

Athens Journal of Business & Economics

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The Athens Journal of Business & Economics (AJBE) is an Open Access quarterly double-blind peer reviewed journal and considers papers from all areas of business and economics, including papers on accounting, finance, management, marketing, organization etc. The AJBE welcomes theoretical (including methodological), empirical (including case-studies) and policy (i.e., descriptive and non-analytical) papers. Given the mission of Athens Institute the AJBE will also consider papers which emphasize country-related studies both at the business and the national economy level as well as economic history, history of economic thought and philosophy of economics papers. All papers are subject to Athens Institute's [Publication Ethical Policy and Statement](#).

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The current issue is the third of the eleventh volume of the *Athens Journal of Business & Economics (AJBE)*, published by the [Business & Law Division](#) and the [Economics Unit](#) of Athens Institute.

Gregory T. Papanikos
President
Athens Institute



Athens Institute for Education and Research

A World Association of Academics and Researchers

19th Annual International Symposium on Economic Theory, Policy and Applications 30 June & 1-3 July 2025, Athens, Greece

The [Economics Unit](#) of Athens Institute, will hold its **19th Annual International Symposium on Economic Theory, Policy and Applications, 30 June & 1-3 July 2025, Athens, Greece** sponsored by the [Athens Journal of Business & Economics](#). The aim of the conference is to bring together academics and researchers of all areas of economics and other related disciplines. You may participate as panel organizer, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (<https://www.atiner.gr/2025/FORM-ECO.doc>).

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Important Dates

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- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **2 June 2025**

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- Athens Sightseeing: Old and New-An Educational Urban Walk
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Details can be found at: <https://www.atiner.gr/fees>



Athens Institute for Education and Research

A World Association of Academics and Researchers

13th Annual International Conference on Business, Law & Economics 4-8 May 2026, Athens, Greece

The [Business, Economics and Law Division](#) (BLRD) of Athens Institute is organizing its 13th Annual International Conference on Business, Law & Economics, 4-8 May 2026, Athens, Greece, sponsored by the [Athens Journal of Business & Economics](#) and the [Athens Journal of Law](#). In the past, the [six units](#) of BLRD have organized more than 50 annual international conferences on accounting, finance, management, marketing, law and economics. This annual international conference offers an opportunity for cross disciplinary presentations on all aspects of business, law and economics. This annual international conference offers an opportunity for cross disciplinary presentations on all aspects of business, law and economics. Please submit an abstract (email only) to: atiner@atiner.gr, using the abstract submission form (<https://www.atiner.gr/2026/FORM-BLE.doc>)

Important Dates

- Abstract Submission: **30 September 2025**
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **6 April 2026**

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Gen Z Concepts of Leadership: Formulating Archetypes Based on Inter-Relational Business, Political, and Generational Characteristics

*By Arthur Pantelides**

In a multiyear quantitative data-driven study that focused on the Gen Z demographic in Eastern Europe, the Balkans, and Central Asia, we discovered that a dichotomy in leadership thinking exists. Based on a significant amount of survey data, we found that our population, surprisingly, displayed a definitive propensity towards authoritarian political leadership. We theorize the rationale behind this authoritarian leadership thinking approach as a sincere desire for a developing country's leadership to produce efficient life-improving results for its population and a continued improvement in regional standing. The thinking suggests that such an authoritarian leader who focuses on their nation's well-being, at least in theory, gets things done, and improves daily living standards. This has in fact occurred specifically in Russia where GDP has risen significantly over the past 20 plus years and where a large portion of younger Russians have supported their leadership, at least up to the War in Ukraine. We found similar, quantifiable sentiment in our scope of research. However, the concept is reversed when Gen Z considers leadership ideas and concepts related to their own professional work environment; something that will affect them directly. Here young people favor a distinct democratic approach to work life with a leader that exhibits a democratic or laissez faire style of leadership in the workplace and where employees are integrated in corporate decision-making. This duality in thinking is investigated through direct data research in the region over a multi-year period from 2018-2021. A quantitative relationship archetype model is established that helps the understanding of the interrelated factors that lead Gen Z'ers in this approach to leadership.

Keywords: *leadership, Gen Z, authoritarian and democratic leadership, Eastern Europe, Balkans, Central Asia, attitudes of business leadership*

Introduction

Conceptualizing Leadership

Leadership is one of those terms that is difficult to define. Typical dictionary definitions of leadership, such as “*the office or position of a leader*”, “*the capacity to lead*”, or “*the act or an instance of leading*”, offer little insight. According to the business writer Susan Ward, leadership can be encapsulated as “*the art of motivating a group of people to act toward achieving a common goal*”. With fairly small variations,

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this definition, is used in various academic references including Peter G. Northouse's perennial text, *Leadership, Theory and Practice*.

His definition is similar to Ward's with leadership defined as "a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse 2022).

Conceptually there is a sort of duality in how individuals perceive leadership. There is a strong influence based on culture (where you are from) as well as generational affiliation (how old you are). This duality essentially establishes the idea that leadership stems from either (1) social influence, or (2) power and authority. When we talk about social influence we generally think about a democratic sort of approach. On the other hand terms like power and authority generally prompt us towards a more authoritarian way of thought. This duality also plays a role in both Ward's and Northouse's definitions that use terms such as "motivate" and "influence". Yes, a leader can motivate and influence others, but the question is how they will do that? Is this done utilizing a positive, constructive, and inclusive and democratic approach; or is it done through a coercive, forceful, perhaps negative consequential approach; all hallmarks of authoritarian leadership. Thus we feel that this duality with respect to the idea leadership is inherent within the concept itself; originally emerging from a definitional origin and developing historically as such, and continues to be nurtured based on cultural aspects of individuals and societies.

Our research focused on how young people, so called Gen Z'ers (born after 1995), in the Balkans, Central and Eastern Europe, and Central Asia, perceived and personally defined leadership specifically from a dual-role perspective. In other words, what is their perception of national/political leadership (a leader leading a nation) vs. business leadership (a manager or CEO). More specifically we sought to research and analyze data that would shed light on Gen Z concepts of what they felt would be a "good" national leader based on their socio-cultural background, where they were from, and compare/contrast this with the sort of leader they would desire in a professional work setting in which they would like to participate.

The motivation for this study originated with several factors coming into play starting in 2016. The first factor was the author's strategic shift going from 25 years of mid-and-high level leadership experience in the international manufacturing industry, to academia, specifically research and teaching strategic leadership and management at the *American University in Bulgaria* (AUBG). This provided the impetus for the research, initially based on first-hand business experience, and now utilized in management research in academia.

The second motivating factor originated with the author's own students at AUBG. These 3rd and 4th year undergraduate students seemed to exhibit a dual approach to their thinking of leadership. This was gleaned (unofficially at first) through countless hours of informal discussions. Because AUBG students were primarily from the Balkans, Central and Eastern Europe and Central Asia, there was a sense that their approach to leadership seemed to follow a sort of "strong-man" dependent model in their home countries; as opposed to a desire for a democratic or independent hands-off approach from their bosses at the companies they wished to work professionally upon graduation. This dichotomy was interesting and provided the foundation and starting point for the research question of how these students

perceived the concept of leadership and why it may have developed in this way; what were the driving factors and could these be modeled into reasonable archetypes.

The third factor for motivating this research was the socio-political shift globally towards a questioning of the democratic approach to government. The recent shift towards Populism and *Populist Authoritarianism* became a major environmental context for which to consider the thinking of leadership especially from the point of view of a regional generation completing their academic development and getting ready to enter society in a professional capacity.

These young people will either continue and strengthen the trend towards populism being seen in Europe or will they turn a corner and provide some new approach in national leadership, and perhaps in business leadership as well; a sort of hybrid approach.

Based on our conceptual framework, which is shown in Figure 1., our specific research objectives have been developed as: (1) identify distinct *perceptions of leadership* in our targeted population utilizing a controlled sample obtained from a survey tool; (2) analyze the data to identify *distinct consistent patterns of perception* from which to; (3) establish a reasonable first iteration *conceptual model* which relates these patterns; (4) utilize the model to better understand the *divergent nature of perception* of our population with respect to concepts of leadership between national leadership and corporate leadership.

Democracy, Leadership and a Dynamic Environmental Context

According to the Economist article, *How Democracy Dies*, indices of the health of democracy show alarming deterioration since the fiscal crisis of 2008. More than 80 countries show signs of regressing in democratic ideals in the period between 2017-2019 with only less than 30 showing improvement (How democracy dies. (2018, June 16). *The Economist*, Vol. 427, no. 9096, page 7). When we consider these statistics it is easy for us to conclude that such shifts in thinking are taking place in far-off countries other than the US. There is some justification in considering that these shifts towards an authoritarian “strongman model” occur in newly-formed fragile democracies such as those emerging in the early to mid-1990s after the collapse of the USSR. These democracies after all may not have the structural political mechanisms in place that a country like the United States has to provide checks and balances, to check the power of leadership. It is true that while, for example, a country like Bulgaria can trace back coherent sociological origins a thousand years thus making it an “old” country when compared to the relatively newly-developed United States; the US by contrast is a very “young” country but one of the *oldest democracies* where checks and balances on power have functioned continuously for over 200 years and constrain the power of presidential leadership. So, even though Bulgaria is listed as a “Free” state, we have statistics from Freedom House that report a continued deterioration of democratic governance in the country after 2009, citing reduced media independence, stalled reforms, and abuse of authority (Zankina 2018). Furthermore, the Democracy Index defines the country as a “*Flawed Democracy*” (Democracy Index 2017: Free speech under attack. The Economist Intelligence Unit. July 2018). This is just one example.

However, in demonstrating how this slide towards authoritarian leadership can in fact spread, the United States itself is not out of the woods. A number of surveys conducted between 2010 and 2015, have found an alarming statistic – less than a third of young Americans think it’s “*essential*” to live in a democracy. (Democracy’s retreat. (2018), *The Economist*, Vol. 427, no. 9096, page 51-53). This is an integral point within our research because it indicates direct sentiment towards national/political leadership not only in the US but *even more* towards authoritarianism in those fragile-system, newly-formed democracies, like Bulgaria, ripe for undermining.

The playbook for undermining liberal democracies essentially has four chapters: (1) there is a genuine popular grievance with the status quo; (2) a would-be strongman leader identifies “*enemies*” for angry voters to blame; (3) having won power the leader begins to chip away at established institutions and the rule of law while still pretending the country is free; (4) liberal democratic erosion takes place with election manipulation and other measures designed to cement continued power moving forward. This playbook has been used by leaders from Russia’s Putin, the first populist leader to take over a major country in the 21st Century, to Turkiye’s Erdogan, to Hungary’s Orban. One can even make a stretch and say that this playbook was *on the table* in the US just a short time ago.

Future would-be autocrats learn from each other’s experience and thus perpetuate the movement or at least try to; this was nowhere more apparent than in the 2016 US Presidential Election and subsequent events over the next 4 years culminating in the January 6 (2021) mob at the capitol building in Washington DC. According to an essay by The Brookings Institute’s Fiona Hill which appeared in Foreign Affairs, “.....Trump came to more closely resemble Putin in political practice than he resembled any of his American predecessors.” (Hill 2021). If forces shape potential populist/authoritarian inclinations, even in a country like the US which has fairly strong checks and balances on power, one can imagine the conditions and sentiment in the fragile democracies of Central and Eastern Europe and Central Asia where our research was focused.

Evolution of Business Leadership and the Age of the Entrepreneur

Business leadership concepts have evolved since the industrial revolution, which we use as a starting point in our discussion. **Trait Theory**, which considers personal qualities and characteristics that differentiate leaders from non-leaders, dominated thinking through the 1930s. Leaders were seen as charismatic, enthusiastic and courageous and you either had this in you or you didn’t. Followers generally accepted this framework and the resulting balance in organizations was, for the most part, harmonious with each group understanding their place in the hierarchy of things.

Behavioral Theory followed in the 1950s and 60s. It emphasized selection and training as the primary focus instead of the idea of being born a leader. This concept, coupled with the post-war economic boom at the time, enabled a significantly greater pool of workers to consider leadership positions and how they fit into the leader-follower relationship. Behavioral theory also ushered in the first primarily dual approach to leadership which in our opinion laid the initial foundation for the concept of democratic vs. autocratic approach in business leadership. Researchers at the

University of Michigan developed and identified two types of leadership behaviors: employee orientation and production orientation (Northouse 2022). **Employee-oriented** leaders emphasized interpersonal relationships by taking personal interest in the needs of employees and accepting individual differences among them; thus a more democratic approach. **Production-oriented** leaders emphasized the technical and task-oriented aspects of the job with little concern for the employees; thus a more impersonal and gradual move towards autocratic “*get things done*” approach and with decision-making being centralized. Followers now had a choice to work for either type of leader depending on the particular circumstances. And the choices were in fact plentiful because of the economic expansion enjoyed by a significant portion of the industrialized economies.

Contingency theories of leadership such as *Situational Leadership Theory* and the *Path-Goal Models* which emerged in the late 1960s emphasized the environment in which leadership takes place. This meant for example under conditions “A” your leadership style should be “X” and under conditions “B” leadership style should be “Y”. The factors that influenced this relationship included the urgency of the task at hand, followers’ ability and willingness to perform, available information and its dissemination to the team, perceptions of provided support or lack thereof, etc. With this leadership approach another important factor emerges in the evolution of leadership – leading based on what the situation at hand requires. This is important because it can and has been manipulated towards an authoritarianist approach in numerous situations.

In the 1980s **Charismatic and Transformational theories** emerged. These brought in several additional important dimensions primarily towards a sense of inspiration of the greater good of the organization and reaching objectives. Additionally, the articulation of a sense of vision and idealized overarching goal also characterize these theories and, interestingly enough, unconventional behavior. However charismatic and transformational leadership is not the same. The purely charismatic leader wants followers to adopt his/her charismatic world-view while the transformational leader wants followers to eventually question and improve upon **their own** established views....for themselves and to eventually transform into something better than their leader. The concept of charisma and leadership has always played a key role for many years and across multiple theories. Charisma has always been a short-cut to trust with respect to followers. Followers trust those they like, and charismatic leaders tend to be liked and followed, but not always for the right reasons. So this approach can, generally-speaking, swing both ways - towards a democratic or autocratic direction as long as charismatic factor(s) appeal to followers within the environmental context. Transformational leadership is interesting because it provides impetus for a “*something bigger and better than all of us*” approach which has been used in business and industry in the past from working towards an American ideal for example, to the entire mentality of Japanese business settings where the organization takes priority over the individual employee.

Around the year 2000 the concept of **Authentic Leadership** emerged and although this is still under development, it provides for a key factor in the leader-follower-environment equation – the central theme of **trust** which was begun over the previous two decades. Now, this theory put trust in the forefront. One can argue that

trust in leadership has always played a major role, but in authentic leadership it plays *the* major role.

Along with this, the new millennium, coupled with significant technological breakthroughs in the age of information also ushered in *the age of the entrepreneur/corporate entrepreneur*, the employee that is not necessarily tied to one organization or one leader, but is in a sense an independent contractor even if employed by a larger organization. We call this ***Self-Leadership***.

This is significant because it has helped shape the thinking of followers on how they view leadership, corporate trust, and their individual roles within the larger organization. We also argue that over the past 2 years with the global COVID-19 pandemic, this sense of free-lance independence has been significantly reinforced. Thus further shaping the concepts and attitudes of younger generations towards work, professional independence within organizations, and overall organizational leadership. This, along with other socio-cultural factors has created the age of “*me*”..... ***“I lead myself”***.

So the two dynamic factors that are important for our research and we see developing are:

(1) a questioning of a democratic approach to national leadership over the past 15 years and a tendency towards a populist strongman model; this being true primarily in political systems emerging from the collapse of the USSR in the early 1990s but also making their way even to solid democracies such as the USA as has been evident since 2016; (2) an evolution of business leadership that emerged initially from leader-focused (autocratic), ➡ to team-focused (situational democratic), ➡ to eventually “me” focused. This evolution in business leadership has aligned initially with the greater industrialization and innovation of the past 200 years, then with the tech boom and entrepreneurship of the past 25 years, and even more recently has seen further development and acceleration by the effects of the COVID-19 pandemic.

At this point it is fair to mention three additional factors that will impact the future thinking of the concepts outlined here. The 2022 war in Ukraine may have a lasting impact that reverses the trend towards a populist strongman/authoritarian approach to national leadership; this remains to be seen. In addition, the political and economic trajectory of China within the global stage will also play an important factor that will either reinforce the “*strongman model*” and lend credence to its viability or it will reverse it. This also remains to be seen and based on which way China is headed and how successful it will be. Finally we need to consider to what extent will the remote work trends emerging from COVID-19 last and continue to contribute to a greater sense of independence and “the self” in the workplace.

In Table 1, we summarize briefly the different theoretical approaches to business leadership over the past 150 years or so and the primary factors and contributors/business environment for each. It should be noted this table is not meant to provide a comprehensive outline of each leadership theory but a layman approach to what the individual theory essentially represents. Of course the foundations is rigorously supported in numerous references including Northouse (Northouse 2022).

Table 1. Key Leadership Theories, Foci, and Contributing Environmental Factors

LEADERSHIP THEORY	FOCUS	BUSINESS ENVIRONMENT
Trait	- Either you have it or you don't - No Choice	- Industrialization period > social differentiation
Behavioral	- It's in your hands - You have a Choice	- Post WWII economic expansion (in the US and Western Europe)
Contingency	- It depends on Emotional Intelligence integration with the environment which you are working in - You have a Choice	
Charismatic and Transformational	- It's about something bigger than all of us; the greater objective - the choice should be obvious	- Globalization, the development of "big business" and global trade
Self-Leadership	- It's all about "me"	- growth in technology and entrepreneurship - social media and more recently the global COVID19 pandemic

Methods

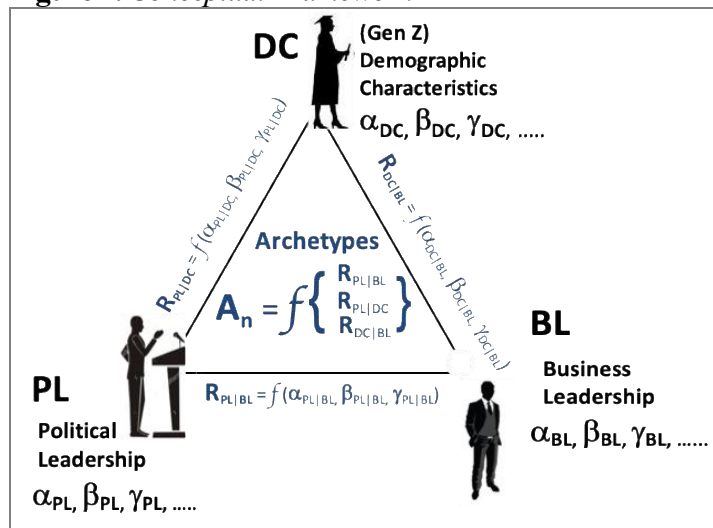
The research was conducted with a survey instrument used to gather data on which a correlational analytical methodology was utilized. "The correlational approach is effective in determining whether, and to what extent, a relationship exists between 2 or more quantifiable variables" (Gay and Diel 1992). The completely anonymous and institutional (AUBG) research-approved survey consisted of four sections: (1) introduction to and purpose of the research; (2) instructions; (3) six demographic questions that provided data on the respondent's background; and (4) thirty-five Likert Scale survey questions that provided the views/opinions of the respondent.

In addition to the survey a Qualitative Interview Protocol was developed and used for those respondents who wished to provide additional information via either a face-to-face or online video interview. The protocol consisted of a structured and standardized approach to:

(1) interview preparation; (2) actual Interview structure; process, and flow; (3) question wording, structure, and sequence; and (4) post interview process. There were small variations in protocol based on whether the interview was conducted face-to-face or online, but these were negligible. This approach overall is typically considered as "...an appropriate methodology in an initial research effort that is intended to develop some theoretical understanding..." (Henrie 2005). This multi-method, or what is referred to as *triangulation* has also been successfully utilized in research conducted by Stock and Greis (1996) and Jansen (2002). For our research this methodology was appropriate and applicable since the intent was to establish an understanding of the relationship among the three Primary Factor Groups (PFG) associated with our Gen Z

respondents: (1) Demographics, (2) Political Leadership views, and (3) Business Leadership views. Our conceptual model is shown in Figure 1. What this framework depicts is the *integrated relationship among the three PFGs - DC, BL, and PL* each of which maintains individual group characteristics; for example for the Primary Factor Group related to Political Leadership (PL), we have a set of group characteristics that will be identified by our model; these are depicted as α_{PL} , β_{PL} , γ_{PL} and so on. The relationship of these with respect to the Demographic PFG (DC) is shown as the relationship: $R_{PL|DC}$. If we extend the discussion around the entire model we establish the variable relationships among the three PFGs which combined become the Archetype Model A_n . Once data is gathered and analyzed and the mathematical derivation is complete, we obtain what is shown in Figure 5 which depicts the model. Figure 5 is essentially the end result of Figure 1.

Figure 1. Conceptual Framework



Development & Foundation

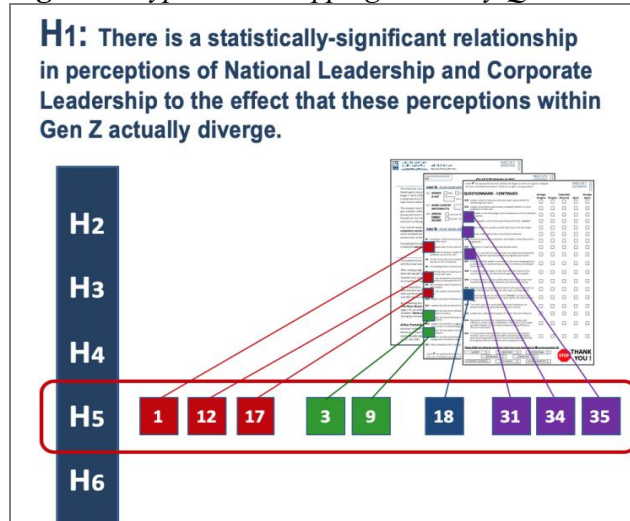
The primary assumption of the research is that there is in fact a correlation among the three primary factors DC, PL, and BL with regards to the Gen Z respondent population. There does exist a relationship which can be identified and used to describe an archetype model in terms of their concept of leadership. Furthermore, this concept of leadership will emerge as dichotomous. Based on this the primary hypothesis is stated here, along with the Null Hypothesis:

H₁: There is a statistically-significant relationship in perceptions of National Leadership and Corporate Leadership to the effect that these perceptions within Gen Z actually diverge.

H₀: There is no statistically-significant relationship in perceptions of National Leadership and Corporate Leadership to the effect that these perceptions within Gen Z actually diverge.

Several sub hypotheses which relate to specific demographic, corporate, and national factors in terms of leadership roles were developed and mapped to key survey questions this is shown in Figure 2. Essentially this figure provides a visual representation of the following link within our research: **RESEARCH OBJECTIVE** ➔ **HYPOTHESES SET DEVELOPMENT** ➔ **QUESTIONNAIRE RATIONALIZATION** (with respect to individual questions linked to individual sub hypotheses).

Figure 2. *Hypotheses Mapping to Survey Questions Approach*



Subsequently, hypotheses were tested using conventional methodologies - statistical analysis on a random sample of the population being analyzed, i.e., the data obtained by a survey questionnaire tool.

Respondents tend to favor a strong, nationalistic, even populist authoritarian approach to national leadership based on their home country experience, while expecting a much more democratic even laissez-faire approach when it comes to their professional work environment and dealing with those directly supervising them. Thus research development and analysis must follow along the two lines of national and corporate leadership coupled within the context of specific demographics, as outlined in Figure 1, so as to move forward with establishing the archetype model.

In following a correlational approach, we model our analysis in a similar way as Vincent Michel Ribiere's 2000-2001 research (Ribiere 2001). This methodology, as previously utilized by Gay,

“attempts to determine whether, and to what degree, a relationship exists between two or more quantifiable variables...prediction of some outcome or hypothesis confirmation is based on a strong relationship between the variables...” (Gay and Diel 1992).

Based initially on the Primary Factor Groups (PFG) of our conceptual framework, Table 2 constructs the specific attributes established and associated with the development of the eventual quantitative model.

English as well. Thus we felt language was not a factor for these international students and the survey instrument would successfully gauge true sentiment. We used a five position Likert Scale for the bulk of the survey associated with specific views on leadership. Likert scales are ordinal and statistical analysis for survey data such as ours examines response patterns—frequencies of different responses, what response occurred most frequently for each question within a group, variation in responses within a group, and differences in ways different subgroups (within the same survey) responded (Kasunic 2005)

In terms of actual question development, we wanted to maintain an academically-rigorous approach to our research which could directly link to previously well-established and reviewed leadership research methods. Therefore, our survey questions were taken from previous work by the well-known leadership researcher Peter G. Northouse. These have been published and can be found in several editions of the classical text *Leadership Theory and Practice* as well as related research articles by Northouse. The alternative to this approach was to establish new, original questions in identifying authoritarian vs. democratic, vs. laissez-faire types of leadership, and task vs. relationship leadership approaches, but we felt that this would not provide the appropriate level of rigor and foundational basis as has already been established and thus may lead to questionable conclusions based on these untested new questions. Trying to do this would lead us to scope creep and take away from the focus of the *relationship* between leadership thinking in a political vs. business sense. Thus, our use of previously established questions which have already been vetted. We felt that the two basic rules in formulating strong survey questions: *relevance* and *accuracy* have been met by previous extensive research. The survey questionnaire instrument is shown in Figure 3a.

Figure 3a. Survey Tool & Questions

The figure shows two pages of a survey questionnaire. Page 2 of 3 (left) is titled "QUESTIONNAIRE" and contains "PART A: YOUR DEMOGRAPHIC INFO" with questions A1 through A6 regarding gender, age, home country, annual family income, political view, work experience, and preferred country to work. It also includes "PART B: YOUR VIEWS ON LEADERSHIP & BUSINESS" with questions B1 through B17. Page 3 of 3 (right) is titled "QUESTIONNAIRE - CONTINUED" and contains questions B18 through B33. Both pages feature a five-point Likert scale (Strongly Disagree, Disagree, Undecided (Neutral), Agree, Strongly Agree) and a "STOP THANK YOU!" graphic at the bottom right.

Ten questions, **B1, B4, B7, B10, B12, B13, B15, B17, B20,** and **B23** measure propensity towards authoritarian business leadership (**AU**). Nine questions, **B2, B5, B8, B11, B14, B16, B18, B21,** and **B24,** measure propensity towards democratic business leadership (**DE**). And, six questions, **B3, B6, B9, B19, B22,** and **B25,** measure inclination towards laissez-faire type business leadership (**LZ**). This gives a total of 25 questions measuring business leadership style. Furthermore, we utilize 10 additional questions, **B26-B35** derived from Northouse and geared specifically towards political leadership with a delineation between autocratic vs. democratic style approach. Table 3b outlines the sections/sources from the Northouse text.

Figure 3b. Survey Tool & Questions Sources

SURVEY QUESTIONS	DIRECT SOURCE	LEADERSHIP STYLE	SURVEY QUESTION
B1, B2, B3, B4, B5, B6, B7, B8, B9, B17, B18, B19, B20, B21, B22, B23, B24, B25	Adapted from 3.1 Leadership Styles Questionnaire; Introduction to Leadership: Concepts and Practices, 2 nd Edition, Peter G. Northouse, Sage Publications, 2011	Authoritarian Learning	B1, B4, B7, B12, B13, B15, B17, B20, B23
B10, B11, B12, B13, B14, B15, B16	Adapted from Path-Goal Leadership Questionnaire; Leadership: Theory & Practice, 7 th and 9 th editions, Peter G. Northouse, Sage Publications, 2016, 2022	Democratic Learning	B2, B5, B8, B11, B14, B16, B18, B21, B24
B26, B27, B28, B29, B30, B31, B32, B33, B34, B35	Modified from Leadership Behavior Questionnaire; Leadership: Theory & Practice, 7 th editions, Peter G. Northouse, Sage Publications, 2016	Laissez-Faire	B3, B6, B9, B19, B22, B25
		↓	
		Applied to Political Factors/Leadership	→ B26, B27, B28, B29, B30, B31, B32, B33, B34, B35

Results & Analysis

A total of 667 surveys were distributed over a period of 3 years starting in April 2018 and ending in May 2021. The method used was initially hard copies distributed and completed anonymously in a classroom setting with the researcher not present. A student volunteer coordinated this process. However, because of the COVID-19 pandemic and the transition to online learning, the last academic year of the research 2020-2021, surveys were done electronically online. The response rate with in-class hard copies was over 95% which is a significant achievement. It is felt that the respondents were a sort of “*captured audience*”.

in the classroom and this provided a high turn-in rate. In addition, we felt that the students themselves were very interested in the research and were willing to contribute. But, the response rate for the last year conducted online dropped to 67%. This was not very surprising as we felt overall student motivation in general decreased due to the shift to online learning because of the pandemic. Overall out of the total 667 surveys distributed, we received a total of 532 returns with useable data; this is an overall return rate of approximately 79% and is considered a strong response rate for these types of research. We feel that the sample collected is representative of the target population in which the research is focused.

In terms of demographics, 47% respondents were male, while 53% were female. 58.81% listed their age as 22 years old or younger while 41.19% designated their age as 23 or older. We felt these statistics provide for a fairly good balance. 42.77% responded a total annual family income of \$25K or less; 31.02% between \$25-\$50K; 18.31% between \$50-75K; and 7.9% over \$75K. Total response rate for the annual family income question was 93%. Additionally, students were asked to select their

political view. 52.85% listed this as “*Liberal*”, 41.65% as “*Moderate*”, and 5.5% as “*Conservative*.” This self-reporting is not surprising since these students chose to study at an American liberal arts institution; but it becomes interesting when we discuss the survey results.

The vast majority of students, over 93%, responded that they had 3 years or less of professional experience; this needs further explanation. Students were free to list their summer work and travel program trips to the United States as professional work. The majority of AUBG students participate in this program every summer as a means for funding their education. Students obtain summer work visas and work throughout the United States but a good percentage of AUBG students (about 60%) head to Cape Cod, Nantucket, and/or Martha’s Vineyard where they actually do have experience in a professional setting primarily as employees in the Service and Tourism/ Leisure sector. Additionally we felt that the students’ exposure to these *particular* locations also contributes to their rationale and thought process which we attempted to control within the analysis.

Respondent nationalities fell into four categories based on survey responses. Approximately **59%** listed themselves within the primary **Group 1** of Central and Eastern Europe and the Balkans, and from specific countries such as Bulgaria, North Macedonia, Kosovo, Russia, Belarus, Albania, Serbia, Slovakia, Slovenia, Ukraine, Romania. An additional **33%** listed their home country affiliations within **Group 2** Central Asian and surrounding countries which includes Mongolia, Turkmenistan, Georgia, Kazakhstan, Uzbekistan, and Kyrgyzstan. The remaining 8% were from miscellaneous countries with only a handful of students enrolling at AUBG including through the EU’s Erasmus program; these included Lithuania, Latvia, Czechia, Moldova, and Poland. Finally, there was approximately half a dozen returned surveys from students from India, Spain, Greece, and the US (two transfer students). These were not considered in the analysis since they fell out of the research’s geographical scope area.

