechanisms. Boards are made up of directors - people with sets of specific ethical values, accountability being one of the key ethical principles for board members. Boards are accountable to the company, not the shareholders or any one specific stakeholder group. If we assume that the company, as a legal person, wants to ensure its survival in perpetuity, an accountable board's temporal preference can only ever be for the long-term. One of the key ethical values for boards of directors is loyalty to the company which includes prioritizing company welfare above directors' personal gain. Therefore, board members are expected to ignore any stakeholders' preferences, including those of shareholders, regardless of the pressures applied by these groups on directors, even at the risk of losing their seats. Therefore, promoting long-termism is first and foremost an ethics choice. However, it is not a choice all directors and all boards make, for one reason or another. Several questions emerge from this. First, is short-termism totally incompatible with corporate sustainability? Also, is the choice between the short-term and the long-term always apparent to board members? What makes boards change temporal orientations? Furthermore, can boards effectively balance stakeholders' interests if they always promote a long-term orientation? Next, how do boards manage directors' different temporal preferences? Should corporate law be reformed to make corporate governance mechanisms such as boards of directors active corporate sustainability promoters? How do political shifts, followed by corporate sustainability regulatory changes, influence boards of directors' ethics, and should they? So, let us begin.

Corporate sustainability entails success in delivering on all three promises: economic, environmental, and social. Therefore, economic success is an integral, and logically a *conditio sine qua non* of corporate sustainability. Many corporate sustainability focused initiatives are profitable only in the long run, therefore a company pursuing environmental and social goals together with its economic goals might financially underperform in the short-term, as compared to a pier not interested in the long-term survival of its company, let alone the survival of the human society on this planet. For example, a company investing in better overall employee job satisfaction will first incur extra costs, but should later achieve better productivity, reflecting in higher earnings. Similarly, a production company investing in anti air-pollution technology will incur higher depreciation costs, but should be protected from environmental lawsuits, making this investment an effective and prudent risk management activity. But, if market analysts' focus on next quarter financials continues to put pressure on managers, and such short-termism behavior prevails within the company, initiatives such as these will never be launched. However, the short-term is very vaguely defined. Some might say that investing in employee benefits will pay off in the form of higher productivity in the short-term, presuming this to be in under a year. Other might discard such an initiative for not delivering financial returns in the next quarter. The temporal preferences are not static at all either.

A management team can probably survive one quarter of financial underperformance, but the pressure on them increases with every quarter of such poor performance, thereby decreasing their temporal preferences. Also, board members might not have credible information about the return periods of proposed sustainability initiatives at all. Balancing the interests of different stakeholders is the board's superpower so boards are always concerned with preserving it. That entails catering to often opposing stakeholder demands. Alienating shareholders, even those short-term oriented, can decrease the board's ability to influence company decision-making. Therefore, boards of directors can be considered corporate sustainability pacemakers. Stakeholders are not the only ones with opposing temporal preferences, directors often dispute the same amongst themselves. Therefore, boards' intertemporal preferences, dynamic in nature, depend on many elements of board structure, such as boards being staggered or co-opted, etc., but also on group dynamics elements, such as the level of cognitive conflict, board cohesiveness, chairman's moderating ability etc. Cited authors have proposed several corporate law reform initiatives focused on empowering boards to provide even more resistance to short-termism. In the sense that promoting long-termism points inductively to corporate sustainability, these proposed reforms already strengthen the board's role in promoting sustainability. The world is intricately linked by a multitude of political, geo-strategic, social, and economic bonds. In the multipolar world we live in today, the United States, the European Union and China represent key influencers and bear the most significant responsibility in addressing global challenges. The legitimacy and longevity of their leadership are intrinsically linked to the demonstrable capacity for visionary thinking and courageous engagement with critical global challenges. Repeatedly entering into and withdrawing from the 2015 Paris Agreement on climate change mitigation, and simplifying, or in essence deregulating, recently enacted corporate sustainability reporting rules, are not signs of visionary thinking. Moral norms and values are not static and change over long periods, but the prevailing societal ethics should not change in four-year terms by assuming completely opposing positions towards this crucial global problem. Therefore, current ethical dynamics related to sustainable development create a sort of a moral vacuum in which boards must continue to operate and provide leadership to organizations.

It will therefore be interesting to see if boards of directors, only recently pledging everlasting commitment to corporate sustainability, now begin to exhibit a *drill, baby, drill* (Trump, 2025) approach to doing business. Only those boards of directors that continue to lead their companies on their journey to sustainability shall reap the rewards of such continuity as the credibility of these companies shall not be overlooked by a new generation of consumers making their purchasing decisions in line with their worldview, which often includes sustainable development. A methodological constraint of this research lies in the exclusive inclusion of English-language publications within the sample. Moreover, the sheer breadth of literature on short-termism implies a possibility that, despite diligent efforts, some relevant scholarly works may have been inadvertently excluded, therefore this review might not be exhaustive.

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SUPPLY CHAIN MANAGEMENT (SCM) BETWEEN THE SYSTEMS OF CLINICS AND PHARMACY SERVICES: THE CASE OF CLINICAL HOSPITAL CENTRE SPLIT

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ABSTRACT

The systems of pharmacies, i.e., the production and distribution of medicines, and hospital systems form an integral overarching system whose purpose is to ensure successful healthcare and the well-being of the population at the national level and beyond. Each system operates based on its own principles, which define it as a system. At the national level, all systems or subsystems come together to form an operational macronational system. This raises the research question regarding the concept of the macronational system, focusing on the subsystems and their interconnectivity and efficiency. The system of medicine production and distribution is closely linked to the healthcare system, specifically the hospital system, which is the subject of this study. Accordingly, this research will focus on analysing the supply chain management of three critical subsystems: the hospital treatment system and the procurement, production, and distribution of medicines. In doing so, the basic concepts of systems, operational subsystems, management, and supply chain management related to the integral overarching system of three subsystems will be explained, with a particular emphasis on Croatia. The study will analyse the possibilities and factors affecting the operational efficiency of three subsystems, as well as their integration under the conditions of an undefined macronational system. The sample taken is Clinical Hospital Centre Split. To draw final conclusions, standard research methods will be used, with a focus on desk research and survey methods. The research results indicate a relatively low degree of integration between the hospital and medicine supply systems, which is a consequence of an underdeveloped supply chain management framework aimed at integrating three systems.

Keywords: *hospital treatment system, macronational system, pharmaceutical production, procurement and distribution of medicines, supply chain management*

1. INTRODUCTORY CONSIDERATIONS

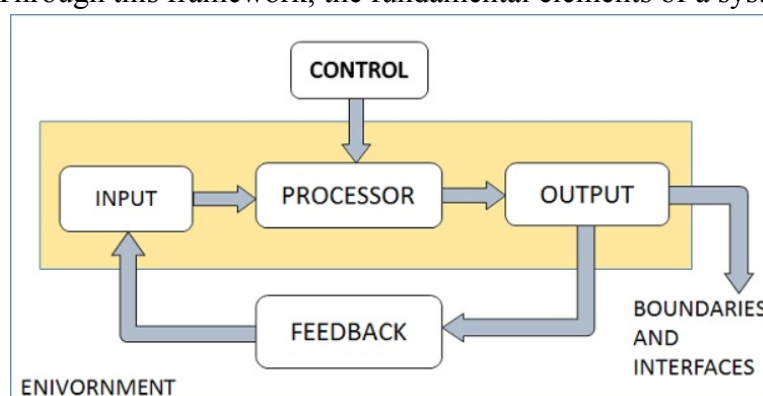
1.1. Research Subject

The macronational system consists of thematic subsystems that develop in accordance with set objectives, transparently within a supra-partisan macro-national framework. This is a characteristic of developed countries and economies based on the principles of civil society and market economy. From the perspective of the European Union, transition economies have not yet developed a macro-national system, and their subsystem's function based on inherited internal cohesion processes that form their structural components. This is particularly evident

in the healthcare system, which consists of the production, procurement, and distribution of pharmaceuticals (hereinafter referred to as the pharmaceutical sector) and the healthcare treatment subsystem in transition economies, including Croatia. The introduction of a market economy and private entrepreneurship into the healthcare system of transition economies has significantly altered its operational model. Since everyday life largely depends on functional systems, the pharmaceutical sector and pharmaceutical production are inherently linked to the healthcare treatment system, encompassing hospitals, outpatient clinics, and specialized healthcare institutions. Each of these three subsystems individually requires an administrative framework, followed by management structures that ensure their orderly operation. The roles of the pharmaceutical sector and pharmaceutical production within the healthcare system are, in a way, subordinated to the needs of the healthcare treatment system, meaning they primarily serve the requirements of hospitals, clinics, and outpatient facilities. On the other hand, pharmaceutical companies and distributors operate under their own management structures, ensuring the continuous availability of necessary pharmaceuticals and medical supplies for effective patient treatment while maintaining business profitability. In line with the research subject, this study aims to explore the management mechanisms that connect these three systems - the pharmaceutical production sector, the pharmaceutical distribution sector, and the healthcare treatment sector. Therefore, the purpose of this research is to analyse the interaction between these systems, thereby shaping the supply chain management framework of the national healthcare system.

1.2. System and Subsystem

Systems theory is a relatively young discipline that initially developed within psychology, particularly child psychology. The definition of a system in this theory started at the level of individual entities and progressively evolved into more complex structures. In the domain of microsystems, an acceptable definition states that a system is: "an interconnected set of business processes (or components) utilized within a single business unit, working together toward a specific purpose. A system has nine characteristics (...) it exists within a larger world, or environment. A boundary separates the system from its surroundings. The system receives input from the external environment, processes it, and sends the resulting output back into its environment."¹ Through this framework, the fundamental elements of a system are formed.



Picture 1. Element sin the system model (micro)

(Source: PadaKuu.com www.padakuu.com/article/2-system-definition-and-concepts-characteristics-and-types-of-system)

¹ PadaKuu.com is structured as a system for scientific and higher education information dissemination "System definition and concepts / characteristics and types of system" www.padakuu.com/article/2-system-definition-and-concepts-characteristics-and-types-of-system (15. 02. 2022.)

In the domain of macro systems and their definition, the research and works of Urie Bronfenbrenner are particularly significant. He emphasizes that every macro system consists of numerous variables inherent to a specific society or state. Based on his research, Bronfenbrenner defines a macro system as: "A macro system refers to the consistencies observed within a given culture or subculture in the form and content of its constituent micro-, meso-, and ecosystems, as well as any belief systems or ideologies underlying such consistencies"². He emphasizes that the macro system consists of six super-systems: (1) globalization, (2) government, (3) economy, (4) family, (5) religion, and (6) media.³ Given the dynamic development of e-technology and cybernetics, systems theory, and especially macro systems, is evolving in the field of mathematics, with Wiener standing out for his significant research published in 1984, which relates to systems theory.⁴ Mathematician Wiener was a professor at Harvard University and is considered the first computer pioneer. In the same year, Shannon published a paper titled *A Mathematical Theory of Communication*⁵ which marked the beginning of information management and its application in systems. Since then, the Planning Programming Budgeting System (PPBS) has been developed, representing the application of an analytical system in management. The PPBS systematically elaborates and connects the functions of planning, programming, and budgeting, functioning in a way that links and harmonizes all system factors, thereby forming an integrated system. It is important to distinguish between terms related to systems theory, such as systems approach, systems analysis, cost-benefit analysis, PPBS, and so on. From a theoretical and scientific perspective, a system can be defined as "a collection of interrelated ideas and statements that provide a systematic description of a phenomenon, with interrelated variables".⁶ The system, as understood here, represents the connection of important goals, associated plans, and the budgeting of the entire system. This also means that every system has a similar structure, at least in its basic setup, upon which the specificity of the type of system is built, particularly concerning macro-national systems. In practice, it is essential to consider cultural differences as well as politics, which, with respect to science, has the task of developing the macro-national system. A good example of this is Germany, which, after being devastated by World War I, began to develop a macro-national system known as the Freiburg School. Its achievements are still being studied today to maintain and develop the German macro-national system.⁷ During the post-war period, German scientists played a crucial role in its development, and Eucken and the "Freiburg School," with the help of politics⁸ built a macro-national model that has persisted to this day. Considering the macronational system, alongside Germany, Japan is also indispensable, as it defines six areas or pillars of action within the Japanese macro-national model.

