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Assist. Prof.Dr. Burçin ATASEVEN DOĞRU

FROM THE EDITOR

International Journal of Contemporary Social Sciences

Dear people of the scientific world,

CSS JOURNAL started publishing in 2023. CSS Journal is a social science platform where everyone who is engaged in academic studies in the field of social sciences can have their say.

I would like to express my gratitude to our valuable professors on the board of directors of the journal, who have contributed to the activities of CSS Journal since its establishment, as well as to our valuable professors, both at home and abroad, who have been on the advisory, publishing and referee boards and contributed to us with their areas of expertise.

In this journey that we have embarked on to contribute to academic life to some extent, we would like to have you, the valuable people of the scientific world, with us as the editorial board, advisory board, referee board and author. Additionally, your guidance and suggestions to help us achieve perfection will give us even more strength.

I would like to thank you for all your support for CSS Journal and offer my best regards.

Assist.Prof.Dr. Burçin ATASEVEN DOĞRU

GENERIC

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Financial Inclusion And Economic Growth: A Focus On Care Workers And Caregivers

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ABSTCART

This paper explores the intricate relationships among caregivers, poverty, financial inclusion, and economic growth. The methodology employed for this exploration is the systematic literature review, which aims to examine the impact of financial inclusion on these interconnections. Informal caregivers, often unacknowledged heroes in our society, provide unpaid assistance and support to individuals dealing with challenges because of illness, disability, aging, or other circumstances. Their roles include offering emotional support, daily care, and various tasks to assist those in need. Poverty, a multifaceted issue, encompasses aspects such as income, the distribution of capital and income, assets, basic needs, services, life, and asset security. Financial inclusion, the effort to make financial services accessible to all, plays a crucial role in tackling poverty and enhancing overall well-being. The importance of financial inclusion in eradicating poverty is emphasized by the United Nations' Sustainable Development Goals. Despite the essential role caregivers play in providing care, their responsibilities often destroy their own economic well-being. Unpaid family caregivers, in particular, encounter difficulties like absenteeism and diminished productivity on their jobs. Anticipated global growth in the demand for informal caregiving underscores the need for policy measures to support caregivers. Studies on African countries and Turkey reveal that financial inclusion eagerly decrease poverty levels and contributes to economic growth and poverty reduction. The impact of caregivers on economic productivity is substantial, resulting in significant costs attributed to caregiving-related work productivity loss. It is crucial to address the unique challenges faced by caregivers, particularly single mothers, to enhance their employment prospects and financial well-being. Although specific articles directly linking financial inclusion to caregivers were not identified, the evidence suggests that caregivers, particularly specific groups like single mothers, should be the focus of targeted support through financial inclusion initiatives for an effective approach to combat poverty.

In conclusion, grasping the intricate connections among caregivers, poverty, and financial inclusion is essential for formulating policies and support systems that empower caregivers to provide essential care without facing poverty. Additional research in this field holds the potential to provide valuable insights, contributing to the enhancement of caregivers' economic well-being and the reduction of poverty.

Key Words: Financial Inclusion, Caregivers, Care work, Economic Productivity, Poverty Reduction

INRODUCTION

In this paper, various articles have been investigated to establish a connection between caregivers, poverty, and financial inclusion. Numerous research trials have demonstrated the effectiveness of interventions, including multidimensional and psychoeducational approaches, nevertheless, there has been a lag in translating these findings into easily accessible resources for caregivers. An informal caregiver is a person who provides unpaid aid and assistance to someone requiring care, typically a family member, friend, or neighbour. These caregivers provide a variety of assistance to individuals who are unable to conduct certain issues or in need of help due to factors like illness, disability, aging, or other circumstances. (Swartz, K., & Collins, L. G. 2019). Informal caregivers frequently assume various responsibilities, including offering emotional support, assisting with daily activities such as bathing and dressing, administering medications, running errands, cooking meals, and providing companionship. Their role differs from that of professional caregivers, who receive payment for their services and may operate within healthcare or home care settings. (McKie, L., Gregory, S., & Bowlby, S. 2002). Considering the delineation of caregivers and their significant role in societal and familial contexts, the present study aims to scrutinize the potential impact of financial inclusion on the well-being of caregivers. This investigation seeks to explore how financial inclusion, as a mechanism for economic enhancement, may ameliorate the lives of caregivers and capture the attention of policymakers towards this pertinent issue.

Financial inclusion is a principle that refers to the effort to make financial services and products accessible and affordable to all segments of the population, especially those who are traditionally underserved or excluded from the formal financial system. The goal of financial inclusion is to promote economic development, reduce poverty, and enhance the overall well-being of individuals and communities by ensuring that people have access to essential financial tools and resources. (Sarma, M., & Pais, J. 2011). The discussion regarding the role of financial inclusion began in the late 1990s, predating the adoption of Agenda 2030. During this time,

specific organizations, such as the UN Capital Development Fund (UNCDF), acknowledged that relying solely on microfinance was inadequate for addressing poverty effectively. They identified the necessity to provide a broad range of financial services, including savings and insurance. In 2008, the European Commission articulated financial exclusion as a circumstance wherein individuals encounter difficulties in accessing or utilizing commonly available financial services and products crucial for fulfilling their needs and maintaining a socially typical life. This issue is evidently not confined to financial matters alone, often being interlinked with restricted access to fundamental facets of life, including employment, healthcare, education, and suitable housing. These elements bear considerable relevance in the context of addressing concerns related to sustainable development. (Ferrata, L. 2019). The literature (Khan, I., Khan, I., Sayal, A. U., & Khan, M. Z. 2022) has delved into examining how financial inclusion has affected poverty and income inequality across 54 African countries during the period from 2001 to 2019. Furthermore, the study explores the relationship between financial inclusion and financial stability, taking into account factors like poverty, income inequality, and financial integration. An additional study has investigated the connection between financial development, economic growth, and poverty reduction in Turkey. (Kar, M., Ağır, H., & Peker, O. 2009). The central inquiry revolves around the longstanding debate in development economics: Whether financial development propels economic growth. The study employs diverse economic indicators as proxies for both financial development and poverty reduction. Empirical findings endorse the notion that financial development is associated with economic growth, indicating a causal relationship between economic growth and poverty reduction. Various facets of poverty from academic and activists perspectives and synthesized from a seminar at Thailand development research institution (TDRI), include the following elements: Income and Expenditure, Distribution of Capital and Income, Assets and Capability to Consume, Indebtedness, Fundamental Needs like Essential Services, Health and Education, such as Electricity, Basic Health, Clean Water, Life and Asset Security, Social Capital, Living Standard relative to Expectation, Acceptance and Respect within Society, Choices and Opportunities in Personal Life and for the Family, Voices to be Acknowledged and Spiritual Dimensions.(Jitsuchon, S. 2001).