Finally, the survey asked for a preferred country which a respondent wished to work/be professionally employed upon graduation. These were grouped by regions with the highest percentage of respondents (78%) listing the US, UK, EU including Holland, Austria, Italy, France, Germany, Spain, Belgium, and Denmark as preferred destination. Note, some responded listed specific countries while others listed “*EU*”. The second group of countries was listed by 16% of respondents and included Canada, Switzerland, Russia, Iceland, Singapore and New Zealand. Approximately 6% of students had no preference or did not list anything. The results clearly indicated a propensity to work and make a career “*in the West*”.

Based on these responses and with some simple data filtering and weighing (selecting complete data and omitting several data sets which were incomplete; these represented less than 2.32% of the data) we were able to obtain a strong representative sample of a typical Gen Z’er from Central, Eastern and Balkan Europe as well as Central Asia, between the ages of 20-23 (on average), with an annual family income approximately between \$23-\$43K with about 8-12 months (total) work experience primarily in the US (summers) and who identify as primarily “*liberal*” to “*moderate liberal*” This is our respondent so-called *persona*. With the additional important note that all respondents were Business Majors at the university.

Results - based on the specific grouping/mappings of the survey questions associated with types of leadership our research resulted in the following frequency distribution (bar graphs) shown in Figures 4a, 4b, 4c and 4d. For specific wording of individual survey question B1, B2, B3....., please refer to previous Figure 3. Our survey results have a **margin of error of that ranges between 2.52 - 4.39%** depending on the individual result. This was calculated in the typical fashion and based on a Z value at 90%. Additionally, all appropriate mathematical calculations were done according to established norms in statistical analysis; alpha $\alpha=0.05$ (less than 5% chance that the survey data being tested could have occurred under the null hypothesis) and a p-value of 0.037 (<0.05) indicated good support of our hypothesis and rejection of the null hypothesis. We felt that the data was relevant, reliable, valid, and representative of the population.

Measures of central tendency and dispersion, which we consider in our analysis, “...constitute the fundamental elements of descriptive statistics” (Rea and Parker 2005). They describe and summarize a large amount of data typically obtained through survey methodologies. These analyses are fairly simple and elegant because they provide description through single statistical values. Initial analysis was conducted on all fundamental survey questions in order to obtain a baseline of our data. This is important because the next step is establishing an analysis on the relationship among the data, specifically the relationship between variable established from the various survey questions. Therefore, an understanding of the initial data disposition prior to initiating such a relational analysis is important. If there already exists some initial relationship prior to our correlational methodology, it needs to be identified and accounted for within the subsequent analysis.

Figure 4a. Propensity Towards Authoritarian Leadership

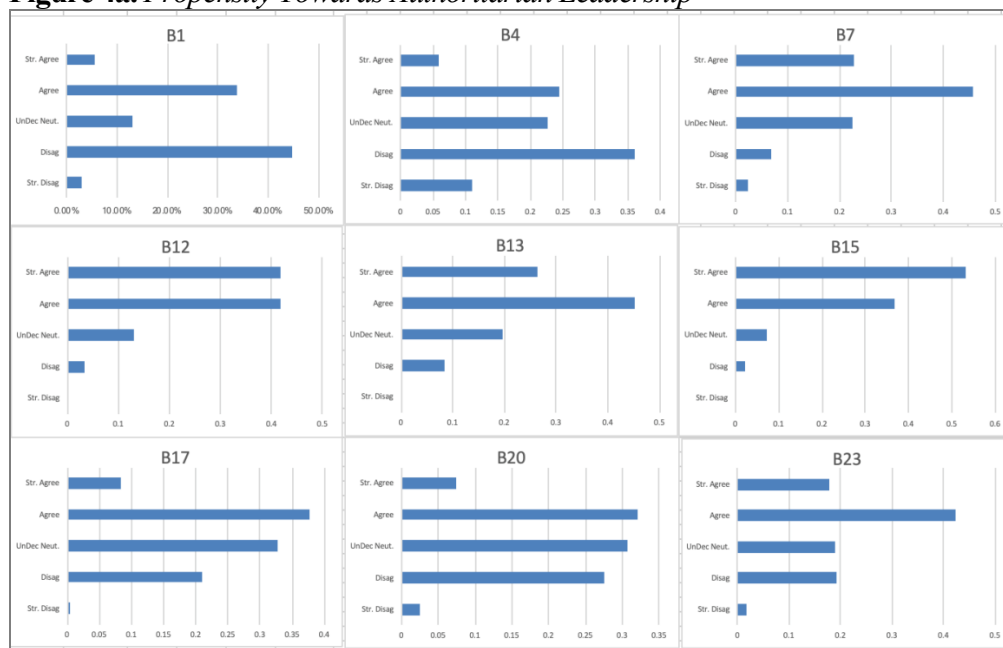


Figure 4b. Propensity Towards Democratic Leadership

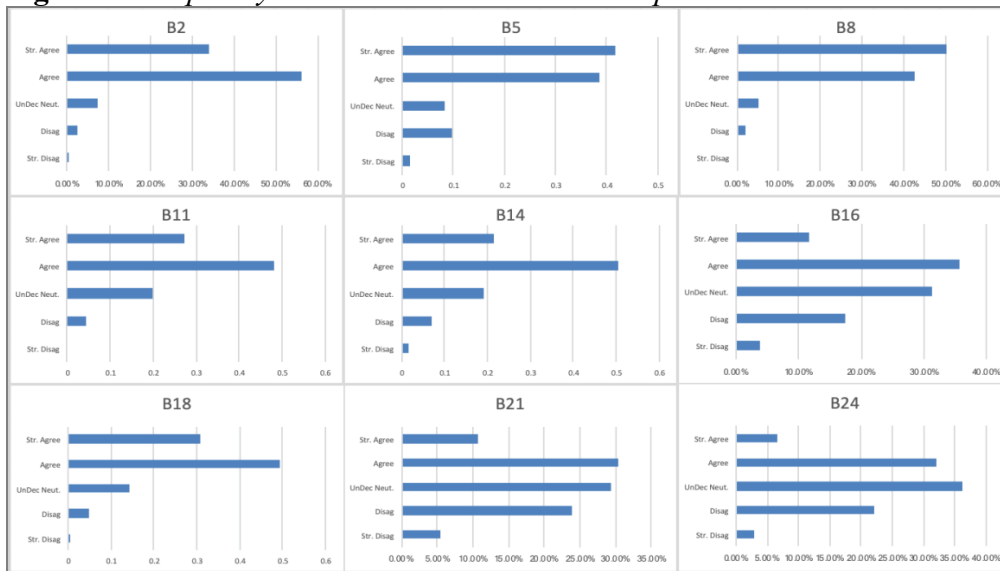


Figure 4c. Propensity Towards Laissez-Faire Leadership

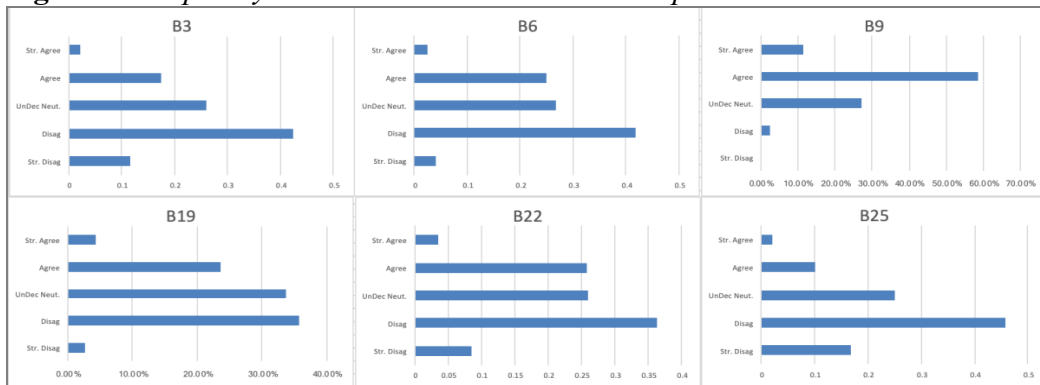
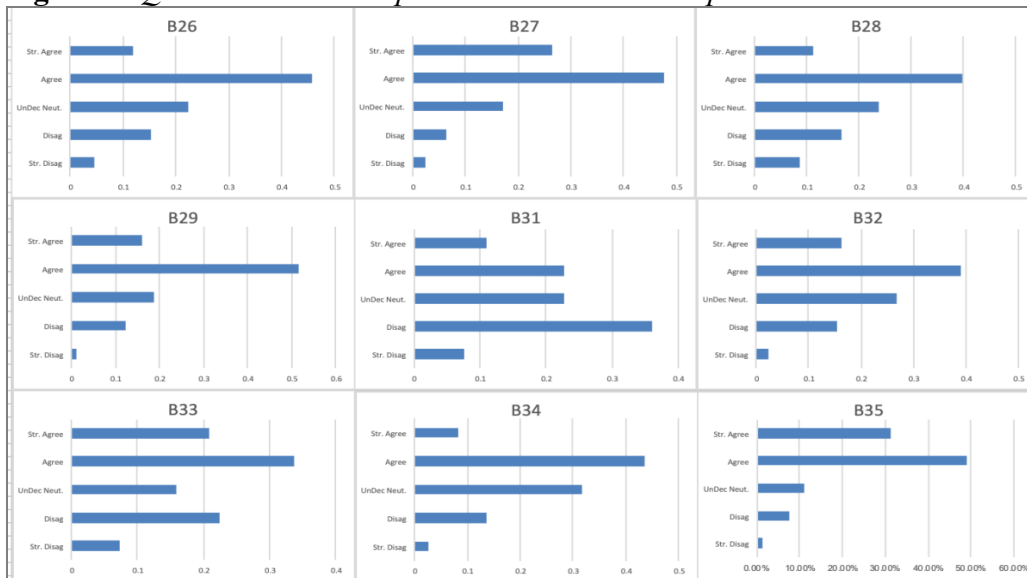


Figure 4c. Question Set with Respect to Political Leadership



The simple arithmetic mean was calculated to identify data located above and below the central point in addition to providing a relative distance of the data to that point. This is important in order to establish the baseline for each survey question from which subsequent analyses were handled. The median also was calculated to provide an additional measure comparable to the arithmetic mean. According to Rea and Parker, when working with cross-tabulated contingency tables, “...it is normal not to expect the median and the mean to coincide or even be close in magnitude to each other based on a scaled frequency distribution used such as a Likert Scale...” and the arithmetic mean seems to be the most appropriate measure to consider (Rea and Parker 2005).

The additional measure of central tendency is the mode which is useful in identifying the particular category (in ordinal scaled surveys) which is “*most popular*” with respondents, or most “*typical*” of the population surveyed. This calculation will help identify some beliefs and trends and add to our discussion and conclusions from an overall perspective. The well-known standard deviation measure was individually calculated in order to provide a good measure of dispersion that does not eliminate any outliers or extreme values yet is not overly influenced by them. Also, we included a simple chi-square calculation (χ^2) for all the distribution function data obtained for each survey question so that we could confirm that no initial relationship exists prior to initiating our correlational analysis relating to our hypotheses. Finally, fairly simple and versatile measure of association derived directly from the chi-square values is Cramer’s V. This test is used extensively in survey research. Statistical significance factor p was maintained at 0.05.

Based on this methodology and starting with cross-tabulation which was used because of our multiple nominal variables mapped directly to specific survey questions, we initialize our analysis; next, verifying statistical significance, a targeted correlational analysis was performed to establish and finalize our desired archetype leadership relationship model. The model is shown in Figure 5. Note, the factor/attribute variables are outlined in previous Table 2.

The model A_n is composed of essentially of 3 primary factors that align with our initial conceptual framework shown in Figure 1; these factors are: (1) the relationship (R) between Political Leadership (PL) and Business Leadership (BL) which is designated as $R_{PL|BL}$; (2) the relationship (R) between Political Leadership (PL) and the Demographic Characteristics of the respondents (DC) which is designated as $R_{PL|DC}$; (3) the relationship (R) between Business Leadership (BL) and the Demographic Characteristics of the respondents (DC) which is designated as $R_{BL|DC}$.

The model is refined and resolved into 2 final terms which relate the 3 primary factors mentioned and a necessary error term. The first of these term $[R_{PL}/R_{BL}]$ is of primary importance because it relates the two research factors in question Political and Business Leadership and establishes the primary relational function between the two; while the second term $[(R_{PL}+R_{BL})/R_{DC}]$, relates these leadership terms with the demographic data R_{DC} from the respondents. The analysis outlined above along with the empirical data obtained by the surveys provide the numerical weight factors for each of the attribute variables previously defined.

Finally, our analysis must take into consideration (through survey data responses and factor/ question relational analysis) the fact that the model is actually a set of 3

equations relating to the 3 types of leadership: Authoritarian (**AU**), Democratic (**DE**), and Laissez Faire (**LZ**), based on multiple iterations for **n**.

The model is, of course, preliminary and requires further refinement if you consider the fact that it is based on a fairly controlled population. We view this model as a first step in the continued evaluation and research.

Figure 5. Leadership Relationship Model Development

$$A_n = f\{R_{PL|BL}, R_{PL|DC}, R_{BL|DC}\}_n = [R_{PL} / R_{BL}] + [(R_{PL} + R_{BL}) / R_{DC}]_n + e$$

Where:
 $n_1 = AU =$ Authoritarian tendency
 $n_2 = DE =$ Democratic tendency
 $n_3 = LZ =$ Laissez Faire tendency

$$R_{PL, n1} = 0.53(IF)_{AU} + 0.61(DS)_{AU} + 0.67(SRL)_{AU} + 0.63(PS)_{AU} + 0.61(FA)_{AU} + 0.50(PE)_{AU}$$

$$R_{PL, n2} = 0.26(IF)_{DE} + 0.18(DS)_{DE} + 0.12(SRL)_{DE} + 0.14(PS)_{DE} + 0.22(FA)_{DE} + 0.23(PE)_{DE}$$

$$R_{BL, n1} = 0.38(ES)_{AU} + 0.23(PWE)_{AU} + 0.84(EDM)_{AU} + 0.68(RW)_{AU} + 0.74(SA)_{AU} + 0.82(TA)_{AU} + 0.67(SD)_{AU}$$

$$R_{BL, n2} = 0.88(ES)_{DE} + 0.59(PWE)_{DE} + 0.79(EDM)_{DE} + 0.61(RW)_{DE} + 0.76(SA)_{DE} + 0.81(TA)_{DE} + 0.82(SD)_{DE}$$

$$R_{BL, n3} = 0.22(ES)_{LZ} + 0.70(PWE)_{LZ} + 0.70(EDM)_{LZ} + 0.12(RW)_{LZ} + 0.39(SA)_{LZ} + 0.45(TA)_{LZ} + 0.36(SD)_{LZ}$$

And,
 $R_{DC} = 0.76(AG) + 0.61(IPH) + 0.32(W)$
 |
where:
 AG = aggregate factor combining and taking into account **A**ge & **G**ender
 IPH = aggregate factor combining and taking into account **I**ncome, **P**olitical View, **H**ome Country
 W = taking into account **W**ork experience
 e = error term

Discussion

Political Leadership

Based on the data and subsequent analysis, respondents to our survey have a fairly strong tendency towards an autocratic approach to political/national leadership when they feel it serves their country's purpose both nationally and internationally. We can see this fairly clearly based on the responses to specific questions in our survey (raw data responses, pre-analysis).

Initially we see that 57% of respondents favor strong political leadership. This is not by any way unusual and would seem a normal desire for any nation's people. This sense of strong leadership is now coupled with, and related to, a desire for a favorable

image of the country's standing internationally; and in this sense 74% respondents make this connection and are in favor of this approach. This relationship however can be deceptive and in our view false; but nevertheless it plays a significant role in the perceptions of citizens of new, emerging democracies or pseudo-democracies after the end of the cold war as is evident from the data of those responding with agreement and/or strong agreement.

If we now consider taking a closer look at the leader as an individual we gain greater insight to perceptions of our respondents as to what constitutes *effective and reasonable behavior*.

About a third of respondents (33.58%) agree or strongly agree that a leader does not need to act "*friendly*" as long as they focus on the well-being of their nation within the international stage. Of course, "*friendliness*" is subjective and respondents can have several things on their mind including professionalism, but it opens the door to a deeper thinking of proper action of a national leader, and what can be acceptable to his/her citizens depending on situations, situations that can be easily manipulated with propaganda, the media, etc. Furthermore, in many situations the lines between what may be good for a nation and what may be good for an autocratic leader trying to stay in power, are often blurred, once gain by propaganda and media control. If one takes this concept of "*friendliness*" to an extreme one can argue that Russia's move on Ukraine of course not a "*friendly*" move by any means, would be acceptable to perhaps a third or more of the country's citizens as long as it is to their best interest, or at least they are convinced it is to their best interest and prestige, even though in many situations, including the situation in Ukraine, the opposite occurs, the prestige of the distinctly "*unfriendly*" leader/country is in fact damaged rather than enhanced.

Diving deeper into the concept of individual and exclusive control, approximately half (51%) responded favorably with agreement and strong agreement to a political leader being the chief direction-setter of both national and international agenda, and 67.7% favor direct and strong input towards these agendas, policies, direction, etc. The key thing here is that we are now moving from the relationship between strong political leadership and international status (which may be positive or negative), to a more sinister concentration of power into a single individual with little if any consideration of other government entities such as parliament, the courts, etc. More than half of respondents (55.26%) agreed or strongly agreed with the statement that "*too much sharing or participative leadership can become inefficient....*"

This closely reflects the belief by some who define leadership as essentially "*getting things done*." Problems arise as to *how* we get things done. In a democracy the means *do* in fact justify the results, while in an autocracy one can argue the opposite.

Next, we have over half of respondents, **51.88%**, agree or strongly agree with the statement, Survey Question **B34**:

"...benevolent authoritarian leadership relies on power and efficiency: power clearly-established in the hands of the leader and with the goal of improving and guaranteeing efficiency; this can in fact work."

This question now directly links the concept of authoritarian leadership through specific wording to the idea of positively affecting efficiency of “*getting things done*” but even more importantly the statement goes on to state that “*...this can in fact work*” at which more than half of respondents actually agree! So we have made a direct link to getting things done with authoritarianism and tied in a fairly positively-leaning response from those taking the survey. First off we feel this demonstrates that respondents from the countries we targeted demonstrate a real need and strong desire to improve their nations; the problem becomes once again, *how* this can be done.

Our research indicates that a majority of individuals feel that strong leadership that borders on authoritarianism is OK. Secondly it’s interesting to note the percentage of respondents who disagreed with this statement – only **16.35%** with a substantial number **31.77%** undecided. Now, we refer to this statement as a sort of “*overt*” statement because it specifically uses the term ‘authoritarian’ and even though we have over half respondents agreeing, we have some caution as demonstrated in the high number of undecided responses.

The last survey question dealing with political leadership has been designed to encompass several previous points such as setting vision & goals, outlining a path (plan) for reaching these, ensuring everyone does their part (compliance) and all these centered around the national leadership’s individual control of this process. Survey Question **B35** states the following:

“...it is the political leader’s role to set up a common vision & goals for the nation; to outline the path to achieving these goals with clear responsibility; and to monitor the accomplishments of the goals while ensuring everyone is doing their part.”

This question was listed last because it offers a summary of some of the previously developed concepts in previous questions; it nicely packages everything together in a sort of concluding comment for the survey taker to consider. It also is a “*covert*” question whereas as the previous one (B34) was “*overt*” in that it mentioned authoritarianism; this one does not, but in closely scrutinizing this last question B35, one can see that it pretty much encompasses all aspects of authoritarianism from planning, to execution, to monitoring and all set up and controlled by an individual. The interesting thing is that whereas before, with overt question B34 we had a cautious 31.77% undecided...now, it seems, those undecided respondents have clearly come to an agreement with this question so that a significant **80.08%** agree or strongly agree!

We have shown that not only do a significant number of respondents tend towards an authoritarian approach as long as they think or feel things are getting done to a positive effect for their nation, but this number of support actually grows if one tends to deemphasize the fact that this is in fact an authoritarian approach. Thus we feel we have also proven to some point that the modus operandi, the methods that authoritarian leaders use to camouflage their approach, or spin it to a favorable light, actually works within their population. This is interesting even though we surveyed young people Gen Z, who predominately identify as liberal leaning, and who have gone through at least 3+ years of liberal arts higher education. The conclusion?.....*in this part of the world, under this environment of these young democracies, it may be*

a relatively easy thing to get individuals to support a more authoritarian approach to national leadership depending on how you “spin it”.

Business Leadership

Now, what about respondents' ideas in business leadership? We begin with those questions in the survey that measure tendency towards authoritarian leadership. Here we see that because of the relative inexperience with professional work and general insecurity of young people ready to enter the job market, with certain questions which relate to authoritarian style leadership the respondents tended to answer in agreement; for example, 90.17% agreed that work bosses need to explain level of required performance expected and 60.15% agreed that work bosses are the ones that give orders and clarify procedures. We feel that these respondent values are indicative of the Gen Z group in a sense that they do in fact want direction, initially, but then desire greater independence with their professional duties on the job. Almost half of respondents (47.74%) disagreed or strongly disagreed with the notion that employees must have close supervision or they will not do their work. And equally (47.18%) disagreed with the idea that employees are generally lazy and non-productive.

What we can glean specifically from the response data here, and what was analyzed into our model and compared with the authoritarian approach to national leadership is that in aggregate (64.2-69.9%) we have a population that indicates a propensity towards authoritarianism. The conditional factors are that this approach should, at least in theory, benefit a relatively new, fragile, but what is only thought about as a democracy. But if an authoritarian leader effectively camouflages their approach and essentially creates a (pseudo-democracy) in which populism and media control reign, then the potential for agreement with this approach may reach upwards of 81%. On the other hand, in a business setting, and especially in a publicly-traded organization where transparency is not only the norm, but also a financial requirement, where annual reports are published, financials are audited, and performance overall is open for scrutiny, we have a tendency for authoritarian leadership of only 33.5-38.2% based on aggregate analysis of the data. This is still significant (approximately a third of respondents) but we feel that the major reasons for this are: (1) cultural/historical; (2) the lack of real professional experience of these young people in a sort of anxiety about what comes next after graduation, and thus manifesting itself into positive (authoritarian-leaning responses) with questions on direction of work (of course a new employee will most likely always feel that he/she will need more direction than say someone with a number of years of experience); (3) a real need for initial job stability professionally which manifests itself through a decrease in a democratic approach/response and a slight increase in a sort of autocratic leadership approach that will result in a more stable environment, so the thinking goes. Now whether this actually happens in reality or not is another question.

If we consider the responses which indicate a favor towards democratic/participative style leadership, we see a significantly strong indication from the data and corresponding model. A significant majority of respondents (89.95%) agree or strongly agree that employees should be part of the decision-making process in organizations. Furthermore 80.45% say that providing guidance without pressure is

the key to good corporate leadership – the key to being a “good boss,” while 92.83% responded that supportive communication from their bosses would be strongly desired. Furthermore, 72% and 75.61% respectively indicate that bosses should ask for suggestions from followers on how things get done in the organization and solicit advice (from followers) on issues and problems that the organization may face, even though such concerns may not impact followers directly.

So, what we can see from these responses is a clear propensity, or at least a strong desire, of followers/potential employees towards a real inclusive type environment within their future professional work environments. When analyzed, the level of these responses is greater in magnitude to any tendency towards an authoritarian approach by a factor of 1.4[<] favoring democratic/participatory leadership. Interestingly though, we still see a sense of inexperience, anxiety, and insecurity within the responses when we consider the following; when asked to respond to this statement, only 38.72% agreed or strongly agreed: “...people are generally competent; and if given a task they will do a good job.” In our opinion this is due to the general lack of professional work experience of the respondents, as previously mentioned. If we utilize our model in multiple iterations and analyze results further we see that a significant aggregate response towards democratic business leadership takes shape favorably, upwards of 94.1%

Finally, we need to consider the responses for those questions that indicate a more relaxed laissez-faire type of leadership approach to business which responses, we feel, would probably strengthen and complement the democratic model. Here we start with responses to the question (B19) that leaders should give subordinates complete freedom to solve problems on their own. 38.42% disagree with this statement, while only 27.87% agree, which strengthens the democratic, participative style as opposed to a complete hands-off approach. This is reinforced with responses to the next question (B22): “..... workers prefer little input from the leader.” Once again the majority 44.74% disagreed with this while only 25.94% agreed. When asked, more directly, whether it’s better to leave subordinates alone, a greater majority at 62.78% disagreed with only 12.22% agreement. And finally a significant percentage of 70.11% did agree to the question of whether leaders should allow subordinate to appraise their own work, to some extent.

With respect to the demographic factors we accounted for, namely age, gender, income, political view, home country and work experience, we identified the aggregate factor for age and gender to provide the biggest impact. Slightly older female respondents tended to favor a more participative/democratic business environment but also to a national approach to leadership, somewhat more than their male counterparts which tended to lean towards authoritarianism.

The second factor we aggregated for easier modeling was based on income, political view, and home country. Here we saw a corresponding trend, hence the particular methodology we used to combine these. As income increased we saw a tendency towards more liberal views and this also corresponded well to the political view factor as well. With regards to home country we utilized published democratic index factors previously mentioned in the introduction of this paper that corresponded with the respondents’ home country and we incorporated the average time that country was considered “free and democratic” a sort of experience with democracy.

However, one of the limitations we ran into was that even though some countries may have for example say 25+ years of democratic elections (Bulgaria for example), it was difficult to tie in any factor for corruption, thus this was omitted and the primary measure was the number of years since the first free elections; this being the years of experience with a liberal form of government.

The final factor was work experience which, based on the fact that overall work experience of the entire population was rather limited, we really could not provide for a significant impact to the model. The number of years, actually measured in months rather than years was consistently limited for all student respondents so this factor's impact was low. But, this actual limitation, as discussed above, we feel did provide an impact we feel overall to the input data we received we just could not account for variation because the variation was low across the board.

Conclusions

Based on what we set out to accomplish within our specific scope of objectives, we feel we have successfully met those objectives. This research set out to *measure* national leadership and business leadership concepts and ideas of a specific population of Gen Z'ers coming from former authoritarian countries such as the Eastern Block, former republics of the Soviet Union in Central Asia and other similar regional countries, and including Russia itself. Some of these countries today would be considered "liberal democracies" while others we would still consider authoritarian to some extent or so called "pseudo-democracies" catering to populism. We feel our research accomplish this goal of measuring ideas of leadership in these two areas from a statistically significant population of young people.

Next we *analyzed* our data to see if we could identify a significant relationship and prove our hypothesis that Gen Z'ers from our population tend to feel one way in terms of political leadership, leaning towards a strong authoritarian model, while at the same time favoring a significantly more liberal approach towards their own work life expectations of leadership (i.e., their boss). Here they desire a more democratic and hands-off approach as it pertains to them and their work. Thus we identified this inverse dichotomous relationship - *strong national leadership bordering on authoritarian*, if it can bring desired results, *but a democratic professional work environment approach with respect to them directly*. Here our respondents wished for overall more freedom, personal recognition, and opportunities to design, plan and execute their own work without too much interference from above after initial consultations with "the boss". This is the opposite of their national leadership thinking approach.

Finally, we used our data to *establish an archetype model* for this sort of thinking taking into account the various factors for national leadership, business leadership, and the key demographic data provided by our respondents. We compared our analysis and model with published research and attempted to fit into the narrative that is taking place today in a significant number of countries and regions in the world.

In 2018 The Economist magazine conducted interviews of dozens of 18+ year olds across Russia in the months leading up to the elections. These young people,

referred to as “*Puteens*” (Gen Z’ers) were the first of a generation in Russia that have no memory of life before President Putin. According to the subsequent article in the Economist, these Puteens have come of age at a time of unprecedented prosperity in Russia with GDP increasing by more than sixfold (Meet the puteens, (2018, March 17). *The Economist*, page 23). Furthermore, the Economist survey identified that these 18–24-year-olds are more likely than any other cohort to approve of Mr. Putin’s performance; more likely to say the country is headed in the right direction. But, most importantly the Economist research indicates that: “.....**when presented with a choice between a Soviet-style political system, the current Russian system, and Western-style democracy, these young people are most likely to prefer the current Russian system.**” (Meet the puteens, (2018, March 17). *The Economist*, page 24). Our research confirmed this thinking fairly well in terms of the political aspect. A significant number of young people do favor this approach and not only in Russia, but in a number of countries in Central and Eastern Europe, The Balkans and Central Asia. The question may well be, “....*how deep is this thinking rooted and will this continue, and if so to what extent ?*”

Following the conceptualization of Daniel Goleman (Goleman et al. 2013) who described the importance of fit between leadership competencies, followers’ demands, and the environment, we identify the very significant factor here – **context**, the environment in which leadership takes place. Boyatzis primarily focused on *business* leadership environment, however, we extend this to the socio-economic/ political environment created not in a country a business is operating in, or a particular industry, but with a particular *event*. Here what we are considering, in order to answer our hypothetical question of whether this thought of leadership is rooted deeply or not, is whether world events are able to shift this thinking of a strongman national leadership to any significant level? The onset of the war in Ukraine, how will this affect thought on leadership?

Which brings us to a potential follow-up extension of our study over the next 3-5 years to measure any significant shifts in thinking, which, by the way, we feel will in fact occur in ideas of national leadership. Numerous recent articles in the Wall Street Journal (Bisserbe et al. 2022) as well as CNN Online (McGee 2022) describe how President Putin’s decision to launch a full-scale invasion of Ukraine is testing the support of Europe’s populist leaders and thus impacting how their young people will also view national leadership in the coming years. However, a counter to this is how the situation with China plays out in terms of its authoritarian politics vs. its standing in the global stage as well as the robustness of its economy. Many will argue that China has been successful in its strongman authoritarian leadership approach. Will this endure?

One can argue that China is not within our research scope (Europe), but we feel that China’s presence will be felt more and more on a global scale which will influence national leadership thinking of generations to come.

From the business side however, we reiterate that the sense of independence of younger employees will only grow stronger in the coming years - a trend that is accelerating due to both technology and COVID-19. Although not a huge demographic today in the workplace, Gen Z’ers are expected to account for nearly a third of the US workforce by 2030; and for the most part, these digital natives don’t

want to go into the office full time. In interviews done several months into the COVID19 pandemic, 69% said they would like to work remote at least half of the time. (A generation that may never work in an office. What will that mean for them? (2022, February 22). *The Wall Street Journal*, R6-R87). We feel this directly integrates with increasingly growing attitudes on liberal leadership in the workplace. Out of the office means greater independence, less control, more freedom for the workplace and work overall.