² Newman, B. M. & Newman, P. R.: "Theories of Adolescent Development", 2020; micro-, meso-, and exosystems are part of the broader societal macrosystem that influences the development and behaviour of an individual throughout life (chronosystem)

www.sciencedirect.com/topics/psychology/exosystem (12. 12. 2024.)

³ Bronfenbrenner, U.: „Ecological systems theory. *Annals of Child Development*“, Vol. 6, 187- 249., 1989.

⁴ Ilgauds, Hans, Joakim: „Norbert Wiener“, *Biographien hervorragender Naturwissenschaftler, Techniker und Mediziner*, Band 45, Leipzig 1984

⁵ Harman G.: „Reassessing Research in The Politic of Education in Education perspective “, (Dept. of Ed.: University of Western Australia, 1980), p. 241

⁶ Philips H. Coomb: „The World Crisis In Education: The View From Eighties “, New York: Oxford University Press, 1985., p.122

⁷ Course: „Social market economy. Economic political ideas from Walter Eucken to Ludwig Erhard“, Advanced Graduate Seminar (OS), Campus-Management (WS 21/22), Karlsruhe Institute of Technology, www.campus.kit.edu/campus/all/start.asp?tguid=0x02EBB65E8F5846FFBC4EACD3117053CE (15. 12. 2024)

⁸ „The Social Market Economy“ Federal Ministry For Economic Affairs and Energy, Federal Republic Germany. Retrived 11 September 2015, www.en.wikipedia.org/wiki/Ludwig_Erhard#cite_ref-3 (15. 12.2024)

This model, structured in such a way, is also applicable at the European level, across all economies and transitioning countries, including Croatia. Thus, all states, regardless of political orientation, if they wish to address problems systematically, establish a macro-national system aligned with their culture and objectives. This system is then reinforced through oversight and legislation that supports the successful functioning of its subsystems. One of the key subsystems within the macro-strategic framework is the healthcare system, which consists of three subsystems: pharmaceutical production, pharmacy services, and the treatment subsystem, which includes clinical centres, hospitals, outpatient clinics, and similar facilities. The overall success of the healthcare system depends on management. Since it consists of three subsystems, it is essential to develop a supply chain management system for healthcare services.

1.2.1. Defining and Structuring Supply Chain Management

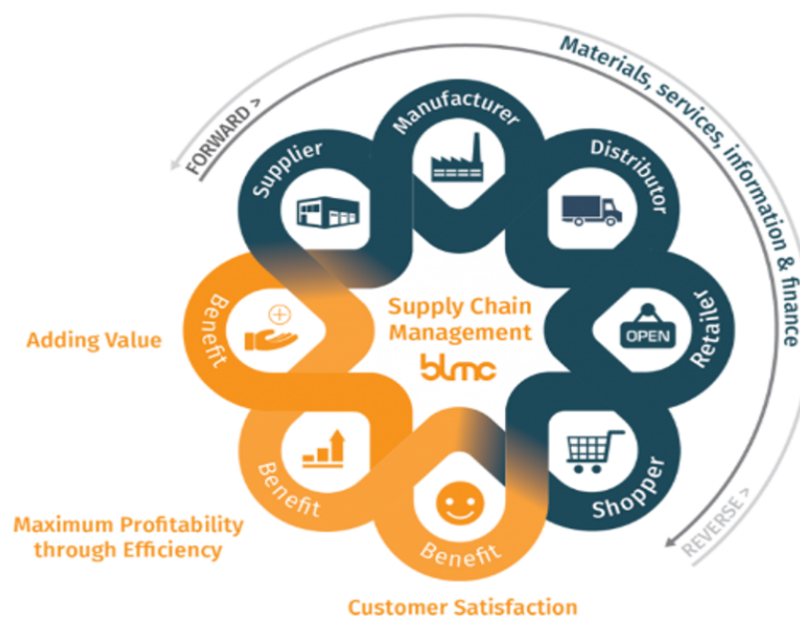
There are many definitions of supply chain management, but they can be encompassed by the definition of Stock & Boyer, which states: „The management of a network of relationships within a firm and between interdependent organisations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction”⁹ As the authors of this definition emphasize, it is necessary to distinguish between the internal and external supply chain:

- The internal supply chain includes everything within a specific organization and is related to procurement, production, storage, and sales.
- The external supply chain includes everything outside the given organization and is connected to suppliers, customers, and other stakeholders.

In complex systems consisting of interconnected internal and external supply chains, with the added dimensions of time and application, the entire supply chain management system becomes very broad and comprehensive.

Picture following on the next page

⁹ Stock, James, R. & Boyer, Stefanie, L.: „Developing a consensus definition of supply chain management: A qualitative study“, International Journal of Physical Distribution & Logistics Management, 2009., pp. 691



Picture 2: A Complex Supply Chain Management System

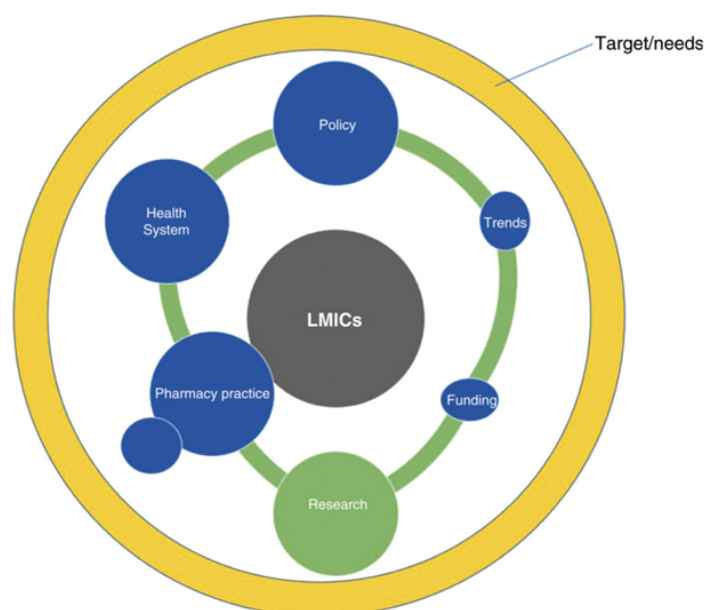
(Source: BLMC B.V. Supply Chain, Netherlands, www.supply-chain-consultancy.com/supply-chain-management/)

As seen in the figure, supply chain management influences various roles both within and outside the organization in a complex system of a large supply chain. This highlights the challenges of implementation and the need to address highly complex problems, not only in terms of communication among all stakeholders at different levels within and between organizations but also in maintaining aligned goals and objectives. For supply chain management to be effective, it is crucial to ensure cooperation among all stakeholders in the supply chain, which requires the formulation of a shared strategy. This involves agreeing on common goals and the methods for achieving them, with a clear and monitored distribution of tasks and responsibilities. Such a strategy allows organizations within the supply chain to operate as a cohesive team. It is suggested that at the head of the supply chain, there should be goal-oriented management that integrates and oversees the entire chain. Its role is to ensure that the supply chain management process leads to a unified overarching goal. This approach to supply chain systems, particularly in large-scale operations, represents a highly complex system. Jack van der Veen & Solaimani warn that, in practice, many large supply chains suffer from fragmentation, where each entity operates independently, leading to significant frustration among top management and supply chain managers, who are typically strong team players.¹⁰ Therefore, for supply chain management to be successful, it is necessary to achieve effective collaboration, design a well-structured system, clearly define the roles of stakeholders, assign tasks and responsibilities, and oversee the entire process. This requires strong technological support. Given that supply chain management in healthcare is an extremely complex system with a vast network of stakeholders, it is crucial to establish an efficient system led by supply chain management to ensure seamless operations and optimal resource utilization.

¹⁰ Solaimani, S. & Jack, A. A. Van der Veen: „Open supply chain innovation: an extended view on supply chain collaboration“, Supply Chain Management An International Journal © Emerald Publishing Limited, · August 2021

1.2.2. Integral Supply Chain Management of the Healthcare Subsystem: Basic Assumptions

Consulting international literature related to healthcare, it can be concluded that the theoretical development of supply chain management in healthcare is well-established, unlike in Croatia, where research and scientific papers are quite rare. According to the Medical Encyclopedia, supply chain management in healthcare is defined similarly to that in management encyclopedias, but the explanation of its operation in healthcare is subordinated to the goals of healthcare. In this regard, the goal of supply chain management in healthcare is stated as: „The aim of supply chain in healthcare is to find the vulnerabilities or weak areas among departments and propose measures to reduce them to achieve targeted health outcomes and increase investments in global health.“¹¹ It is emphasized that: „An implemented supply chain ensures availability of medicine/products at the right time, minimizing inventory wastage, maximizing patient care, coordination in all departments and minimizing human error/medication errors.“¹² Pharmacy, as a subject of the integral system that connects the treatment system with the production and distribution of medicines through supply chain management, is defined as: „Managing supply chains is one of the fundamental duties attributed to the pharmacy profession. The definition of essential medicines highlights the importance of good inventory management, by emphasizing the availability of the medicinal supply at all times in suitable dosage form and strength.“¹³ Emphasizing the importance of supply continuity, it is suggested that „the introduction of customized disease-specific kits in the inventory management systems has also proven to be an effective approach in postdisaster and emergency situations in other LMICs.“¹⁴



Picture 3: Proposed Components of the Action Plan for Improving Pharmacy Practice and Treatment

(Source: „Encyclopedia of Pharmacy Practice and Clinical Pharmacy“, Editor by Zahleer-Ud-Din-Babar, Elsevier, University of Huddersfield, Huddersfield, UK, 2019, p. 110)

¹¹ „Encyclopaedia of Healthcare Management“, Elgar Encyclopedias, Edward Elgar Publishing, 2023, p 258

¹² Ibid

¹³ „Encyclopaedia of Pharmacy Practice and Clinical Pharmacy“, Editor by Zahleer-Ud-Din-Babar, Elsevier, University of Huddersfield, Huddersfield, UK, 2019, p. 106

¹⁴ Ibid

As seen from the Figure 3, the outer circle refers to global trends and advancement in pharmacy practice. The central sphere refers to the indigenous needs. The magnitude of the blue green circles refers to the quantity/magnitude of progress in the related sector. The colour of circles may represent the quality of the component. The closer the circle moves to the central sphere the more it caters to indigenous needs.