METHODOLOGY

The systematic review adheres to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The articles identified underwent screening employing the content-centric analysis technique. Concerning the review's methodology, articles included in this analysis must meet four specific criteria. First, the articles should be recent, with a primary focus on studies conducted post-2000 related to financial inclusion. Second, the chosen articles must be published as either empirical studies, analytical studies, policy discussion papers, or related working papers. This implies that the review excluded unpublished dissertations, website content, and online blogs. Thirdly, older articles may be considered if they pertain to the topics covered in this review. Lastly, to be included in this review, selected articles should either predominantly delve into financial inclusion as a central theme or examine the relationships between financial inclusion and other relevant issues, addressing the research questions posed in this study, which pertain to (1) what is poverty?; (2) caregivers profile; (3) In what way does financial inclusion alleviate poverty?; (4) The relationship between the alleviation of poverty and economic growth; (5) financial inclusion and economic growth; (6) The involvement and impact of caregivers in fostering economic growth; (7) Does financial inclusion offer any specific support programs for caregivers? (Figure.1) The following sections outline the search terms individually.
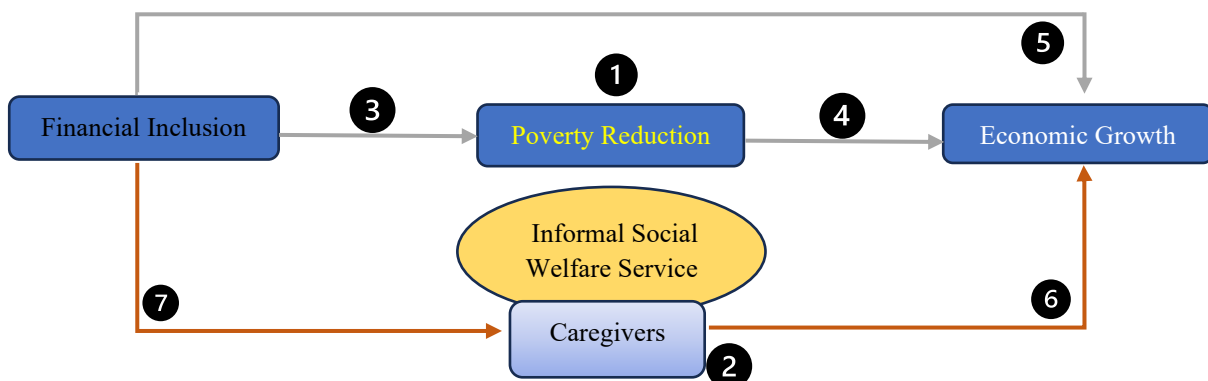
Figure 1. Flow Diagram Of The Article Search

What is the Meaning Of Poverty?

The scientific literature initially provides a fundamental and single-dimensional definition of poverty, describing it as the inability to afford adequate nutrition. This one-dimensional perspective identifies the poor as impoverished with income levels at or below one to two dollars per day. Nevertheless, a more contemporary viewpoint expands upon this definition, acknowledging that poverty involves not only nutritional aspects but also expends to education, physical health, and mental well-being. This comprehensive definition recognizes that poverty can manifest in diverse dimensions, with the specific aspects varying based on the unique circumstances of each country. (Ochilov, A. O., & Najibullah, E. 2021, April). Differences in consumption habits between villagers and individuals living in sanitary districts are anticipated to result in poverty lines that appear excessively costly when applied to rural aeras. Preliminary discoveries from several village surveys seem to substantiate this conjecture. (Jitsuchon, S. 2001).

Caregivers Profile

At present, 80% of adults requiring long-term care reside within their communities and receive 90% of their care from unpaid family caregivers. These family caregivers play a crucial role in supplementing the U.S. healthcare system, and the demand for their services is projected to increase in the forthcoming decades (Swartz, K., & Collins, L. G. 2019). By the year 2030, a massive portion of the adult population, accounting for one out of every five individuals, will have reached the age of 65 or older. A substantial number of these senior citizens will find themselves in need of support for tasks related to instrumental activities of daily living or basic daily activities. (National Association of Chronic Disease Directors; Centres for Disease Control and Prevention; Health Benefits ABCs. CDC seeks to protect health of family caregivers. January 15, 2009.) In The literature (Swartz, K., & Collins, L. G. 2019). it has been observed that caregiving imposes a notable physical, psychological, and financial burden on those who provide care. The article has delineated certain aspects of caregiver burden related to financial consequences. These encompass elevated absenteeism or decreased work hours, Greater self-reported financial stress, sacrificing opportunities for promotion and training, forfeiting salary and benefits, and a reduced in income. The National Family Caregiving Support Program (NFCSP) was instituted in the year 2000 as a component of the Older Americans Act, a federal law. This program directs funding towards community and state-level initiatives designed to support two distinct groups of caregivers: individuals aged 60 and older and grandparents over the age of 60 who are raising children. This program consists of five primary areas of assistance for caregivers, encompassing: (1) Furnishing caregivers with information regarding available services. (2) Aiding caregivers in accessing the necessary services. (3) Providing individual counselling, coordinating support groups, and delivering training to assist caregivers in making informed decisions and resolving issues associated with their caregiving roles. (4) Supplying respite care to afford caregivers temporary relief from their caregiving responsibilities. (5) Providing additional services to supplement the care offered by caregivers (Ivey, D. L. 2022). Noteworthy is that the NFCSP does not explicitly acknowledge or propose financial inclusion in its supportive provisions.

How Can Financial Inclusion Reduce Poverty?

The United Nations (UN) unanimously endorsed the 2030 Agenda on September 27th, 2015, which incorporates the 17 Sustainable Development Goals (SDGs). These SDGs encompass all aspects of human existence and emphasize two essential principles: leaving no one behind, be it nations or individuals. Upon closer examination of the document, it becomes evident that finance and financial inclusion play instrumental roles in achieving all SDGs. However, the primary focus among these 17 goals is the eradication of poverty (Ferrata, L. 2019). To address this challenge, the emphasis has been placed on ensuring everyone has access to financial services, including microfinance. There is growing evidence highlighting the significant benefits of financial inclusion, particularly for women and impoverished adults in numerous nations (Ozili, P. K. 2021, October). In this comprehensive review, the author has found that financial inclusion is intricately linked to and influenced by factors such as the extent of financial innovation, poverty alleviation efforts, financial sector stability, economic conditions, financial literacy, and the distinct regulatory frameworks in various countries. This review explores the latest evidence on financial inclusion across all regions of the world.