By 2036 Gen Z'ers will also make up almost 55% of voters in the US. So, we have a demographic pressure growing and impacting the workplace attitudes of leadership and with recent events such as the war in Ukraine and the growing power of China affecting the political aspect and thinking of leadership. It is difficult to which way sentiment will shift, if it will shift at all. Based on our detailed research, based on world events, the growth of technology, the realities of the workplace and needs to workers, we feel that it will be the democratic and further independence thinking will prevail to the extent that this duality we established in our research will eventually fade. Nevertheless, this idea, this logic of power, whether authoritarian or liberal is most likely to continue to evolve in the near-term. An interesting follow-up research initiative can be identifying trends in Gen Z'ers in the US and comparing their attitudes with those of the respondents in our current research.

One specific point to consider is that the scope of our research focused primarily within a *regional* environmental setting, that is, Group 1 (Europe) and Group (2) Central Asia. Focusing into individual countries was not part of the scope and the differences among these countries, as they relate to the specific demographic was assumed to be minimally impacting to what we set out to do. Based on an environmental and historical scan we felt the cultural context within regions was, to a certain level, fairly homogeneous in the bigger scheme of things. Our scope would have been significantly greater, expanded, and more complex, if particular country factors were considered beyond the regional level. Deciding to focus as we did initially within this initial regional geographic level phase can provide the foundation and further opportunity to study and delve into greater details within each region as a second phase of the research to further enhance and optimize our model. This, in fact, is currently already underway as of 2023.

Finally, one very interesting vector for continued future research is in the area of **leadership education** - how to develop a wider, more comprehensive higher education curriculum in leadership at the *undergraduate* level. Most leadership curriculums focus at the graduate level, for example with MBA students. Our research can provide the initiative to establish a more *integrated leadership development* approach for undergraduates which explores different facets of leadership and is not purely focused either on business or political science, but in a more encompassing approach. This can continue to shape the thinking of young people so that they can think critically and holistically.

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A Strategic Turnaround Model for Distressed Properties

By Lesvokli Pitsiladi*, Chris Adendorff[‡] & Brink Botha[°]

The importance of commercial real estate is clearly shown by the role it plays, worldwide, in the sustainability of economic activities, with a substantial global impact when measured in monetary terms. This study responds to an important gap in the built environment and turnaround literature relating to the likelihood of a successful distressed commercial property financial recovery. The present research also addressed the absence of empirical evidence by identifying several important factors that influence the likelihood of a successful distressed, commercial property financial recovery. Once the important factors that increase the likelihood of recovery have been determined, the results can be used as a basis for turnaround strategies concerning property investors who invest in distressed opportunities. A theoretical turnaround model concerning properties in distress, would be of interest to 'opportunistic investing' yield-hungry investors targeting real estate transactions involving 'turnaround' potential. A proposed theoretical model was constructed and empirically tested through a sample of real estate practitioners from across the globe, and who had all been involved, directly or indirectly, with reviving distressed properties. The statistical analysis performed to ensure the validity and reliability of the results, together with a detailed description of the covariance structural equation modelling method used to verify the proposed theoretical conceptual model. The research presents important actions that can be used to influence the turnaround and recovery of distressed real estate. The literature had indicated reasons to recover distressed properties as having wide-ranging economic consequences for the broader communities and the countries in which they reside. The turnaround of distressed properties will not only present financial rewards for opportunistic investors but will have positive effects on the greater community and economy and, thus, social, and economic stability.

Introduction

According to a Savills World Research 2016 report, the value of all developed real estate assets entailing residential properties, commercial properties, industrial properties, and agricultural land, across the globe, equated to roughly US\$217 trillion (Barnes, 2016). The need for real estate is shown in countless studies (Levy & Peterson, 2013). Real estate is widely regarded as a good investment (Wolski & Zaleczna, 2011). Real estate as an asset class to invest in differs from other types of investments for the following reasons, notably; the investor owns and controls the asset, the asset can be physically improved, the asset can be made more operationally efficient and the asset can be repurposed, all of which can contribute to enhancing the returns of the asset (Ross & Mancuso, 2011). The risk-return investment styles for real

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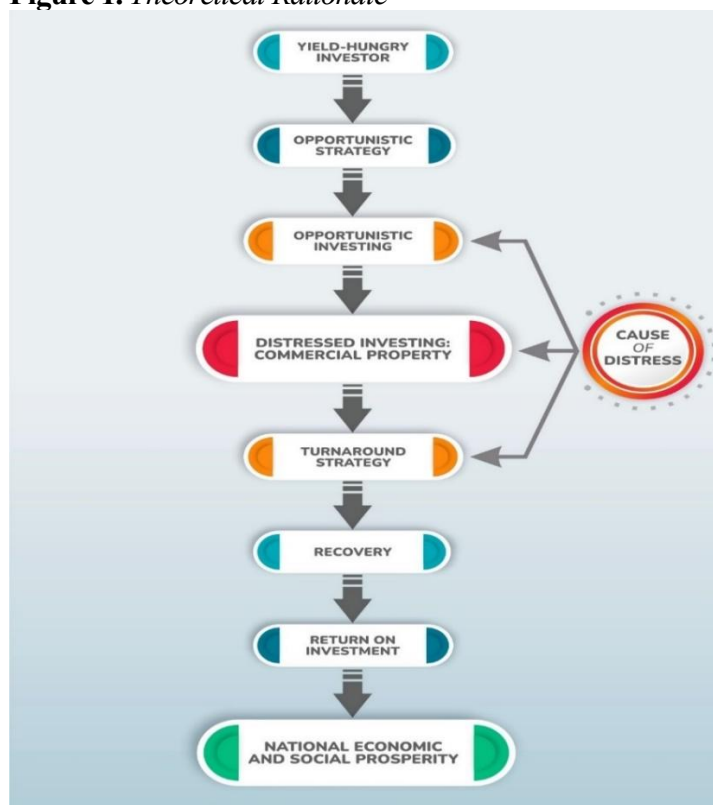
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estate investing include core, value-added and opportunistic property investing (Folkestone Ltd, 2015).

Opportunistic property investing can involve investing in distressed properties (Brady, 2016), where opportunities emerge for property investors to acquire distressed properties with the goal of turning the broken property around (NEPC, 2010). In these circumstances, although risk can be the greatest, the investor has an opportunity to possibly earn above-normal returns (Gahr et al., 2017). This will very much depend on the investor’s experience, knowledge, and skill in managing properties. It will also depend on the conditions of the overall market and the timing of the property investment (Brady, 2016). Distressed properties are characterised by unsustainable capital structures, high vacancy rates, may require capital investment to lease vacant space and may require capital investment to change the use or rebrand the property and possibly the construction of new buildings (Brady, 2016). Obsolescence, in its many forms, is a key cause of a property to become problematic and distressed (Healy, 1989).

Regarding a state of distress, until corrective measures are taken, the severity of the state of decline, and thus financial distress, will deteriorate further to a point where monetary obligations cannot be covered and honoured. To correct these types of situations, a turnaround strategy must be developed and implemented (Mbandu, 2016). The recovery from distress is known as a ‘turnaround’ (Schendel, Patton & Riggs, 1976; Schweizer & Nienhaus, 2017).

Figure 1. *Theoretical Rationale*



Source: Own Construction

There is an abundance of literature on theoretical turnaround models, and which show different strategies and activities conducted during a business or organisational turnaround, such as the turnaround models found in the research publications of Pearce & Robbins (1993; 2008); Maheshwari (2000); Chowdhury (2002); Lohrke, Bedeian & Palmer (2004); Pandey & Verma (2005); Sheppard & Chowdhury (2005); Cater & Schwab (2008); Pretorius (2008); Jeyavelu (2009); Tangpong, Abebe & Li (2015); Mbandu (2016); Rockwell (2016) & Schweizer and Nienhaus (2017); but there is no known formal, theoretical turnaround model that shows strategies and activities conducted during the turnaround of a distressed commercial property.

To summarise; given the relative importance of real estate in general, the absence of empirical evidence on strategies and activities that increase the likelihood of a successful distressed commercial property financial recovery is an important gap in the built environment and turnaround literature. The research addressed the absence of empirical evidence by identifying several important factors that influence the likelihood of a successful distressed, commercial property financial recovery.

Once the important factors that increase the likelihood of recovery have been determined, the results can be used as a basis for turnaround strategies concerning property investors who invest in distressed opportunities.

The Research Problem

The real estate market will always be in a state of perpetual transformation due to changes and disruptions in the economy, legislation, innovation, and operational factors (JLL, 2013). Opportunities are likely to always emerge at some point for an real estate investor to turn 'broken' properties around (NEPC, 2010). Pursuing turnaround strategies may likely require the adoption of a series of consequential, direct, long-term decisions and actions with the aim of reversing a perceived crisis that threatens survival (Cater & Schwab, 2008; Kibui & Iravo, 2017). The purpose of the present research was to contribute to the built environment and turnaround literature, by investigating important strategies and activities that would improve the likelihood of a successful distressed commercial property financial recovery. The primary objective of the present research was to develop a theoretical turnaround process model for distressed commercial properties. While there is an abundance of literature on theoretical turnaround models, that indicate different reform strategies, decisions and actions conducted during a business or organisational turnaround, there is no known formal, theoretical turnaround model that shows strategies and activities conducted during the turnaround of a distressed commercial property. Against this background, the main research problem investigated in the present research effort was as follows:

Determine the Important Factors that would Increase the Likelihood of a Successful distressed Commercial Property Financial Recovery

A theoretical turnaround model concerning properties in distress, would be of interest to ‘opportunistic investing’ yield-hungry investors targeting real estate transactions involving ‘turnaround’ potential.

Research Methodology

Table 1 provides a summary of the research methodology concerning the present research effort.

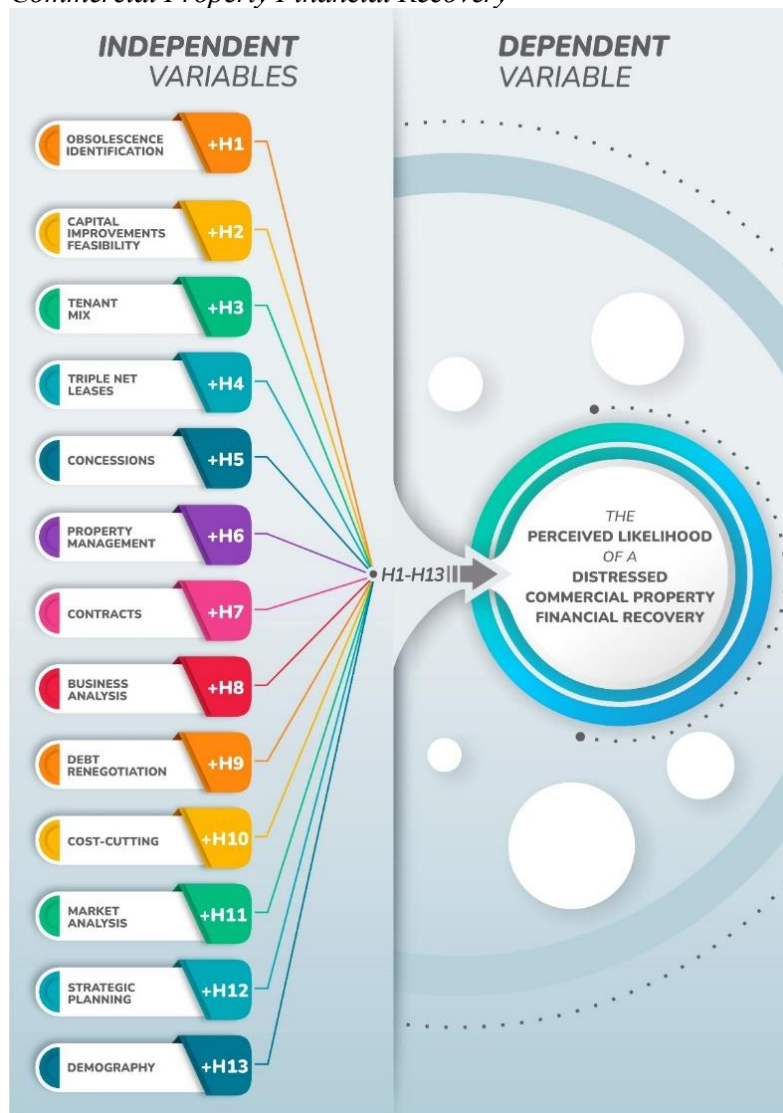
Table 1. *Research Methodology Summary*

Research paradigm	Positivism
Type of research	Explanatory
Research design	Quantitative; survey
Population studied	Global real estate stakeholders and actors
Sample size	391 respondents
Sampling unit	Individual perceptions of each of the real estate stakeholders and actors in the sample.
Sampling methods	Probability methods
Method of data collection	Self-administered questionnaires
Administration of questionnaire	Online; email
Scale	Interval; Likert 7 point; attitudinal
Research approach	Deductive
Validity	Pilot test; exploratory factor analysis; expert opinion; existing literature
Reliability	Cronbach’s α
Dimension reduction technique	Exploratory factor analysis
Extraction method	Principal axis factoring; Kaiser’s criteria
Rotation method	Oblimin with Kaiser normalisation
Method of data analysis	Covariance-based structural equation modelling
Estimation method	Robust maximum likelihood
Fit indices	<ul style="list-style-type: none"> • Satorra-Bentler scaled chi-square • Normed chi-square (χ^2/df) • Root mean square error of approximation • Expected cross-validation index
Software package	LISREL

The Conceptual Model, Hypotheses and Operational Definitions

The proposed conceptual model and the hypothesised relationships between the variables is presented in Figure 2.

Figure 2. Proposed Conceptual Model for the Perceived Likelihood of a Distressed Commercial Property Financial Recovery



Source: Own Construction

The researchers accessed existing literature for construct definitions and explanations, and where the items used in the instrument were deduced from the definitions and explanations. The various operational definitions of the dependent and independent variables are provided below:

Dependent Variable: The Perceived Likelihood of a Distressed Commercial Property Financial Recovery

For the purpose of the present research and within the context of The Perceived Likelihood of a Distressed Commercial Property Financial Recovery, the dependent variable was defined as income-producing properties, where a property had become distressed, in other words, the property generated minimal, if any, positive net

operating income, and the situation would likely only improve when normal operations of the property had resumed, and the property performance returned to levels prior to the state of decline and was of an acceptable performance level to the property stakeholders, and the property achieved a positive cash flow and crossed the break-even point, the property became financially solvent, the property regained profitability and competitive advantage, there was a reduction in vacancies, an increase in rent income and the property was able to avoid a loan default. The turnaround outcome was, therefore, seen as an increase in the net operating income of the property, in other words, the improvement of the property's cash flow situation, hence resulting in the improved likelihood of a successful financial recovery of the commercial property that was in distress (NEPC, 2010).

Independent Variable: Obsolescence Identification

For the purpose of the present research, Obsolescence Identification refers to inspecting the condition of a building, identifying unused facility space, identifying structural deficiencies, identifying inefficient facility design, reviewing documents and reports concerning building functionality, inspecting the current circumstances and situation of the surrounding neighbourhood, conducting a comparative analysis of market rental rates and analysing data concerning the financial performance of the property. Identifying functional obsolescence triggers the need to change the current function of the property to a more profitable function or use of the rentable space.

Identifying locational and/or economic obsolescence would likely require the demolishing of existing structures and buildings and the total redevelopment of the property to suit the existing circumstances of the external environment affecting the property. It is, therefore, hypothesised that:

H1: There is a positive relationship between the importance of Obsolescence Identification and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Capital Improvements Feasibility

For the purpose of the present research, Capital Improvements Feasibility entailed determining if there was a reasonable likelihood of satisfying explicit objectives when a selected course of action was tested for the fit to a context of specific constraints and limited resources in order to implement long-term improvements to the physical quality of a property, to implement structural additions that increased the useful life of a property, to implement alterations that prolonged the economic life of a property and to implement the replacement of building components. Improving the physical quality, adding structures and alterations that increase building economic life and replacing building components, which are assessed to be feasible and result in future, higher rental rates and lower, future operating expenses, will improve the overall prospects of the property. It is, therefore, hypothesised that:

H2: There is a positive relationship between the importance of Capital Improvements Feasibility and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Tenant Mix

For the present research, Tenant Mix refers to selecting an appropriate mix of tenants that consists of a variety of compatible retail and service providers, that accomplishes the desired property image, and where the goods and services offered by non-anchor tenants do not clash with those of the anchor tenants. Servicing both destination and impulse customers, generates traffic to the benefit of all tenants and generates maximum sales potential.

An appropriate tenant mix would improve the benefits for all the tenants, reduce the risk of any tenant not renewing a lease contract and, therefore, reducing vacancies, and thereby benefiting the prospects of the property. It is, therefore, hypothesised that:

H3: There is a positive relationship between the importance of the Tenant Mix and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Triple Net Leases

For the present research, Triple Net Leases entail lease agreements where the tenant is responsible for covering real estate taxes, utility expenses, property insurance, agreed-on items of maintenance and repair and common area maintenance. From triple net lease agreements, the risk of inflation in operating costs is transferred to the tenant but also the tenant receives a lower base rent and can control operating expenses. From the perspective of the property owner, triple net lease agreements are low risk, provide a predictable monthly income and some protection against inflation in operating costs, and should thus improve the overall prospects of the property. It is, therefore, hypothesised that:

H4: There is a positive relationship between the importance of Triple Net Leases and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Concessions

For the present research, Concessions are about offering incentives to existing tenants to encourage lease renewal or to attract new tenants. The incentives or concessions include a reduced rental rate for a specific period, covering penalties incurred by a tenant for breaking an existing lease and providing a tenant with an allowance for internal fitouts. Concessions encourage the leasing of space at a time when the rental market is unfavourable for the landlord, thereby leading to a reduction in vacancies, and hence improving the prospects for the property. It is, therefore, hypothesised that:

H5: There is a positive relationship between the importance of Concessions and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Property Management

For the present research, Property Management refers to property management services, where the property owner either manages the property, or hires a property manager as an employee or appoints a property manager on a fee basis. Property management is required to keep the property in good condition, minimise operating costs, develop a positive image for the property, improve the overall rental value, negotiate profitable lease contracts, continuously improve both the physical structure and technical functions of a building, and manage a diverse combination of tenants. Good property management would likely improve the prospects of a property. It is, therefore, hypothesised that:

H6: There is a positive relationship between the importance of Property Management and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Contracts

For the present research, Contracts are about making amendments to the property management contract to align the interests of the property owner and property management services or hired property manager and, thereby, reducing any immoral or hazardous behaviour of the property manager. Property owners should consider the idea of making changes to the level of decision-making power that a property manager has concerning the property. Property owners should also adjust the level of protection that property management has from being held liable for property-specific lawsuits. Lastly, property owners should make changes to the property management compensation agreement that will result in the alignment of the interests of the property manager and the property owner. A situation where the interests of the property manager and the property owner are aligned would likely increase the prospects of the property. It is, therefore, hypothesised that:

H7: There is a positive relationship between the importance of Contracts and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Business Analysis

For the present research, Business Analysis entails the evaluation of the economic prospects of, and risks faced by, the property to make informed strategic decisions that will assist in reaching the goals of the property owner. In times of distress an appropriate strategic decision may require a decision to be made regarding the reengineering of the property. Reengineering the property requires the rethinking and radical redesign of the property business processes to achieve a dramatic improvement in critical, contemporary measures of performance. Reduced costs and increased revenues are the ultimate goals of the property reengineering efforts. Informed strategic decision-making about property reengineering, because of business analysis, would likely improve the prospects of the property. It is, therefore, hypothesised that:

H8: There is a positive relationship between the importance of Business Analysis and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Debt Renegotiation

For the present research, Debt Renegotiation is about the property owner negotiating with the property lender to secure more favourable loan terms for the property owner who is the borrower, with the goal of avoiding a loan default, which would be both in the best interests of the lender and the borrower. The property owner would request for amendments to be made to the existing loan agreement and make a request for facilities that alleviate financial stress and/or request the current loan to be replaced with a loan that has terms that are more favourable for the property owner to manage the property debt situation. Should the property lender concede and assist the property owner, this would enable the property owner to get a sustainable grip on the property debt situation and should improve the future financial situation of the property. It is, therefore, hypothesised that:

H9: There is a positive relationship between the importance of Debt Renegotiation and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Cost-Cutting

For the present research, Cost-Cutting is the strategic action and process of reducing the overall cost situation of the property. Cost-cutting entails cutting administrative overheads, eliminating non-essential low value-adding property operational activities, modernising the property equipment and overall technological situation of the property, delaying non-essential capital expenditure, and restructuring the property debt situation. Reduced costs would lead to better property prospects, provided that the reduction in costs does not cause tenants to vacate and does not infringe on, and affect the capacity of, the property to earn the market rental rates. It is, therefore, hypothesised that:

H10: There is a positive relationship between the importance of Cost-Cutting and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Market Analysis

For the present research, Market Analysis is the study of the real estate market in which the property operates. Analysing the real estate market surrounding the property entails evaluating the supply and demand conditions for rental space, forecasting the supply and demand for space, forecasting the future rental rate, forecasting potential vacancies, gathering information about comparable competitive properties, the identification of prospective tenants and studying relevant economic and demographic information that would have an impact on leasing. Property owners would use information gathered from the market analysis to determine the rental rates for lease agreements, and where the rental rates would be adjusted to meet the changing market conditions projected by the market analysis. Having favourable rental rates that suit

the current market conditions would likely increase the overall income situation of the property. It is, therefore, hypothesised that:

H11: There is a positive relationship between the importance of Market Analysis and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Strategic Planning

For the present research, Strategic Planning is about developing a strategy for the property, with the goal of achieving an appropriate return on the property. Strategic planning involves the formulation of a formal and well-prepared documented strategic plan for the property. Strategic plan formulation would entail evaluating the existing strategies of the property and generating new ones.

A strategic plan would contain the goals of the property owner. Planners collect property-related data and construct models describing alternative future scenarios concerning the property. It is, therefore, hypothesised that:

H12: There is a positive relationship between the importance of Strategic Planning and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

Independent Variable: Demography

For the present research, Demography entails the study of the size, territorial distribution, and composition of the population of the geographical region where the property is situated. Studying the population composition involves looking at age groups, gender, marital status, health, skills, and qualifications. Demography involves studying the natality, mortality, and migration situation of the population of interest. Understanding the changes in the size and composition of the local population of interest will provide a better understanding of the level of disposable income, spending patterns and the available workforce, since employment has a direct influence on consumer spending potential and is related to the demand for rentable space. Furthermore, the demographical study of the local population of interest forms part of a feasibility study concerning a property related project. It is, therefore, hypothesised that:

H13: There is a positive relationship between the importance of Demography and the Perceived Likelihood of a Distressed Commercial Property Financial Recovery.

The validity of the content of the measuring scales and the questionnaire in the present research effort was assessed by a research expert and an academic. The research expert was given the construct definitions of the different variables and asked to assess whether the 89 questionnaires/statements in the measuring instrument were considered relevant, necessary, meaningful, and correctly worded, thereby checking the content validity. A pilot study was conducted to test the instrument with 30 respondents who had similar characteristics to the study population. All necessary amendments and corrections were implemented.

Population Studied, Sample Size and Response Rate

For the present research, the target population was defined as real estate stakeholders and actors who had participated, or who were participating in distressed property financial recovery projects, from both the public and private sector, from across the world. The actual global population of all the real estate stakeholders and actors that have been involved in a distressed property recovery project is unknown, as well as the proportions of the profession segments that make up the study target population. The researcher had randomly selected as many real estate practitioners from across the globe as possible, where only candidates that were linked to real estate were randomly selected and contacted. The researcher had sought participation, via email, from several sources, as described below:

- The professional networking platform, ‘LinkedIn’, achieving 2500 plus real estate-related connections.
- Real estate divisions of the various major banks in South Africa, with some banks responding.
- Real estate-related companies from across the world.
- The South African Property Owners Association.
- The Women’s Property Network
- The South African Institute of Valuers.
- The Property Sector Charter Council.
- Rode and Associates.
- Urban Studies South Africa.
- The Johannesburg Development Agency.
- TUHF Property Finance.
- The African Real Estate Society.
- From a conference, where many the attendees had previous experience with distressed properties.

Once the consent of a real estate-related experts to take part in the present research effort was obtained, the candidate respondents were provided (emailed/ hard copy delivery) with a questionnaire, including instructions on how to facilitate completion. Only respondents that had been involved in at least one real estate-related project and/or transaction that resulted in the full recovery of the net cash flow of a distressed ‘income earning’ property, to a level that was sufficient to cover any debt service for at least two years, was selected to participate in the present research effort. Questionnaires were captured on the ‘Nelson Mandela University Web Survey’ platform (Nelson Mandela University, 2020) and the ‘Qualtrics’ platform (Qualtrics, 2020). The sample size of respondents who had been involved in a distressed commercial property financial recovery amounted to 391 respondents. The respondents from the pilot test were not incorporated in the final study.

Presentation and Analysis of Data

The following section discusses the statistical analysis of the results from the questionnaires.

Construct Validity

In the present research effort, an exploratory factor analysis was conducted to assess the convergent validity of the research instrument used to measure the constructs incorporated in the theoretical conceptual model and to confirm whether the sample data contained the underlying dimensions of *The Perceived Likelihood of a Distressed Commercial Property Financial Recovery* as proposed in the theoretical conceptual model. According to Williams et al. (2010) exploratory factor analysis is a multivariate statistical method with the objective of evaluating the construct validity of a scale, test or measuring instrument. Construct validity evidence entails convergent and discriminant evidence (Cizek et al., 2008; Wang et al., 2015). Convergent validity evaluates the degree to which two measures of the same concept are correlated, where high correlations are strong indicators that the scale is in fact measuring the intended concept (Hair et al., 2014a). The sample size of the present research effort comprised 391 respondents and the measuring instrument questionnaire contained 78 items. The complete matrix of responses was accessed by exploratory factor analysis. Before the extraction of the factors, it is recommended that multiple tests be used to determine the appropriateness of the data, collected from the respondents, for factor analysis. These include; the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1970; Williams et al., 2010) and the Bartlett's test of Sphericity (Bartlett, 1950; Williams et al., 2010). The Kaiser-Meyer-Olkin measure of sampling adequacy test and Bartlett's test of sphericity must be conducted to establish construct validity and to attain confirmation on whether the data collected for the exploratory factor analysis was appropriate (Yu & Richardson, 2016).

Satisfactory results require the Kaiser-Meyer-Olkin measure of sampling adequacy to have values 0.80 or higher (Yu & Richardson, 2016), although measures above 0.60 are acceptable (Rencher, 2002; Yu & Richardson, 2016). Measuring statistical relevance requires the use of the Bartlett's test of sphericity to test the null hypothesis, to conclude on whether the variables are not correlated amongst each other (Cruz-Martínez, 2014). The critical value or p-value of the test must be lower than $p = 0.05$ for statistical significance and relevance (Cruz-Martínez, 2014; Yu & Richardson, 2016). The present research effort adopted the principal axis factor extraction method and oblimin with the Kaiser normalisation rotation method. During extraction, factors are defined to represent the structure of the variables in the analysis (Hair et al., 2014b).

The principal axis factor extraction method requires that all variables belong to the first group so that when the factor is extracted, a residual matrix is calculated (Yong & Pearce, 2013). Factors must be extracted successively until there is sufficient variance accounted for in the correlation matrix (Tucker & MacCallum, 1997; Yong & Pearce, 2013). Principal axis factor must be used when the data violates the assumption of multivariate normality (Costello & Osborne, 2005; Yong & Pearce, 2013). Kaiser's criterion requires that all factors above the eigenvalue of one, be retained

(Kaiser, 1960; Yong & Pearce, 2013). Oblique rotation requires the pattern matrix to be examined for factor or item loadings (Costello & Osborne, 2005). Oblimin benefits the study in that the method yields a simple structure by minimising the cross-products of factor loading (Finch, 2020). In Kaiser normalisation, the loadings of each variable must be divided by the square root of the communalities of the variables, as this is likely to ensure that each variable has equal influence on the rotation process (Dien et al., 2005).

Using an alpha level of 0.01, two-tailed, a rotated factor loading for a sample size of at least 300 must be at least 0.32 to be statistically meaningful (Tabachnick et al., 2007; Yong & Pearce, 2013). Convergent validity requires a minimum factor loading of 0.30, for a sample size of at least 350 (Hair et al., 2006). The eigenvalues greater than one, percentage of variance and individual factor loadings greater than 0.30 were considered to determine the number of factors to be extracted. The eigenvalues as presented in Table 2 and Table 3 suggest that 2 factors should be used as the dependent variables and 9 factors as independent variables.

All items with factor loadings less than 0.30 were deleted, resulting in the maximum interpretable factor structure as presented in Table 2 and Table 3 respectively. The newly formed constructs of the present research effort demonstrate sufficient convergent validity.

Two factors, with Eigenvalues greater than 1.0 were extracted and renamed as *The Likelihood of a Distressed Property Turnaround* and *The Likelihood of a Distressed Property Financial Recovery* respectively, and which are presented in Table 2. The exploratory factor analysis thus demonstrated that the dependent variable *The Perceived Likelihood of a Distressed Commercial Property Financial Recovery* was not a uni-dimensional construct, but consisted of two different sub-dimensions, as per the sample data of the present research effort. The two factors explained 49.36% of the variance in the data. The results indicated that the p-value significance level of the Bartlett's test of sphericity concerning the dependent variables equated to $p = 0.00$, which is less than the $p < 0.05$ requirement. Hence there is statistical significance and relevance and, therefore, the variables correlate amongst each other.

The results showed that the Kaiser-Meyer-Olkin measure of sampling adequacy concerning the dependent variable equated to 0.882, which exceeded the 0.80 threshold. Therefore, the results were satisfactory for the application of exploratory factor analysis.

Table 2. Rotated Factor Loadings: Dependent Variable

Eigenvalues	4.362	1.065
Item	Factor	
	1 The Likelihood of a Distressed Property Turnaround	2 The Likelihood of a Distressed Property Financial Recovery
TUR1	<u>.700</u>	
TUR6	<u>.528</u>	
TUR10	<u>.517</u>	
TUR13	<u>.515</u>	
TUR11	<u>.514</u>	
TUR3	<u>.382</u>	
TUR2	<u>.360</u>	
TUR8		<u>-.951</u>
TUR5		<u>-.684</u>
TUR7		<u>-.483</u>
TUR4		<u>-.453</u>

Source: Constructed by the Researcher

The results of the exploratory factor analysis for the study’s independent variables are reported in Table 3, followed by the findings of the individual factor analysis. As mentioned before, Kaiser’s criterion indicates that all factors that are above the eigenvalue of 1.0, should be retained (Kaiser, 1960; Yong & Pearce, 2013). The Eigenvalues greater than 1.0 extracted and renamed were *Strategy, Concessions, Tenant Mix, Debt Restructuring, Demography, Analysing Alternatives, Property Management* and *Net Leases* respectively, which are shown in Table 6.4.