6. 1.3. Effectiveness of Supply Chain Management

Explaining the problem of the healthcare system, in their research, Miller & Goodman cite one of the key factors for success as LMIC (low- and middle-income countries), or the level of development of the country. When investigating the efficiency of the healthcare system in Asia, they emphasize: „In low- and middle-income countries (LMIC) in Asia, pharmacies are often patients’ first point of contact with the health care system and their preferred channel for purchasing medicines. Unfortunately, pharmacy practice in these settings has been characterized by deficient knowledge and inappropriate treatment.“¹⁵ This conclusion reached by Miller & Goodman pertains to Asia, but it can be applied more generally, including for the European Union and its member states with low GDP per capita. For the integral system that combines the three components of the healthcare system to be effective, it is necessary to maintain the core factors of each of the three subsystems, as well as their integrated system, at a high level. In seeking solutions, research accessible through online systems of scientific papers promotes advancements on a global scale, such as the Japanese Toyota Principles, which have also found their place in healthcare. As Vijayakrishnan Poondi Srinivasan emphasizes: „In general, application of TPS in Healthcare is mainly focused on operational aspects using lean tools. A more integrative approach focused on task, structural, and cultural level of the organization is discussed below for successful implementation of TPS in Healthcare:

1. All work must be highly specified as to content, sequence, timing, and outcome – accurate documentation of Patient’s medical record, developing processes to streamline the workflow, and tracking patient-centred outcome measures.
2. Every customer-supplier connection must be direct, and there must be an unambiguous yes-or-no way to send requests and receive responses – direct communication between the patient and the caregiver, improved communication between caregivers regarding the patient’s condition and plan of care, and secured access to patient information.
3. The pathway for every product and service must be simple and direct – develop and implement “Clinical Pathway” for each treatment initiative based on the “best practice” methodology.
4. Any improvement must be made in accordance with the scientific method, under the guidance of a teacher, at the lowest possible level of the organization – identify quality improvement projects that focus on improving the workflow of front-line staff and patient safety.“¹⁶

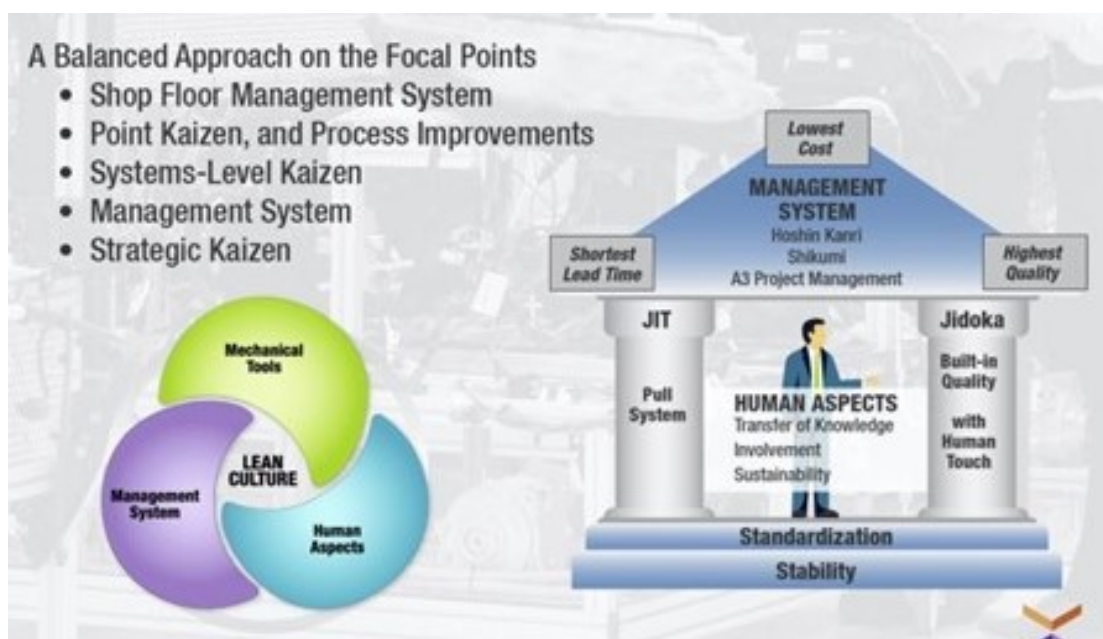
Japanese achievements in management are very closely related to the German school of management, which is also connected to supply chain management, and all of these stems from cultural characteristics and linkages.¹⁷

¹⁵ “Performance of retail pharmacies in low- and middle-income Asian settings: a systematic review“, Health Policy and Planning, 31, 2016, 940–953, Oxford, UK, 2016, p. 940

¹⁶ Vijayakrishnan Poondi Srinivasan: “Integration of Toyota Principles in Healthcare for Quality Improvement“, The MH Institute for Teaching Excellence (MITE), Maine Medical Centre, Portland, 2020

¹⁷ Luković, T. & Šperanda, I. & Kizielewicz, J. & Asić, A.: “Kultur in der Verteilung der Differenzierung des Weltmanagements“, AV Akademiker Verlag, Norderstedt/Germany 2020

The development of management on a global level, thanks to the internet and e-technology, has also extended to healthcare management in Japan, shaping it into the LEAN Business System. This system consists of five core principles, which include: 1) Business Space Management System; 2) Point Kaizen and process improvements; 3) Kaizen at the system level; 4) Management system and structure; and 5) Strategic Kaizen. As is well known, Kaizen¹⁸ represents the intention for continuous improvement, a concept that was developed through the Japanese philosophy of life and work. Since it is a mental and cultural necessity to pursue ongoing improvement and enhancement of work processes within a company, it is clear that the European school of management is very close to the Japanese approach.



Picture 4. LEAN Business System, 5 main points
(Source: „The Focal Points for Implementing a LEAN Business System”, Structured LEAN,
www.structuredlean.com/tps-house)

In this regard, the solution should be sought in the implementation of supply chain management in healthcare within the European context. Therefore, despite cultural differences, the fundamental principles for defining healthcare supply chain management should be the same in Europe as in other mega markets, with the health of citizens being the primary goal. It is acceptable that the implementation of supply chain management will vary according to culture, viewed in the broadest sense, as previously explained, but the goal, which is to ensure the sufficiency of medicines for patient needs and the effective operation of hospitals, remains the same everywhere.

1.3.1. Digitalization of System and Controlling as Solution

The complexity of the integral healthcare system is at the highest level, surpassing traditional management and process capabilities, as it involves the need to meet the complex needs of patients.

¹⁸ Harvey S.: “The Japanese Method for Transforming Habits One Small Step at a Time”, Bluebird Book of Life, 2017, p. 12

Therefore, the involvement of adapted e-technology systems is essential to achieve healthcare objectives. In this regard, it is emphasized that: „When selecting a supply chain automation system, hospitals must include the following:

- Communication: Integrates systems and manages hospital workflows and processes by sending and receiving files for both clinical and financial systems.
- Ease-of-use: Enables managers, operators, and care providers to achieve efficient system operations and maintain the standardization of processes.
- Scalability: Includes consolidated management tools for both single and multiple site locations.
- Open, flexible design: Helps users achieve data integrity for the devices in use.
- Reporting and analytics: Generates accurate, real-time inventory reporting information from receiving to patient care.
- Supply chain methodologies: Includes PAR, Kanban, ROP/ROQ, EOQ/ROP, Min/Max and Consignment capabilities; utilizes sound processes and practices for specific department requirements related to supply chain demands.
- Superior service: Creates effective clinical and financial workflow design, defines implementation requirements, and provides support before, during, and after implementation.“¹⁹

The healthcare supply chain management system, under the pressure of new health threats such as COVID-19, requires new research, particularly in the domain of predictive analytics. Predictive analytics is based on statistical algorithms and customized ERP (Enterprise Resource Planning) software to predict future events by analysing real-time data. As Tavakoli states: „Its application in healthcare marks a transformative shift towards data-driven decision-making, leveraging advanced analytics to improve health outcomes and optimize patient care. (...) The process of building a predictive model involves three key steps: data collection and pre-processing, model development (training and parameter optimization), and model validation. The data used in this process can range from structured data (e.g., age, lab results) to unstructured data (e.g., text from clinical notes, images).“²⁰ Thus, the development of the integral healthcare supply chain management system must be subordinated to time and stakeholders, which means the state, as well as regionally defined entities. There are many reasons for this, ranging from the pharmaceutical procurement system, in which the state plays an important role, to the differences in healthcare that are related to the region or locality. Therefore, in order for this integral system to be effective, controlling must oversee it, as without controlling, any system remains incomplete and inefficient. As Iqbal states, M. J. & Ishaq, M. G. & Dar, A. P.: „The structure and importance of supply chains for medicines vary from country to country. However, purchasing power of the public limits their significance in all low and middle-income countries (LMICs).“²¹ To understand the effectiveness of the integral healthcare system, it is necessary to conduct research both at the national and regional levels.

¹⁹ “Encyclopaedia of Healthcare Management“, Elgar Encyclopaedias, Edward Elgar Publishing, 2023, p 260

²⁰ Tavakoli, Motaharem (Moti): “Introduction to Application of Predictive Modelling in Healthcare“, The MH Institute for Teaching Excellence (MITE), Maine Medical Centre, Portland, 2024.

²¹ Iqbal, M. J. & Ishaq, M. G. & Dar, A. P.: “Medicines Management in Hospitals: A Supply Chain Perspective“, *Systematic Reviews in Pharmacy* 8(1):80-85, 2017., p. 86.
www.researchgate.net/publication/316245745_Medicines_Management_in_Hospitals_A_Supply_Chain_Perspective (16. 12. 2024.)

This means that, in accordance with previous explanations, it is essential to investigate the development of digitalization across all processes, as well as the application of controlling in systems and subsystems. As emphasized in the World Health Organization's Handbook: „Dispensing a drug to a patient consists of the following: checking the prescription, collecting, counting and packaging the drug, and dispensing the drug to the patient. The dispenser should carefully and clearly explain to the patient how to take the drug. This is very important. Drugs are effective only if taken correctly. Then the dispenser should check that the patient understands how to take the drug. The patient should be able to repeat to the dispenser how he will take the drug. In some health facilities, a health worker other than yourself may be the dispenser. Therefore, it is your responsibility to teach the following procedures to all health workers who dispense drugs at your facility.“²² It can be concluded that the application of e-technology in e-health services requires the development of E-Health Management. The technical capabilities available to E-Health Management are vast, but for its effectiveness, new knowledge, educational prerequisites, and research are necessary. In their study, Alshammari T. A., Alshammari K. M., & Alshammari F. M. emphasize that the quality of the system and the perceived usefulness of the system have a significant and positive impact on the behavioural intention of patients to use e-health services. Furthermore, knowledge of e-health significantly moderates the relationship between the perceived quality of e-health and the perceived usefulness, influencing the patients' intention to use e-health services.²³ The development of e-health services has significantly promoted the growth of E-Health Management, especially in developed countries in Europe and around the world. For example, a group of French authors in 2020 developed the GER-e-TEC project, which aims to provide telemedicine tools, specifically telemonitoring, to older and less educated patients, supported by a well-defined and personalized protocol.²⁴ The GER-e-TEC project developed the MyPredi platform, which uses a system for defining a monitoring vocabulary (diseases, medications, symptoms, etc.), as well as a system for modelling concepts related to heart failure monitoring. The effectiveness of the system, for diagnostic purposes, involves the inclusion of operational semantics, which specifies how the knowledge modelled in the system will be processed and automatically generate further knowledge.²⁵ In this way, unforeseen risks are significantly reduced, especially in terms of prevention and actions in risky circumstances. It can be concluded that E-Health Management, with the help of e-health systems, connects all three subsystems of healthcare in the broader sense of care. This assumes a higher level of education and research, particularly in terms of an interdisciplinary approach. This raises the question of the development of the integral healthcare system in transitioning EU member states, such as Croatia.