In the article by (Khan, I., Khan, I., Sayal, A. U., & Khan, M. Z. 2022), it is highlighted that, according to a 2016 World Bank report, Africa stands out as the most impoverished region globally, accounting for 50% of the worldwide poor population. Additionally, it is the second-most unequal region in terms of income distribution, following Latin America. This literature proposes that financial inclusion could potentially serve as a key factor facilitating the escape of the African population from the clutches of poverty and inequality. The study investigates the impact of financial inclusion on poverty and income inequality across 54 African

nations spanning from 2001 to 2019. It also explores how financial inclusion influences financial stability in the context of poverty, income inequality, and financial integration. The research utilizes panel data modelling techniques for estimation and takes into account various factors related to poverty and income inequality. The findings underscore the substantial role of financial inclusion in reducing poverty levels in African countries.

Another research (Dogan, E., Madaleno, M., & Taskin, D. 2022). the research utilized data from Turkish household surveys to explore the impact of financial inclusion (FI) on various poverty levels. As per the World Bank's 2020 report, these levels encompass tree type of lower poverty, upper poverty, and extreme poverty. The result emphasizes the importance of FI in reducing poverty across all these groups. The empirical findings also indicate that individuals with characteristics such as being male, employed, unmarried, possessing higher education qualifications, and owning a house are less likely to experience poverty. These results imply that FI functions as an effective policy tool for poverty reduction and combating poverty, even in developing nations.

The Correlation Between Poverty And Economic Growth

Katy Hull's research has explored the correlation between unemployment (a crucial economic growth indicator), and the reduction of poverty. The third section of this framework proposes that an array of policies, encompassing both direct labour market measures and broader consideration of policy and institutional, can stimulate a growth pattern in sectors that reduces poverty. Comprehensive quantitative and qualitative analysis specific to every country is necessary to identify obstacles to job creations, productivity, and workforce mobility. Policymakers, depending on the sector under consideration, may aim to enhance either employment or productivity, all while ensuring that individuals in poverty can access improved employment opportunities. (Hull, K. 2009). In the case of Mexico from 1984 to 2002, a significant observation is that the implementation of macroeconomic policies aimed at ensuring economic stability and enhancing labour productivity concurrently serves as a strategy for poverty reduction (Hernández Licona, G., and M. Székely, "Labor Productivity: the link between economic growth and poverty in Mexico," chapter 2 in Bane, M.J. and R. Zenteno, "Poverty and Poverty Reduction Strategies: Lessons from Mexican and International Experience," Harvard University Press, Cambridge, Massachusetts, USA, 2009). The research highlights that labour productivity acts as a bridge between macroeconomic policies and social policies. Conversely, macro policies have the potential to enhance productivity by creating a more favourable economic environment, facilitating the effective utilization of individuals' human capital. While this article does not address the role of caregivers in social policies, exploring their place in social policies could be a subject of study.

Financial Inclusion and Economic Growth

Many studies have explored the connection between financial inclusion and economic growth, with a wealth of articles available on this topic. In the work of Sarma, M. (2012), an Index of Financial Inclusion (IFI) has been introduced. The IFI serves as a tool for evaluating and comparing the extent of financial inclusion across different economies, enabling the tracking of economic progress in terms of financial inclusion over time. The low IFI category is predominantly composed of low and lower-middle-income countries, while the medium IFI category is dominated by upper-middle and high-income countries. Furthermore, most countries with high IFI also fall within the high-income bracket. This suggests that financial inclusion and income levels generally progress together, although there are occasional exceptions.

A study carried out in Nigeria established the strong correlation between financial inclusion and economic growth. (Chude, N. P., & Chude, D. I. 2022). The research findings underscore the substantial impact of this relationship on Nigeria's economic development, emphasizing the necessity for the government to enact appropriate monetary and fiscal policies that foster financial innovations within the country. Notably, the study's most significant contribution to understanding the impact of financial inclusion on economic growth is its emphasis on the importance of policymakers directing greater attention to shaping fiscal and monetary policies and making essential facilities accessible to the entire society.

The examination of regional data in China through eight VAR models, with the first concentrating on monetary policy and the last four on economic fundamentals, has unveiled that monetary policy positively impacts financial inclusion, whereas the economy exerts a contrary effect. Corroborating results affirm that monetary policy has a favourable impact on financial inclusion, underscoring the importance of fostering an enabling policy environment and adaptable incentive measures to sustain its effectiveness. (Yin, X., Xu, X., Chen, Q., & Peng, J. 2019).

A study has been done by Muhsin KAR to investigate the casual relationship between financial inclusion and poverty reduction in Turkey for the period 1970-2007. (Kar, M., Ağır, H., & Peker, O. 2009). The findings

support the supply-leading hypothesis and indicate that finance plays a role in driving economic growth. Additionally, a causal relationship between economic growth and poverty reduction is identified. However, in the short term, the connection between financial development and poverty reduction appears to be feeble.

Another research initiative, concentrating on eight countries in the Middle East and North Africa (MENA) region, has delved into the impact of financial inclusion on income inequality, poverty, and financial stability from 2002 to 2015. The findings indicate that financial inclusion does not have a significant influence on poverty, with factors such as population size, inflation, and trade openness emerging as the primary drivers of increased poverty. Conversely, financial inclusion plays a positive role in enhancing financial stability, underscoring the importance of implementing improved policies for the reform of the financial sector (Neaime, S., & Gaysset, I. 2018). Derived from a UK survey, concerning gender, 11.3% of women assumed caregiving roles, whereas this figure was 8.6% for men. Women, overall, dedicated more time to caregiving than their male counterparts (Dahlberg, L., Demack, S., & Bambra, C. 2007). Consequently, the exploration of gender disparities in the utilization of financial services has become an area of interest (Demirgüç-Kunt, A., Klapper, L. F., & Singer, D. 2013).

Examining individual-level data from the Global Financial Inclusion Indicators (Global Findex) database revealed a persistent gender gap. Even after considering various individual characteristics such as income, education, employment status, and age, gender remains significantly associated with the utilization of financial services. Improving women's financial access may require more equitable legal treatment, adjustments in product designs, and enhanced access to financial service providers. Further research is crucial to gain a deeper understanding of the mechanisms hindering women's access to financial services and to identify innovative products, processes, and technologies that can promote greater financial inclusion for women. Additionally, the impact of motherhood on employment can present significant workplace challenges and affect women's earnings, emphasizing the need to address maternal poverty (Misra, J., Budig, M. J., & Moller, S. 2020).

In order to provide more constructive and practical policy implications, economic growth of 27 European Union (EU) nations has been investigated in an article (Huang, R., Kale, S., Paramati, S. R., & Taghizadeh-Hesary, F. 2021). Their findings revealed that the accessibility, depth, efficiency, and comprehensive advancement of financial institutions exert a significant positive influence on economic growth. This effect is more pronounced in low-income and newly admitted EU member nations compared to high-income and established EU countries, and emphasized the importance of detailed policy recommendations to attain desired economic objectives.

A similar study, investigated by Dai-Won Kim (Kima, D. W., Yub, J. S., & Hassanc, M. K. Research in International Business and Finance.), which encompassed 55 countries within the Organization of Islamic Cooperation (OIC). According to the revealing of dynamic panel estimations, financial inclusion has a favourable impact on economic growth.