Table 3 specify that a total of 36 items loaded on 9 different independent factors. For constructs to conform to convergent validity, the minimum factor loading of 0.30 is required for a sample size of 350 and over (Hair et al., 2006). The present research effort had a sample size of 391, therefore, the factor loadings on Table 3 represent significant loadings greater than or equal to 0.3. Hence, there was sufficient evidence of convergent validity and thus, evidence of construct validity. The nine factors account for 63.80% of the variance in the data. In the present research effort, the results showed that the p-value significance level of the Bartlett’s test of sphericity concerning the independent variables equated to $p = 0.00$, which is less than the $p < 0.05$ requirement. Hence, there is statistical significance and relevance. Therefore, the variables correlate amongst each other. The results indicated that the Kaiser-Meyer-Olkin measure of sampling adequacy concerning the independent variables equated to 0.917, which exceeded the 0.80 threshold. Therefore, the results are satisfactory for the application of exploratory factor analysis.

Table 3. Rotated Factor Loadings: Independent Variables

Item	Factor								
	1	2	3	4	5	6	7	8	9
	Strategy	Concessions	Tenant Mix	Debt Restructuring	Demography	Analysing Alternatives	Capital Improvements	Property Management	Net Leases
STR3	<u>.740</u>								
STR2	<u>.680</u>								
BUS3	<u>.665</u>								
STR4	<u>.626</u>								
OBS7	<u>.594</u>								
MAN5	<u>.590</u>								
BUS2	<u>.562</u>								
MAN3	<u>.535</u>								
BUS1	<u>.511</u>								
MAN4	<u>.496</u>								
OBS8	<u>.479</u>								
STR5	<u>.477</u>								
CON3		<u>.728</u>							
CON2		<u>.595</u>							
NET1		<u>.593</u>							
TEN3			<u>.693</u>						
TEN1			<u>.675</u>						
REN1				<u>.759</u>					
COST6				<u>.700</u>					
REN3				<u>.697</u>					
REN2				<u>.399</u>					
DEM3					<u>-.648</u>				
DEM1					<u>-.608</u>				
DEM2					<u>-.531</u>				
MAR1						<u>.658</u>			
COST4						<u>.658</u>			
CAP2							<u>-.615</u>		
CAP3							<u>-.601</u>		
OBS3							<u>-.446</u>		
OBS4							<u>-.429</u>		
MAN6							<u>-.407</u>		
BUS4								<u>.713</u>	
MAN1								<u>.597</u>	
CAP4								<u>.486</u>	
TEN7								<u>.464</u>	
NET4									<u>.597</u>
NET5									<u>.579</u>
Eigenvalues	11.545	2.409	1.964	1.656	1.464	1.341	1.145	1.093	.990

Source: Constructed by the Researcher

The research adopted Cronbach’s α technique for determining the reliability of the measuring instrument. Cronbach’s α is an effective test to establish the internal consistency of a measuring instrument (Heale & Twycross, 2015; Kim et al., 2016). If $\alpha \geq 0.9$, the internal consistency is considered excellent (Kim et al., 2016; Yu & Richardson, 2016), if $0.7 \leq \alpha < 0.9$, internal consistency is considered good (Kim et al., 2016). An acceptable reliability score is 0.7 and higher (Blunch, 2008; Heale & Twycross, 2015; Lobiondo-Wood, 2013; Shuttleworth, 2015; Yu & Richardson, 2016). An acceptable reliability coefficient is 0.7, but lower thresholds are allowed with preliminary research (Nunnally, 1978; Reynaldo & Santon, 1999).

The minimally acceptable reliability for preliminary research must be in the range of 0.5 and 0.6 and cannot go lower than 0.5 (Nunnally 1967; Peterson, 1994). The Cronbach α of the constructs *The Likelihood of a Distressed Property Turnaround*, *The Likelihood of a Distressed Property Financial Recovery*, *Strategy*, *Concessions*, *Tenant Mix*, *Debt Restructuring*, *Demography*, *Capital Improvements Feasibility* and *Property Management* met the 0.70 reliability criteria. *Analyse Alternatives* and *Net Leases* were less than 0.70 but were above 0.50, but the minimally acceptable reliability for preliminary research situations must be in the range of 0.50 and 0.60 (Nunnally 1967; Peterson, 1994). *Analysing Alternatives* and *Net Leases*, therefore, could be accepted as reliable according to Nunnally (1967) and Peterson (1994). Various items were deleted to improve the reliability of the instruments. The convergent validity and Cronbach α and reliability measures provided sufficient evidence to support construct validity.

The Reformulation of the Hypotheses

After conducting the exploratory factor analysis, the theoretical conceptual model was modified. The original hypotheses formulated were reviewed. Table 4 provides a summary of the reformulation of the hypotheses.

Table 4. *Reformulation Of Hypotheses Tested*

H¹	There is a positive relationship between the importance of Strategy and The Likelihood of a Distressed Property Turnaround.
H²	There is a positive relationship between the importance of Concessions and The Likelihood of a Distressed Property Turnaround.
H³	There is a positive relationship between the importance a Tenant Mix and The Likelihood of a Distressed Property Turnaround.
H⁴	There is a positive relationship between the importance of Debt Restructuring and The Likelihood of a Distressed Property Turnaround.
H⁵	There is a positive relationship between the importance of Demography and The Likelihood of a Distressed Property Turnaround.
H⁶	There is a positive relationship between the importance of Analysing Alternatives and The Likelihood of a Distressed Property Turnaround.
H⁷	There is a positive relationship between the importance of Capital Improvement Feasibility and The Likelihood of a Distressed Property Turnaround.
H⁸	There is a positive relationship between the importance of Property Management and The Likelihood of a Distressed Property Turnaround.
H⁹	There is a positive relationship between the importance of Net Leases and The

	Likelihood of a Distressed Property Turnaround.
H ¹⁰	There is a positive relationship between the importance of Strategy and The Likelihood of a Distressed Property Financial Recovery.
H ¹¹	There is a positive relationship between the importance of Concessions and The Likelihood of a Distressed Property Financial Recovery.
H ¹²	There is a positive relationship between the importance a Tenant Mix and The Likelihood of a Distressed Property Financial Recovery.
H ¹³	There is a positive relationship between the importance of Debt Restructuring and The Likelihood of a Distressed Property Financial Recovery.
H ¹⁴	There is a positive relationship between the importance of Demography and The Likelihood of a Distressed Property Financial Recovery.
H ¹⁵	There is a positive relationship between the importance of Analysing Alternatives and The Likelihood of a Distressed Property Financial Recovery.
H ¹⁶	There is a positive relationship between the importance of Capital Improvement Feasibility and The Likelihood of a Distressed Property Financial Recovery.
H ¹⁷	There is a positive relationship between the importance of Property Management and The Likelihood of a Distressed Property Financial Recovery.
H ¹⁸	There is a positive relationship between the importance of Net Leases and The Likelihood of a Distressed Property Financial Recovery.

Source: Constructed by The Researcher

Assessment of Goodness of Fit

The research adopted covariance-based Structural Equation Modelling (SEM) as the method of statistical analysis. Covariance-based structural equation modelling is used primarily to test theories, therefore explaining the relationships among various constructs that make up the theory (Svensson, 2015). Multivariate normality needs to be checked before conducting the Structural Equation Modelling analysis, as structural equation modelling is only effective when there is a multivariate normality assumption for data (Karakaya-Ozyer & Aksu-Dunya, 2018).

With covariance-based structural equation modelling only normal from non-normal distributions, need to be distinguished, where normal distributions are the preferred option (Hair et al., 2017d). The present research adopted the chi-square χ^2 test to determine whether the sample data was normal or non-normal. Chi-square-type tests should be used to test hypotheses to see whether there is adherence of the study sample to a normal law (Lemeshko, 2015). The software application LISREL was used to assess the normality of the data. Table 5 shows the results from LISREL concerning the measurement model of the present research effort. The Satorra-Bentler scaled chi-square (χ^2) of 851.769 ($p = 0.0$) provides testimony that the sample data does not fit the model perfectly and therefore **H0**: *The data fits the model perfectly*, should be rejected.

The results of χ^2/df ratio equated to 1.43 and met the criteria (values < 3) for a good model fit. The results from the root mean square error of approximation equated to 0.0334 and the criteria is values (< 0.05) for a good fit. Finally, the results of the expected cross-validation index equated to 2.743, where the criteria for a model fit required the expected cross-validation index to be less than the saturated model and the independence model, and in which, the results were less for both (2.743 is less than both 3.605 and 61.879), hence there is a model fit. In conclusion, the Satorra-

Bentler scaled chi-square (χ^2) indicated that there was not a perfect model fit, but the χ^2/df ratio, root mean square error of approximation and expected cross-validation indices suggest that the measurement model of the present research effort, fits the data well, that is, a close fit. No changes were made to the measurement model.

Table 5. Goodness-of-fit Indices for the Measurement Model

Fit indices	Measurement Model Results
Sample size	391
Degrees of freedom (<i>df</i>)	594
Satorra-Bentler scaled chi-square (χ^2)	851.769 ($p = 0.0$)
Minimum fit function level	3.380
χ^2/df ratio: Satorra-Bentler scaled chi-square / Degrees of freedom	1.43
Root mean square error of approximation (RMSEA)	0.0334
Expected cross-validation index (ECVI)	2.743
Expected cross-validation index (ECVI) saturated model	3.605
Expected cross-validation index (ECVI) independence model	61.879

Source: Constructed by the Researcher

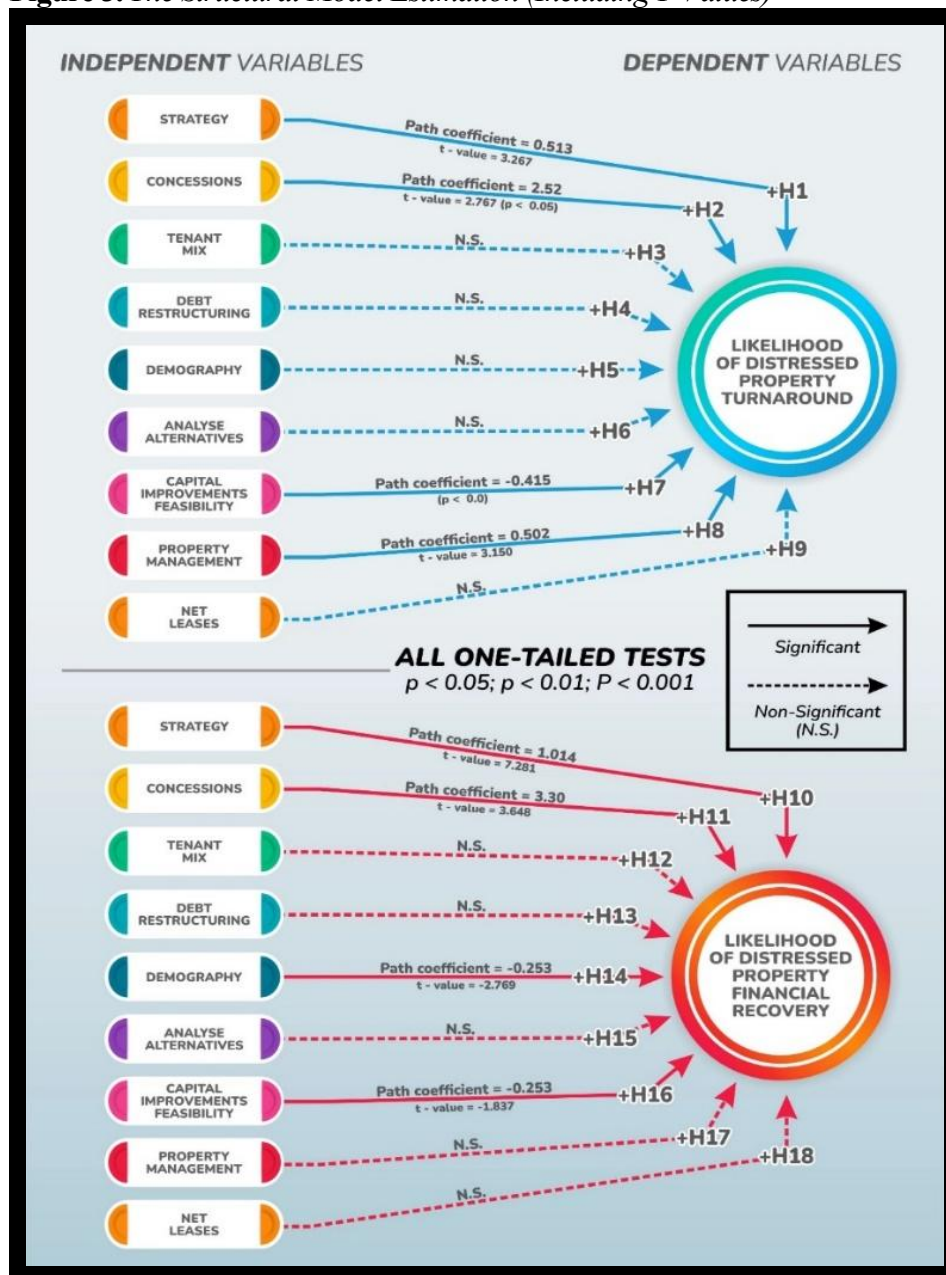
Specifying the Structural Model

Stage Five of SEM requires that the specification of the structural model and, thus, relationships amongst the constructs to another based on the proposed theoretical model, must be assigned, where a structural model specification is likely to use the dependence relationship type to represent structural hypotheses of the model (Hair et al., 2014c). Figure 3 depicts the estimated structural model of the present research effort. Each arrow represents the reformulation of the hypotheses as presented in Table 4.

Assessing Structural Model Validity

Stage Six of SEM requires the testing of the validity of the structural model and the corresponding, hypothesised, theoretical relationships where the goodness-of-fit and significance, direction and the size of the structural parameter estimates must all be assessed, and if the structural model is determined to be valid, then substantive conclusions and recommendations can be drawn, but if the structural model is determined to be invalid, then the model must be refined and tested with new data (Hair et al., 2014b).

Figure 3. The Structural Model Estimation (Including T-Values)



Source: Own Construction

Stage Six of SEM assess goodness-of-fit of the structural model (Hair et al., 2014b). To assess overall model fit, goodness-of-fit indices need to be utilised (Karakaya-Ozyer & Aksu-Dunya, 2018). Table 6 shows the results from LISREL concerning the structural and measurement models of the present research effort. The Satorra-Bentler scaled chi-square (χ^2) of 1480.413 ($p = 0.0$) provides testimony that the sample data does not fit the model perfectly. The results of χ^2/df ratio equated to 1.44 and the criteria for a good model fit is values of < 3 .

The results from the root mean square error of approximation equated to 0.0336 and the criteria or a good fit is values (< 0.05). Finally, the results of the expected

cross-validation index equated to 4.560, where the criteria for a model fit required the expected cross-validation index to be less than the saturated model and the independence model, in which, the results were less for both (4.560 is less than both 6.031 and 99.281), hence there is a model fit. In conclusion, the Satorra-Bentler scaled chi-square (χ^2) indicated that there was not a perfect model fit, but the χ^2/df ratio, root mean square error of approximation and expected cross-validation indices suggested that both the measurement and structural models of the present research effort, fitted the data well, that is, a close fit.

Table 6. Goodness-of-fit Indices for the Measurement and Structural Models

Fit indices	Measurement Model Results	Structural Model Results
Sample size	391	391
Degrees of freedom (<i>df</i>)	594	1027
Satorra-Bentler scaled chi-square (χ^2)	851.769 (p = 0.0)	1480.413 (p = 0.0)
Minimum fit function level	3.380	5.622
χ^2/df ratio: Satorra-Bentler scaled chi-square / Degrees of freedom	1.43	1.44
Root mean square error of approximation (RMSEA)	0.0334	0.0336
Expected cross-validation index (ECVI)	2.743	4.560
Expected cross-validation index (ECVI) saturated model	3.605	6.031
Expected cross-validation index (ECVI) independence model	61.879	99.281

Empirical Results

Once the model is established as being adequate, then the hypotheses within the model must be tested by evaluating the model parameter estimates (Ullman & Bentler, 2013). This is summarised below concerning both non-significant relationships and significant relationships as presented on Figure 3.

Non-significant Relationships

With reference to Figure 3, the results indicate that **H³, H⁴, H⁵, H⁶ and H⁹** are statistically non-significant and are, therefore, rejected. *Tenant Mix, Debt Restructuring, Demography, Analysing Alternatives* and *Net Leases* are not likely to have any influence on *The Likelihood of a Distressed Property Turnaround* and hence, are assumed not to be important factors to consider improving the odds that a distressed property successful overall turnaround in operations and performance occurs. With reference to Figure 3, the results indicate that **H¹², H¹³, H¹⁵, H¹⁷ and H¹⁸** are statistically non-significant and are, therefore, rejected. *Tenant Mix, Debt Restructuring, Property Management, Analysing Alternatives* and *Net Leases* are not likely not to have any influence on *The Likelihood of a Distressed Property Financial Recovery* and hence,

are assumed not to be important factors to consider improving the odds that a distressed property financially fully recovers.

Significant Relationships

The results presented in Figure 3 indicate that there is a positive relationship, with a path coefficient of 0.513 and t-value of 3.267, between *Strategy* and *The Likelihood of a Distressed Property Turnaround*. H^1 is therefore accepted. The results indicated that there is a positive relationship, with a path coefficient of 1.014 and t-value of 7.281, between *Strategy* and *The Likelihood of a Distressed Property Financial Recovery*. Therefore, H^{10} is accepted.

The results further indicate that there is a positive relationship, with a path coefficient of 2.52 and t-value of 2.767 ($p < 0.05$), between *Concessions* and *The Likelihood of Distressed Property Turnaround*. Therefore, H^2 is accepted. The results presented in Figure 3 show that there is a positive relationship, with a path coefficient of 3.30 and t-value of 3.648, between *Concessions* and *The Likelihood of a Distressed Property Financial Recovery*. Therefore, H^{11} is accepted.

The results presented in Figure 3 indicated however that there is a negative relationship, with a path coefficient of -0.255 (minus) and t-value of -2.769 (minus), between *Demography* and *The Likelihood of a Distressed Property Financial Recovery*. Therefore, H^{14} is rejected. The results presented that there is a negative relationship, with a path coefficient of -0.415 (minus) ($p < 0.0$), between *Capital Improvements Feasibility* and *The Likelihood of a Distressed Property Turnaround*. Therefore, H^7 was also rejected.

The results presented in Figure 3 show that there is a negative relationship, with a path coefficient of -0.253 (minus) and t-value of -1.837 (minus), between *Capital Improvements Feasibility* and *The Likelihood of a Distressed Property Financial Recovery*. Therefore, H^{16} is rejected. The results further indicated that there is a positive relationship, with a path coefficient of 0.502 and t-value of 3.150, between *Property Management* and *The Likelihood of a Distressed Property Turnaround*. Therefore, H^8 is accepted.

Summary of Important Actions

Table 7 provides the summary of important actions to consider and actions not to consider concerning the influencing of *The Likelihood of a Distressed Property Turnaround* and of *The Likelihood of a Distressed Property Financial Recovery*. It must be noted that the actions set out in Table 7 are because of the findings from the empirical analysis, based on the opinions of real estate practitioners that have being involved in at least one distressed property recovery project and there is no evidence provided by the empirical analysis suggesting that any of the actions will guarantee a positive influence on the dependent variables. The recommendations on Table 7 are therefore advisory.

Table 7. Researcher Recommendations on Actions to Consider and not to Consider

The Likelihood of a Distressed Property Turnaround; and The Likelihood of a Distressed Property Financial Recovery.	
IMPORTANT ACTIONS TO CONSIDER	
Strategy	<ul style="list-style-type: none"> • A well-prepared strategic plan • Clearly specified goals • The analysis of the business environment • The evaluation of existing strategies • The analysis of market rental rates (market analysis) • The analysis of market rental rates (identifying locational obsolescence) • Management negotiating profitable lease contracts • The evaluation of economic prospects regarding the property • Management developing a positive image concerning the property • The evaluation of all risks • Management efforts of improving the rental value • The analysis of data concerning financial performance • The analysis of data concerning financial performance (identifying economic and functional obsolescence) • Planning for different future scenarios
Concessions	<ul style="list-style-type: none"> • Lease clause concessions entailing a net lease structure, involving a tenant taking responsibility for only covering real estate taxes, while the landlord is responsible for all other property expenses, in other words, a single-net lease agreement. • A concession that covers tenant moving expenses. • A concession that covers penalties incurred by a tenant for breaking an existing lease. <p><i>With a single-net lease, a property owner must manage insurance and maintenance operating cost inflation. Reducing costs by re-bidding certain services and shopping for new insurance can keep costs down (IREM, 2011). Cloete (2006) also noted that operating expenses can be decreased by ensuring the lowest quotes, increasing recoveries from tenants, ensuring an optimum capital and maintenance ratio and optimising energy systems.</i></p>
Property Management	<ul style="list-style-type: none"> • Management that negotiates profitable lease contracts (in conjunction with other strategic actions). • Management that develops a positive image concerning the property (in conjunction with other strategic actions). • Management efforts that improve the rental value (in conjunction with other strategic actions).
The Likelihood of a Distressed Property Turnaround	
IMPORTANT ACTIONS TO CONSIDER	
Property Management	<ul style="list-style-type: none"> • Assess the feasibility of replacing building components. • It is important to analyse the financial position of the property. • Property management that keeps the property in good condition. • Select tenants that generate maximum sales potential.

Capital Improvements Feasibility	<ul style="list-style-type: none"> Assess the feasibility of replacing building components (in conjunction with other property management actions).
The Likelihood of a Distressed Property Turnaround; and The Likelihood of a Distressed Property Financial Recovery.	
ACTIONS ADVISED NOT TO CONSIDER	
Concessions	<ul style="list-style-type: none"> Rent reducing concessions Tenant improvement allowance concessions
Capital Improvements Feasibility	<ul style="list-style-type: none"> Assess the need for structural additions. Investigate the need for alterations to the building. Identify inefficient facility design.
The Likelihood of a Distressed Property Financial Recovery	
ACTIONS ADVISED NOT TO CONSIDER	
Demography	<ul style="list-style-type: none"> Studying the demographic composition of the local population Studying the population size Studying the territorial distribution of the local population

Concluding Remarks

While there is an abundance of literature on theoretical turnaround models, and which shows different reform strategies, decisions and actions conducted during a business or organisational turnaround, there is no known, formal theoretical turnaround model that shows strategies and activities conducted during the turnaround of a distressed commercial property. A theoretical, turnaround model concerning properties in distress, would be of interest to ‘opportunistic investing’ yield-hungry investors targeting real estate transactions involving ‘turnaround’ potential. The present research effort presented important actions that can be used to influence *The Likelihood of a Distressed Property Turnaround* and *The Likelihood of a Distressed Property Financial Recovery*.

The research provides beneficial and useful advice and guidelines to stakeholders involved in distressed property recovery projects, whether from the private or public sector. The important items, identified to have a positive influence on the dependent variables as shown the study results, could form part of a turnaround strategy or model undertaken by the various distressed property stakeholders. Conversely, the items shown in the results to have a non-significant or negative influence on the dependent variables, are items that the various distressed property stakeholders may need to investigate further, but not necessarily ignore. Furthermore, property managers could adopt the important items identified in the research, in the day-to-day property management tasks and functions as best practice for distress preventative measures.

The turnaround of distressed properties will not only present financial rewards for opportunistic investors but will have positive effects on the greater community and economy and, thus, social, and economic stability.

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Contributing and Constraining Factors regarding the Implementation of Human Resource Management Onboarding During the Covid-19 Pandemic at the City of Tshwane Metropolitan Municipality in South Africa

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South Africa was unprepared for the work-from-home measures (computer-based work practices with technological interface) necessitated by the government's rapid lockdown and restriction of mobility during COVID-19. The accelerated adoption of technology for remote work by human resource management (HRM) practitioners resulted in challenges in online and face-to-face onboarding. Problems with internet connectivity, infrastructure, hardware and the availability of electricity hindered operations during this period. The research objective was to investigate the factors influencing the implementation of HRM onboarding practices, with a specific focus on online and hybrid onboarding approaches, within a municipal context in South Africa. This qualitative study employed an interpretive phenomenological design, collecting data through semi-structured interviews in person and via videoconferencing. It focused on HR staff and employees onboarded during the pandemic, selecting a purposive sample of 10 HR staff who were interviewed until data saturation was reached. Thematic analysis, supported by ATLAS.ti for coding, was applied to analyse information. The main findings involved the contributing and constraining factors in onboarding during COVID-19. Videoconferencing tools, paperless systems, geographical location, accessible internet document access and involvement of immediate senior managers were the identified themes of the contributing factors. Lack of Microsoft Teams software experience, lack of adopting onboarding processes, incomplete and slow induction process, no induction process, network and mobile connections, electricity load-shedding, funding, familiarity with technology, COVID-19 regulations and the availability of resources were the identified themes of the constraining factors. The research highlighted the need for the adaptation of work methods, agility and improvement of onboarding processes to ensure that onboarding continued during lockdown and remote working conditions. Managers, drawing insights from COVID-19 experiences, could refine onboarding processes for future efficiency. The research contributed to agile work methods and enhanced onboarding within South African municipalities, addressing common operational challenges.

Keywords: HRM onboarding, constraining and contributing factors, COVID-19 pandemic South Africa, state-owned company

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Introduction

Onboarding, according to Byford, Watkins and Triantogiannis (2017:1-2), is the process used by organisations to support their new employees and assist them in integrating into the organisation. As a result of the Coronavirus pandemic, organisations were obliged to rethink their onboarding practices, with training taking place remotely because of work-from-home measures (Goodermote, 2020:399). Thus traditional onboarding, according to Oranburg and Khan (2020:2), was replaced with virtual onboarding, transcending traditional business models. Goodermote (2020:399) states that the challenge of virtual onboarding for organisations is that the required systems are not yet in place, necessitating their invention or further development.

According to Klein, Pollin and Sutton (2015:263), organisations worldwide make use of onboarding programmes to ensure that newly appointed employees adjust to their roles within the organisation. However, onboarding in its traditional form became invalid with the restrictions put in place during the Coronavirus pandemic (Oranburg & Khan, 2020:2). This led to the adoption of virtual onboarding, which allowed organisations to make much-needed improvements to their onboarding programmes, rendering them more effective and efficient (Oranburg & Khan, 2020:2). According to Reaves (2019:1), organisations which ensured that their onboarding programmes were implemented effectively during the pandemic will hold a significant advantage in the Fourth (Industry 4.0) and Fifth (Industry 5.0) Industrial Revolutions.

Organisations can make use of Smart Human Resources (HR) 4.0 to ensure the effective management of current and next-generation employees (Sivathanu & Pillai, 2018:1-2). For example, employee interviews and discussions can be improved through the implementation of 4G and 5G networks, as well as the use of augmented reality (AR) and virtual reality (VR), to guide an employee on the first employment day (Sivathanu & Pillai, 2018:4).

Lastly, in this study, new knowledge within the field of management sciences was obtained with specific reference to the contributing factors and constraining factors of onboarding during a pandemic on a local government level.

Research Problem and Objective

The COVID-19 pandemic impacted onboarding practices, as companies rapidly shifted to remote work and increased their reliance on digital technologies. This transition exposed several problems with remote onboarding, including inadequate network infrastructure and unfamiliarity with new technologies. Organisations faced challenges in maintaining effective onboarding processes while adapting to digital tools and virtual environments. These issues highlighted the need for more robust and flexible onboarding strategies to address the evolving demands of a digital workspace. The COVID-19 pandemic has forced a shift from traditional to virtual onboarding due to remote work requirements.

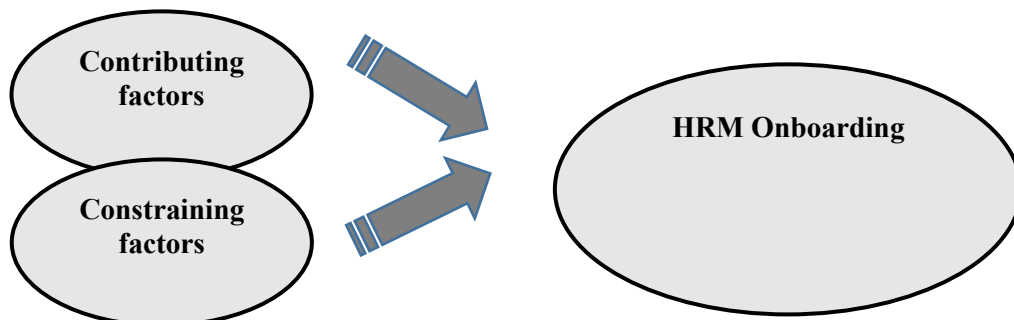
The rapid lockdown and restriction of mobility during the pandemic (COVID-19) necessitated the accelerated implementation and use of technology in work-from-

home measures to do normal work activities. South Africa was largely unprepared for working from home, for computer-based work practices and the technological interface. Several factors hampered the implementation of employee onboarding efforts, both online and face-to-face. These included a lack of internet fibre connection, network capabilities, electronic and computer infrastructure, computer hardware, internet connection and sporadic electricity load-shedding, that is, the controlled temporary reduction of electricity supply to clients for several hours a day.

Onboarding as a human resource management (HRM) process during the COVID-19 pandemic required rapid change and adaptation of existing work methods and procedures to ensure the continuation of work and HRM practices in South Africa. It is interesting to note that South Africa's population has now exceeded 63 million (Stats SA, 2024). During the COVID-19 pandemic, the population in South Africa was 58.9 million (Stats SA, 2020). The City of Tshwane Metropolitan Municipality employed 29788 permanent employees in 2019-2020 (City of Tshwane Metropolitan Municipality, 2020). This is an indication of a very large organisation and the introduction of new employees during the pandemic posed various challenges. This leads to the following research question: What are the contributing and constraining factors regarding onboarding during the pandemic in South Africa?

The objective of this research was to explore the contributing and constraining factors regarding the implementation of HRM onboarding during the COVID-19 pandemic at the City of Tshwane Metropolitan Municipality in South Africa. Figure 1 illustrates the conceptual framework for this study.

Figure 1. *Conceptual Framework*



Source: Authors' work

Literature Review

The underpinning theory used is the Contingency Theory, which will explain how organisations adapted their onboarding processes to meet the unique challenges posed by the pandemic. The Contingency Theory posits that for organisations to be effective, their HRM functions must align with both internal and external factors namely the organisation's strategy and external environment to meet organisational goals.