²² “Handbook for Drug Supply Management at the First-level Health Facility“ World Health Organization Division of Child Health and Development, 1998, p. 33

²³ Alshammari T.A & Alshammari K.M. & Alshammari F.M.: “Impact of Perceived Quality of E-Health Services on Patient Behavioural Intention to Use E-Health Services: A Moderating Role of Knowledge of E-Health Management“, *Journal of Economics and Behavioural Studies*, Vol. 14, No. 1, pp. 23-38, March 2022, www.ojs.amhininternational.com/index.php/jebs/article/view/3293 (16. 12. 2024)

²⁴ Abrar-Ahmad Zulfiqar & Noël Lorenzo-Villalba & Oumair-Ahmad Zulfiqar & Mohamed Hajjam & Quentin Courbon & Lucie Esteouille & Bernard Geny & Samy Talha & Dominique Letourneau & Jawad Hajjam & Sylvie Erve & Amir Hajjam El Hassani & Emmanuel Andres: “e-Health: A Future Solution for Optimized Management of Elderly Patients. GER-e-TEC™ Project“, *MDPI Journal, Medicines* 2020, 7(8), 41; <https://doi.org/10.3390/medicines7080041> (16. 12. 2024)

²⁵ Ibid

1.3.2. Supply chain Management of Healthcare in Croatia

The issues within the healthcare system, particularly the treatment system, were addressed by a number of authors immediately after the Croatian War of Independence, but over time, the number of authors discussing this topic has decreased. From an economic perspective, Stašević, I., Derk, D., and Ropac, D. note: "The healthcare system is becoming increasingly expensive, and no form of financing can meet all the needs. Despite significant budgetary pressures, Croatia continues to provide its citizens with access to publicly funded healthcare services, where the scope of rights covered by mandatory insurance is exceptionally large and includes most services. In Croatia, the healthcare system is financed from employee salaries (the contribution amounts to 15.5%) and from the state budget (which in Croatia accounts for 7.4% of GDP, or 1,241 euros per capita). The share of healthcare costs covered by private sources is increasing (23%). The quality of healthcare is difficult to analyse comprehensively. Some measurable and objective parameters include life expectancy at birth, standardized cancer mortality rates, cardiovascular disease mortality rates, infant mortality rates, neonatal mortality rates, perinatal mortality rates, and maternal mortality rates. Most of these parameters are still unfavourable and indicate poorer health outcomes for the population of Croatia compared to the EU."²⁶ Pharmacy is an important subsystem of the healthcare system in Croatia, and research related to the management of this system is crucial. A study on the effectiveness of pharmacy management, conducted in 2019, showed relatively good results. In a series of 19 questions using the Likert scale, the ratings ranged from an arithmetic mean between 3.65 and 4.45, with a standard deviation of 0.9.²⁷ Based on the above, it can be assessed that pharmacy in Croatia is relatively well-rated. However, the five-year gap in today's dynamic environment points to potential changes. Therefore, it is advisable to conduct a new study.

The issue of pharmaceutical production in Croatia, as a subsystem of healthcare supply chain management, is important in terms of producing the necessary medicines and healthcare supplies for the market. The production and supply of medicines to the market in Croatia is overseen by the state agency for medicines and medical products, HALMED, which reports on annual trends in the Croatian pharmaceutical market. The issue of healthcare is primarily under the responsibility of politics and the Ministry of Health, for which the Strategy is important. This Strategy is published, revised, and changed, and the most recent national strategy in force is the "National Health Development Plan for the period from 2021 to 2027."²⁸ Right at the beginning of the mentioned Strategy, the Ministry of Health of the Republic of Croatia distances itself from unfavourable results, stating: "E-health will be an integral component of the reform processes, aimed at ensuring the improvement of the quality and efficiency of healthcare for the entire population. In the Republic of Croatia, e-health projects and activities have been a priority for the healthcare system for more than 15 years. However, the information systems are still not fully comprehensive and integrated to enable the integrated delivery of healthcare that puts patients at the centre, nor have sufficient professional human resources been developed for the development and management of these systems.

²⁶ Stašević, I. & Derk, D. & Ropac, D.: „Zdravstveni sustav u Republici Hrvatskoj“, Development Models - Experiences of Others and Our Opportunities, 7th International Scientific Conference - Development Models - Experiences of Others and Our Opportunities., 2019, Brčko, BIH, pp. 146-158 <https://www.bib.irb.hr/993998> (16. 12. 2024)

²⁷ Dukić, G. & Medarić, D.: „Ljekarnički menadžment u Hrvatskoj“, Ekonomska misao i praksa, Zagreb, No. 1, 2019., p.33

²⁸ Nacionalni plan razvoja zdravstva 2021.-2027..pdf (gov.hr) (16. 12. 2024)

Furthermore, the healthcare system has lacked the flexibility to absorb all the necessary changes and potential improvements due to the rapid advancement of technology.²⁹ In addition to the Strategy, other documents are also formally adopted, but research proves the low level of development and efficiency of the healthcare system in Croatia, in which the coordination of the three subsystems of supply chain management is underdeveloped, especially in terms of their coordinated functioning. The question arises regarding the possibility of improving the supply chain management of the Croatian healthcare system, and consequently, patient satisfaction, which is of particular importance. What is commendable and reflects the desire for better healthcare services is a survey conducted by KBC Zagreb since 2024, where it states: "Communication is a fundamental life activity and satisfies human needs for the exchange of information, knowledge, sharing experiences, and learning. We believe that the quality of work can be improved through communication between nurses and patients, the quality of work, and a higher quality healthcare system. What we consider a key factor in improving quality is education. Education and knowledge are what patients' value today. We must be aware of the information patients already have, and in many cases, they are merely questioning our knowledge. We believe that quality can be worked on in all aspects of healthcare today, starting with the selection of future nurses, education through high school, and continuing in the workplace."³⁰ This is certainly a good example and effort by Clinical Hospital Centre Zagreb, which recognizes the importance of communication, the information system, and staff education. By focusing on these key areas, Clinical Hospital Centre Zagreb shows a proactive approach to improving the overall quality of healthcare services and enhancing patient satisfaction. It reflects an understanding that effective communication and well-trained personnel are essential for a well-functioning healthcare system. All three elements important for supply chain management in healthcare—education, digitalization, and communication—are included in the E-Health Management system, which promotes technological development. Therefore, in line with the hypothesis of this paper, a small-scale study was conducted, highlighting the main issues of the integrated healthcare supply chain management system in Croatia.

2. LIMITATIONS OF THE RESEARCH, AIM, OBJECTIVES, AND RESEARCH HYPOTHESIS

The research conducted relates to Clinical Hospital Centre Split, meaning that the results can be linked to the situation in the county. If the research results were to be taken as a representation of the situation in Croatia, further research would need to be conducted in other counties. Therefore, this limitation should be considered a constraint of the study. Additionally, the survey, which was conducted as an anonymous questionnaire, covered the opinions of doctors employed at Clinical Hospital Centre Split, whose views represent a subjective perspective, particularly in the section of the survey concerning patients. Therefore, the results of this part of the survey should be taken with some reservation, as they reflect the subjective opinions of the employed doctors. It should be noted that the sample covered by the survey consists of doctors from various specialties, and the sample size is small, as it includes only 32 doctors employed at Clinical Hospital Centre Split. The research was extended to the supply of pharmaceuticals, which represents the link between drug production, procurement, and distribution. A limitation in this part of the survey is the relatively small number of questions, as well as the situation in the county, which is not entirely representative of the whole of Croatia.

²⁹ Ibid

³⁰ <https://www.kbc-zagreb.hr/ankete.aspx> (16. 12. 2024)

Additionally, an important limitation is the realistic impossibility of proposing a specific model of supply chain management for Croatian healthcare. Specifically, it concerns a complex hybrid model that requires an interdisciplinary approach and work that span over years, making it overly ambitious to offer a concrete model in this paper. The aim of the research is focused on evaluating the effectiveness of the three main subsystems that make up the supply chain management of healthcare in Croatia, which consists of three core components: the treatment subsystem, the procurement and production subsystem, and the pharmacy subsystem. The interconnection of these three subsystems in the basic healthcare system of developed healthcare systems is shaped as e-health services, based on the digitalization of communication and systematic action, where controlling plays a key role. The research objectives are set as an approach that is conducted segmentally, meaning that the production of pharmaceuticals and the adaptation of production to market changes are researched separately. Subsequently, the basic characteristics of the hospital treatment system are investigated, and finally, communication is analysed. In line with the set goal of the research, the hypothesis posits that the e-health services system in Croatia is developed, highly digitalized, and receives significant approval from patients during its implementation.

3. METHODS AND SAMPLE

Considering the limited research on the topic of supply chain management subsystems in clinics and pharmacy, the desk research method was used to obtain important insights that shaped the subject of this study. The key part of this paper focuses on surveying and processing the research results in order to reach the necessary conclusions.

3.1. Designing and Research Procedure

The research conducted in this study included a sample of 32 doctors employed at Clinical Hospital Centre Split. The survey covered doctors from various specialties, with one doctor selected from each department of Clinical Hospital Centre Split. Nurses and patients were excluded from the sample. The research was conducted at the end of November 2024 and the beginning of December of the same year, in Split at the Main City Hospital and its departments. Care was taken to ensure that the participants were neither too young nor too old, with participants aged between 35 and 55 years. The reason for this age range is that doctors in this period of their career are typically the most active and dynamic, having intensive contact with patients, while also possessing a thorough understanding of the system in which they work. To ensure the truthfulness of responses without additional barriers or concerns, the survey was conducted anonymously.

4. RESULTS

According to the aim of the research and the methodology adjusted to prove the hypothesis, the survey was conducted with three key subjects that make up the supply chain management of e-health services at Clinical Hospital Centre Split. Therefore, one part of the survey focused on pharmacy, specifically on the production and distribution of medications, while the other part was directed towards understanding the basic characteristics of the functioning of Clinical Hospital Centre Split. The following results were obtained in this regard.