The Impact Of Caregivers To Economic Productivity

George J. Stigler independently introduced the concept of efficiency and total factor productivity in 1947, initiating a noteworthy research effort at the National Bureau of Economic Research. I could not find articles investigating the correlation between caregivers and economic growth, for this reason, I modified the search term to "economic productivity." Workplace absences (absenteeism) and decreased on-the-job productivity (presenteeism) are two factors that exert an adverse influence on productivity. On average, these factors are reduced by approximately one-third, amounting to an estimated $5,600 per employee when extended across all caregivers in the workforce, primarily due to diminished on-site work performance (Fakeye, M. B. K., Samuel, L. J., Drabo, E. F., Bandeen-Roche, K., & Wolff, J. L. 2023).

The anticipated increase in the aging population necessitates preparing for the growing global demand for informal caregiving by implementing essential policies. (Keramat, S. A., Hashmi, R., Aregbeshola, B. S., & Comans, T. 2023).

Caregivers require tailored interventions that address the various stages of a child's development. It is crucial for the government to embrace a comprehensive life cycle approach, which includes actions such as evaluating maternal mental health, facilitating appropriate referral services, providing parenting support both within centres and at home, offering high-quality early learning opportunities in both centre-based and home-based settings, and ensuring the delivery of premium childcare. This approach aims to effectively ease the burden of caregiving. Childcare stands out as a uniquely complex sector within the regional economy. Firstly, it can be perceived as an independent economic sector complete with its own facilities, staff, and connections to other

sectors. Secondly, it serves as a crucial component of social infrastructure, enabling parents to participate in the workforce and contribute to the regional economy. Thirdly, it has a lasting economic influence by contributing to the development of children, who represent the future workforce. Since the year 2000, fifty-eight states and localities have conducted regional economic assessments of their childcare sectors, with an additional thirteen studies currently in progress. This paper provides a comprehensive overview of these studies, highlighting how they reveal fundamental conceptual and methodological challenges in how regional economists approach care sectors and their contribution to the regional economy (Warner, M. E. 2006).

The poverty experienced by single mothers is primarily linked to the constrained earning potential within an unequal job market. This is especially challenging for lone parents who lack external assistance as they must allocate their time to fulfill two overlapping responsibilities: generating enough income to provide for their families and attending to the needs of their children and themselves. (Himmelweit, S., Bergmann, B., Green, K., Albelda, R., the Women's Committee of One Hundred, & Koren, C. 2004).

Does Financial Inclusion Offer Any Specific Support Programs For Caregivers?

Among all the articles that were reviewed, no article was found that specifically addresses a direct link and connection between financial inclusion and caregivers. However, based on the responses provided to questions 1 through 6, it appears that caregivers, especially specific groups such as single mothers, should be a central focus of financial inclusion, and it is recommended that specialized services should be tailored to distinct groups at risk of poverty.

CONCLUSION

In this document, we have investigated the complex network of connections among caretakers, poverty, financial inclusion, and economic development. Informal caregivers, often ignored but important contributors to the society, provide unpaid aid and support to individuals, performing various roles to support those facing difficulties arising from illness, disability, aging, or other conditions. They undertake various roles range from emotional aid to daily care, including administering medications, running errands, preparing meals, and offering companionship.

Poverty, a multifaceted problem involving aspects such as income and spending patterns, distribution of income and capital, properties, fundamental needs like health and education, access to essential services, asset, and life security, and more. Financial inclusion, the initiative to make financial services available to everyone, plays a significant role to addressing poverty and improving overall well-being. The United Nations' Sustainable Development Goals highlight the importance of financial inclusion to eliminate poverty.

While caregivers play an essential role in delivering care, their responsibilities often entail certain costs. Caregivers, particularly unpaid family caregivers, encounter challenges like increased absenteeism and decreasing workplace productivity, affecting their own economic well-being. The global demand for informal care is expected to increase, emphasizing policy measures to bolster caregiver support.

Research indicates a strong correlation between financial inclusion and the alleviation of poverty (Khan, I., Khan, I., Sayal, A. U., & Khan, M. Z. 2022). This investigation on 54 African countries demonstrate that increased financial inclusion notably reduces poverty levels. Similarly, research conducted in Turkey (Kar, M., Ağır, H., & Peker, O. 2009) suggests that financial development fosters economic growth, thereby contributing to poverty reduction. Regional studies focusing on MENA countries and European Union nations underscore the positive influence of financial inclusion on economic growth and stress the need for implementing appropriate policies (Neaime, S., & Gaysset, I. 2018).

The influence of caregivers on economic productivity is essential, and the loss of work productivity because of caregiving responsibilities is estimated to average around $5,600 per employee. It is crucial to tackle the distinct challenges encountered by caregivers, particularly single mothers, concerning employment and earnings. While specific articles connecting financial inclusion to caregivers were not identified, the findings from the reviewed studies indicate that caregivers, especially specific demographics like single mothers, should be the focus of targeted support through financial inclusion initiatives for a more effective approach to combating poverty.

In conclusion, comprehending the interconnections between caregivers, poverty, and financial inclusion is vital for creating policies and support structures that empower caregivers to deliver essential care without succumbing to poverty themselves. Further investigation in this field can yield valuable insights into enhancement of the economic well-being of caregivers and alleviation of poverty.

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The Effect Of Automation On Job Performance And Job Security Of Sweet Industry Workers

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ABSTCART

Automation has had a significant impact on the sweet industry in recent years. One way in which automation has affected the sweet industry is through the development of advanced production technologies and techniques. Another way in which automation has affected the sweet industry is through the use of data analytics and machine learning to optimize production processes and improve the quality of sweets and minimize the level of defects. Automation has also impacted the sweet industry by enabling the development of advanced logistics systems that can help improve the efficiency and speed of distribution. For example, automation has been used to develop advanced transportation systems that can help to reduce the time and cost of delivering sweets to customers (Ritson, 2017). Automation has also been used to develop advanced warehouse management systems that can help to optimize the storage and handling of sweets, reducing waste and increasing efficiency (Goyal & Sharma, 2018).

This paper presents a better understanding of the effect of Automation on job performance elements and job security for better-managing employees' job security and performance in the sweet sector.

This research assists businesses in general and sweet organizations in particular in understanding the influence of Automation on employee job security and job performance elements and therefore managing better employees in the workplace, which will significantly assist in improving ideal work conditions. The study highlights the importance of understanding the impact of automation on job security and job performance in the context of the sweet industry. The results suggest that automation can positively and negatively affect these factors, and organizations should carefully consider the potential impacts when implementing automation technologies.

Future studies can concentrate on organizational and operational performance. Moreover, further research may investigate the impact of the mediation of organization policies and practices.