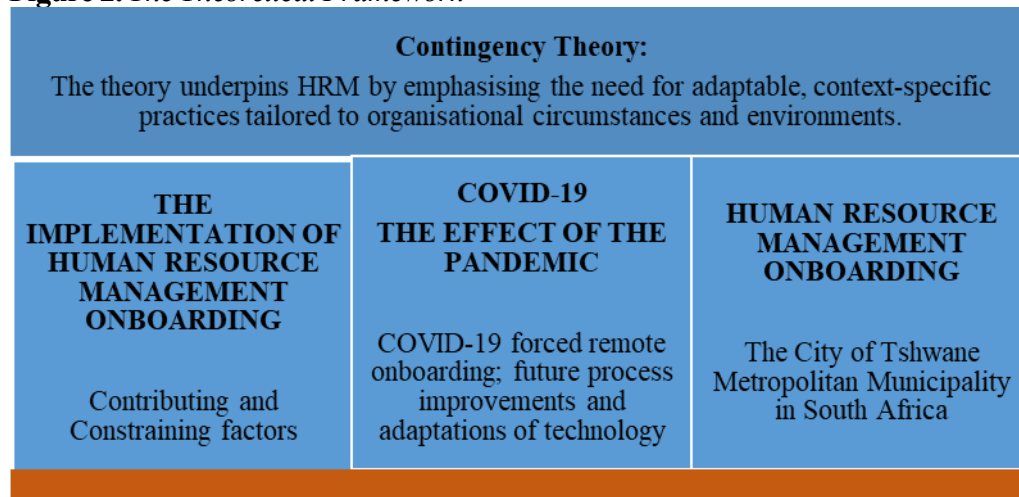
The Contingency theory in HRM focuses on two types of fit namely the external fit which refers to aligning HR practices with organisational strategy and

environmental conditions, while internal fit involves ensuring HR practices are cohesive and support a unified message (Ahmed, Mahmood, & Abdullah, 2020:15, Harney, 2023: 470). The theory highlights that HRM effectiveness is influenced by contextual factors such as organisational culture, globalisation, and company size. For example, different cultures and global contexts may require tailored HR practices, and the size of a company affects the complexity and scope of its HR functions.

The COVID-19 pandemic has highlighted the relevance of Contingency Theory by contingency strategies like remote operational policies and lean HRM policies significantly helped organisations to sustain their organisation's operations and performance in times of COVID-19 (Almohtaseb, 2022, 593). Therefore necessitates rapid adjustments in HRM practices to address new external challenges, such as remote online work, while also ensuring internal onboarding practices remain cohesive and supportive of the organisational culture, policies and procedures.

The following figure, Figure 2 depicts a summary of the the theoretical framework applicable to this study using the contingency theory.

Figure 2. *The Theoretical Framework*



Source: Authors (2024).

The literature review will now be discussed:

- *Onboarding during COVID-19*

Ho, Hofmann and Schwaiger (2023:589) state that organisations were forced to adapt to working-from-home policies for their employees during the pandemic, thus rendering traditional onboarding obsolete during COVID-19. Fortunately, employers and employees alike put tremendous effort into transitioning onboarding to a virtual format (Rodeghero, Zimmermann, Houck & Ford, 2021:1). According to Pavlina (2020:35), this inspired organisations to improve their onboarding programmes far beyond what was needed and to prepare for the future.

Twitter announced that working from home would continue indefinitely after the COVID-19 pandemic (Rodeghero et al., 2021:1). Pavlina (2020:2) advocates enhanced work-from-home practices, noting technology firms as early adopters.

According to Rodeghero et al. (2021:2), the idea of remote onboarding is not new, with studies as far back as 2008 performed by Hemphill and Begel (2021). Goodermote (2020:400-401) adds that for remote onboarding to be successful, actions such as mimicking a working day virtually, doing detailed planning and establishing standard formats for meetings must be performed.

Onboarding during the Fourth Industrial Revolution

According to Whysall, Owtram and Brittain (2019:118), Industry 4.0 and the digital age gave rise to new technological advances. These included robotics, augmented and virtual reality, the Internet of Things (IoT), big data, 3D printing and more (Da Silva, Kovaleski, Pagani, Corsi & Gomes, 2020:89).

The Fourth Industrial Revolution is unlike the previous advancements, as it combines the physical workplace with the digital space and impacts all areas of industry and economy (Whysall, Owtram & Brittain, 2019:118-119). Due to this, it is apparent to organisations that a shift in thinking is required when discussing Industry 4.0, as the challenges facing HRM extend beyond training and development (Piowar-Sulej, 2020:104).

A consideration in the onboarding requirements of Industry 4.0 is how HR as a discipline needs to be reinvented and what changes should be made when discussing employees in the workplace (Verma, Bansal & Verma, 2020:9). This creates both an employer and personal brand, which includes the competencies, applications and adaptability of the new employee (Blštáková, Joniaková, Jankelová, Stachová & Stacho, 2020:4).

Rockwood (2020:17) proposes that the virtual onboarding process should be kept human and paperwork streamlined. During culture orientation employees are exposed to the company's mission, values, culture and working methods (Pavlina, 2020:46). Heinrichs and Rommerskirchen (2021:38) found that employees felt isolated in the virtual onboarding programme and that they would have been more visible and communicative had they been in an office.

Tech Mahindra reformed its HR processes to be more accessible, trackable and impactful within Industry 4.0 (Verma, Bansal & Verma, 2020:11). By adopting these processes early, organisations can achieve more efficient HR operations from smaller HR departments (Sivathanu & Pillai, 2018:1).

Organisations can determine which areas offer the most success for their onboarding programme and thus ensure employee retention and engagement by using self-service terminals which allow for smoother interaction with new employees and may increase their retention rate (Alharbi, Dasuki & Lin, 2021:63). Chatbots, according to Dominic, Houser, Steinmacher, Ritter and Rodeghero (2020:2), differ from software bots due to the ability of the chatbot to communicate with the new employee in human language. A well-known example of a chatbot is Apple's Siri system, found in devices such as the iPhone and iMac. The use of chatbots in onboarding has the added advantage of speeding up the onboarding process and spending less time mentoring new employees (Alharbi, Dasuki & Lin, 2021:63). Watthanabut (2019:813) found that there was a positive relationship between the use

of onboarding for talented employees and the supply chain flexibility of the organisation.

Contributors towards Onboarding for the Fourth Industrial Revolution

Onboarding during the Fourth Industrial Revolution is assisted through using technology during the employee recruitment process and in the employee reward system, as well as through implementing virtual data rooms for use by employees in the organisation.

Various technological processes can be made use of during recruitment such as blockchain technology, artificial intelligence and robotic process automation.

Blockchain technology – Onboarding during the Fourth Industrial Revolution is assisted by blockchain-based HRM systems (Gan & Yusof, 2019:621-622). Furthermore, Sivathanu and Pillai (2018:4) state that HR is assisted through the generation of real-time data, as well as the immense capacity of cloud-based storage. The use of new technologies in the recruitment process also allows the HR department to make decisions which can lead to a decrease in overspending (Gan & Yusof, 2019:621-622).

Artificial intelligence – The use of AI and big data assists the HR department in selecting talented employees by filtering out and disqualifying employees who do not meet the requirements, thereby reducing the time spent on selection (Gan & Yusof, 2019:621-622). According to Sivathanu and Pillai (2018:4), AI and big data help reduce the time spent by the HR department on recruitment and selection.

Robotic process automation (RPA) – This can be best described as an office automation solution which has grown in popularity in recent years and can be used for various processes, in particular HR. RPA supports onboarding and selection processes by performing a verification check on the background of a shortlisted employee (Axmann & Harmoko, 2020:559-560). For example, Tech Mahindra makes use of an AI platform called Acumos (Verma, Bansa & Verma, 2020:10) which, amongst others, filters the profiles of potential job candidates from the job applicant database. Furthermore, these systems may assist the employee by completing application forms, ensuring that a candidate's data are transferred to the database of the organisation, as well as sending notifications to the candidate (Axmann & Harmoko, 2020:559-560). The benefit of RPA use lies in the fact that it frees up the HR department to focus on person-oriented tasks such as ensuring that the onboarding process is performed correctly (Axmann & Harmoko, 2020:560-561). Moreover, Verma, Bansal and Verma (2020:10) found that by using intelligent automation organisations might see a decrease of 60% in their average handling time.

Virtual data room (VDR) – Organisations can seamlessly transition to onboarding within an online space by using a virtual data room to store and organise digital files, ensuring that all new employees have access to the required documentation (Oranburg & Khan, 2020:11-13). VDR can be seen as one component of HRIS, described by Verma and Rana (2021:2247) as the intersection of information technology and human resources. VDR applications are currently available on the market, with iCloud, DropBox and Microsoft OneDrive being examples of commonly used VDR systems (Oranburg & Khan, 2020:11-13). According to Verma and Rana

(2021:2250), cloud-based software such as Dropbox can be viewed as SAAS, or Software as a Service, and has seen implementation in recent years.

Constraints towards Onboarding for the Fourth Industrial Revolution

Just as onboarding is assisted by technology during the Fourth Industrial Revolution, it is also constrained by the difficulty of onboarding virtual work teams which are geographically dispersed.

Difficulty in onboarding virtual teams – Aside from the lack of literature on the onboarding of virtual teams, it was found that onboarding virtual teams reduced opportunities for informal communication with other team members and that members who worked remotely felt left out at times (Hemphill & Begel, 2021:2). This lack of spontaneous interaction between employees took away any opportunity to create trust during informal situations (Allard & Cagenius, 2021:55).

Onboarding practices which are viewed as “normal”, such as small talk before meetings, impromptu questions or lunch with fellow employees, rarely or never occur within virtual teams (Hemphill & Begel, 2021:2). This spontaneous small talk, according to Allard and Cagenius (2021:55), is very difficult to recreate in a virtual space and exacerbates the lack of interaction among team members. The deficiency in informal communication negatively impacts the social relationships among team members and disrupts the onboarding process (Hemphill & Begel, 2021:2). New employees may not fully comprehend the way their performance will be evaluated by both their peers and their supervisor (Hemphill & Begel, 2021:2).

According to Allard and Cagenius (2021:55), a decrease in opportunities for socialising may result in new employees forming wrong impressions of their new jobs and team members. Lastly, since new employees in a virtual team are remotely located, it can make it difficult for their team members to observe and guide them through the onboarding process (Hemphill & Begel, 2021:2). Similarly, Fourie et al. (2023:41) state that in a short timeframe, HR personnel – who were woefully unprepared for the change – had to adopt measures to onboard candidates.

Effect of load shedding and network infrastructure – As the Fourth Industrial Revolution relies on a digital environment, adequate access to electricity will determine the effectiveness of any online onboarding process. The supply of electricity not only affects the adoption of new technologies, but also the prerequisite network infrastructure (Olaitan, Issah & Wayi, 2021:8). South Africa’s sole electricity provider, Eskom, cannot ensure a constant supply of electricity and often the country’s economy is hampered by the implementation of load shedding. Thus, an irregular supply of electricity hinders all online onboarding efforts.

It is clear from the above literature review that there is limited research conducted on the contributing and constraining factors regarding the onboarding process during the pandemic in a South African local government environment. During COVID-19, organisations adapted by moving onboarding online, using tools like chatbots and Virtual Data Rooms (VDRs). The Fourth Industrial Revolution further advanced onboarding through blockchain, AI, and robotic process automation (RPA), enhancing recruitment and HR processes.

The theoretical gap in onboarding for the Fourth Industrial Revolution includes insufficient research on effectively onboarding virtual teams and the impact of infrastructural issues like unreliable electricity on digital onboarding processes. The theoretical gap highlights the need for research methods other than the closed-ended quantitative research approach, such methods may not be sufficient in obtaining new and rich data about the onboarding phenomenon during a pandemic.

Research Method

Research Design

A qualitative research method was implemented for this research, within an interpretive phenomenological research paradigm. An exploratory research design was used because there was little research available on onboarding during COVID-19. This study was cross-sectional in nature. This open-ended approach allowed for rich data to be obtained.

Sample

As mentioned before, the municipality where the study was conducted recorded 29 788 permanent employees in 2019-2020, with 222 staff members working in the Group Human Capital Management department (City of Tshwane Metropolitan Municipality, 2020:181-182). According to Crouch and McKenzie (2006:432), by using a smaller sample with fewer than 20 participants, new insight into the phenomenon can be obtained. Purposive sample using inclusion criteria was used to identify the HR staff members who worked with onboarding during the pandemic. The following inclusion criteria were used:

- Permanently employed HR staff in the Group Human Capital Management department within the City of Tshwane Metropolitan Municipality.
- HR staff members who worked with onboarding during the pandemic.

A total number of 10 participants fit these inclusion criteria. Saturation of data was taken into consideration and no new information was gathered in interview number 10.

Measuring Instrument

Data Collection

The data collection method chosen for this research was semi-structured interviews conducted using Microsoft Teams. The interviews were recorded and transcriptions were stored for record purposes (Bless, Higson-Smith & Sitole, 2013:340-341). The open-ended interview questions were aligned with the research objective and the literature review of the study. The following questions were posed during the interview:

- Can you kindly elaborate on your experience making use of onboarding processes during the COVID-19 pandemic?
- In your opinion, what are the constraints (hindering factors) that hindered onboarding during the COVID-19 pandemic within the municipality?
- In your opinion, what are the contributors (helpful factors) that assisted onboarding during the COVID-19 pandemic within the municipality?
- Do you have any other comments or remarks related to this study?

Data Analysis

The thematic analysis approach described by Tesch (1990) was used to analyse the primary data (interviews). More specifically, the six-phase analytical process of Byrne (2022) was used to analyse the data.

Phase 1: Familiarisation with the Data

This phase enables the researchers to identify suitable and essential information applicable to the research objectives. Following the completion of data collection, the researchers went through all of the transcripts to identify any interesting passages. After the researchers listened to the recorded interview data repetitively, the data were verbatim transcribed and uploaded on ATLAS.ti[®] version 22.

Phase 2: Generating Initial Codes

Inductive coding was used as new codes were found in the transcripts and deductive codes that were derived from the literature review were also used. A combination of inductive and deductive coding, referred to as a blended approach, is most commonly used (Graebner, Martin & Roundy, 2012:280). There is a strong tradition in qualitative research of developing codes “directly” from the data. For this research, the researchers developed codes by using the phrases or terms of the participants themselves rather than the theoretical vocabulary of the researchers. In this way the codes stayed close to the data, mirroring what was in them rather than the ideas and prior understandings of the researchers, who exercised vigilance to remain open-minded (Skjott Linneberg & Korsgaard, 2019:260). This is most often referred to as the inductive approach. Generally, the codes in deductive coding are theoretical concepts or themes drawn from the existing literature. The researchers began the initial coding process by coding each piece of information that might be useful in addressing the research questions using ATLAS.ti[®]. After multiple familiarisations with the data, the researchers were able to decide on codes that could help interpret the themes and those that could be discarded.

Phase 3: Generating Themes

After coding all related data items, the researchers examined the data to ascertain how various codes might be combined by shared meanings to create themes or sub-themes.

Phase 4: Reviewing Potential Themes

Codes and themes may be revised or removed at this phase to yield a relevant and significant interpretation of the data; as such, it would be necessary to code more data

items, combine or remove some codes or even promote some codes as sub-themes or themes.

Phase 5: Defining and Naming Themes

At this stage, the researchers defined each theme and sub-theme concerning the dataset and the research question. This includes choosing which data items to use as extracts when summarising the analysis' findings and submitting the themes' names for a final review.

Phase 6: Producing the Report

This phase can be seen as the completion and final inspection of the report, which the researchers would most likely have begun writing even before undertaking the thematic analysis. Qualitative research is considered difficult to publish because the methods followed are not detailed and trusting the approach used presents a hurdle (Lemon & Hayes, 2020:604).

It is therefore essential that before producing the report, the quality of the process needs to be ensured by checking the trustworthiness. Rose and Johnson (2020:3) state that trustworthiness refers to the rigour of the research design, the credibility of the researchers and how applicable the research methods used are. Furthermore, trustworthiness ensures that qualitative research remains a viable methodology within the academic world. The criteria of credibility, transferability, dependability, conformability and reflexivity are key to establishing trustworthiness (Korstjens & Moser, 2017:2; Lemon & Hayes, 2020:605). Trustworthiness involves the elements of credibility, dependability, confirmability and transferability (Bless et al., 2013: 236):

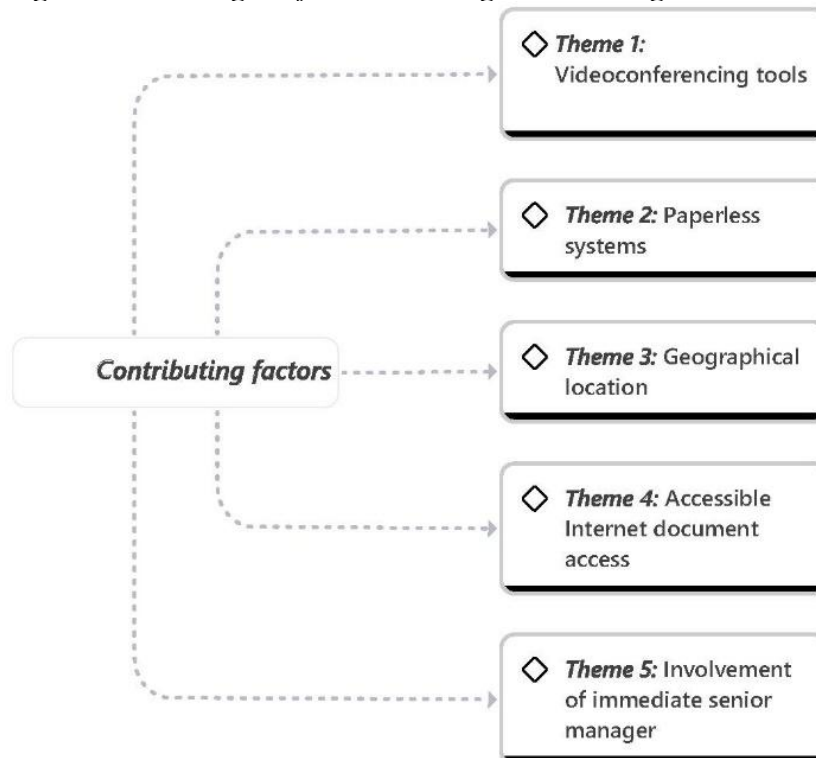
- Credibility was established through peer debriefing and member checks (Madill & Sullivan, 2018:322). Peer debriefing involved a disinterested peer – someone who was not involved in the research project – to aid in probing the researchers' thinking around all or parts of the research process. Member checking was done by providing the research participants with a summary of the findings.
- In the interests of dependability the study used a transparent process of coding to ensure that the research process was logical, traceable and documented (Sinkovics & Alfoldi, 2012:819).
- Korstjens and Moser (2017:2) state that conformability is the extent to which other researchers can confirm the findings within the study performed, through the same or similar methods used.
- Transferability is described by Nassaji (2020:428) as the extent to which the conclusions of a research study can be transferred to a situation which is similar in context. Transferability must provide the researchers with sufficient detail for a transfer to be possible.

In ATLAS.ti, a tree diagram is a visual tool used to represent relationships among various concepts, categories, or themes in qualitative research. In this study, the tree diagrams below illustrate the contributing and constraining factors (Figures 4 and 5) that influenced human resource management onboarding during the COVID-19 pandemic at the City of Tshwane Metropolitan Municipality. By organising these factors into categories, these diagrams highlight the complex relationships that either supported or hindered the onboarding process. This analysis provides valuable insights, enabling targeted interventions to strengthen positive aspects and address challenges, ultimately improving onboarding effectiveness.

Contributing Factors

Contributing Factors refer to the elements that facilitated or enhanced the onboarding process during the COVID-19 pandemic, with the purpose of this section being to identify and analyse these supportive elements so organisations can build on their strengths and improve their onboarding practices.

Figure 4. Tree Diagram for Contributing Factors using ATLAS.ti



It is clear from Figure 4 that five contributing factors supported the onboarding process during the pandemic. Each theme is discussed below using the direct quotes of the participants and discussion.

Theme 1: Videoconferencing Tools

Videoconferencing tools assisted the City of Tshwane Metropolitan Municipality to continue working in an online space, which included the continued onboarding of newly hired employees. The verbatim quotations below give a comprehensive description of the benefits of videoconferencing tools in employee onboarding processes:

Participant 3:

“Currently we have technology at our disposal and one other thing that I’ve actually forgotten. Sometimes we normally do induction at Pretoria West and then as a newly employed person in this city is actually based in, let’s say Cullinan or Hammanskraal. Sometimes transportation becomes a challenge. And how do we actually rectify that? Because that is a hindrance. But to actually overcome that, how can we do that? We can make use of what technology for those who could not actually make it. Therefore, make technology available for those who are very far away, and then for those who can be able to go physically into the venue where induction is taking place. Let them actually go there.”

Participant 5:

“In other words, what they try to do is to work with individuals rather than working with groups until the technology was available. You know, teams and so on.”
“You know, we all use Microsoft Teams to do our meetings and even today people sort of, they don’t want to engage in large groups. They tend to favour you know, the Teams meetings.”

Theme 2: Paperless Systems

The quotations clearly show that videoconferencing tools were comprehensively used to onboard new employees during the COVID-19 period and that the use of videoconferencing tools such as Microsoft Teams was commonplace even after COVID-19 regulations had been relaxed.

Paperless systems contributed to increased efficiency within onboarding programmes in the municipality and reduced the reliance on physical documents. The following verbatim quotations demonstrate the advantages of paperless systems in the municipality, as well as the benefits of implementing a paperless system:

Participant 1:

“I think the people I think the city council has started to see that one has to go more electronically oriented, like uhm first of all, it was just paperwork. Papers, papers, papers, so paperless I think became a big uhm factor.”

Participant 7:

“I think the paper trail is definitely reduced and it has made the onboarding process seamlessly.”

Based on the quotations, it can be said that utilising a paperless system has proved to be beneficial for the municipality, with a preference for an electronic instead of a physical filing system.

Theme 3: Geographical Location

Online onboarding allowed the municipality to onboard new employees who were not in Pretoria or could not travel to Tshwane House. The following verbatim quotations provide context for the use of online onboarding processes and how these processes allowed for the onboarding of employees who were geographically dispersed:

Participant 8:

"I don't think we will ever go back for totally or do away with Teams you know, because if we advertise there are people staying in Cape Town that we shortlisted, and you know and Durban it's fruitless expenditure to fly the people up here you know."

Participant 10:

"... what we talked about earlier as well to say when people come for induction also it's quite costly and sometimes you get more than 100 people in one venue which is it's health wise not ok, it also means that we also need to adopt an online induction programme that maybe we would invite people online, people with log in wherever they are."

As can be seen from the quotations, utilising an online onboarding system allowed new employees to be onboarded, irrespective of where they lived. If the employee was connected to the internet, the onboarding process could occur.

Theme 4: Accessible Internet Document Access

The use of an intranet system within the municipality reduced the costs related to printing booklets of information, as well as ensuring that there is a repository where information is located for access by the employee, regardless of their geographical location. The following verbatim quotations highlight the need for an intranet system, as well as its benefits within the municipality:

Participant 5:

"...so the biggest factor I think is making available the hardware and the network anywhere, so that people don't need to travel to get to information you know they can access the information anywhere from anywhere whenever they want to"

Participant 7:

"You could probably set up some form of files that you can create to say 2023 onboarding you can divide it into like correct naming, convention so that when you go and look for the documents it's easy for you to find. So, there are definitely benefits. We're no longer printing or killing trees anymore, it's easy for us to share the documents because if it's a contract that we have printed and they signed it in the old days you would need to share it with someone who is in another office, you would have to think about scanning and making another copy. If it's online, all you do is just forward it to the relevant person."

As the quotations indicated, the use of an intranet system reduces the need for new employees to travel to receive information, as well as allowing them to access the information wherever they are. Information can also be shared with colleagues and employees alike a lot more easily and quickly, with online signatures being used in place of physical ones. An intranet system has the added benefit that fewer trees are

being used to produce paper, thereby making a small contribution to the conservation of forests.

Theme 5: Involvement of immediate senior manager

During COVID-19 new employees were onboarded in their particular departments by their immediate supervisors, using department-specific onboarding. The following verbatim quotations highlight the use of department-specific onboarding within the municipality and how this became a common theme during COVID-19:

Participant 3:

“So I don't think there was something that happened that I could say it was positive except the fact that the immediate seniors will actually induct the newly appointed individuals.”

Participant 10:

“...but from then the individual will go to their various departments where they were appointed, then they will also be inducted in that department via the job specific. Meaning basically what is it that they are going to do on that job, so they will be orientated or inducted on that particular job that they will be doing. So basically, that's how we would conduct inductions.”

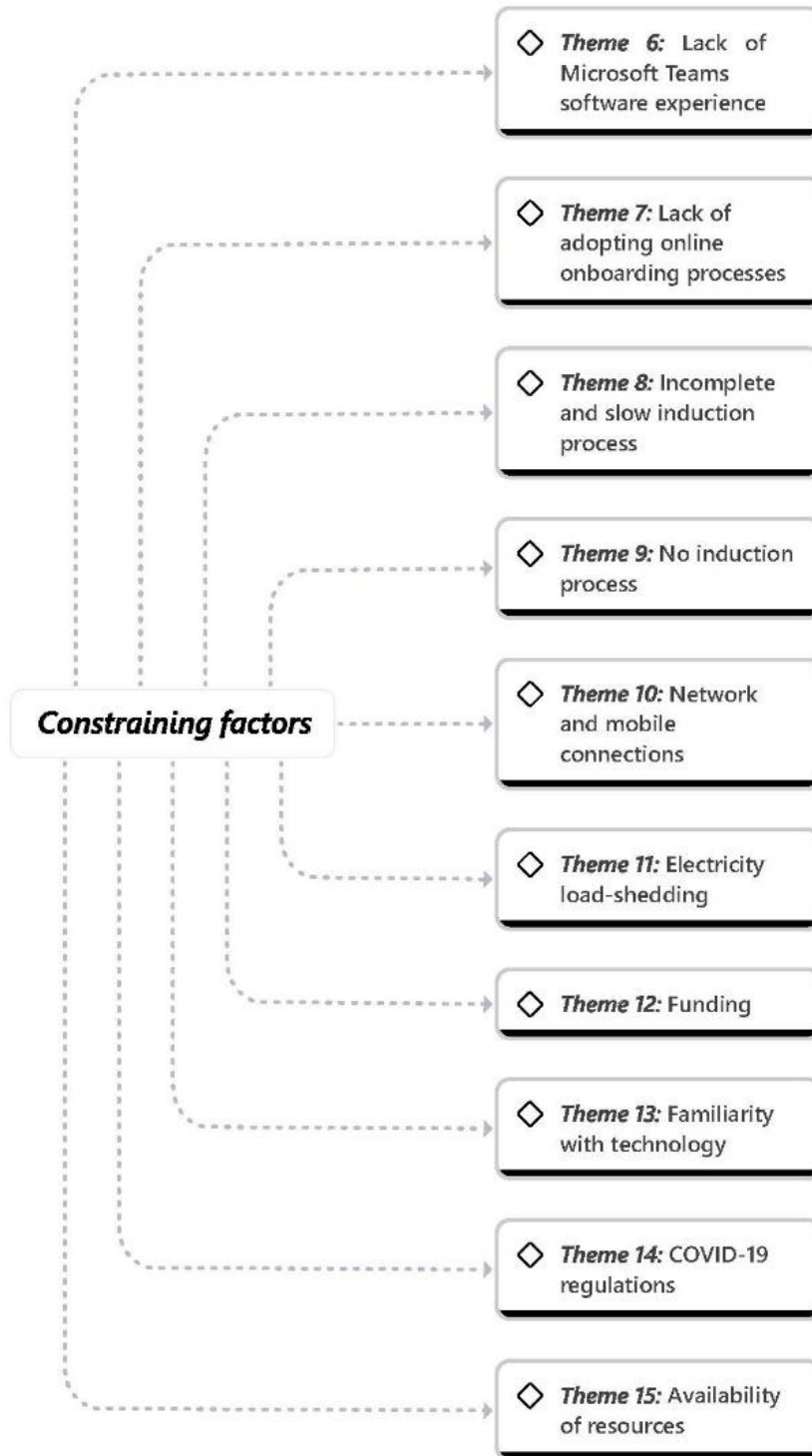
As the quotations show, during COVID-19 it became common for employee onboarding to occur within the department itself, where the immediate supervisor of the new employee conducted the onboarding process.

Constraining Factors

Constraining factors highlight the challenges or obstacles that hindered successful onboarding during the COVID-19 pandemic, with the purpose of this section being to identify and examine these barriers to help organisations recognise what went wrong and how to address or mitigate similar issues in the future.

It is clear from Figure 5 that more constraining factors hinder the onboarding process during the pandemic than the contributing factors that assisted this process. Each theme is discussed below using the direct quotes of the participants and discussion.

Figure 5. Tree Diagram for Constraining Factors using ATLAS.ti



Theme 6: Lack of Microsoft Teams software experience

The majority of the newly appointed employees did not have any Microsoft Teams software experience and this was a constraint during the onboarding process. The following verbatim quotations illustrate the problems encountered with the use of Microsoft Teams at the onset of COVID-19:

Participant 6:

"I remember I've never heard of Teams before COVID-19 ever and I remember it was like Monday we having meetings from Teams and we trying to figure out what is this Teams."

Participant 7:

"...if you are onboarding 80 member that is not used to working with online systems, and so they have never been introduced to Teams that can be a problem."

The quotations are a clear indication that not all employees of the municipality adapted easily to the use of Microsoft Teams. This created a problem for the HR staff to successfully complete the onboarding process.

Theme 7: Lack of adopting online onboarding processes

As with videoconferencing tools, many employees of the municipality were not familiar with online programmes, having mainly done face-to-face onboarding, therefore the implementation of online onboarding measures proved problematic at the onset of COVID-19. The following verbatim quotations identify the problems experienced in the municipality when conducting online onboarding with new employees:

Participant 7:

"Look you onboard a person online they're not responding and you're not sure whether they're not responding because they have not received the documentation, or they have not responded because they've got another offer. So those could be some of the challenges and you could try as much as to do follow-up emails for a person to respond to say I've accepted the offer or not, but it becomes difficult to ask. If you have it in person, it is very easy to call a person in and they easily pick up a line."

Participant 9:

"I think it was a total new experience for everybody. We were not used to that, and it was like everything else in COVID-19 it was quite a steep learning curve. There are Teams an apparently is user friendly even sometimes today I myself struggle with some of the technicalities and functions. I think everything was geared for face-to-face meetings and face to face interaction or really written interaction only through Outlook, so it was quite a learning curve for everybody."

The quotations indicate that there was an interpersonal communication problem when utilising online onboarding and that its use was new to all members of the municipality. This presented a steep learning curve for many employees, forcing them to become acquainted with and proficient in the use of Microsoft Teams as well as the online onboarding process.