	Questions	YES	NO
a)	Is the medication procurement system fully digitalized?	X	
a1)	If YES, is there a built-in reserve in the system, and how long does it last?	Partially, the system is still in development.	
a2)	Is the system based on predictive analysis?		X
a3)	Is the system updated and adapted to changes? Please explain.	Yes, but not quickly enough.	
a4)	Is the procurement system connected to the central healthcare procurement system?	X	
a5)	Is the production of medications adapted to changes in the disease structure for the area covered by the production?	X	

Survey 1: Questions on the Digitalization of the Medication Supply System
(Source: Defined and conducted by the authors)

Although the medication supply system is significantly digitalized, there are processes that are not fully digitalized or designed in a way that allows the entire medication procurement and distribution process, especially within hospital pharmacies and departments, to be closely monitored. Procedures are not aligned, which can lead to errors in the distribution of medication to patients, as well as significant financial losses for the institution and the system. The introduction of digitalized pharmacy warehouses, colloquially referred to as “robotic pharmacies,” as well as the development of models where each patient will receive individualized therapy on the department, will allow better monitoring of pharmacy stock, expiration dates, and the frequency of medication usage. This will enable predictions for the upcoming period and more efficient inventory management. Thus, it can be concluded that the medication supply system in the county is developing, although it is not yet sufficiently advanced. However, the management is aware of this and is making efforts to address the issues and stabilize the system. In this way, the medication supply subsystem contributes to the improvement of the overall healthcare system in the Split-Dalmatia County.

	Questions	YES	NO
b1)	Is the treatment system fully digitalized?		x
b2)	If YES, are patient data from "general practitioners" accessible on a global level, all the way to hospitals and vice versa?		x
b3)	If YES, does the system include all medications that the patient is using, or does the patient have to provide a list of their medications upon entering the hospital?	x	
b4)	Is the daily medication list for each patient in the hospital digitally recorded?	x	
b5)	Is there a digital system for monitoring the consumption of medications for each patient?	x	

Survey 2: Questions on the Digitalization of the Treatment System
(Source: Defined and conducted by the authors)

The survey related to the digitalization of the hospital treatment system consists of 5 basic questions that address the relationship between the patient and the healthcare system. Of the 5 questions in the survey, 3 are positive, indicating the existence of digital operations in the "patient - healthcare provider" relationship. The need for a higher level of digitalization, in which the general practitioner is connected with the rest of the healthcare system, is extremely important due to significant differences in education levels and mentalities across various parts

of Croatia. It should be considered that a large portion of the Croatian population lives in over a thousand small settlements, and the digital connectivity of their general practitioner with specialist outpatient clinics, hospitals, and clinics is crucial. The use of paper-based records is a thing of the past, and in Croatia, this needs to be changed and transformed into a digital transfer of information at all levels. Due to the insufficiently developed digitalization of e-health services, both in the Split-Dalmatia County and across Croatia, it is important to analyse the operation and functionality of the communication system. For this purpose, a brief survey was conducted to assess the basic characteristics of communication at Clinical Hospital Centre Split, as well as the integration of the entities within the supply chain management of healthcare services.

	Questions	YES	NO
c1)	Is communication ensured with every patient personally, starting from the general practitioner according to the level of development of the destination where the service is provided, and continuing to the hospital?		x
c2)	Are patients satisfied with the services provided?		
	• General practitioner services	x	
	• Hospital services	x	
	• Clinical Hospital Centre) service	x	
	• Nursing services	x	
	• Doctor services	x	
	• Technical services	x	
	• Waiting lists (general practitioners, hospitals, Clinical Hospital Centres)		x
c3)	Integration of pharmacy and treatment systems		
	• Has the integration of all three systems (pharmacy, treatment, and hospital care) been achieved, and how?		x
	• Has unity been achieved in this integration, and how?		x
	• Has controlling been established in this integration, and how?		x

Survey 3: Communication and Services
(Source: Defined and conducted by the authors)

The survey, which focused on the acceptability of the basic characteristics of communication between the patient and the doctor within the treatment system, reveals three key aspects of the communication problem. Firstly, direct contact between the patient and the doctor is not possible, which significantly hinders many issues that the patient would like to address directly with the doctor. Of course, in the current conditions in Croatia, this type of contact is almost impossible because it would burden the doctor with numerous questions and answers from patients. However, this problem can and should be addressed by a higher level of digitalization and organization. The second part highlights a high level of patient satisfaction with doctor services, except for the long waiting lists. This confirms the well-known characteristic of doctors and nurses, who, despite the imperfections of the healthcare system, positively influence patient perception and satisfaction through their personal commitment. The third group of questions, through just three questions and answers, shows that the subsystems of drug production, pharmacy, and treatment are not integrated.

This conclusion should be connected to the previous finding of incomplete digitalization of the entire e-health services system in Croatia. This fact is not sufficiently known to patients, but it is a well-known issue to those involved in managing the supply of medicines to hospitals and production according to the needs of the national market. Considering the information that in 2022, Croatia's total export of pharmaceutical products and preparations amounted to 1.05 billion euros, which is a 3.9% increase compared to 2021, while imports reached 1.8 billion euros with a growth of 10%, it can be concluded that domestic drug production satisfies only half of Croatia's needs, with the other half being met by imports. Therefore, the issue of integrating the supply chain management system for drug production, pharmacy, and treatment is very complex. However, through digitalization, the integration of the system can be highly operationalized.

5. PROPOSAL / MODEL

Modelling the healthcare supply chain management system is a complex task that is based on one clearly defined strategic goal, which would be to achieve a level of healthcare services at least at the European Union average. This implies the division of that goal into several sub-goals that become the objectives of all stakeholders. For such a supply chain management system to function effectively, a highly sophisticated oversight system is required, which is ensured through ERP (Enterprise Resource Planning). Explaining the function and significance of ERP in supply chain management, Jenkins identifies 13 areas.³¹ Which must be covered by the ERP, which will significantly improve the efficiency of supply chain management:

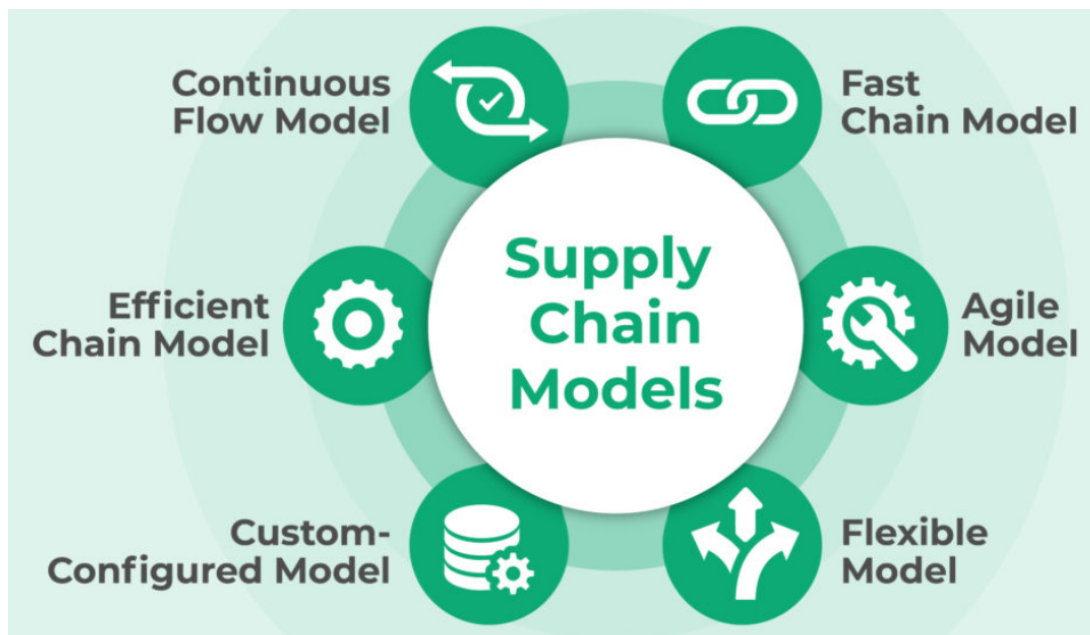
1. **Planning:** The planning capabilities in ERP software enable companies to forecast inventory and production needs based on factors such as historical demand, seasonal variations, and sales forecasts.
2. **Purchasing:** Replacing manual and paper-based steps with automated purchasing can reduce costs and improve oversight of the purchasing process.
3. **Procurement:** ERP systems allow companies to centrally manage the entire procurement process, from evaluating and approving suppliers to managing supplier quotations and tracking orders.
4. **Supply Chain Execution:** ERP software helps companies efficiently manage complex manufacturing processes by coordinating inventory, production resources, and logistics to ensure timely completion and delivery.
5. **Tracking:** Traditionally, tracking the supply chain required companies to manually pull and consolidate data from many different systems. This complex and time-consuming process was prone to errors and made it almost impossible to get real-time information. With supply chain data integrated into the ERP system's database, companies can use real-time dashboards to monitor performance across the entire supply chain. This helps them quickly adapt to problems such as delivery delays or production equipment failures.
6. **Maintenance:** Maintenance and asset management applications integrated into ERP packages help companies track equipment utilization, plan maintenance to ensure smooth production, and track asset costs.
7. **Measurement:** Successful supply chain management greatly depends on the ability to collect, analyse, and extract useful insights from data. ERP solutions provide extensive measurement and reporting capabilities that gather data from both internal and external sources.

³¹ Jenkins, A.: „The Role of ERP in Supply Chain Management“, OracleNetSuite, 2023; www.netsuite.com/portal/resource/articles/erp/supply-chain-management-erp.shtml (02. 02. 2025)

8. Collaboration and Communication: ERP systems facilitate communication and collaboration within the company, as well as with external suppliers. Procurement, production, sales, and inventory teams use the same shared database, meaning that information updated by one group is immediately available to everyone else.
9. Inventory Management: Sophisticated inventory management systems help companies ensure and maintain the right amount of inventory to fuel production processes and fulfil customer orders. For example, ERP systems can alert purchasing teams when it's time to reorder items based on factors such as seasonal sale data, forecasted customer demand, and supplier lead times, along with current stock levels.
10. Warehouse Management: Warehouse Management Systems (WMS) integrated into ERP packages help companies manage their warehouses more efficiently, reducing costs and quickly fulfilling orders. WMS can help companies optimize warehouse space, track inventory, monitor productivity, and improve picking and packing efficiency.
11. Material Management/Material Requirements Planning (MRP): Material requirements planning software helps companies schedule efficient production timelines, ensuring that the right materials are available at the right time. The software determines the quantities of raw materials and other inventory needed to meet demand, as well as when materials will be required. Advanced MRP systems allow companies to optimize production and delivery by analysing the impact of various potential scenarios, such as different shipping locations.
12. Supplier Performance Evaluation: Continuous supplier performance evaluation allows companies to select suppliers that consistently meet requirements. ERP software provides analytics that companies can use to measure and compare supplier performance based on metrics such as delivery times, on-time deliveries, order accuracy, and cost.
13. Global Visibility: ERP systems can provide better visibility of raw materials, subassemblies, and finished products as they move from supply to production and delivery, both within and outside the company. This supply chain visibility is key to increasing operational efficiency and improving relationships with customers and suppliers.

In the context of a large, complex supply chain, where supply chain management must anticipate the future, as is the case in healthcare, it is essential to develop additional ERP features in the cloud, such as integration with robotics and predictive analytics based on artificial intelligence. Based on this, the model for complex supply chain management is established by selecting six model options, each with unique characteristics aimed at achieving the set objective.