Key Words: Automation, Job security, Job performance, Measurability, Understandability, Achievability.

INRODUCTION

Nowadays, automation leads to many changes in the working environment and workers' behaviors; there is an opportunity to take advantage of it to develop job performance and increase job security. Automation is creating new jobs; while this process is happening, many jobs will be eliminated; there are two important variables to consider: job security and job performance.

Workers should feel secure in their jobs, so factories gain more productivity. Studying the variables that are the best consideration, keeping professional and trained workers is the main priority for any factory at any stage of its life. Automation may make a risk discernment in employees, which leads to vulnerability since the conditions beneath which workers make forecasts for the long-term period change (Roskies & Louis, 1990).

Automation and computerization will exceedingly influence middle-income workers, particularly within manufacturing and service (Frey & Osborne, 2015). Working under uncertain conditions is adversely connected with happiness and life fulfillment. It influences the quality of life and self-image (Judge & Bono, 2001).

Job performance is connected to the worker's expected operations and the execution of these operations by the representative (Noor & Sharhrom, 2021). Moreover, workers may have blended or negative impacts on their well-being (Nazareno & Schiff, 2021). Therefore, automation may improve efficiency or compensation for those who stay utilized.

LITERATURE REVIEW AND THEORETICAL BACKGROUND

Automation

Automation is defined as using technology to perform tasks without direct human intervention (Acemoglu & Restrepo, 2019). It can reduce the time and effort required to complete a task, freeing human workers to focus

on more complex and value-added activities. For example, using robots in manufacturing has improved output and reduced defects (Liu et al., 2020). It can also improve the accuracy and consistency of tasks, as it is less prone to human error (Gao et al., 2019).

Contrastingly, automation also brings challenges and potential negative impacts. One concern is the potential displacement of human workers by automated systems, particularly in industries where tasks can be easily automated; this can lead to job loss and inequality, and social and economic disruption in affected communities (Acemoglu & Restrepo, 2019). In addition, implementing automation can be costly, requiring investments in technology and training (Gao et al., 2019).

Another area of concern is the ethical implications of automation. As automation advances, it raises questions about allocating decision-making power and responsibility. For example, using autonomous vehicles raises questions about the allocation of liability in the event of an accident (Lin & Bekey, 2018). In addition, using automation in decision-making processes, such as hiring or criminal justice, raises concerns about bias and fairness (O'Neil, 2016).

Automation has been increasingly implemented in the sweet industry, using automated systems for mixing, shaping, and packaging tasks. Adopting automation in the sweet industry can bring about several benefits, including increased efficiency, productivity, and accuracy, reduced labor costs, and improved food safety (Liu et al., 2020).

Implementing automation in the sweet industry also brings challenges and potential negative impacts. One concern is automated systems' potential displacement of human workers, which can lead to job loss and social and economic disruption in affected communities (Acemoglu & Restrepo, 2019). In addition, the cost of implementing automation can be a barrier for smaller sweet manufacturers (Gao et al., 2019).

Another area of concern is the ethical implications of automation in the sweet industry. Artificial intelligence and machine learning used in developing and marketing sweet products raise questions about the potential for bias and the manipulation of consumer behavior (O'Neil, 2016). In addition, using automation in the production and distribution of sweet products may have environmental impacts, such as energy consumption and waste generation, that must be carefully considered (Bryant et al., 2019).

Job Security

Job security refers to the stability and safety of employees, including the likelihood of losing one's job or being unable to find employment (Ferrie et al., 2013). Workers who feel secure at work will have a sense of work steadiness and successfully contribute to the organization's development; job security is critical for workers to have a sense of work fulfillment and the proper mental steadiness to keep their jobs (Olawole, 2022). In another way, job insecurity happens when a worker's work is less than stable or the worker feels like it is. It is the inverse of work security when a worker has certainty that their business is guaranteed (McCrindle et al., 2021).

Additionally, job security benefits workers so they can work in their current work for a predictable future. Job security comes with assurance against terminations and other elements that may affect employment (Miles, 2022). Work security regularly comes about in a more flexible climate within the work environment and in superior worker engagement. More fulfilled workers lead to a reduced chance of worker turnover, a secured work will move forward the employee's effectiveness level and efficiency (Khorev, 2021).

The consideration of job security may negatively affect the workers. Job security stems from the problem of a threat expected by a worker. In transactional stress models, this expectation of a threat or additional seek can become a source of stress for the worker (Hassard et al., 2017). When a worker becomes as well secure, he might lose the need to move forward, which can have the opposite of the desired effect on his efficiency and productivity levels (Khorev, 2021).

The way to determine the job security in companies can be measured as the company has a low worker turnover rate, high work security evaluations, the company contains a solid budgetary standing, workers are inquired to serve a sensible probation period, and the company offers long-term benefits for workers (Puri, 2020).

Job Performance

Job performance, defined as the overall anticipated value to the organization of the behavioral scenes that a person carries out over a standard period (Motowidlo et al., 2014), is the two perspectives of action, behaviors, and consequence perspective. The behavioral perspective alludes to, as it was conducted, which is appropriate for the organizational purpose. It can be defined as open exercises, conduct, and results that workers are

involved in or bring approximately that are connected with and give to organizational goals (Griffin et al., 2007).

On the other hand, it influences the overall outcomes of the organization (Ramawickrama et al., 2017). Past research has appeared that ideal person execution leads to trade success and influences the productivity of an organization. Wasteful work execution is commonly related to lower efficiency, benefit, and organizational adequacy (Okoye et al., 2013). Job performance could be an implication of reaching an objective or set of objectives inside a work, part, or organization, but not the actual results of the acts performed inside a work; also it is not a single activity but maybe a "complex activity".

Job performance benefits are a multidimensional build with a typical substantive figure that ranges over its higher arranged measurements of assignment execution and shirking of counterproductive work behaviors (Viswesvaran et al., 2000). Furthermore, it can be considered a specific result in administration, financial matters, and promotion. That print highlights the organization's competitiveness, proficiency, viability, and procedural and essential elements.

The disagreement concerning the negative impacts of high-performance work frameworks stem from two essential concerns: objective difference and worker differences, and the personal interface of worker are frequently ignored in high-performance work frameworks (Han et al., 2020).

Sweet Industries

The sweet industry is a large and growing sector worldwide, with various products ranging from confectionery and chocolate to bakery and pastry items. According to a recent market research report by Grand View Research (2021), the global confectionery market size was valued at USD 190.77 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 3.4% from 2021 to 2028. This growth can be attributed to several factors, such as changing consumer preferences, rising disposable income, and the increasing demand for healthy and organic sweets.

The sweet industry is a significant sector in the United States, with companies such as Mars, Nestle, and Hershey's leading the market. The European market is also significant, with countries such as Switzerland, Belgium, and Germany known for their high-quality chocolates and confectionery products. The Asia-Pacific region is a rapidly growing market, with countries such as India and China experiencing a surge in demand for sweets due to increasing population and urbanization.