Theme 8: Incomplete and slow induction process

Onboarding processes were shortened or reduced due to COVID-19 regulations being implemented. This proved to be detrimental to new employees in the municipality. The following verbatim quotations provide context on the decisions made to shorten or reduce onboarding processes and the effect of these decisions:

Participant 3:

“What happened with the induction during COVID-19 was that those newly and there were very few those newly appointed candidates were actually inducted by their immediate seniors and then some telephonically. This is what was happening so induction was actually limited. It was a streamlined to only focus on the benefits and all those things.”

Participant 3:

“Those are the kind of aspect that induction should focus on and unfortunately during COVID-19 they were not actually that much of that focus because inductions should be about speeding up the newly employed people into the system so that they get used to where to find what at whatever time and they know the organisation.”

The quotations indicate that the shortened onboarding processes had a detrimental effect on employees. Onboarding was changed to only focus on the benefits offered to employees. Shortened onboarding processes created the problem of employees who underwent onboarding at the onset of COVID-19 but were still not fully onboarded by the year 2023.

Theme 9: No induction process

In some instances, the entire onboarding process in the City of Tshwane Metropolitan Municipality was halted because of COVID-19. The following verbatim quotations highlight the fact that onboarding was discontinued in various instances:

Participant 2:

“It’s induction was just completely discontinued.”

Participant 10:

“Not that I know of because there was no induction that happened online.”

The quotations indicate that onboarding was wholly discontinued in some departments of the City of Tshwane Metropolitan Municipality.

Theme 10: Network and mobile connections

A lack of network infrastructure and stable mobile connections detrimentally impacted onboarding and work-from-home efforts in the City of Tshwane Metropolitan Municipality. The following verbatim quotations clearly show the effect of a network infrastructure and mobile connections that can be seen as lacking throughout the city:

Participant 3:

“... then secondly, access to internet and technologies could have actually assisted, but a lot of people were not actually having that access to this kind of technologies.”

Participant 10:

“... and in the candidate space, because for us we conducted interview here in Tshwane house and we never had any load shedding or connection problems. So, connection problems were largely on the side of the interviewees.”

It is clear from the quotations that employees did not have adequate access to fast and reliable networks in their area. However, the network connectivity problems apparently for the most part plagued only interviewees and new employees undergoing online onboarding.

Theme 11: Electricity Load-shedding

Loadshedding played a significant part in online work not being done during COVID-19 and continues to detrimentally affect all instances of online onboarding, as well as online work. The following verbatim quotations highlight the effects of loadshedding on the connections of employees:

Participant 9:

“My experience is that wi-fi sometimes doesn't properly work if you've got other loadshedding my experience is that wi-fi really has a problem with that sometimes even cell phone connections are bad.”

Participant 10:

“The only issue that arose I think it was connection problems lately, maybe due to loadshedding that occurred.”

From the quotations it is clear that the wi-fi and cell network connections of personnel of the City of Tshwane Metropolitan Municipality were negatively affected by the implementation of loadshedding stages. As a result of the networks being unavailable, online onboarding could not occur.

Theme 12: Funding

The City of Tshwane Metropolitan Municipality is in a difficult financial position, which has affected its ability to provide the required resources for online onboarding and necessitated a hiring freeze. The following verbatim quotations address the financial well-being of the City of Tshwane Metropolitan Municipality and the effect of the financial shortcomings of the municipality:

Participant 2:

“That's what we usually did, but from COVID-19 it's not happening anymore because we're not hiring people anymore. The death simple reason, the city council doesn't have finances to hire people.”

Participant 4:

"... because most of the buildings weren't sanitized and there weren't the necessary safety measures in place, we couldn't accommodate all of them. So, there was quite a bit of funding.. Funding was an issue in terms of the PPS."

The abovementioned quotations indicate that the municipality did not have the required funding to hire employees, which caused a hiring freeze. Furthermore, funding was unavailable for PPS, which resulted in buildings leased by the municipality not being used, as there was no funding available for adequate safety measures to be implemented.

Theme 13: Familiarity with Technology

Employees were not wholly familiar with the technology which was implemented during COVID-19, with many of them struggling to adapt to and become comfortable with using both the hardware and the software. The following verbatim quotations highlight the problems faced by employees of the municipality in terms of becoming familiar with technology:

Participant 3:

"... secondly the technology people were not that much clued-up about this kind of technology where you and I can still talk even though we haven't met face to face. So, we we're not familiar with that."

Participant 6:

"... it's a lot it's an adaption not everybody is comfortable with, you know with laptops and digital things, even though you're working I'm struggling even now with my current job."

It is clear from the quotations that many employees were not prepared to use the technology implemented during COVID-19, in particular the use of software such as Microsoft Teams. Furthermore, some employees were still struggling to gain mastery of the technology that they used daily.

Theme 14: COVID-19 Regulations

The regulations introduced by the government due to COVID-19 halted face-to-face onboarding efforts and also resulted in work not being performed in the offices of Tshwane House or the satellite offices. The following verbatim quotations address the effect of COVID-19 regulations put in place by the government:

Participant 3:

"During lockdown, people were not allowed to come to work. So, it was very much impossible for people to come for induction."

Participant 4:

"We did it in smaller scales and we broke it up instead of a big group, for example, now two per hour or two a half hour to accommodate everyone due to social distance and let's still keep it in touch with the COVID-19 regulations."

Participant 5:

“It was basically the restrictions that you had that you could not, you know, work with groups within a confined space.”

The abovementioned quotations indicate clearly that social distancing halted face-to-face onboarding processes at the beginning of COVID-19 and that the processes had to be adapted to smaller groups to adhere to pandemic regulations.

Theme 15: Availability of resources

The regulations introduced by the government due to COVID-19 halted face-to-face onboarding efforts and also resulted in work not being performed in the offices of Tshwane House or the satellite offices. The following verbatim quotations address the effect of COVID-19 regulations put in place by the government:

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The abovementioned quotations indicate clearly that social distancing halted face-to-face onboarding processes at the beginning of COVID-19 and that the processes had to be adapted to smaller groups to adhere to pandemic regulations.

Discussion

There are numerous studies on employee onboarding. While many organisations remain anonymous, some either explicitly or indirectly refer to their involvement in onboarding studies. Research by Caniac (2018:38-39) indicated that there was a need for increased investment in organisational onboarding programmes and for ensuring that technology was improved for personnel dedicated to managing the programme.

For example, employee onboarding studies have been performed in the academic libraries of the University of Pretoria and Tshwane University of Technology (Nyakale, 2016). Other studies have been conducted in the eThekweni Municipality (Sithole, 2019), as well as Microsoft (Rodeghero et al., 2021:1), Ikea (Karintaus, Kontor, Raudaskoski & Eronen, 2020), Otis (Skolasky, 2022) and Electronic Arts (Zaeske, 2019). These studies showcase global research, employing diverse technologies and methods in the context of a web-centric world. Common factors across organisations include effective employee socialisation, performance expectations, communication, learning, development, work-related documentation and technology integration for work-related information.

Bhakta and Medina (2020:1) maintain that organisations can utilise mentors throughout the entire onboarding process. This helps new employees to build relationships and adjust to their roles more effectively.

The objective of this study was to explore the constraints and contributions relating to onboarding during COVID-19, as well as those relating to the future use of onboarding in the municipality.

The following contributing and constraining factors were identified in this current study and are now discussed and compared with those of previous findings although previous findings on these onboarding factors during a pandemic were limited.

Contributing factors

The findings on contributors to the onboarding process during COVID-19 are discussed below. These contributors include videoconferencing tools, paperless systems, online onboarding, an intranet system, department-specific onboarding, improving existing onboarding processes, face-to-face onboarding and the availability of resources.

Theme 1: Videoconferencing Tools

Many participants adapted to the use of videoconferencing tools during COVID-19, with two participants indicating that videoconferencing was still favoured and used to great effect. This finding in this current study concurs with research conducted by Liu, Frenette Beltran, Passi and Pitoulis (2021:27), who found that virtual meetings and training had been helpful to families and new employees who were geographically dispersed or might have had issues with transportation.

Theme 2: Paperless systems

Participant opinions on paperless systems were generally positive, with indications that a paperless route in the City of Tshwane Metropolitan Municipality could ensure seamless implementation of onboarding. This coincides with the research of Liu et al. (2021:27) also found that a paperless system improved organisation and accessibility and saved time and this concurs with theme 2 of this current study.

Theme 3: Geographical Location

Participants were generally positive about onboarding in an online space, especially in light of the convenience factors of reduced travelling requirements and costs. This finding is in alignment with the study of Katerere (2022:12), who noted that COVID-19 assisted organisations in South Africa by accelerating the implementation of online onboarding, thereby allowing employees who were geographically separated to be onboarded.

Theme 4: Accessible Internet Document Access

The use of an intranet system was seen as favourable to the City of Tshwane Metropolitan Municipality because it removed the need to print booklets and consequently saved money. New employees could download only the information they required, making it easier for them. Steifo and Thomasson (2023:25) found that the organisation's intranet system contained onboarding-specific information for new employees like a personnel handbook, information on the company, an email

signature template and an onboarding checklist. This concurs with the findings of the current study.

Theme 5: Involvement of immediate supervisor

Participants highlighted that onboarding was performed in the department by the employee's direct supervisor. This finding concurs with the with the research Conducted By Arsamakov (2022:8) Who Found Role-Specific Onboarding Was Conducted by higher-ranking and more experienced managers.

Constraining Factors

The findings on the constraints to the onboarding process, both during COVID-19 are discussed below. These constraints include the use of videoconferencing tools, online onboarding, onboarding being shortened/reduced, onboarding halted, network and mobile connections, the effect of loadshedding and the lack of funding.

Theme 6: Lack of Microsoft Teams Software Experience

No previous findings were found that concurred or deviated from this finding of participants not having Microsoft Teams experience as part of online onboarding.

Theme 7: Lack of adopting online Onboarding Processes

Several participants indicated that online onboarding presented a steep learning curve to employees in the City of Tshwane Metropolitan Municipality. This agrees with findings by Fourie et al. (2023:41) that the HR department had to adapt quickly to changing working conditions which caught both new employees and existing personnel unawares, leading to difficulty in integrating into the organisation.

Theme 8: Incomplete and Slow Induction Process

Various participants indicated that onboarding processes were shortened or reduced due to the implementation of COVID-19 regulations. This resulted in new employees not being onboarded fully into the municipality. The research by Fourie et al. (2023:41), namely that new candidates had to be onboarded within a very short timeframe, which led to vast inefficiencies in their onboarding experience is in alignment with this current study.

Theme 9: No Induction Process

Two participants informed the researchers that onboarding processes in the municipality had been halted completely and there was no active induction process. Ho, Hofmann and Schwaiger (2023:589) found that many firms had to shut down all in-person functions and operations as a result of the lockdown regulations and this concurs with the findings of this current study.

Theme 10: Network and Mobile Connections

Two participants informed the researchers that onboarding processes in the municipality had been halted completely. This is in alignment with the research results

of Ho, Hofmann and Schwaiger (2023:589) that many firms had to shut down all in-person functions and operations as a result of the lockdown regulations.

Theme 11: Electricity Load-shedding

Load-shedding of electrical supply was identified as detrimental to onboarding during COVID-19. This is because cell towers do not have the required battery backup capacity to remain working and effective during extended load-shedding periods. Furthermore, if employees and the municipality do not have a backup system for their computers, it is improbable that online onboarding will be conducted. Olaitan, Issah and Wayi (2021:8) found that load-shedding makes it difficult for business entities in South Africa to adopt technologies required for the Fourth and Fifth Industrial Revolutions and this is alignment with the findings of the current study. Ensuring stable access to electricity brings about energy security, which is crucial for the utilisation of new technologies such as online onboarding.

Theme 12: Funding

Multiple participants indicated that the precarious financial position of the City of Tshwane Metropolitan Municipality hampered hiring efforts during COVID-19, as well as the introduction of new technology. A hiring freeze was implemented due to a lack of funding which could be attributed to a reduction in tax revenue during the COVID-19 period. This shortfall resulted from a ban on the sale of alcohol and cigarettes; retrenchments; a reduction in imports and customs duties; and a loss of revenue from fuel levies due to the diminished need to travel during the lockdown (De Villiers, Cerbone & Van Zijl, 2020:6) and this is in alignment with this current study.

Theme 13: Familiarity with Technology

The interview process made it clear that not all employees were technologically apt, with several employees having difficulty understanding the technology implemented during COVID-19. Olaitan, Issah and Wayi (2021:8) found that the current curriculum used in higher education should incorporate learning outcomes related to the digital literacy and digital skills of South Africans. This is in alignment with this current study in the sense that there is a lack of familiarity with technology among the participants. This would ensure that technologies relevant to the Fourth Industrial Revolution are more successfully adopted in South African organisations.

Theme 14: COVID-19 Regulations

The implementation of COVID-19 regulations required onboarding processes to make adjustments which were not for the better. COVID-19 regulations disrupted nearly all onboarding processes, especially through the implementation of social distancing measures. Scott, Gu, Deepak and Wildman (2021:3) confirm that COVID-19 affected the physical workplace: common work areas had limited accessibility and employee activities were hampered by the implemented measures and this is in alignment with this theme of the current study.

Theme 15: Availability of Resources

Many participants echoed the sentiment that lower-level employees were not given computers and laptops, while senior-level employees were given the required hardware to undergo online onboarding. This concurs with the finding by Olaitan, Issah and Wayi (2021:7) that South Africa did not possess the required IT and network infrastructure to support processes which form part of the Fourth Industrial Revolution.

Practical/Managerial Implications

Practical applications of this research for HR managers involve workplace work methods where changes and adaptation will be required to ensure that employee onboarding continues during a time of lockdown and remote working conditions. The HR policy regarding a hybrid onboarding system should be amended to ensure that the organisation is future fit for similar pandemics and challenges. The practical implications stress the importance of leveraging technology, investing in reliable infrastructure, and ensuring equitable resource distribution to maintain effective onboarding practices, even during disruptions or remote work conditions.

The managerial implications of this research relate to the need for HR managers to rethink employee onboarding processes, based on the findings from practices implemented during the COVID-19 pandemic. Managers could utilise the information to devise a hybrid combination of onboarding processes for the future, ensuring that the onboarding process remains efficient and effective. The managerial implications emphasise the need for active managerial involvement, comprehensive pre-onboarding training, flexible onboarding strategies, strategic financial planning, and enhanced digital literacy to support effective onboarding processes and the effectiveness.

Limitations and Recommendations

- Limitations of the study:

Due to the qualitative cross-sectional nature of the study, this study is not generalisable and is therefore a limitation. There were various other limitations, in particular the sample size, interview medium and reluctance of participants.

Sample size – The sample size of ten participants was admittedly small for research purposes. The sample size came about because employees refused to be a part of the interview process or stated outright that they were not relevant to the research at all.

Interview medium – Due to the first interviews being conducted face to face as opposed to online, time was spent meticulously transcribing the recorded interviews because the interviewer was not fully prepared for the first interviews. However the necessary changes were made to subsequent interviews by ensuring that all the technology required was working and that the interviews were conducted in English using Microsoft Teams. This eliminated the need to transcribe the interviews from a recording.

Reluctance of participants – Various persons were reluctant to participate in this research, with the POPI Act used as the reason for their reluctance. This proverbial stone wall hampered attempts to gain more participants for the research.

- Recommendations of the study:

It is recommended that the contributing and constraining factors found in this study be made available to the managers and HR managers of the municipality under study. Policies, procedures and practices should then be developed to convert to a hybrid onboarding system which includes technology training. HR managers should invest in reliable digital technologies, including videoconferencing tools and Microsoft Teams software, and continue utilising paperless systems to streamline onboarding processes. They should also focus on providing accessible internet document access and integrate both remote and in-person elements into onboarding policies. Additionally, ensuring the involvement of immediate senior managers and the equitable distribution of resources will enhance the overall onboarding effectiveness.

For future research, a quantitative study can be conducted to investigate the demographic differences among employees during onboarding in challenging times such as a pandemic.

Conclusion

The study aimed to explore the factors that contributed to and constrained the implementation of HRM onboarding amid the COVID-19 pandemic at the City of Tshwane Metropolitan Municipality in South Africa. Videoconferencing tools, paperless systems, geographical location, accessible internet document access and involvement of immediate senior managers were the identified themes of the contributing factors. Lack of Microsoft Teams software experience, lack of adopting onboarding processes, incomplete and slow induction process, no induction process, network and mobile connections, electricity load-shedding, funding, familiarity with technology, COVID-19 regulations and the availability of resources were the identified themes of the constraining factors. New knowledge contribution within the field of management sciences was obtained with specific reference to these contributing factors and constraining factors of onboarding during a pandemic on a local government level. HRM policies, procedures and practices should be amended according to the these identified factors to ensure that this municipality is future-ready if similar challenges may arise.

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Comparison of ESG and SDG Indices: Sustainability and Performance of Companies in the Context of Slovakia and the EU

*By Radka Lešková**

This paper assesses the sustainability of companies in Slovakia, emphasizing environmental indexes. We analyze commonly used indexes, with a focus on ESG (Environmental, Social, and Governance) and SDG (Sustainable Development Goals) indexes. The ESG index is a key indicator, evaluating companies' efforts in minimizing environmental impact, including energy efficiency, waste management, greenhouse gas emissions, and biodiversity protection. It provides investors with a tool to assess and compare the environmental sustainability of companies, promoting investments in environmentally responsible firms. The SDG index measures countries' progress towards UN's Agenda 2030 sustainable development goals, enabling comparison of environmental protection performance among countries. By comparing the ESG and SDG index scores for selected EU-27 countries, with Slovakia serving as a case study, we aim to identify their relative positions in terms of sustainability and the performance of individual countries within the EU. This information can be utilized as a guide for decision-making by firms and organizations in Slovakia, enabling them to take concrete measures to support sustainable development and improve their environmental, social, and governance performance. While data source and methodology variations can affect index results, critical analysis is recommended for informed decision-making.

Keywords: *Sustainability Assessment, Environmental Indexes, ESG Index, SDG Index, EU-27, Slovakia*

Introduction

In recent years, the search for higher efficiency of the production process has become a more relevant problem for thinking about microeconomic foundations, about the relationship between energy, the environment and growth. Private companies and their production technology are slowly moving away from their dependence on fossil energy sources. In addition, the roles of non-governmental organizations and a better institutional framework for environmental resources have become key inputs for achieving the goal of sustainable expansion of prosperity. In order to obtain an energy-efficient combination of inputs in the long term, it is necessary to increase the efficiency and productivity of the company's processes. To be effective and efficient, these profits should come from various sources such as technology, business models, management decisions, institutional directives, and regulatory policies.

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The current energy crisis, climate change and increasingly serious environmental problems have begun to raise public concerns about environmental issues. Especially in recent decades, rapid economic growth has led to excessive consumption of natural resources and environmental degradation. Green consumption is sustainable consumer behavior characterized by consumption that is compatible with the protection of the environment for the present and for future generations, which has attracted the attention of businesses and consumers in recent years. The purchase and consumption of "green", ecological, environmentally friendly products on a daily basis is beginning to be considered an effective way of solving environmental problems.

We can conclude that consumption is inherently linked to sustainability, because every decision about what to buy, how much to buy, how much to consume and how to dispose of waste has a direct impact on the environment and future generations. The essence lies in the ideas of how human decisions affect the quality of the environment, how human values and institutions shape our demands to improve its quality, and especially, how to design effective public policies to achieve said improvements. Understanding the psychology behind environmental or sustainable behavior is central to a sustainable future and large-scale behavioral change. However, despite this, the obvious importance and substantial impact of research in these areas is relatively low and significantly lagging behind. In the European Union, there is a strong tendency to centrally introduce various kinds of measures restricting currently used technologies and to promote others. There is a constant emphasis on the need for sustainable development, investment in innovative technologies through continuous and increased research and development (R&D) spending.

A growing number of companies in various industries are currently pursuing sustainable development goals in order to improve business efficiency, manage stakeholder expectations or achieve compliance with legislation. This also applies to companies that are under pressure from their stakeholders to manage and improve their sustainability performance. This requires the development of credible tools and measurement systems to capture and monitor sustainability.

The main goal of this professional article is to assess the sustainability of companies operating in Slovakia, with an emphasis on the importance of environmental indices. These indices will be analyzed to determine their role in guiding companies' efforts to reduce their environmental footprint. The findings aim to provide actionable insights for businesses and organizations in Slovakia, helping them to implement effective strategies that enhance their environmental, social, and governance (ESG) performance and promote sustainable development.

Literature Review

Indices of Environmental Economics

In this section, we will overview global environmental indices and their significance in environmental economics, focusing on their use in evaluating the effectiveness of policies and measuring the impact of investment decisions.

In the upcoming section, we will provide a comprehensive overview of key

environmental indices, focusing on their *intended applications*, the *number of indicators* and *categories* they encompass, *sustainability dimensions*, *data sources*, *normalization methods*, *category weights*, *aggregation techniques*, and the *interpretation of results*. Additionally, we will examine specific indices utilized in evaluating the state of the environmental economy, as well as some of the most prominent indices that influence the sustainability of companies and organizations.

Assessment of the State of Environmental Economics

The state of the environmental economy is important to evaluate and assess in larger contexts, while it is necessary to consider the sustainability of the systems that are necessary for its existence. The assessment of the state of the environmental economy can be carried out using **environmental indices** and various **models** and **methods** that make it possible to quantitatively evaluate the impact of economic activities on the environment and provide recommendations for policy and decision-making on sustainable development.

Environmental indices are tools used to quantify and compare environmental quality between different countries and regions. These indices include various indicators such as greenhouse gas emissions, air and water quality, waste levels, the amount of renewable energy sources and others (Wendling, et al. 2020).

Unlike environmental indices, we also know *environmental models* and *methods* as versatile tools that contribute to scientific research, policy development, decision-making by simulating the consequences of different management strategies, risk assessment, resource management and public involvement in environmental matters. Their applications go beyond environmental indices and provide valuable insights into the complex interactions between human activities and the natural world. Among the most used models are linear programming, cost-benefit analysis, decision trees and various types of econometric models.

Global Environmental Indices

Global environmental indices are important in the evaluation and assessment of the state of the environment and sustainability, especially in terms of economic activities. They provide measurable indicators that can be used to monitor the impact of human activity on nature and how countries and societies strive to minimize negative impacts and achieve sustainable development. Indices can thus be useful to investment funds, businesses, governments and the public who seek to invest, trade, manage and evaluate their activities and decisions in terms of their environmental impact. In addition, global environmental indices can also be used to compare performance between different countries, sectors and companies and to identify areas where improvement is needed (Esty and Winston, 2009).

Moreover, these indices often drive policy changes by highlighting the most pressing environmental issues that require immediate attention. They can facilitate informed decision-making by providing stakeholders with the necessary data to make strategic choices aligned with sustainability goals. Furthermore, the transparency and accessibility of these indices can enhance public awareness and engagement, fostering

a culture of environmental responsibility. By promoting accountability, they encourage businesses to adopt greener practices and innovate in sustainable technologies.

In the global discourse, sustainability is understood as a broad political concept that is divided into three "dimensions" or "pillars": *environmental*, *economic* and *social* (Purvis, et al., 2019). Each of these three dimensions has its own unique purpose: the **environmental dimension** focuses on the protection of the environment, the renewability of natural systems and the sustainable use of natural resources to ensure their availability for future generations; the **economic dimension** focuses on the sustainability of economic growth and ensuring economic prosperity for current and future generations; the **social dimension** focuses on ensuring social justice and ensuring a dignified life for all people, regardless of their social status or financial means. In practice, this means that all three dimensions need to be considered when deciding how to ensure sustainable development.

Tables 1 and 2, divided into two parts, summarize the most important information about: (1) the main purpose of the index application; (2) the number of indicators and their relationship to the primary dimensions of sustainability; (3) number of categories; (4) dimensions of sustainability; (5) proposed and used data sources for each index; (6) the data normalization method used; (7) structure of indicators and component weights; (8) the method of aggregation of indicators used in the overall assessment; (9) interpretation of index results.

Table 1. Comparison of selected Environmental Indices (Part I)

Index	(1) The purpose of the index application	(2) Number of indicators	(3) Number of categories	(4) Dimensions of sustainability
EPI ¹	Measurement of current environmental capacity	32	11	environmental, social
EFI ²	Measurement of environmental resources	6	-	environmental
ESI ³	Measuring the long-term ability to protect the environment	76/21 ³	5	environmental, social
EVI ⁴	Measuring environmental sensitivity	50	3	environmental, social
DJSI ⁵	Measuring business sustainability	depending on the sector (60 sectors)	3	environmental, social, economic

¹EPI Team. 2018 EPI Report; Yale University: New Haven, CT, USA; Columbia University: NY, USA, 2018.

²Galli, A.; Wackernagel, M.; Iha, K.; Lazarus, E. Ecological Footprint: Implications for Biodiversity. Biol. Conserv. 2014, 173, 121–132. <https://doi.org/10.1016/j.biocon.2013.10.019>

³Esty, D.C. et al. 2005. Environmental Sustainability Index: Benchmarking National Environmental Stewardship; Yale Center for Environmental Law & Policy: New Haven, CT, USA, 2005.

⁴Pratt, C.R.; Kaly, U.L.; Mitchell, J. Manual: How to Use the Environmental Vulnerability Index (EVI); SOPAC Technical Report 384; 2004. (accessed on 13 December 2022). URL: <<http://gsd.spc.int/so-pac/evi/Files/EVI%202004%20Technical%20Report.pdf>>

⁵Dow Jones Sustainability Indices Methodology. (accessed on 13 December 2022). Available online: <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-dj-sustainability-indices.pdf>

ESG⁶	Measurement of the environmental, social and management practices of the company	depending on the data provider	3	environmental, social, economic
SDG⁷	Measuring countries' efforts to achieve sustainable development goals	247	17	environmental, social, economic

Note: WHO 2010. EPI - Environmental Performance Index; EFI - Ecological Footprint Index; ESI - Environmental Sustainability Index; EVI - Environmental Vulnerability Index ; DJSI - Dow Jones Sustainability Index; ESG - Environmental, Social and Governance Index; SDG Index – Sustainable Development Goals Index.

Table 2. Comparison of selected Environmental Indices (Part II)

Index	(5) Data sources	(6) Normalization	(7) Category weights	(8) Aggregation method	(9) Interpretation of results
EPI	Primary, secondary, expert, forecasts, among others: WB, IEA, IMF, WRI, IHME, WWF, OECD, Eurostat, UNSD	linear transformation	PCA (Principal Component Analysis)/ expert	arithmetic	Ranking of countries; scale 0-100
EFI	Secondary, among others: FAO, IEA, UNSD, UNDP	none	Expert (conversion parameter)	arithmetic	Standardized global hectares (corresponding to average biological productivity); A value > 1 indicates unsustainability
ESI	Primary, secondary, among others: OECD, UNHABITAT, WHO, EEA, WRI, WWF, UNEP, FAO, UNFCCC, UNSD, WB, WEF, WTO, UNICEF, UNDP, DJSG, ITU, UNESCO, UNCCD, UNCBD	standard score	equivalent at the level of sub-indicators a indicators (expert)	arithmetic (except component level)	Ranking of countries; scale 0–100; The probability that the country will be able to effectively protect the environment in the coming decades

⁶MSCI ESG Indexes and MSCI Analytics (accessed on March 2020). URL: <<https://www.msci.com/our-solutions/indexes/esg-indexes>>

⁷United Nations, Department of Economic and Social Affairs (2022). ISBN: 978-92-1-101448-8. URL: <<https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf>>

EVI	Secondary, among others: WRI, FAO, WB, UNEP, OECD, UNDP, EEA, EPA	none (point scale 1-7)	none	arithmetic (in the absence of data, the indicator is omitted)	Ranking of countries; 0–700 is reflected on a 5-point qualitative scale of susceptibility to environmental problems; Results and availability of data for indicators are reported; Results for the components are also provided
DJSI	Primary	none (point scale 0 - 100)	Expert	arithmetic	0–100 scale for the index and each of the components and indicators; Comparison with median and best score
ESG	Primary, secondary, among others: MSCI, S&P Global, FTSE Russell, Bloomberg, Morningstar	none	Expert	arithmetic (except the importance level of the indicator)	Ranking of countries; scale 0–10; ESG Risk Ratings have a scale of 0-100
SDG	Primary, secondary, among others: MSCI ESG Research, Sustainalytics, RobecoSAM, FTSE Russell	min-max normalization on a scale from 0 to 100	Expert	arithmetic	Ranking of countries; scale 0–100

Note: DJSI—Dow Jones Sustainability Group Indexes; EEA—European Environment Agency; EPA—Environmental Protection Agency; Eurostat—European Statistical Office; FAO—United Nations Food and Agricultural Organization; IEA—International Energy Agency; IHME—Institute for Health Metrics and Evaluation; IMF—International Monetary Fund; ITU—International Telecommunication Union; OECD—Organisation for Economic Co-operation and Development; UNCBD—United Nations Convention on Biological Diversity; UNCCD—United Nations Convention to Combat Desertification; UNDP—United Nations Development Programme; UNEP—United Nations Environment Programme; UNESCO—United Nations Educational Scientific and Cultural Organization; UNFCCC—United Nations Framework Convention on Climate Change; UNHABITAT—United Nations Human Settlements Programme; UNICEF—United Nations Children’s Fund; UNSD—United Nations Statistics Division; WB—World Bank; WEF—World Economic Forum; WHO—World Health Organization; WRI—World Resources Institute; WTO—World Trade Organization; WWF—World Wildlife Fund.

In addition to the listed indices in the table, we record many global environmental indices that are used in the assessment of the state of the environmental economy. Some of the most famous include:

- **Environmental Performance Index (EPI)** – created by Yale University and Columbia University, evaluates 180 countries based on their performance in 32 environmental indicators (Wolf, et al., 2022).
- **Ecological Footprint Index (EFI)** – measures the impact of human activity

on the environment by calculating the necessary space for resource production and waste absorption for a given population (Kitzes, 2009).

- **Environmental Sustainability Index (ESI)** – evaluates the ability of countries to maintain the economy and the environment (Saisana, 2014).
- **Green Growth Index** – measures the sustainability of the economy based on consideration of environmental factors (Acosta, et al., 2019).
- **Happy Planet Index (HPI)** – created by the New Economics Foundation, includes indicators that measure the quality of life and the impact of human activities on the environment (Marks, et al., 2006).
- **Climate Change Performance Index (CCPI)** – evaluates the performance of countries in the field of climate protection, it also includes an assessment of environmental policy and the impact on the health and quality of life of residents (Burck, et al., 2023).
- **Environmental Vulnerability Index (EVI)** – aimed at measuring the vulnerability of countries in relation to environmental impacts and the country's ability to protect its environment (Schepelmann, et al., 2010).