Picture following on the next page



Picture 5. Six options for a supply chain management model suitable for healthcare
(Source: www.10xerp.com/blog/supply-chain-model/)

The six options for the supply chain management model have their characteristics tailored to the goal, considering the market situation as well as the form of production and business operations. According to the options, the model is applicable in the process of shaping the supply chain management model for healthcare.

- The Continuous Flow Model

The continuous flow model or continuous model is best suited for mature industries that produce a uniform set of goods and expect stable demand in their market. Goods flow continuously, and the entire chain is built for continuous and forecasted delivery of goods.

- The Fast Chain Model

The continuous flow model or continuous model is best suited for mature industries that produce a uniform set of goods and expect stable demand in their market. Goods flow continuously, and the entire chain is built for continuous and forecasted delivery of goods.

- The Efficient Chain Model

Managers of supply chains in highly competitive markets use the efficient chain model. They must strive for high overall equipment effectiveness at all times to maintain their competitive edge, which is why they choose the most cost-effective model when determining their supply chain strategies. The emphasis is placed on proper inventory management and maximizing the performance of the workforce and production processes.

- The Agile Model

The agile model requires fast supply chains for selling modern products during peak demand. This model tracks market demand in real-time, manages its inventory, uses joint product design, and emphasizes efficiency from start to finish. The agile model is suitable for companies that sell specialized products requiring special attention in transportation or design, such as luxury fashion items.

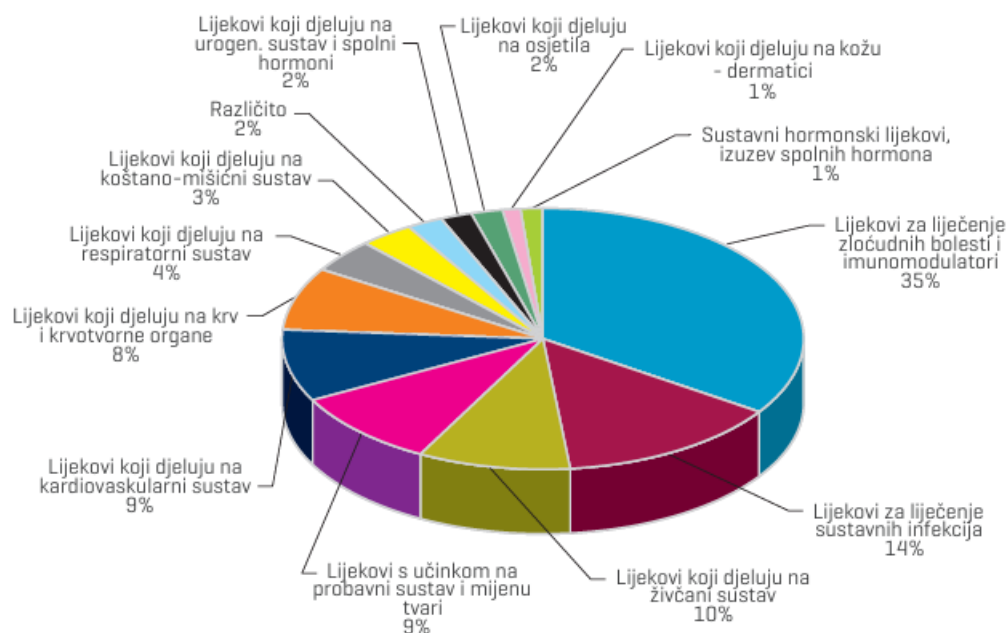
- The Custom-Configured Model

The customized configuration model combines the agile and continuous flow models. It is used in industries where more customized configurations are needed. The market remains fairly consistent, with a few predictable peaks in demand throughout the year, but the company remains flexible only in case a particular customization falls out of use.

- The Flexible Model

The flexible model enables businesses to meet peaks of high demand and long periods of low demand. Suppliers are diverse and engaged on seasonal contracts to ensure a stable flow of raw materials as needed, and factories use automation wherever possible.

As seen, classifying and characterizing the mentioned 6 chains as options for supply chain management ensures adaptation to the specific characteristics of the given production, and accordingly, it is adjusted to the set goal. Certainly, supply chain modelling is very complex and represents a system that requires a lot of knowledge, effort, and time to shape. The question arises: how to set up and manage the supply chain, i.e., supply chain management. The most productive supply chain that a complex system needs, such as the healthcare supply chain, is a hybrid chain to meet the specific needs of companies and customers within that chain. When setting up an adequate model of the healthcare supply chain system, it is important to consider people, technology, and the existing process with all its flaws and strengths when selecting the model. The fact that this is an extremely complex segment of management research, which is interdisciplinary in supply chain management, is confirmed by the small number of scientific papers but a larger number of consulting firms offering their models in practice. Considering the supply chain management of Croatian healthcare, a key role is played by the structure of diseases that require healthcare, and the availability of medications at all times, regardless of market changes.

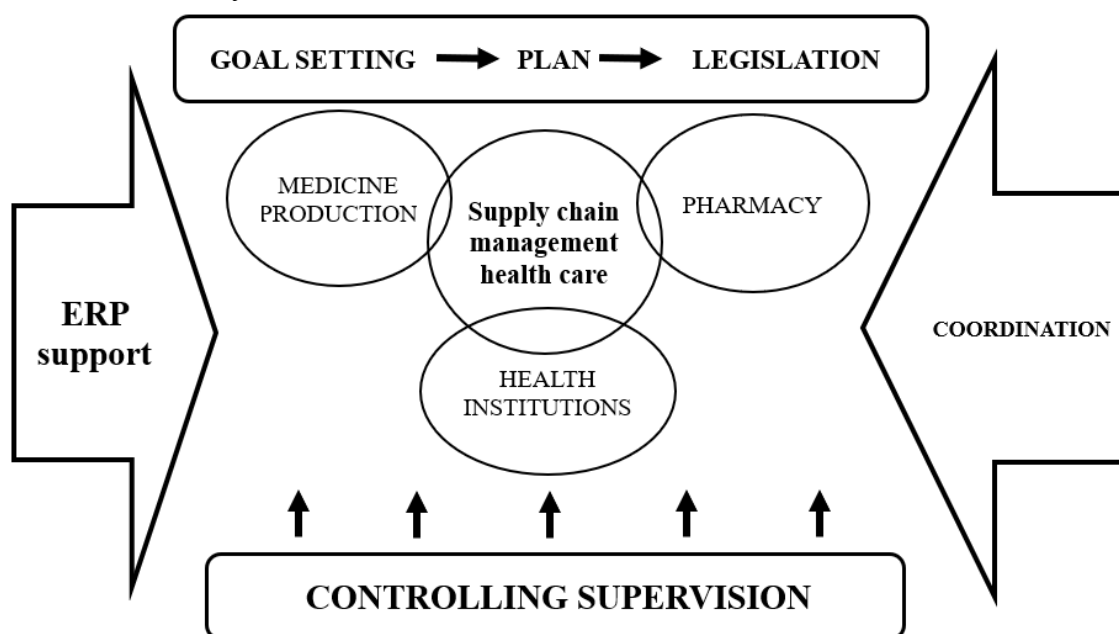


*Chart 1. Medications in the total value of medication consumption in 2021
(Source: Božić, Ljiljana: „Farmaceutska industrija“, Economic Institute Zagreb, Sector of Analysis, extract from data of the Croatian Institute of Public Health, 2022, p. 3.)*

The structure of demand for medications in Croatia reflects the representative state of the disease structure in the country. As seen from the chart, malignant diseases dominate in Croatia, followed by systemic infections, diseases of the nervous system, diseases of the digestive system, cardiovascular diseases, and blood diseases, which together make up 85% of all diseases in Croatia. In this regard, it is necessary to approach the design of healthcare supply chain management, as this structure concerns all participants in the chain.

5.1. How to make supply chain management effective?

As already mentioned, controlling is a fundamental management function, but also a way of thinking that must dominate when setting up supply chain management. In this regard, the support of e-technologies, particularly in the sense of resource planning systems (Enterprise Resource Planning, ERP), which enable companies in the chain to coordinate and simplify the complex chain of activities.³² In this chain, through a controlling-oriented management, the functioning of all participants in the chain is monitored daily, and timely intervention is made in case of deviations from the plan. "By integrating essential capabilities of supply chain management, from demand planning and procurement of medications to production and distribution to clinical centres, ERP systems help participants in the chain efficiently meet the needs of patients and clinics while controlling and monitoring costs. To better understand the role of ERP systems in supply chain management, it is important to know that ERP systems store all business data in a unified database, so companies, as participants in the chain, receive a consolidated overview of supply chain operations along with their financial and other critical information. The integration between ERP modules helps companies in the chain to better plan procurement and production based on the overall national demand for medications. Based on the above, it is possible to establish a general model of supply chain management for the Croatian healthcare system.



Picture 6. Proposal for the supply chain management model of the Croatian healthcare system
Source: designed by the authors

³² Jenkins, A.: „The Role of ERP in Supply Chain Management“, OracleNetSuite, 2023; www.netsuite.com/portal/resource/articles/erp/supply-chain-management-erp.shtml (03. 02. 2025.)

According to the explanation in the previous chapters, and especially in this chapter, in the first step, when choosing the model, it is suggested to develop a hybrid model that should incorporate the characteristics of the 4 theoretically established models: (1) the continuous flow model, (2) the efficient chain model, (3) the customized configuration model, and (4) the flexible model. People as a resource in the model are an extremely important factor, as the functioning of supply chain management in Croatian healthcare requires adequately educated and trained employees who are products of the profession, not of Croatian politics. Since it is an interdisciplinary model, attention must be paid to ensure that supply chain management is not predominantly represented by health professionals, as is the practice in Croatia. To operate supply chain management in healthcare, it is necessary to develop a controlling system for monitoring as well as coordination among the participants in the chain, and for this, an ERP system for supply chain management is required. Certainly, it is important to account for continuous refinement, elimination of deficiencies, and adaptation of the chain to market situations, which means including and developing predictive analytics and artificial intelligence.