The sweet industry is also essential in Jordan, significantly contributing to the country's economy. Jordanian sweets are well known for their unique taste and high quality and are prevalent in Jordan and neighboring countries. The industry includes a wide range of products, including Baklava, Ma'amoul, and other traditional sweets, as well as chocolates and other confectionery items.

Several research studies have been conducted on the sweet industry globally and in Jordan. For example, Al-Mahadin et al. (2019) examined the relationship between customer satisfaction and loyalty in the Jordanian sweets industry. Another study by Al-Zu'bi et al. (2021) investigated the impact of social media on consumer behavior in the Jordanian bakery industry.

There have been several studies in recent years regarding the impact of automation on the sweet industry. For example, a study by Kumar and Bhatia (2020) examined the impact of automation on the food industry, including confectionery and bakery products. Another study by Al-Mahadin et al. (2020) investigated the impact of automation on the job security and job performance of employees in the Jordanian sweets industry.

The literature on the sweet industry and its various aspects, including automation, provides a comprehensive understanding of its dynamics, challenges, and opportunities. Further research is necessary to explore the potential of automation in improving the efficiency, productivity, and quality of sweet industry products globally and in Jordan.

THE EFFECT OF AUTOMATION ON JOB PERFORMANCE AND JOB SECURITY

Using Automation can increase efficiency, reduce errors, and reduce the need for human labor. Automation can replace human workers with machines and technology, which can often perform tasks more efficiently and at a lower cost (Frey & Osborne, 2013). For example, the widespread adoption of Automation in manufacturing has been associated with significant job loss in the sector (Acemoglu & Restrepo, 2017).

While Automation eliminates jobs, on the other hand, it creates more jobs. In the short term, the implementation of new strategies and approaching Automation will not be easy and will have harmful effects

on workers who feel that Automation will replace their work; they will not feel more secure in their jobs (Schwabe et al.,2020). Another way in which Automation can negatively impact job security is through the changing nature of work. A study by Auyeung et al. (2017) found that workers who need to possess the skills required for the jobs of the future may face increased job insecurity.

Additionally, Automation can negatively impact job security by increasing the precarity of work. As automation increases, the use of temporary or contract work may become more common as companies seek to avoid the costs and responsibilities associated with permanent employment. A study by Kalleberg et al. (2017) found that a decline in job security has accompanied the growth of precarious work. Workers in precarious employment are more likely to experience job loss and have less access to benefits and protections.

Automation has the potential to dispose of 73 million US occupations by 2030, which would compare to an impressive 46% of the current occupations. 37% of Americans are stressed because of Automation (Flynn, 2022); in South Africa, the primary people's income comes from manufacturing, and Automation may eliminate unskilled and semiskilled people's jobs; the percentage of unemployment due to Automation is increasing every year. As a result, two million jobs have been lost and still.

Last year many studies focused on the unemployment of Automation; 47% of American jobs may face unemployment due to Automation; workers who think that their job will be eliminated may they are not in a real risk of Automation because they are not doing routinized work; they use of Automation create new jobs while eliminating others (Arntz et al., 2016).

In addition to improving the efficiency and skills of workers, Automation can also have a positive impact on worker motivation and satisfaction in the manufacturing industry; by reducing the burden of routine and repetitive tasks, Automation can increase the autonomy and discretion of workers, which can lead to higher levels of engagement and motivation (Hackman & Oldham, 1980). For example, a study of automated assembly lines in the electronics industry found that they increased the satisfaction of workers by allowing them to focus on more complex and rewarding tasks, such as quality control and maintenance (Shin & Lee, 2014).

Reutilizing the reasons for automation anxiety of workers that they are going to lose their jobs, the workers who are afraid to lose their jobs for different reasons more than the workers who are afraid to lose their jobs due to Automation, there are many reasons that make workers feel the insecurity of their jobs not only because of the Automation, the findings were that there is a limited proof of work characteristics recognized by specialists of Automation being the reasons of job insecurity (Coupe, 2019).

Unemployment because of Automation is now less than before and soon will be zero while we are transforming manual duties to Automation. We need people with new skills to operate new Automation, which means reducing job insecurity (Nakamura et al., 2018).

The article titled Automation stated that the Automation and Anxiety of it refer to the relationship between workers' Anxiety about losing their jobs due to Automation; researchers have asked the workers about their understanding of Automation, giving them a chance to deep thinking about this concept and the results were moderate self-rated knowledge of Automation. They are not confident about the concept of Automation till now (Loewen et al., 2021), and up to 34% are at risk of being eliminated due to Automation by 2040. However, Automation will moreover create new workforce opportunities (Hughes, 2022).

One way in which automation can affect job performance is through the displacement of workers. As automation increases, specific tasks may become obsolete or be performed by machines rather than humans. This can lead to the loss of jobs for workers who are no longer needed to perform those tasks. A study by Frey & Osborne (2013) found that automation will likely lead to significant job displacement in the coming decades, particularly in the manufacturing, transportation, and retail industries. This displacement can negatively impact job performance, as workers may struggle to find new employment or may be forced to take lower-paying or lower-skilled jobs (Acemoglu & Restrepo, 2017).

Another way in which automation can affect job performance is through the changing nature of work. As automation increases, the skills required to perform work may change. This can lead to workers needing to acquire new skills in order to remain employable, and the workers who do not possess the skills required for the jobs of the future may face decreased job performance, as they may struggle to perform tasks that require new or unfamiliar skills (Auyeung et al., 2017). This can be particularly challenging for older workers, who may have more difficulty acquiring new skills or face age discrimination in the job market (Gould, 2017).

Additionally, automation can affect job performance by increasing the precarity of work. As automation increases, temporary or contract work may become more common as companies seek to avoid the costs and responsibilities associated with permanent employment. The growth of precarious work has been accompanied by a decline in job security and performance, as precarious workers often need to be provided with the same support or resources as workers in permanent employment (Kalleberg et al., 2017).

Another way in which automation can affect job performance is through the erosion of job quality. As automation increases, certain aspects of work may become less enjoyable or rewarding, leading to decreased job satisfaction and an increased risk of job turnover (Dobson & Hall, 2019). Elsewhere, automation may lead to the deskilling of work, as tasks that skilled workers previously performed are automated, leading to a decline in the skill level required for specific jobs (Brynjolfsson & McAfee, 2014). This can lead to a decline in the prestige and status of specific jobs, which can, in turn, lead to a decline in job satisfaction and an increased risk of job turnover (Murnane & Levy, 1996).

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In the Challenging BANI World: Is Agile Leadership Enough?