In addition to the global environmental indices mentioned above, which are used to quantify and compare environmental quality between different countries and regions, there are other global environmental indices that companies can use to assess their environmental performance and compare with their competitors. Some of these indices are global and industry-wide, while others are sector-specific.

The most well-known indices affecting the sustainability of companies and organizations are, for example:

- **Carbon Disclosure Project (CDP)** – evaluates companies according to their efforts to reduce greenhouse gas emissions and improve their environmental performance. CDP evaluates this information and publishes it in a score called CDP (Whelan & Fink, 2016).
- **Dow Jones Sustainability Index (DJSI)** – measures the environmental, social and economic performance of companies and includes more than 2,000 companies worldwide. This index is compiled by S&P Dow Jones Indices (Naqvi & Jus, 2019).
- **Global Reporting Initiative (GRI)** – provides a framework for transparent and comprehensive reporting on the environmental, social and economic performance of companies. The GRI defines frameworks and standards for reporting and evaluating environmental factors (GRI, 2023).
- **ESG Index (Environmental, Social and Governance – ESG)** – evaluates environmental, social and administrative factors affecting the sustainability of companies. ESG indices are compiled by various companies and organizations (MSCI, S&P Global, FTSE Russell, RobecoSAM, ISS ESG and Bloomberg) and serve as a tool for investment decision-making (MSCI, 2023).

One of the most well-known indices affecting the sustainability of companies, the ESG index, will be discussed in more detail in the results section, where we will zoom in on the ESG index on individual Slovak representatives of the automotive industry.

Methodology

The research methodology follows the established main goal of evaluating the sustainability of selected companies in Slovakia using environmental, social, and governance (ESG) indices. We apply a combination of quantitative and qualitative research methods to assess both theoretical and practical implications of the ESG indices in the context of imperfectly competitive markets.

Research Design and Selection Criteria

The study focuses on key industries that exhibit characteristics of imperfect competition, such as the automotive, energy, telecommunications, and financial sectors. These industries are represented by companies with significant market shares, limited competition, and an impact on the overall market, such as Volkswagen Slovakia, Slovenské elektrárne, and Orange Slovensko. We chose these companies because they play a pivotal role in Slovakia's economy and are subject to ESG-related reporting obligations.

The primary criterion for company selection is their dominant presence in the Slovak market and their global recognition in ESG reporting. Specifically, the research targets four major automotive companies operating in Slovakia: **Volkswagen AG** (SK: Volkswagen Slovakia, 1991), **Stellantis NV** (SK: Stellantis Slovakia, 2006), **Kia Motors Corporation** (SK: Kia Slovakia, 2006), and **Jaguar Land Rover** (SK: Jaguar Land Rover Slovakia, 2018). These companies were chosen due to their significant contributions to the Slovak economy and their inclusion in global ESG indices.

Data Collection

Given the unavailability of localized ESG index scores for these companies in Slovakia, we sourced global ESG data from the CSRHub ESG database. CSRHub offers comprehensive access to ESG scores, which include evaluations of companies' environmental, social, and governance practices in North America, Europe, and Asia. Data from this platform provides insights into companies' employee relations, environmental policies, community impact, and governance structures, which form the basis of our analysis.

Index Selection

For the automotive industry, we specifically reference the MSCI World Automobiles ESG Leaders Index, which includes globally recognized car manufacturers such as Toyota, BMW, and General Motors. This index evaluates companies based on environmental performance (e.g., greenhouse gas emissions, resource use), social factors (e.g., labor practices, community relations), and governance (e.g., management structure, shareholder rights).

Analysis Procedures

The analysis includes a comparative review of the ESG scores for each selected automotive company, assessing how well they align with global sustainability standards. Each company's performance is evaluated based on its environmental impact (e.g., emissions, energy use), social responsibility (e.g., employee and community engagement), and governance practices (e.g., transparency, board diversity). The results will be used to draw conclusions about the sustainability efforts of these companies and their contributions to the broader economic and environmental context of Slovakia.

Results

One of the important tools in environmental economics are environmental indices, which play an important role in measuring and evaluating the environmental efficiency of various economic entities, such as enterprises, industries, regions, or countries. These indices provide relevant information on how successfully these entities manage their environmental impact and are able to achieve their environmental goals.

We can consider environmental indices as an important entry into the knowledge of environmental economics, and their importance has been increasing rapidly in recent years due to the increasing awareness of environmental problems and the need to solve them. With the help of indices, we can quantify environmental data and factors such as emissions, waste, resource use and other environmental impacts, and create measurable indicators from them that can be used to assess the environmental impact of economic activity.

Application of ESG and SDG Environmental Indices to EU-27 Countries

The ESG index is currently one of the important indicators in the field of the environment, which evaluates the environmental, social, and governmental factors of companies and investment products. It focuses on environmental aspects and measures how well companies take care of the environment and try to minimize their negative impact. The ESG index considers various factors such as energy efficiency, waste product management, greenhouse gas emissions and biodiversity protection. It provides investment companies and investors with an important tool for evaluating and comparing companies in terms of their environmental sustainability. This index helps to support and stimulate investments in ecologically responsible companies and contributes to sustainable development and environmental protection.

The SDG index, also used as the "*sustainable development goals index*", represents an indicator that measures and evaluates the progress of countries in meeting the sustainable development goals set by the United Nations (UN) as part of the 2030 Agenda (Jones, et al., 2017). Using the SDG index, it is possible to compare and evaluate the performance of individual countries in the area environmental protection and contribute to global efforts to achieve sustainable development. We consider it an important tool for monitoring progress and supporting measures to protect the

environment and achieve the goals of sustainable development at the global level.

Based on the above-mentioned characteristics of the ESG and SDG indices, we decided to compare their scores for selected EU-27 countries, with the help of which we identify their pan-European position in the area of sustainability and the performance of individual countries. The practical use of this information can serve as a guide for decision-making and taking measures to support sustainable development and improve the environmental, social and government performance of countries within the European Union. However, it is important to keep in mind that the results of these indices may vary depending on the data sources, measurement and evaluation methods, and therefore critical analysis and comparisons are necessary.

Figure 1. Comparison of ESG and SDG Index Score of EU-27 Countries for 2022



Source: Own processing according to MSCI ESG Fundamentals Country Score, and UN (SDG Score), 2022

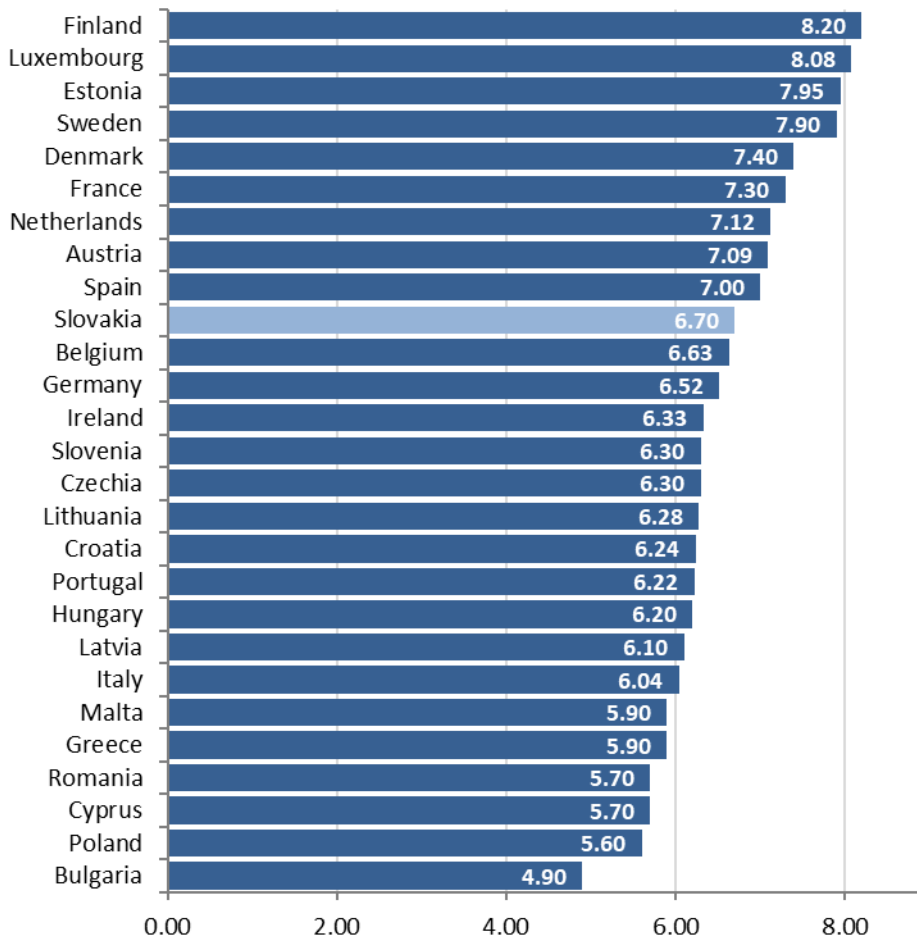
Before we evaluate the results from Figure 1 and 2, it is important to realize how the individual indices or index scores expressed. The ESG score uses a scale from 0 to 10, most commonly within ESG rating agencies such as MSCI. The SDG index uses a scale from 0 to 100 to evaluate the success of countries in achieving the sustainable development goals set by the United Nations.

Figure 1 shows that by comparing the values of the ESG index and the SDG index, we obtained a group of strong countries with a significant commitment to sustainability and achieve high performance in the areas of environmental, social and governmental factors. **Finland** with the SDG index (81.68) and ESG (8.20), **Sweden** with the SDG index (80.63) and ESG (7.90), **Denmark** with the SDG index (79.17) and ESG (7.40). This means that the selected Scandinavian countries achieve high

values due to a strong emphasis on extensive environmental policies and commitments that focus on reducing greenhouse gas emissions, using renewable energy sources, protecting biodiversity and improving air and water quality. Furthermore, they are characterized by high social justice and a high quality of life for their residents, where they have well-developed social programs aimed at healthcare, education, pensions and social security. Their effective legal and regulatory frameworks promote transparency, anti-corruption, and responsible governance, fostering collaboration among businesses, citizens, and government for sustainable development. Investments in renewable energy, resource efficiency, and a socially just economy boost their ESG and SDG results, setting an example for other nations and encouraging global cooperation in sustainability and environmental protection.

Our neighboring country **Austria** is not far behind the mentioned countries with an SDG (78.17) and ESG (7.09) index, followed by **Germany** with an SDG (74.84) and ESG (6.52) index. Within the Visegrad group (V4), we can evaluate the initial position of the **Czechia** with a value of 74.24 and ESG (6.30) according to the SDG index. It is followed by **Poland** with 72.40 and ESG (5.60), **Slovakia** with a score of 70.20 and ESG (6.70) and in last place **Hungary** with a value of 69.85 and ESG (6.20).

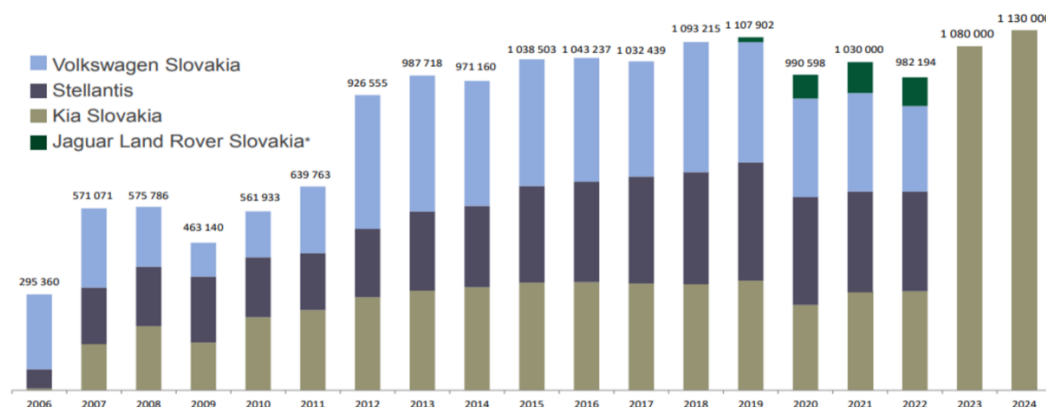
In this case, we could approach several factors that can explain the similar placement of the V4 countries in the assessment of the ESG and SDG indices. One of the reasons is the **significant dependence on fossil fuels** such as coal and gas in their energy mix, which can negatively affect their ESG and SDG results, as these fuels have a significant negative impact on the environment and climate. The economies of these countries are **largely based on industry**, including heavy industry and manufacturing with high greenhouse gas emissions (Jones, et al., 2021). In some cases, these countries may **lag behind in terms of infrastructure and investment** in renewable energy sources and environmentally sustainable projects. Lack of sufficient resources and investments may affect their ability to achieve higher values in the ESG and SDG indices. **Regulatory frameworks** and **political will** can also have a significant impact on environmental performance and sustainability efforts.

Figure 2. ESG reporting on Sustainability in EU-27 Countries for 2022

Source: Own processing according to MSCI ESG Fundamentals Country Score, 2022

The Automotive Sector and its Current Situation in Slovakia

Picture no. 3 we reach the position of the Slovak automotive sector and according to current data obtained from the Association of the Automotive Industry of the SR, the production of cars in Slovakia reached slightly more than one million eighty thousand vehicles in 2023, which represents an approximately 4 percent increase compared to the previous year. It is also interesting that in February 2024 this year, the **17,000,000th** vehicle was produced in Slovakia (ZAP, 2024). Car production per capita places Slovakia at the top of the world, **198 passenger motor vehicles** produced per 1,000 inhabitants in 2023. This indicator is followed by the Czechia, Slovenia, Hungary, Germany, Spain and Sweden.

Figure 3. Slovakia - Vehicle Production over the Past Years (2006 – 2024)

Source: Own processing according to ZAP | Automotive Industry Association of Slovakia, 2024

Note: The last years 2023 and 2024 offer only preliminary results of all car manufacturers together, as ZAP worked with incomplete data.

At the beginning of 2021, we could observe a significant increase in car production and sales, and forecasts showed that 2021 will be a strong competitor to the record year 2019. In comparison, this year Slovakia produced 1.11 million cars and sold 101,568 vehicles. However, the semiconductor crisis and the new waves of the COVID-19 pandemic did not help this forecast, but Slovak automakers dealt with it relatively well. Car brands such as *Jaguar Land Rover* and *Volkswagen* focused on producing higher-priced vehicles, which protected them from larger impacts. *KIA Motors Slovakia* had almost no problems with the supply of chips and at the end of the year it started production of the fifth generation Sportage model. Starting from the second quarter, the *Stellantis Slovakia* plant (historical name: until January 2021, Groupe PSA Slovakia) was the most affected, which had to cancel 111 production shifts.

However, despite the worsened situation, the automotive industry in 2022 accounted for 50.3 percent of total industrial production in Slovakia and accounted for more than 42 percent of the country's total exports. The number of employees in this area increased by more than 10,000 employees. Direct employment was at the level of 176,000 workers, while the total number of employees reached 261,000.

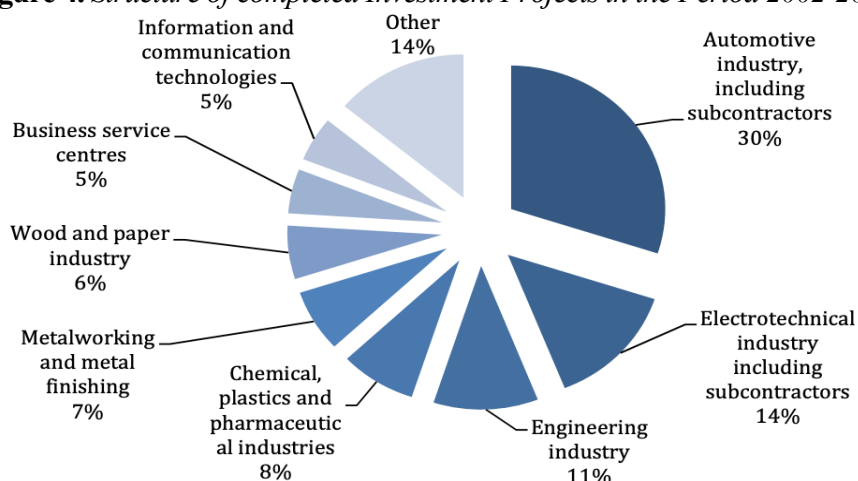
SARIO (Slovak Investment and Trade Development Agency) has been operating in Slovakia since 2003 under the auspices of the Slovak Ministry of Economy, whose task is to support Slovakia's investment, export and innovation potential (SARIO, 2022a). The activity of the SARIO agency includes not only the support of the expansion of established companies and foreign investments with export potential, but also the diversification of sectors, the increase of added value and employment in the least developed regions of Slovakia. During the last twenty years, 609 investment projects were implemented, which created almost 136,000 jobs and brought investments of more than 13.5 billion euros (SARIO, 2022b). In recent years, we can observe the trend of increasing investments with higher added value, such as research and development centers, technology and design centers, as well as an increased number of large investments with multiplier effects on the subcontracting network. In 2021, 29 investment projects with a total value of 464 million euros were completed,

creating more than 3,000 new jobs.

From the point of view of the regional distribution of investments, in the last two years (2020 - 2021) it was found that the position of the Banská Bystrica Region weakened slightly, while the position of the Trnava Region strengthened. The Prešov region still lags behind, not only in terms of the number of completed projects, but also in terms of the number of jobs created. In the structure of completed investment projects by country of origin in the period from 2002 to 2021, Germany is the clear leader (19%), which is in line with Slovakia's foreign trade. The second highest share is South Korea (9%), followed by the USA (7%) and Austria (6%).

Figure no. 4 illustrates the distribution of **completed projects by sector**, with the automotive industry including subcontractors accounting for nearly a third, the electrical engineering industry including subcontractors accounting for approximately one-seventh, and the engineering industry accounting for a ninth. The SARIO agency played a role in the realization of automotive industry investments, including *Jaguar Land Rover* in Nitra (2015), *Stellantis Slovakia* in Trnava (2003), *Kia Slovakia* in Žilina (2004), as well as in the expansion of the *Volkswagen Slovakia* plant in Bratislava (2008, 2020).

Figure 4. Structure of completed Investment Projects in the Period 2002-2021



Source: Based on SARIO data (2022b)

In the coming years, the further development of Slovakia's foreign trade will be largely influenced by the situation in the automotive industry, as it is important for the Slovak economy from various points of view. In addition to making up a third of industrial exports, it represents 13% of Slovakia's total GDP and more than half of industrial production, where it employs nearly 300,000 people. The automotive sector is currently facing a number of challenges, including the impact of the pandemic, which has manifested itself mainly in the disruption of supply chains. The war conflict in Ukraine poses a challenge to Slovakia's foreign trade by reducing trade with Russia and Ukraine.

In addition to global events such as the pandemic and the war conflict in Ukraine, the automotive sector across Europe is also facing a transformation due to decarbonization, which includes the automation and electrification of vehicles. The

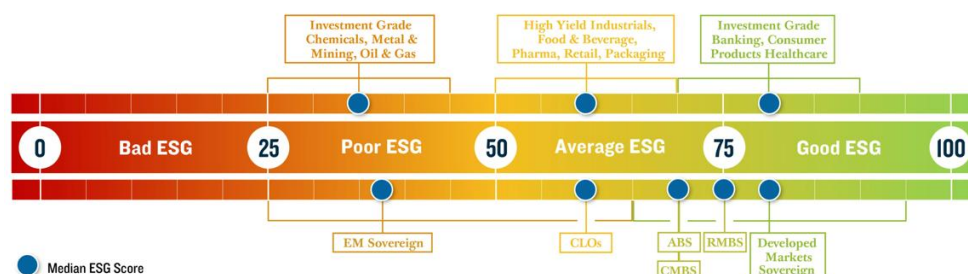
successful management of this transformation is critical for Slovakia, as it would be reflected in macroeconomic indicators and the development of regions with significant automobile production. If Slovakia could successfully transform the automotive sector, it could strengthen its position in electric vehicle production. However, it should be emphasized that the transformation should also include the reduction of individual transport and the support of public transport, which could lead to a decrease in the demand for cars. The impact of the pandemic, the war conflict in Ukraine, the transformation of the automotive sector and Slovakia's ability to face these challenges remain important factors for the future export and overall performance of the Slovak economy in the coming years.

Application of the ESG Index to the Slovak Automotive Sector

ESG indices are used to evaluate environmental, social and government criteria that have an impact on the performance of companies within their industry. In the case of the automotive industry, there are various ESG indices that evaluate these criteria for individual automotive plants. In addition, there are other ESG indices in the automotive industry, such as the S&P Global Clean Energy Index, which focuses on companies producing clean energy and technologies for its use (Egan, 2021). This index also includes automakers that are engaged in the production of electric vehicles or other alternative drives, such as Tesla.

Figure 5 shows the scoring scale of the ESG index score from 0 to 100 percent, according to which we can interpret the obtained results of the analyzed companies.

Figure 5. Scoring Scale of the ESG Index Score (0-100%)



Source: Own processing according to CSRHub ESG

Figures 6, 7, 8 and 9 show us the history of the ESG index rating for all four automotive representatives compared to the industry from April 2021 to January 2023, when we can observe interesting developments by period.

Due to the unavailability of the ESG index scores for Slovak representatives, we decided to conduct a global analysis of selected automotive concerns. We used *CSRHub ESG* (*The first company integrates data from 10 leading Socially Responsible Investing (SRI) analytics firms, alongside over 600 NGOs, government agencies, news outlets, social media groups, and smaller publishers. This tool consolidates more than 510 million data points on sustainability and CSR performance into a cohesive set of ratings.*) as our source database, which provides ratings on employee, environmental, community, and governance performance for large companies in North America,

Europe, and Asia (Gidwani, 2021).

Figure 6. ESG index Evaluation History - Stellantis NV

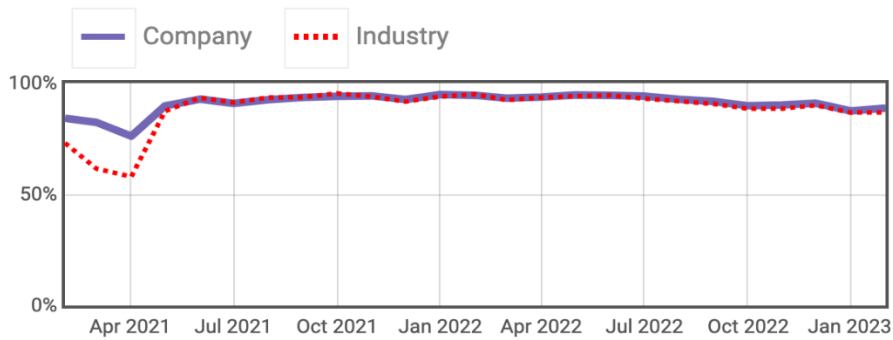
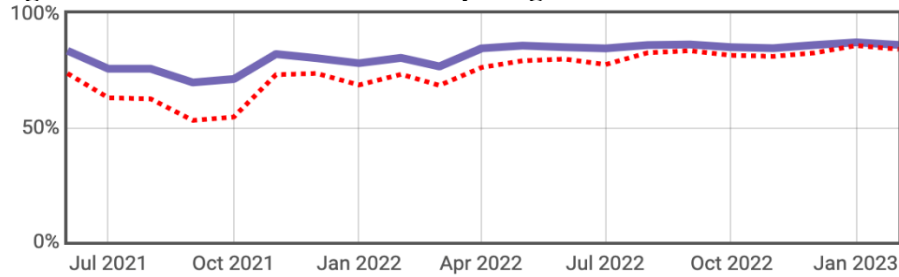


Figure 7. ESG Index Evaluation History - Jaguar Land Rover



Source: Own processing according to CSRHub ESG

Figure 8. ESG index Evaluation History - Kia Motors Corporation

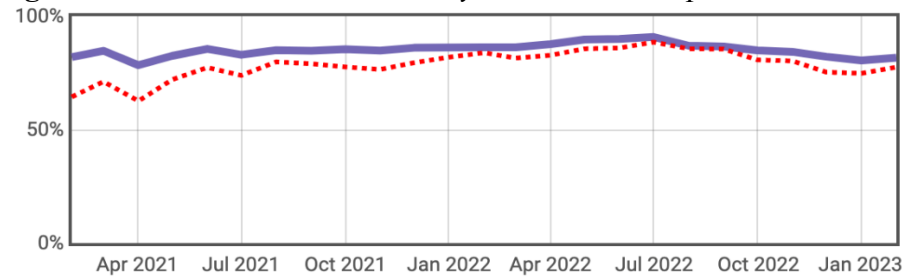
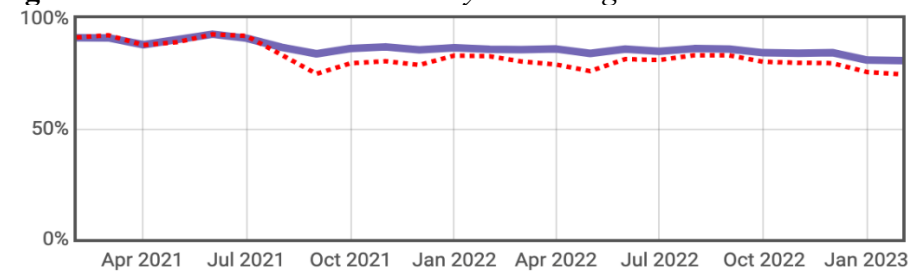


Figure 9. ESG Index Evaluation History - Volkswagen AG



Source: Own processing according to CSRHub ESG

By analyzing the ESG index for four automotive representatives, according to the CSRHub ESG database, we obtained the results shown in Table 3, which show

Stellantis NV (Concern that was created in January 2021 by the merger of the French company Groupe PSA with the Italian-American company Fiat Chrysler Automobiles. It is a joint-stock company based in the Netherlands) as the leader with the highest ESG score of 89%. **Jaguar Land Rover** (Jaguar Land Rover Limited is a British multinational automobile company based in Great Britain, which was founded in 2008. It is a subsidiary of the Indian automobile company Tata Motors) came in second with an ESG score of 86%. In third place we see **Kia Motors Corporation** (Kia Motors Corporation is a sister company of the South Korean corporation Hyundai Motor Company, and also a member of the Hyundai Motor Group, which was founded in 1944) with an ESG score of 82%. Last place was taken by **Volkswagen AG** (The Volkswagen Group, with its headquarters in Germany, is one of the leading and largest manufacturers of cars and commercial vehicles, which was founded in 1937) with an ESG score of 81%.

Table 3. Automotive Company ESG Index Rating in 2023

Automotive companies	Stellantis NV	Jaguar Land Rover	Kia Motors Corporation	Volkswagen AG
ESG score	89 %	86 %	82 %	81 %
Order of success	1.	2.	3.	4.



Source: Own processing according to CSRHub ESG

Conclusions

The overall results achieved in the ESG index indicate that the given companies achieve a high level in the field of environmental, social and governance factors. This result indicates that companies are actively concerned with sustainability and responsible management of their business with minimal negative impact on the environment and with respect to employees and society as a whole.

Based on the analysis of rating agencies and investment companies focused on ESG performance of companies, we found that for most Slovak companies this concept is still relatively new. Finding a balance between sustainability and responsible business, with minimal negative impact on the environment and with an emphasis on employees and society, is the key to assessing company performance through ESG criteria. This concept is more often discussed in companies with an international context, especially since 2021, when it began to be talked about the obligation to publish information on sustainability according to the exact standards that are currently being finalized at the European level.

According to analyzes by Mazars, approximately 30 Slovak companies are currently dealing with the issue of sustainability, but only a third of them would meet

the stricter criteria for reporting. What is new is that this published information will have to undergo an independent audit and companies will store it in a central digital system. Under the new rules, companies should start publishing reports on non-financial indicators in 2025 for the year 2024.

ESG indices are becoming an increasingly popular tool for investors who want to invest in companies that consider environmental and social factors as well as the management of their businesses. These indices are often used to measure and compare the performance of companies based on their ESG scores. The higher the company's ESG score, the higher the rating of its environmental, social and governance performance. Investor interest in ESG indices has increased in recent years, as more and more people and companies seek to invest in sustainable development and consider environmental and social factors when making investment decisions.

Acknowledgments

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Wage Productivity Gap and Labour Market Flexibility: A Study based on Indian Manufacturing Industries during 1973-2020

By Byasdeb Dasgupta & Dip Dutta[‡]*

The present study is an attempt to analyse and assess the wage-productivity gap in the Indian manufacturing industries during the last few decades along with a focus on labour market flexibility in recent time. We carry out the study at the All-India level using the available ASI database for the period 1973-2020. The basic objective of the study is two-fold: (a) to assess the wage productivity gap in Indian manufacturing industry based on secondary data available from Annual Survey of Industries (ASI) and (b) to see whether the labour market flexibility at the same time period has any mutual association with the wage productivity gap in Indian manufacturing industry. We measured the wage-productivity gap at the 3-digit level of the NIC classification of industry groups by regrouping them into divisions of industries. We have tried to relate the wage productivity gap in terms of labour share with the ongoing effort for labour market flexibility in India since 1991.

Keywords: *Wage, Labour Productivity, Wage-Productivity Gap, Labour Share, Labour Market Flexibility,*

Introduction

The present study aims at the examination of wage productivity gap in manufacturing sector in India since 1973. We have considered 1973 as the starting year of our investigation as ASI data got published by the Government of India from that year only. Also, it is to be noted that there is no data available in India for the unorganized or informal manufacturing industries. So, the present study is restricted to the organized or formal manufacturing sector in India. As per the standard microeconomic understanding, as is delineated in terms of the marginal productivity theorem, an individual labourer is paid according to her marginal productivity based upon standard assumptions of perfectly competitive market structure and also homogeneous production function. Two points merit attention at this juncture:

- (a) While productivity is the outcome or end result of the production process which is often determined by the technology, wages may not wholly be determined by the production process or technology. Rather, they are determined to a great extent by the labour market institutions in a particular macroeconomic context.

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- (b) Given (a) above, it means the labour wage and labour productivity may display *four* possible inter-relations as follows:
- (i) Wages may increase proportionately more than productivity over time;
 - (ii) Wages may increase proportionately less than productivity over time;
 - (iii) Wages and productivity may change similarly at the same proportion over time;
 - (iv) Wages may stagnate over time while productivity is rising.

What kind of trend wage would register over time relative to productivity would depend quite significantly on the macroeconomic environment governing the labour market and labour institutions on the one hand, and also, on the technological progress on the other hand. The focus of the present study is to judge (a) whether the wage productivity gap in Indian manufacturing during the post-liberalisation period has widened or not and (b) to find out whether there is any connectivity between wage-productivity gap and flexible labour regime which is the norm of the day.⁸

⁸When we say Indian manufacturing sector, we restrict ourselves to the formal manufacturing sector in India. The manufacturing sector is divided between formal and informal segment. As far as the standard official definition of an informal unit is concerned it is an enterprise which employs less than 10 workers and without power or employs less than 25 workers and with power and also, in general, these are the enterprises which are not registered with the Government under the Factory Act and hence, the labour laws of the land do not apply to them.