6. DISCUSSION

Healthcare is one of the most sensitive sectors of national-level operations, which means that it requires responsible and effective management. In Croatia, as a country, economy, and society in transition, the healthcare system operates within the framework of inherited systems from the former socialist regime, which requires new solutions to ensure that healthcare services remain at a high standard. The Croatian healthcare system consists of three major components: pharmaceutical production, pharmacy as a distribution system, and clinics and outpatient facilities that directly interact with patients and perform the task of treating the sick. These three systems/subjects, based on the core task of treating the sick, represent a collective that needs to be shaped into a cohesive supply chain management system. Supply chain management, in its form, belongs to the most complex management systems, yet it is insufficiently covered in theory. More significant treatment of supply chain management can be found in practice, particularly in services provided by entrepreneurs/consultants. The analysis of a possible healthcare supply chain management model confirms its complexity and importance for the success of national healthcare. Dependence on the import of medicines does not contribute to patient safety, and increasingly frequent diseases turning into pandemics pose a strategic risk that must be addressed. This research has confirmed the fact that healthcare supply chain management is also an issue for the young mega-European community, the European Union, which has also faced the problem of pharmaceutical production and dependency on imports. Therefore, the issue of supplying the national market and the higher level of coverage is expected to be addressed by domestic pharmaceutical production. The Croatian healthcare supply chain management faces many challenges, burdened by scandals and public dissatisfaction, especially with regard to waiting lists, as confirmed by this study. Furthermore, communication is insufficiently developed within the entire supply chain management system, which together results in an insufficiently good assessment of the excellence of Croatia's healthcare supply chain management. However, entrepreneurship that has developed in post-war Croatia contributes to a better supply of medicines. It is a disadvantage that many manufacturers are focused on more affordable and profitable drug production, indicating shortcomings in supervision, system harmonization, and insufficient attention from the state administration. This problem highlights the underdeveloped and inefficient Croatian healthcare supply chain management system, with an important aspect being the issue of the country's and society's transition, in which private capital now plays an important role, having entered

pharmaceutical production, pharmacies, as well as clinics and outpatient facilities. The connection between the private and public sectors is still underdeveloped, to the detriment of patients. The results of the research point to the key segments of the Croatian healthcare supply chain management that need to be approached from a controlling-oriented management perspective. In this regard, the development of the characteristics of the supply chain management model is of crucial importance, such as a higher level of coordination, task allocation, responsibility, and participation within the system. Additionally, for the system to function, coordination of stakeholders must be achieved through the support of ERP and artificial intelligence. In conclusion, this means the formation of a new generation of professionals who will meet the requirements of the task, which calls for higher knowledge and less political interference, which has proven to be detrimental to the efficiency of the entire system.

7. CONCLUSION

The research conducted in this paper was focused on supply chain management within the healthcare subsystem in Croatia, with a case study of KBC Split. Healthcare consists of three subsystems: pharmaceutical production, pharmacy, and healthcare institutions. Together, these form a unified healthcare system that needs to be managed. The analysis confirmed that it is an extremely complex system that operates at a macro-national level, meaning that supply chain management in the Croatian healthcare system needs to be viewed integrally. As a result of the research, the hypothesis set out in the study was tested. The hypothesis stated that the e-health services system in Croatia is well-developed, highly digitalized, and well-received by patients. The null hypothesis (H0) was not confirmed in this research. Therefore, the alternative hypothesis (H1) was accepted, which contradicts the statement of the null hypothesis (H0). In this regard, the research led to the following findings.

- a) Supply chain management in the healthcare subsystem of Croatia is a complex system inherited from the former socialist state and the planned economy, which makes it insufficiently efficient.
- b) As mentioned in point a), this refers to the very low level and underdeveloped potential for cooperation between the private and public healthcare sectors
- c) The pharmaceutical production subsystem is tasked with ensuring an adequate supply of medications at all times in Croatia, which has not been realized.
- d) As mentioned in point c), the issue of ensuring all types of medications in sufficient quantities is a problem for the European Union, but also for Croatia, meaning supply heavily depends on imports.
- e) Pharmaceutical production in Croatia takes place through approximately 30 companies, with Pliva Zagreb at the forefront.
- f) The business strategy of private companies is largely focused on more profitable products, which shows insufficient synergy with the needs of the Croatian market and the underdevelopment of supply chain management.
- g) Pharmacy, which is a segment of Croatian entrepreneurship, similar to manufacturers, is focused on mass-market products that contribute to a more successful business result.
- h) Communication between "patient: hospital doctor" is almost nonexistent, and there is no connection between general practitioners and the treatment system, meaning there is no link between clinics and outpatient services.
- i) Patient waiting lists are long, causing dissatisfaction and discontent among patients.
- j) Private practices and polyclinics are operating successfully and are available to patients who can afford to pay for private medical services.

- k) Cooperation between the private and public healthcare sectors is underdeveloped, to the detriment of patients.
- l) Supply chain management is poorly digitalized, and the monitoring system, as well as the controlling approach to management functions, is underdeveloped.
- m) Supply chain management in the Croatian healthcare system operates in accordance with laws, but since there is no macrostrategic national system, the system's deficiencies are addressed through a trial-and-error approach.

In conclusion, the supply chain management model of the Croatian healthcare system is in the developmental phase, but the creation of an effective operational model based on scientific and professional foundations is yet to be expected.

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THE IMPACT OF THE SHARING ECONOMY ON CONSUMPTION

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ABSTRACT

This article presents a literature review of the impact of the sharing economy on consumption, focusing on the analysis of key trends and implications for both businesses and consumers. The study examines various aspects of the sharing economy, including its impact on consumer behavior and market dynamics, as well as its potential policy implications. It examines the factors that influence consumer behavior within the sharing economy, including the roles of trust, convenience, and cost savings. Overall, the findings suggest that the sharing economy has a significant impact on consumer consumption patterns and behaviors. The study aims to comprehensively analyse the relationship between the sharing economy and consumer behavior. The findings contribute to a better understanding of the impact of the sharing economy on consumption patterns and preferences.

Keywords: *sharing economy, consumption, consumer behavior*

1. INTRODUCTION

The sharing economy, characterized by peer-to-peer exchanges facilitated by digital platforms, has significantly transformed consumption patterns (Minami et al., 2021; Kuhzady et al., 2022). This review aims to analyze the effects of the sharing economy on consumer behavior, focusing on how it alters consumption habits, promotes sustainable practices, and impacts traditional business models. The sharing economy has gained significant attention in recent years due to its potential to disrupt traditional industries and reshape consumer behavior (Sima et al., 2020). This has led to a growing body of research examining the impact of the sharing economy on consumption patterns (Hossain, 2020; Mody et al., 2021; Gerwe & Silva, 2020; Curtis & Mont, 2020; Henry et al., 2021). In this paper, we aim to contribute to the existing body of research by conducting an impact of the sharing economy on consumer behavior. We examine the various ways in which the sharing economy has affected consumer behavior and spending patterns. The sharing economy has recently gained momentum in sharing goods and services, such as homes, cars, or other applicable assets (Schor, 2020; Geissinger et al., 2020). This innovative business model thrives across various industries, regardless of the form of ownership, operational structure, or market sector. The rapidly rising number of sharing economy companies worldwide has led to intense market competition and significant social and economic changes (Hossain, 2020). Policymakers who are aware of how innovations spread across various markets and who conduct strategic management analyses for key stakeholders need to address the sharing economy problem, as it is a global issue (Gerwe & Silva, 2020; Laukkanen & Tura, 2020; Geissinger et al., 2020; Laukkanen & Tura, 2020). Early analysis and practical actions can improve the field, stimulating business competitiveness and novelty. However, increased interest in the phenomenon has led to growing inconclusiveness rather than commendable research into the sharing economy (Dabbous & Tarhini, 2021). Consequently, recent literature offers new insights, marking a new phase in the ongoing academic research on

this novel concept. This paper provides a quantifiable continuum on the sharing economies. The findings provided valuable insights for each stakeholder, highlighting the significant effects in both the short and long term. Policymakers and local governments can benefit from the findings of this research by creating and enhancing a more effective ecosystem for their communities, thereby improving social welfare and promoting economic growth. Increased interest in the sharing economy phenomenon can lead to increased business competitiveness, novelty, and customer satisfaction.

1.1. Literature background

Recent literature on the impact of the sharing economy on consumption provides insight into the factors that influence this relationship and its implications for businesses in the sharing economy, as well as for users, competitors, and regulators. However, the sharing economy literature is growing exponentially, and the absence of a comprehensive review imposes significant limitations on understanding the main findings of existing individual studies and identifying proposed future research needs (Hossain, 2020; Gerwe & Silva, 2020). However, it is unlikely that academic research on the sharing economy has been limited to the marketing field, ignoring other relevant aspects and research questions. The voluntary nature of industry affiliation raises doubts about the level of critical analysis in the existing literature on the sharing economy (Hossain, 2020). The rise of the sharing economy has expanded the use of the internet for the peer-to-peer exchange of goods and services across a wide range of sectors, including transportation, temporary accommodation, music and film, personal loans, and professional contacts. The sharing economy enables access to goods and services by allowing direct peer-to-peer contact and use, rather than the traditional plug-and-play model, where consumers are passive users of products once they have purchased them. Depending on the specifics of the sharing economy business model, consumers have access to a wide variety of goods and services, with varying degrees of quality and uncertainty about future availability and reliability, often at a more affordable price compared to traditional enterprises. While the sharing economy has the potential to generate benefits by leveraging unused resources and decoupling access from ownership, it has also raised public and policy concerns regarding other matters, such as health, economics, and environmental safety (Buhalis et al., 2020).

1.2. Research question and objectives

In our search for context and objectives, this paper examines research from operations and service management, as well as other academic journals that have published papers on strategy in this field. Consequently, we aim to identify new and promising research opportunities for strategy researchers interested in sharing economy and consumption. We also discuss promising directions for future strategy research, considering the methodological issues and challenges identified in pertinent research questions. The sharing economy is growing exponentially, offering new perspectives for both consumers and companies. This paper examines the existing knowledge on how sharing economy firms deliver value to actors within a consumption context, with a focus on insights from the field of strategy. Our research question is: How does the sharing economy impact consumption? Specifically, we investigate how the sharing economy influences individuals' consumption behavior.

2. METHODOLOGY

This study comprises three distinct stages. In the first stage, key questions were defined that serve as the basis for the systematic literature review (SLR). In addition to GDPR requirements, they also raise significant concerns about the changes that the uptake, acceptance, and use of

platforms are guiding in the global market, as well as consumer protection regulations. Thus, we are in the presence of a massive growth cycle, as using platforms facilitates the creation of social networks, offers consumers personalization options, and provides time and money savings. That is why society, in general, is divided between defenders and critics of the current shared economy (Schor, 2020). We used systematic methods to create the SLR [Systematic Literature Review]. These included setting clear goals, defining the research question, and defining criteria for including data. We also ensured that relevant evidence was included and that the identified data was critically evaluated. Finally, we extracted the data following these methods. These key stages were founded on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

2.1. Search strategy and selection criteria

Second, we applied another set of terms to retrieve studies dealing with the impact of the sharing economy. We thus used terms such as "economic impact," "impact on consumption," or "social impact" to describe these effects. Finally, the third set consists of general terms related to economics and business, which were used to capture the relevant literature in the databases. We also drew references from previous systematic reviews, related conceptual literature, and the authors of key research articles to identify potential additional publications that fit our inclusion and exclusion criteria. For instance, Duan and Sandhu (2023) analyzed 443 articles published from 2015 to 2022. They indicate that research on the sharing economy has been growing over the years, with emerging themes such as "digital economy" and "bike-sharing" gaining traction. A total of 20 publications related to the sharing economy and corporate social responsibility (CSR) published between 2017 and 2021 were analysed by Tetrevova et. al. (2023). Their focus was on the overall trends and research clusters identified within the specified time frame (the sharing economy as a tool of the CSR concept; the joint contribution of the sharing economy towards reduction of overconsumption and wastage; the importance of CSR communication for sharing economy platforms; and relationship between the sharing model and the concept of CSR). The authors included language restrictions; the research papers excluded from our SLR were non-English papers, non-empirical studies, conference papers, serializations, book chapters, and editorials. We utilize the updated Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure that our systematic literature review (SLR) methodology is rigorous and transparent. A comprehensive database search was conducted in May 2024 across the economics and business fields in the Web of Science and Scopus databases. An analysis of 36 publications on this topic, published between 2020 and 2024, was conducted. The search strategy was designed around three groups of search terms. First, we employed a set of terms that refer to the concept of the sharing economy. These include the terms "sharing economy," "collaborative consumption," "access-based consumption," "platform-based economy," "collaborative economy," and "collaborative business models."