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ABSTCART

In a world characterized by Brittle, Anxious, Non-linear, and Incomprehensible (BANI) dynamics, organizations are confronted with unprecedented challenges that demand innovative leadership approaches. This article explores the potential of Agile leadership as a strategic response to the complexities of the BANI world. Drawing on a comprehensive analysis of existing literature, empirical studies, and illuminating case studies, this research examines the interplay between Agile leadership principles and the unique characteristics of the BANI environment.

Furthermore, our findings indicate that the scalability and adaptability of Agile leadership vary contextually. Understanding the factors influencing this scalability and adaptability is essential for both large corporations and non-profit entities.

Resilience emerges as a central theme in the context of brittleness, emphasizing Agile leadership's role in enabling organizations to navigate constant change and uncertainty. Additionally, the relationship between Agile leadership and innovation merits deeper exploration, particularly in sectors where innovation is pivotal to success.

This research concludes by underscoring the imperative of bridging the gap between the theoretical underpinnings of Agile leadership and its practical implementation, offering a call for future research to provide practical guidance to organizations. The potential of interdisciplinary perspectives to enhance our understanding of Agile leadership is highlighted, emphasizing collaborations across various domains.

In summation, this research illuminates Agile leadership as a dynamic and versatile strategy capable of addressing the intricate challenges of the BANI world. The insights derived from this study provide valuable guidance to organizations seeking to enhance their adaptability, innovation, and resilience in a continuously evolving and uncertain environment.

Key Words: BANI World, Agile Leadership

INRODUCTION

When characterizing the current state of the modern world, it can be aptly termed as "marginal," signifying a world with limited guiding principles. Organizations face formidable obstacles in their business processes, compelling them to continuously reassess their strategies, methods, and approaches in pursuit of their objectives. Notably, in 2016, Jamais Cascio (2020), a prominent futurist and researcher at the Institute for the Future, introduced a novel concept that accurately reflects the contemporary landscape. This landscape is characterized by the impacts of the COVID-19 pandemic, political instabilities, resource scarcities, climatic upheavals, and ongoing geopolitical tensions. Cascio introduced the acronym BANI, which stands for "brittle, anxious, nonlinear, incomprehensible," representing a world devoid of a clear and structured framework.

In the BANI world, the role of leadership has taken on a new level of complexity (Nataliia & Olena, 2023). The traditional models of leadership, which were designed for more stable and predictable environments, are increasingly being challenged by the rapidly evolving dynamics of this BANI world (Ray, 2023). This prompts us to ask a fundamental question: Is agile leadership, with its emphasis on adaptability and flexibility, sufficient to navigate the challenges of the BANI world?

Agile leadership, a concept rooted in the principles of agility and responsiveness, has gained widespread attention and adoption in recent years. Organizations have recognized the need to be more agile to thrive in an environment where change is constant and disruption is the new norm (Harvey & Meuse, 2021). But does the agility of leadership, on its own, address the unique complexities and uncertainties that the BANI world presents?

This article aims to examine the compatibility of Agile leadership principles with the unique challenges posed by the BANI world. Moreover, it aims to explore the dynamic relationship between agile leadership and the BANI world by critically examining whether agile leadership principles are sufficient to successfully guide organizations through these turbulent waters. The core components of agile leadership and the complexities of the BANI world will be examined, analyzing where they intersect and where they may fall short.

REVIEW OF KEY CONCEPTS OF AGILE LEADERSHIP AND THE CHARACTERISTICS OF THE BANI WORLD

In this section, the fundamental concepts of Agile leadership will be examined and the unique characteristics of the BANI world will be explored. To understand the context of the analysis, it is essential to grasp the key elements that underpin Agile leadership and the challenges posed by the BANI environment.

Agile Leadership: A Framework for Adaptability

In the scholarly literature, a universally accepted definition of agile leadership and its distinguishing features remains elusive. Leadership scholars employ a variety of terminologies to allude to agile leadership. Terms like 'leadership agility' and 'leadership proficiency' are occasionally used within leadership research to delineate the concept of agile leadership. Joiner and Joseph (2007a), noted for their significant contributions to this field, define agile leadership as the capacity of a leader to make rational and effective decisions within a complex, volatile, and rapidly changing environment. According to Greineder and Leicht (2020), Agile Leadership embodies a cognitive framework and disposition that guides agile teams through diverse leadership practices and processes.

In addition to these definitions, Prasongko and Adianto (2019) propose a model where agile leadership is characterized by rapid decision-making, sensitivity, risk-taking, and crisis management. Within this model, agile leaders are expected to provide solutions for navigating change, crises, and pressures, all while facilitating the organization's adaptability to shifts in its environment. Consequently, the accelerating pace of market dynamics underscores the necessity for self-organizing teams and agile leadership (Lipman-Blumen, 2020). The concept of self-organizing teams implies that leaders should offer guidance and create a framework for what can be achieved, as opposed to issuing specific directives on what must be done (Spreitzer et al., 1999). Leaders who adopt these flexible and agile practices transform into agile leaders, setting the course and fostering a culture of continuous feedback, adaptation, and collaboration.

Agile leadership has gained prominence as a dynamic framework that emphasizes adaptability, responsiveness, and collaboration (Meyer, 2016). Drawing inspiration from Agile methodologies in software development, this leadership approach seeks to address the rapid changes and uncertainties prevalent in the BANI world (Ray, 2023). Key components of Agile leadership include (Lemay, 2019):

- ✓ **Iterative Processes:** Agile leaders favor iterative and incremental approaches to problem-solving and decision-making, allowing for flexibility in adapting to evolving circumstances.
- ✓ **Cross-Functional Teams:** Collaboration and multidisciplinary teams are central to Agile leadership, with an emphasis on diversity of skills and perspectives.
- ✓ **Customer-Centricity:** Agile leadership places the customer at the core, aligning strategies and actions with customer needs and feedback.
- ✓ **Continuous Learning:** A commitment to continuous learning and improvement is a hallmark of Agile leadership, encouraging experimentation and adaptation.

The BANI World: Characteristics and Challenges

The BANI world, with its inherent characteristics of Brittle, Anxious, Non-linear, and Incomprehensible dynamics, poses a unique set of challenges to organizations (GRZEŚ, 2023). Understanding these characteristics is crucial to assessing the applicability of Agile leadership (Sergiy et al., 2023). The key features of the BANI world include (Synergy Strategies, 2023);

- ✓ **Brittle Nature:** The fragility of systems and processes in the BANI world, where even minor disruptions can lead to significant consequences (Bushuyev et al., 2023). Coping with an interconnected world implies that vulnerabilities once constrained to specific regions and communities can now create a far-reaching impact, akin to ripples in water. This fragility has the potential to influence enterprises, potentially resulting in bankruptcy at the micro-level. At the macro level, it can pose a threat to the socio-economic and political stability of a nation. On the meso level, it has the capacity to disrupt social, economic, and political agreements among groups of countries. Finally, at the mega-level, it has the potential to precipitate a global socio-economic and political crisis, affecting the entire world (Cascio, 2020).
- ✓ **Anxiety and Uncertainty:** A prevailing sense of anxiety and uncertainty characterizes the BANI world, making it difficult to predict and plan for the future. It signifies ambiguity, emphasizing the existence of multiple interpretations, perspectives, and uncertainties within the business environment. Ambiguity

denotes the potential existence of conflicting information or signals, thus complicating the process of discerning the most appropriate course of action. (Bushuyev et al., 2023).