The data on contractual employment is available in ASI database from 2001 only. The data for labour share (LS) or wage share for directly employed and contractually employed are provided here as follows:

year	LS directly	LS contractual
2001	0.284643	0.07338
2002	0.223929	0.061381
2003	0.235529	0.071699
2004	0.196433	0.07083
2005	0.176058	0.06969
2006	0.171088	0.084504
2007	0.139344	0.066838
2008	0.117847	0.058523
2009	0.132129	0.063826
2010	0.128902	0.064961
2011	0.119109	0.062786
2012	0.113697	0.06163
2013	0.120966	0.063337
2014	0.200752	0.118865
2015	0.15752	0.074728
2016	0.110778	0.062879
2017	0.110424	0.064256
2018	0.113436	0.067709
2019	0.11843	0.07434
2020	0.112694	0.074862
2021	0.107076	0.071119
2022	0.088959	0.062968

The flexible labour rules allow the firms to contain their labour cost which is now vital for their survival in the growing competitive market environment. The unit labour cost in Indian manufacturing has registered significant drop from around 9 percent of total operating cost of production to little over 5 percent across the manufacturing sector in India since the beginning of the new policy regime in 1991 as can be confirmed from the official ASI data (Dasgupta 2013).

Furthermore, the process of informalisation is also a mean to achieve this cost reduction. It is more cost-effective for a manufacturing firm (a) to outsource labour-intensive works outside its factory premise in a labour surplus economy and (b) also to informalise its own in-house production by raising the proportion of relatively less paid casual and contractual workers in the total workforce of the firm.

This introduction sets the backdrop of the present study the sole objective of which is to examine the wage productivity gap in Indian formal manufacturing production and also to see the connectivity of labour share with degree of informalisation of the formal manufacturing space. For doing this analysis we depend on the factory level Annual Survey of Industries (ASI) data at the 3-digit level published by the Central Statistics Office of Government of India.

The study is organised as follows. While the Section 1 provides a brief review of existing literature as far as the question of wage productivity gap and related issues are concerned in general and Indian context, the methodology of the study is spelt out in the following section. Section 3 provides the empirical findings of the study pertaining to wage productivity gap in Indian manufacturing sector since 1973. Section 4 provides an empirical analysis to probe the connectivity between labour share and degree of informalisation where the latter is taken as a proxy for labour market flexibility in quantitative term. Section 5 involves a more disaggregate analysis by dividing the existing industry groups in high, medium and low degree of informalisation category. The concluding section sums up the major findings of the study and would make an attempt to provide some policy imperatives.

A Brief Review of Existing Literature

The present study draws its main inspiration from the ILO concept of Decent Work in which wages commensurate with productivity plays a large role.⁹ Karanassou and Sala (2010) made an attempt to revisit the wage productivity gap at the macroeconomic level, which basically signifies functional distribution of national income at the country level. In the case of developed countries like Italy, France, Japan, Spain, the UK and the US for the period 1960-2008 they found traces of declining or stagnating labour shares in terms of their employment trajectories. However, a study with respect to France by Bruneau and Girard (2021) found slowdown in labour productivity in recent time.

The particular literature from which we drew immensely for the present study is the *Global Wage Report 2012/13 – Wages and equitable growth* published by the ILO

⁹See the webpage <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm> for an understanding of the ILO concept of Decent Work. This webpage is accessed on 1st August 2023 by the authors.

in 2013. Although the study is meant for depicting global picture of wages and associated aspects – especially the inequitable growth worldwide in recent time, we found Part II of the Report on “Falling labour shares and equitable growth” quite relevant for our purpose. And the methodological clue for the present study follows from this Report.

Similar assessment regarding falling labour shares in the current context is provided in ILS (2008, 2011, and 2012) so to gauge whether free markets may function for better work or not. ILO (2008, 2010 and 2012) too indicates the disturbing labour conditions in developed and developing countries including the emerging markets of India and China. OECD (2011 and 2012) also made attempts to find out what the drivers of low wage and inequality in labour income are. IMF (2007) views the current labouring and wage conditions as something pro cyclical in nature.

In a different context and for a different purpose, Papanikos (2024), found variations of self-employed in Eurozone countries where many of the self-employed might be involved in manufacturing activity which is also not uncommon in India but the study in the Indian context is rare.

In Indian context in recent time there are some attempts to address the question of labour in different forms – labour organisations (Chakrabarti and Dhar 2008; Shyam Sundar 2012), labour conditions (Sen and Dasgupta 2008), labour policy (Papola 2011), informalisation (Papola 1980 and 1981; Sanyal and Bhattacharya 2009; Chakrabarti and Dhar 2008) and labour costs (Kumar and Felpe 2011).

Besides these articles, in the paper ‘The productivity-wage and productivity-employment nexus: A panel data analysis of Indian manufacturing’ (Bhattyacharya, et al. 2011) has inspired us as this article investigated the long-run relationship between labour productivity and employment, and between labour productivity and real wages in the case of the Indian manufacturing sector for the period 1973–1974 to 1999–2001, Where it has been found that both employment and real wages exert a positive effect on labour productivity and their results further suggests that flexible labour market has a significant influence on manufacturing productivity, employment and real wages in the case of Indian manufacturing.

There are few works on wage-productivity nexus as well as technological development in Indian Manufacturing Industries using the available data for different time periods [Bhalotra (1998), Banga (2005), Das and Sengupta (2015), Kapoor (2016), Abrham and Sasikumar (2017), Das, Basu and Halder (2017), Chakraborty (2018), and Jain (2019)]. These studies have attempted to investigate the wage-productivity nexus in Indian manufacturing and also, the impact of technological development on this nexus. However, we did not come across any study which has linked wage-productivity gap in Indian manufacturing industry with the ongoing labour market flexibility in India.

Methodology of the Study

The basic methodology followed to calculate the wage productivity gap in Indian manufacturing is a simple one which actually follows from the definition of labour share as follows:

$$LS = \frac{RWW}{RNVA} \quad (1)$$

where LS stands for labour share and RWW and RNVA stand for real wages to workers and real net value added respectively. We arrive at RWW by deflating nominal wages to workers by consumer price index numbers for the industrial workers and RNVA by deflating nominal value added by wholesale price index numbers as is available from the RBI website.

The labour share as noted in (1) above can also be written as follows:

$$LS = \frac{w}{LP} \quad (2)$$

where w is the real wage rate arrived at dividing RWW by the number of workers (N) and LP is the labour productivity (or real net value added per worker) arrived at dividing RNVA by N .

Taking log of both sides, (2) can be expressed as follows:

$$\begin{aligned} \log(LS) \\ = \log(w) - \log(LP) \end{aligned} \quad (3)$$

Taking total differentials of both sides of (3) we can write:

$$lsg + wg - lpg \quad (4)$$

where lsg is the annual growth rate in labour share, wg is the annual growth rate in real wage rate and lpg is the annual growth rate in labour productivity.

Equation (4) is crucial for our understanding of wage productivity gap in Indian manufacturing. Note that an increasing and positive annual growth over time in labour share would indicate proportionately more growth in real wage than in labour productivity whereas a negative and also falling annual growth over time in labour share would signify proportionately more rise in labour productivity relative to wage.

Also, one can understand this gap crudely by looking at our equation (2) above, that is from the absolute value of labour share (LS). A falling labour share (LS) over time, as is indicated in terms of (2) above, would mean relatively more increase in labour productivity (LP) than real wage (w). Hence, if labour share (LS) is found to fall over time that would indicate a rising wage productivity gap as defined above.

To assess whether wage productivity gap has been rising or not we have used the concept of labour share (LS) as delineated above. We have done this assessment for the period 1973-2020.

We carried out the calculation of real wage (w), labour productivity (LP) and labour share (LS) for all industry groups taken together at the 3-digit NIC classification of industries as contained in ASI database. This helps us to provide an aggregative understanding of the wage productivity gap in Indian manufacturing since 1973. Next, in order to capture the situation what is dubbed as flexible labour regime we have calculated degree of informalisation which means the percentage of workers employed

through contractors in the total workers employed. Note that the data for number of workers employed through contractors are available only from 2000 in the ASI database.

Next, we made an attempt to see if there exists any mutual association between labour share and degree of informalisation and for this we calculated simple correlation coefficient between labour share and degree of informalisation to see whether labour share under flexible labour regime has increased or decreased. The same we captured in terms of a simple econometric exercise involving labour share as the dependent variable and the degree of informalisation as the explanatory variable as follows:

$$LS = \alpha + \beta(\text{Doinf}) + \mu \quad (5)$$

where LS is labour share, Doinf is degree of informalisation and μ is the random error term. Our null hypothesis is $\beta = 0$ against the alternative hypothesis $\beta \neq 0$.

We have also tested the above regression by including capital intensity i.e. capital labour (K/L) ratio as another explanatory variable to test whether along with degree of informalisation technological improvement i.e. change in capital-labour ratio has any effect on the observed labour share during the period under consideration as follows:

$$LS = \alpha + \beta(\text{Doinf}) + \gamma(\text{K/L}) + \mu \quad (6)$$

where K/L is the capital-labour ratio in the Indian manufacturing industry for the period 1973-2020.

Alternatively, we have also proceeded as follows:

$$W/L = (\text{GVA}/L)(W/\text{GVA}) \quad (7)$$

Where W is nominal wages, L is the number of workers and GVA is Gross Value Added.

This can be treated as nominal wages per worker being identically equal to the product of GVA per worker and the Wages share in GVA.

This identity in real terms can be rewritten as:

$$(W/L)(1/\text{CPI}_{IW}) = (\text{GVA}/L)(1/\text{WPI}_{MP})(W/\text{GVA})(\text{WPI}_{MP}/\text{CPI}_{IW}) \quad (8)$$

Where CPI_{IW} and WPI_{MP} are the Consumer Price Index for Industrial Workers and Wholesale Price Index for Manufacturing Products respectively.¹⁰

Expression (8) can be rewritten as:

$$RW = LP.WS.RP \quad (9)$$

Where RW is real wage, WS is wage share and RP is relative price.

So, from the above,

¹⁰Note that in India there is no Producers' Price Index. So, we have used Wholesale Price Index for the Manufacturing products.

$$RWg - LPg = WSg + RPg \quad (10)$$

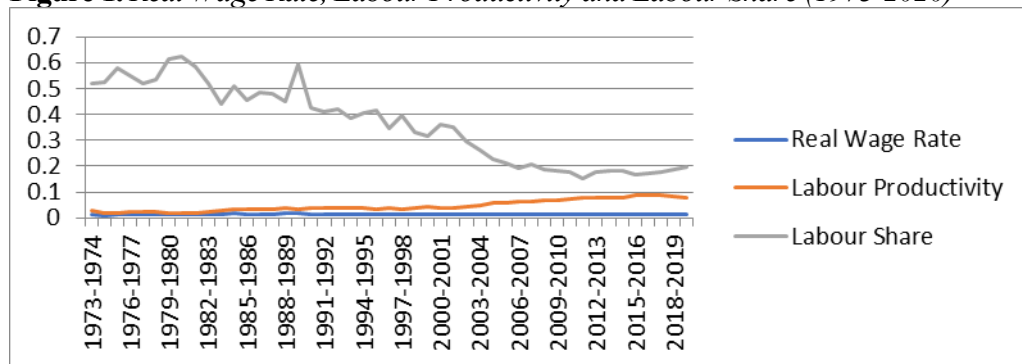
This mean real wage growth rate minus labour productivity growth rate is equal to wage share growth rate plus the relative price growth rate

Empirical Findings

As can be seen from Figure 1 below over the period under consideration in Indian manufacturing while real wage remained almost stagnated labour productivity have moved up significantly indicating widening wage productivity gap, which can also be seen from the little downwardly stagnant labour share line in the figure over the years for all the manufacturing industries taken together. As the graph suggests, while the rise in labour productivity is quite steep over the years the same is not true for real wage. The widening wage productivity gap can be more prominently understood from Figure 2 below where we have plotted annual growth rate in labour share for all industries during the period under consideration. Although the downfall in labour share growth is not smooth over time as it has some peaks at some years yet the overall trend is negative. Hence, at the aggregate level the wage productivity gap has widened during the post-liberalisation period. The divergence between labour productivity and real wage became steeper and steeper implying fall in labour share over time.

Therefore, from Figure 1 and Figure 2 below it can be said that taking all the 3-digit industry groups together, the wage productivity gap in Indian manufacturing industries has widened.

Figure 1. Real Wage Rate, Labour Productivity and Labour Share (1973-2020)

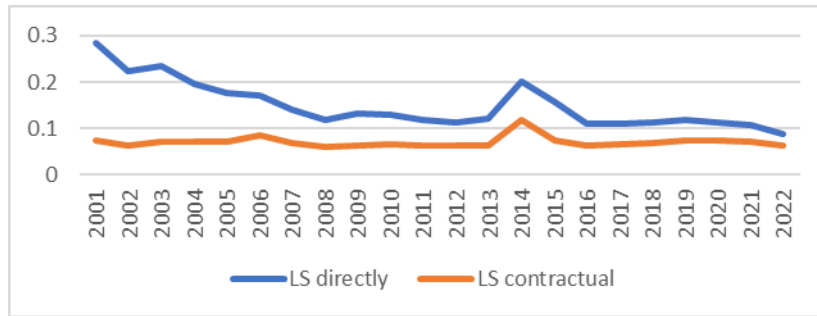


Source: Authors' calculation based on ASI data of Government of India

Note that annual labour share growth rate was negative for 24 years for the period under consideration. The steepest fall in the annual labour share growth rate occurred during 1992-93 just after the inception of economic liberalization programme in India from June 1991. This is also a period (after 1991) which can be dubbed as the beginning of the period characterised by flexible labour regime. So, it would be interesting to note whether falling labour share over time as depicted from Figure 1 and Figure 3 has any connectivity with labour flexibility in Indian context – the discussion of which is taken up in the following section.

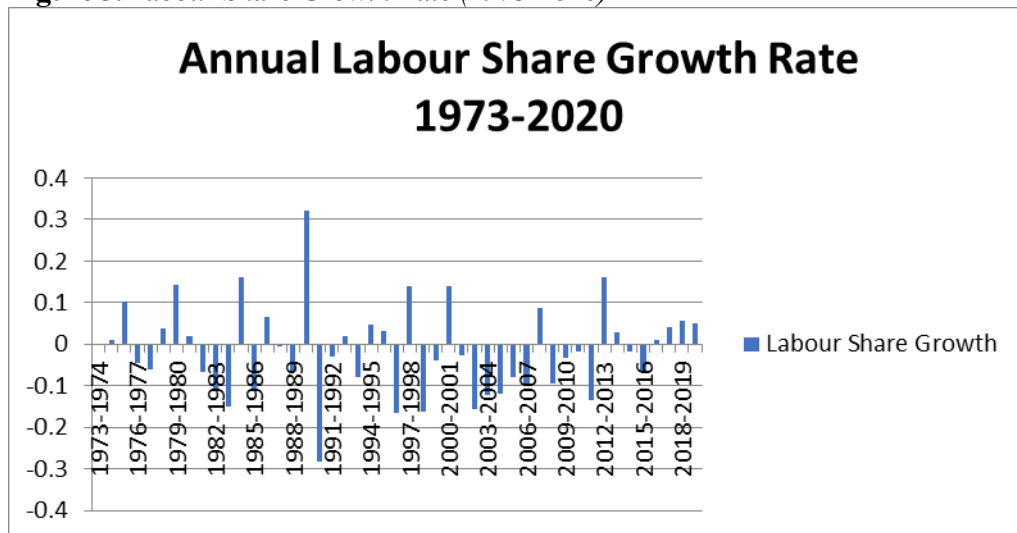
For empirical calculation we have defined degree of informalisation as the percentage of contractual workers in total workers and degree of formalisation as the percentage of directly employed workers in total workers. The two series viz. Degree of informalisation and Degree of formalisation are depicted in Figure 2 below. As can be seen from the figure, the two series exhibits continuous downward trends with a small peak around 2014-15.

Figure 2. Degree of Informalisation and Formalisation in Indian Manufacturing Industries



Source: Authors' calculations based on ASI data base

Figure 3. Labour Share Growth Rate (1973-2020)



Source: Authors' calculation based on ASI data of Government of India

Table 1. *GVA, Real Wage for Regular and Contractual Employment and Relative Price (in terms of equation 8 above)*

Year	total GVA	total RW	RW directly employed	RW contractual employment	Relative Price	Total no. of workers
2001	247678.5	87665.38	70499.9	18174.57	34.76	6135236
2002	311321.9	87946.29	69714.03	19109.2	36.26	5957848
2003	273626.1	83170.69	64446.88	19618.76	37.70	6161493
2004	322762.8	83868.7	63401.11	22861.35	39.15	6086908
2005	388787.8	92207.81	68449.14	27094.47	40.65	6599298
2006	455709.3	112619.6	77966.32	38509.09	42.45	7136097
2007	563041.6	110404.2	78456.44	37632.32	45.29	7880536
2008	693613.6	118684.1	81740.58	40592.25	48.10	8198110
2009	555909.2	106768.5	73451.96	35481.57	52.48	8776745
2010	565208.6	109629.9	72856.39	36716.29	58.97	9157802
2011	675612.8	122891	80471.66	42419.26	65.13	9901970
2012	736141.8	129065.7	83697.16	45368.4	70.59	10438365
2013	712970.8	131402.8	86245.14	45157.75	77.96	10051626
2014	701550.5	224226.8	140837.3	83389.68	85.51	10444404
2015	757450	175916.3	119313.5	56602.63	90.88	10755288
2016	856233.8	148690.5	94851.6	53838.94	96.01	11136133
2017	912355.7	159369.9	100745.8	58624.24	99.97	11662947
2018	947231.2	171586.2	107450.3	64135.96	103.05	12224422
2019	938185.5	180853.6	111109.4	69744.29	108.67	12798588
2020	869562.7	163092.1	97994.61	65097.51	116.85	541799
2021	929285.2	165594.1	99504.37	66089.6	119.87	12594563
2022	1235650	187728.8	109922.4	77806.3	123.26	13609931

Source: Annual Survey of industries and authors' calculations.

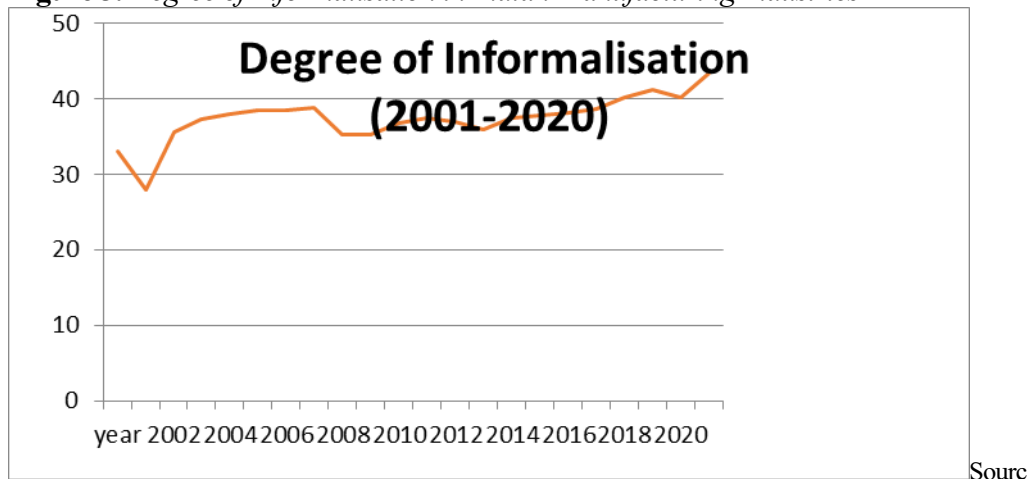
Table 1 shows gross value added, labour share for directly employed as well as contractually employed and also the relative price and total number of workers since 2001 as the data on number of contractual workers got started published from 2001 only. This calculation is based on equation (8) in the previous section on Methodology.

Labour Share and Labour Market Flexibility

Flexibility in the labour market implies doing away with rigid labour rules and replacing them with flexible labour norms like easy hire and fire, casualization or contractualisation of the labour force employed and like (Sen and Dasgupta, 2009). We are considering here the manufacturing industry groups as contained in ASI data base published by the Government of India. The data on employment through contractor (which we have taken as the number of contractual workers in the labour employed in any industry group at the 3-digit level) is available only from 2000. So, we have to contain our exercise for the period 2000-18. We have taken percentage of

contractual workers in the total workers employed in any industry group as the proxy for labour market flexibility which we have termed as degree of informalisation (doinf) in an industry group. Figure 3 below indicates the trend in degree of informalisation in Indian manufacturing industries at the 3-digit level during 2000-18. As can be seen from the Figure 3 below the degree of informalisation had registered unabated rise since 2000. One point merits attention at this juncture. In India not all rigid labour laws are yet to be changed. There are discussions to do this at the policymakers' level in view of containing unit labour cost in the face of steep competition that the Indian manufacturing industries are encountering after opening up of the domestic market following the inception of economic liberalization programme in 1991. However, as Sen and Dasgupta (2009) has observed although there is not much *de jure* change in rigid labour laws but the *de facto* labour market regime is characterised as flexible one compared to what it was in 1970s and 1980s. And rising degree of informalisation in a way does signify rising flexibility in Indian manufacturing industries as far as the labour is concerned. This might have helped on the other hand to enhance efficiency of labourers employed as we have seen in the previous section in terms of rising labour productivity.

Figure 3. Degree of Informalisation in Indian Manufacturing Industries



Source: Authors' calculation based on ASI data from Government of India

To check the mutual association between labour share and degree of informalisation we have calculated the correlation coefficient between them – the value of which is -0.62. The value is high with a negative sign. This implies high degree of negative association between labour share and degree of informalisation. To test the causal relationship we run the following regression which is already indicated in the Methodology Section above:

$$LS = \alpha + \beta(\text{Doinf}) + \mu \quad (3)$$

where LS is labour share, Doinf is degree of informalisation and μ is the random error term. Our null hypothesis is $\beta = 0$ against the alternative hypothesis $\beta \neq 0$.

Our result shows the following:

$$LS = 0.638891 - 1.12879(\text{Doinf}) \quad (4)$$

Both the intercept term and the coefficient term are significant at the 5% level of significance with R^2 of this regression being 0.39. This implies that if degree of informalisation increases by 1 percent the labour share will fall by 1.12879 percent. This vindicates the alternative hypothesis of our regression exercise as mentioned above which means as the degree informalisation (Doinf) increases (falls) labour share in Indian manufacturing industries falls (rises). Falling labour share may be a matter of concern with the inception of flexible labour regime although the need of the hour is to cut the unit cost of production to sustain the steep competition in the goods market following opening up of the Indian economy to a great extent after the beginning of the liberalization era in 1991. And it is very difficult for any industry to reduce non-labour costs of production and so, the onus falls on the labour. One ray of hope in recent time is that real wage has been showing little bit rising trend of late.

Now we test the regression where in addition to degree of informalisation we include capital-labour ration as another explanatory variable – the result of which is given below:

$$LS = 0.6055 - 0.0091(\text{Doinf}) - 0.2869(\text{K/L}) \quad (5)$$

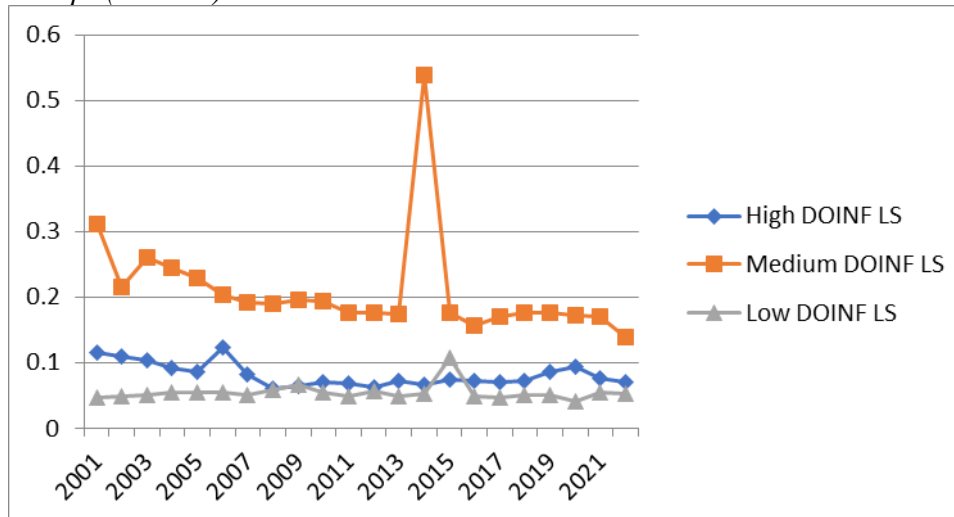
The coefficients are significant at the 5% level and the sign of the coefficients is as expected i.e. negative and R^2 is 0.42 which is significant at 5% level. This implies that with the increase in both degree of informalisation and capital-labour ratio (which is here representative of technological improvement) labour share falls. However, it is the technological improvement compared to increase in degree of informalisation which exerts more downward pressure on labour share in Indian manufacturing industries. Another important point to note here is that the value of intercept term is also significant and not very low implying that there may be other factors than these explanatory variables which may have significant influence upon labour share.

A More Disaggregate Analysis

In this section we take a more disaggregate view of Indian manufacturing industries in terms of degree of informalisation as defined above. We first consider the mean degree of informalisation for all the industries from 2001 to 2022. And then we consider the mean value of the degree of informalisation from least value to the mean value and categorize the industry groups as low degree of informalisation group whose degree of informalisation is less than this mean value i.e. 22.86%. Next, we consider the mean value of the degree of informalisation from the total mean value to the maximum value and categorize the industry groups as high degree of informalisation group if their degree of informalisation is greater than this mean value i.e. 39.56%. The remaining industry groups whose degree of informalisation lies between 22.86% and 39.56% are

dubbed as medium degree of informalisation group. Figure 4 below shows the labour shares of these three groups during 2001-22.

Figure 4. Labour Share of High, Medium and Low Degree of Informalisation Industry Groups (2001-22)



Source: Source: Authors' calculation based on ASI data from Government of India

Note that in each of these industry groups labour share has witnessed continuous downtrend. However, one noticeable fact is that labour share in medium category of industry groups have remained above the high and low category of industry groups. Also, labour share remained most of the time below the labour shares of high category of groups – a result which is counter-intuitive. Note also that there is a sharp peak in labour share in medium category of industry groups in the year 2015 which also merits some attention. But one can assert that barring few years wage productivity gap in each one of these industry groups was increasing or widening from 2001 to 2022. We could not carry out the same exercise from 1973 (from when ASI data is available) because data on number of contractual workers are available only from 2001. In very recent time i.e. during 2020-22 one can observe slight increase in the labour share of the low degree of informalisation group while the other two categories registered sharp fall. Our general hypothesis as can be drawn from the preceding regression analysis in the earlier section is that labour share would be least in high degree of informalisation group followed by medium and then low. But that is not the case as we can see from the above diagram. It may be due to some factors which are as follows:

- (i) In low degree of informalisation group the wage rate is considerably lower than the other two groups so that these industries did not feel the urge to increase the number of contractual workers to reduce their unit labour cost of production.
- (ii) Low category of industries may be mostly more technology driven (compared to the other two categories) which may imply labour intensity is already low

and hence, there was no urge to increase the number of contractual workers unlike the other two categories.

Another point to note at this juncture is that it is the medium category of industries where labour shares throughout the period under consideration remained above the labour shares of the other two categories. This may be said that these industries are more labour intensive i.e. low capital-intensive industries and in spite of having increasing degree of informalisation over the years could not reduce unit cost of labour unlike the other two industry groups.

We also did a panel regression of labour share (LS) on degree of informalisation (doinf) and capital-labour ratio(K/L) as follows:

$$LS_{it} = \alpha_{it} + \beta_{it}(\text{doinf}) + \gamma_{it}(K/L) + \mu \quad (6)$$

where i denotes an industry group and t denotes time (here, year).

The result of random effect regression we got is as given below:

$$LS_{it} = -0.8606162 -0.1036256(\text{doinf}) -0.3769291(K/L) \quad (7)$$

Table 2. Results of Linear Regression with Capital-Labour Ratio (K/L) and Degree of Informalisation (doinf) as Explanatory Variable and Labour Share being the Dependent Variable

Explanatory Variables	Coefficient
Doinf	-0.1036256***
K/L	-0.3769291***
CONSTANT	-0.8606162 ***
R squared within	0.8650
Chi- square	34.43

Source: ASI Database of Government of India. Authors' own calculation of econometrics.

Note: S.E is in 1st parenthesis.

***P < 0.01

**P < 0.05

*P < 0.10

Prob. > Chi-square

Therefore, this is the Hausman test result. Here, the fixed effect model is chosen on the basis of our Hausman Test Statistic and its significance level.

All the coefficients including the intercept term are significant at the 1% level of significance. But as we have found in the preceding section it is the capital intensity which exerts more downward pressure on labour share than the degree of informalisation. Note also that the sign of the intercept term and the other two coefficients is, as expected, negative. The relatively large value of the intercept term compared to the other two coefficients suggests that there are also factors other than the degree of informalisation and capital-labour ratio which might have negative influence on labour share on these industry groups.

Conclusion

The major aim of this paper was to probe the wage productivity gap in the Indian manufacturing industries since 2001. We have used ASI data at the 3-digit level to do this study and have found widening wage productivity gap or falling labour share over time. We have also tried to see whether flexible labour regime has anything to do with the observed trend of labour share. And we have found a high and negative correlation between degree of informalisation (taken as a proxy for labour flexibility) and labour share during 2001-2022.

With the opening up of the Indian economy since 1991 and also, with paradigmatic shift in the Industrial Policy regime after 1991 the Indian manufacturing industries are subject to steep competition. So, the need of the hour is to reduce unit cost of production. But given the technology and other related factors, it is quite difficult (if not impossible) to curtail the non-labour costs of production. Therefore, there was no way out but to reduce the labour costs of production which is imminent in terms of falling labour share since 1991. With the entry into a flexible labour regime probably it became easier to contain labour costs of production. Liberalization policies and flexible labour regime will continue to remain as it is today as there is no other alternative for the state in a highly integrated world economy. The state may come out with some policies concerning the social security of the contractual or casual workers in the formal segment of the Indian manufacturing industries. Or the state may think in terms of Universal Basic Income (UBI) which is a social welfare proposal in which the beneficiaries (here the contractual workers in the formal Indian manufacturing industries) would regularly receive a minimum guaranteed income in the form of an unconditional transfer payment from the state. However, given the current fiscal management challenge faced by the Government whether such a scheme will be viable is a big question.

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