2.2. Data extraction and synthesis

A data extraction protocol was developed to facilitate the extraction and synthesis of data. The data extraction concentrated on reporting the key themes and all relevant variables to form a summary. Moreover, the findings reported in the literature to judge the impact of the sharing economy on consumption were described and analyzed. Studies are characterized based on the research question and the kind of source of profit. The research question can generally be addressed from two perspectives. On the one hand, the research question can focus on the impact of the sharing economy on consumption. This means that researchers try to investigate the direct and indirect effects of the sharing economy on market demand.

For most of the studies used in the analysis, the sharing economy is a market where services are exchanged among individuals who are consumers rather than professional suppliers of such services and who utilize digital platforms, often of a collaborative nature.

3. CONCEPTUAL FRAMEWORK

The term sharing economy did not emerge to frame what we are living in today, in which there are several economic agents whose participation is not registered in the official accounts—the so-called informal economy—and who practice, whether in total or partial time, activities characteristic of commerce and business, as well as ideologies of help, collaboration, and even as an alternative form of work. This part of the economy gains strength through recent traditions and demands changes in the current model of labour relations, especially when legal ordinances are no longer sufficient and the law tends to apply rules to entirely different realities. Governments are exploring new ways to manage the economy, and this reality has also emerged in cities where technological development is primarily concentrated (Schor & Vallas, 2021). This section examines the sharing economy and how various authors have assessed it. It initiates the discussion about the conceptual framework. The discussion begins by presenting the concepts associated with each keyword in the title. After this, we present the framework and introduce the research questions. The concepts frequently differ in literature, and even so, the literature review is dedicated to understanding the exchange of peer-to-peer resources, generally, as a form of collaboration rather than commercialization and inflation.

3.1. Sharing economy definition

The term "sharing economy" commonly refers to an economic model in which individuals can borrow, share, rent, or purchase various goods and services through different channels, primarily facilitated by the development of digital platforms (Schor, 2020). However, this definition is criticized for including business-to-business collaborative economies, which differ from the pure collaborative consumption scale, as they focus mainly on reducing transaction costs for other companies, aiming to optimize specific transactions, reduce the underutilization of human, physical, financial, or intangible resources, and lower costs. Consequently, some authors refer to it as a "shared business-to-business economy." The terms "collaborative consumption" or "collaborative economy" describe a type of consumption that involves sharing goods on an occasional basis, or, in other words, providing access to goods rather than ownership through a facilitated process of mutualization.

3.2. Theoretical perspectives on consumption in the sharing economy

From a macroeconomic perspective, SE impacts new demand patterns and generates new economic drivers. According to some authors, SE can increase productivity and stimulate employment growth. (Mont et al., 2020; Pouri & Hilty, 2021). By contrast, we can see that SE fosters the revival of a concept as old as human history—consumption as sharing—under the lens of a new company strategic approach that orients itself towards the utilitarian use of goods and services. Whether to consider the SE paradigm as part of the expression of sustainable consumption should be debated, as it highlights material, economic, social, spiritual, and moral aspects. First, it is necessary to distinguish between forms of utilization that evade, elude, or suggest the incomplete satisfaction of consumers' material and immaterial needs as a social dimension. Lately, we have observed a shift in patterns of economic activity at the micro-level, once again due to the emergence of a disruptive innovation: the sharing economy (SE). Some authors (Patel et al., 2012) propose a new collaborative model that enables everyone to access goods, services, and skills, inviting them to share their capacities and capabilities.

Moreover, some authors (Rong et al., 2021) consider SE as a way for consumers to obtain what they want more conveniently, at lower prices, or through assets they own. Within the companies considered to belong to SE, there is significant diversity in business models and offerings. Still, all share one characteristic: their core business is the gentle use of the productive capacity of individuals and business assets (whatever they may be) to meet their needs.

4. EMPIRICAL FINDINGS

The review results indicate that researchers employ both proxy and observational empirical methodologies to investigate the impact of the sharing economy on consumption. Most researchers choose the cross-sectional survey, which relies on observational methods. These investigations are often based on both random and nonrandom data. The large size of these datasets enables researchers to analyze relationships using a range of statistical tools, from descriptive statistics to hypothesis testing, regression analysis, and advanced structural equation modeling (SEM)-based models. Furthermore, the sharing economy is often associated with novel phenomena that attract substantial attention from the public and stakeholders, providing researchers with broad possibilities to develop and test hypotheses related to their research questions. The goal of the systematic literature review (SLR) is to review the literature as a window to the grail: it is a map of the territory that can identify, help answer, and raise further questions, potentially leading to reliable, generalizable, and scaling theory formulation as applicable for researchers and practitioners moving beyond anecdote-based conclusions. This section presents empirical findings based on the search strategy used.

4.1. Consumer behavior in the sharing economy

Studies have identified the existence of the collaborative economy for at least ten years, which has developed intensely, primarily in response to the 2008 financial crisis and the subsequent emergence of technologies, notably smartphone applications. However, its magnitude is currently minimal compared to the traditional economy. There are three potential reasons for this failure to reach its potential: lack of access to shared assets, the spontaneous nature of the economy versus the obligations of the traditional economy, and the convenience of direct consumption over conventional acquisition. The features identified in collaborative consumption represent a trend that is growing globally, but its practices coexist in the same context as other consumption models. In other words, the rise of the sharing economy does not imply a decline in other established consumer models (such as individuals or the sharing of private property), but rather that consumers will use new alternatives more frequently as the level of competition in the service or good that it represents will also be a deciding factor. Currently, the terms "sharing economy," "collaborative economy," and "access economy" are often used interchangeably. However, Semple (2018) argues that the term "sharing economy" is inappropriate because what is happening is the development of commercial markets for renting goods and services from a pool of non-commercial providers (Gerwe & Silva, 2020). Either way, the concept of the sharing economy is not new and has undergone several transformations, each guided by historical facts and context. What differentiates this current model of sharing is technology, which has acted as a facilitator in matching the excess supply and demand of increasingly varied and diverse service offers from non-commercial individuals or corporate entities. Through applications that intermediate this new arrangement, these exchanges are enabled between people who have never met before, or what are often referred to as strangers.

5. DISCUSSION AND IMPLICATIONS

Finally, changes in consumer behaviour and the peer-to-peer marketplace structure are the leading indicators of the microeconomic and individual-level impact. The marketing perspective and the consumer behavior perspective are the two primary research perspectives that have primarily examined this cross-level impact. The consequences identified are twofold: on the one hand, it supports shared marketplaces that are building the infrastructure of the sharing economy, and on the other hand, it offers more opportunities for business players in industries that the growth of the sharing economy is expected to influence. These implications open doors for policymakers, academics, and entrepreneurs. We argue that the sharing economy affects the three levels of the traditional economy, providing evidence to support the research perspectives employed. The influence of the determinants on the growth of the business ecosystem is evident at the macroeconomic level. Two main research perspectives are used: one based on inter-organizational relationships and the other on the innovation system and the ecosystems. The impact at the sectorial/industry level has been analyzed in various sectors and approached mainly through the technological innovation and disruption perspective, presenting an outlook on demand behaviour.

5.1. Key themes and patterns in literature

This study examines the impact of the sharing economy on consumption by presenting a typology of academic literature, aiming to understand related challenges and research gaps. We systematically review what is being shared, from whom consumers rent, and the effects of sharing within the sharing economy. Although the growing trend in literature was observed between 2010 and 2017, the selected papers were published in international journals from 2020 to 2024. The main contribution of this review is to organize this separable topic, which has had a significant, rapid and complex impact on society, into a coherent whole by dissecting the sharing economy and linking each component to activities disrupted by sharing technologies. Based on the selected papers, we identified several themes from the sharing economy literature by classifying their methodologies and drawing main conclusions to gain a better understanding and gauge interest in the subject. The systematic literature review results reveal contradictory themes from the 36 selected papers. Three themes emerged as principal components of the sharing economy's impact on consumption. Firstly, we find an increase in people's access to goods and services, which appears to reflect an inter-temporal change in consumption or results from an increase in the net present value of the goods and services. This redistributes costs and benefits that are not evaluated by current antitrust or safety regulations. A second component is the perception of increased consumer surplus resulting from significant cost reductions through the offering of lower-priced goods and enhanced pricing transparency. Finally, two papers find that economic pursuit and environmental and social promotion are the significant consumption motivations through these platforms.

5.2. Theoretical contributions and practical implications

The main practical implications are for service providers of sharing economy platforms, who could design their business activities in a way that increases positive effects and minimizes negative ones; startups, which have a chance to create new business models of the sharing economy; established companies, for whom the sharing economy can cause life-threatening business disruptions; governments, who will in the future have to bring their regulation policy into compliance with a rapidly developing area; and consumer organizations, who could inform customers about the consequences and benefits of the sharing economy and thereby create an environment that meets the principle of sustainable consumption. Some of the findings can also

be useful for researchers, particularly in measurement and research processes related to the sharing economy. The main theoretical contribution is the proposal of a new classification for the consequences of the sharing economy on consumer well-being. We have gone beyond the mainstream approach to the issue, which has so far focused on regulations and consequences for traditional businesses. Such myopia is easily explicable, as the sharing economy issue is primarily a question to be addressed through government action. However, it is debatable to what extent there is citizen demand for such an action, given that the sharing economy provides benefits and satisfaction. This trade-off is often framed within a broader concept of the welfare state: citizens' call for security, protection, and justice versus the right to choice, individual development, and community responsibility. In European countries, 17% of the population believes that societal challenges will disappear owing to the shared economy, compared with the worldwide average of only 9%.

6. CONCLUSION

This paper investigates the primary impact of the sharing economy on consumption and synthesizes the existing research findings in this domain. The purpose is to improve our understanding of the trends and consequences of sharing behaviors in society. We conducted a systematic literature review (SLR). The results suggest that the sharing economy promotes a shift in consumption from ownership to access, contributing to dematerialization and the advancement of circular economies. It also expands the range of goods and services to meet consumer needs better. However, digitization, access, and customer feedback lead to overconsumption and environmental concerns. The integration of the HE indexes, and study variables fills the measurement gaps in literature. A holistic view of the dynamics of the sharing economy is adopted rather than emphasizing how companies participating in it behave. A total of 36 papers published in the Web of Science and Scopus were reviewed and classified. The findings show that the thematic diagram of the impact of the sharing economy on consumption is constructed from four dimensions, 11 sub-level items, and 15 keywords. The sharing economy significantly promotes consumption transitions from ownership to access, leading to dematerialization and the development of circular economies. The sharing economy expands the range of goods and services, embracing the activities of small-scale economies. The sharing economy equally exposes consumer weaknesses. Contagion, access, and customer feedback lead to overconsumption and environmental concerns. This study has important implications for regulating the responsible growth of the sharing economy, as it reveals different patterns of reinvestment through behaviors, provides relevant reviews, assesses research progress, and suggests future research directions. Our study contributes to literature by increasing understanding of the sharing economy's structure, processes, and characteristics in its latest stages.

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