✓ **Non-Linear Dynamics:** The BANI environment is characterized by non-linear, often unpredictable, patterns of change, challenging traditional cause-and-effect models (Bushuyev et al., 2023). In a non-linear environment, even a minor decision can yield profound consequences. Extensive efforts may not necessarily yield substantial results, as causality has become fragmented or unevenly distributed (Cascio, 2020).

✓ **Incomprehensibility:** The complexity and lack of clarity in the BANI world make it challenging to fully comprehend and navigate (Bushuyev et al., 2023). Our conceptual frameworks and ideas are subject to continuous evolution. The pace of change is rapid, necessitating swift responses to dynamic situations (Cascio, 2020).

The following sections will explore how Agile leadership aligns with these unique BANI characteristics and whether it offers a sufficient framework to thrive in this complex environment.

Agile Leadership in the BANI World: Bridging the Gap

The amalgamation of Agile leadership and the BANI world presents a unique juxtaposition that has garnered the attention of researchers and practitioners alike. Here the interplay between the core principles of Agile leadership and distinct features of the BANI environment will be explored (Sharma et al., 2022).

Bridging Brittle Nature with Adaptability: The brittleness of the BANI world, characterized by its vulnerability to minor disruptions, underscores the importance of adaptability. Agile leadership's iterative processes align well with the need to quickly respond to unexpected challenges. By allowing for continuous adjustments, Agile leaders can enhance an organization's resilience in the face of brittleness (Hayward, 2021).

Addressing Anxiety and Uncertainty through Collaboration: Agile leadership's emphasis on cross-functional teams and collaboration becomes particularly relevant in the face of pervasive anxiety and uncertainty in the BANI world (Chawla, 2023). These teams, with their diverse skills and perspectives, are better equipped to collectively confront challenges and make informed decisions amidst uncertainty (Guan et al., 2023).

Navigating Non-Linear Dynamics with Iteration: Non-linear dynamics in the BANI world challenge traditional linear thinking. Agile leadership's iterative problem-solving approach accommodates non-linearity, allowing for adjustments and experiments as conditions evolve. This iterative nature helps organizations embrace the non-linear aspects of the BANI environment (Trieflinger et al., 2023).

Making Sense of Incomprehensibility through Customer-Centricity: Agile leadership's customer-centric approach aligns well with the incomprehensibility of the BANI world. By continuously gathering and incorporating customer feedback, Agile leaders can adapt their strategies to remain relevant in a landscape where comprehending every detail is challenging (Meyer, 2016).

By examining the interplay between Agile leadership and the characteristics of the BANI world, gained a more comprehensive understanding of the potential synergies and tensions between these two paradigms.

DISCUSSION

In discussing the implications of Agile leadership in the context of the BANI world, it's essential to recognize the inherent limitations of Agile practices. While Agile leadership offers significant advantages in terms of adaptability, innovation, and resilience, it's crucial to acknowledge its boundaries. Large-scale organizations, for instance, may encounter difficulties when attempting to implement Agile principles across their complex structures and processes (Jyothi & Rao, 2011; Turk et al., 2002; Gregory et al., 2015).

Moreover, certain sectors, such as heavily regulated industries or those characterized by long product development cycles, may require additional strategies in conjunction with Agile leadership to effectively address the unique challenges of the BANI environment. These may include comprehensive risk management practices, strict compliance standards, or careful alignment with evolving regulatory requirements.

The interplay between organizational culture and Agile leadership is a critical consideration. The establishment of a culture that values adaptability, experimentation, and collaboration is foundational to the successful application of Agile principles. However, instilling such a culture is an intricate process, often necessitating a phased approach involving cultural change initiatives, training, and leadership development (Joiner, 2009).

CONCLUSION

In conclusion, our research underscores the significance of Agile leadership in the BANI world, but also highlights its inherent limitations. Agile leadership can undoubtedly serve as a dynamic and versatile strategy for enhancing an organization's adaptability, fostering innovation, and building resilience. However, its effectiveness may vary according to the organization's size, sector, and readiness to embrace an Agile-friendly culture.

To address the full spectrum of challenges presented by the BANI environment, organizations should consider complementary strategies and transformations. These might encompass risk management, regulatory compliance, innovation frameworks, or culture change initiatives. The integration of such strategies, in tandem with Agile leadership, can create a more comprehensive response to the multifaceted challenges of the BANI world.

As we gaze towards the future, it's imperative to recognize that the BANI world demands a holistic approach to leadership and adaptability. Interdisciplinary perspectives and cross-sector collaborations offer promising avenues for further exploration, shedding light on the intricate dynamics of leadership in this ever-evolving landscape.

Our research calls for organizations to remain agile not only in their leadership approaches but also in their willingness to adapt, innovate, and engage in continuous learning. In this way, they can thrive in a world marked by constant transformation and uncertainty, navigating the BANI challenges with a comprehensive and agile mindset.

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Business Intelligence Implementations With Enterprise Resource Planning Extension Proposal

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ABSTCART

The main purpose of this research is to examine in detail the system operation and success factors required for the most effective use of Business Intelligence (BI) within the company, as well as the importance of a properly implemented Enterprise Resource Planning (ERP) system. The correct implementation of BI is critical for companies to gain competitive advantage and improve decision-making processes. The main problematic of the research is to determine the system work required for the effective use of BI, success factors and especially how ERP is used correctly and effectively. In this context, the compatibility between BI and ERP and how these technologies should be implemented in a balanced manner stand out as an important element of the problematic. The critical role of a properly implemented ERP system in the success of BI is the main focus of this problematic. In other words, the main problem or challenge that the research focuses on is how important the correct use of the ERP system is for the effective use of BI and how this interaction can be optimised. Since an appropriate and effective research strategy is required to examine the system operation and success factors necessary for the effective implementation of BI and ERP within an organisation, document analysis was chosen for this study. Document analysis is a suitable option for the purpose of this study as it includes steps such as literature review, analysis of existing documents and evaluation of expert opinions. The detailed evaluation of existing scientific studies and publications through literature review will provide an in-depth understanding of the information previously obtained on the subject. At the same time, the analysis of existing documents will provide an opportunity to determine the current status of BI and ERP implementations within the company and to understand current practices. The results of the research are expected to reveal that a properly implemented ERP system plays a critical role in the effective use of BI and will contribute significantly to the literature in this field.

Key Words: Business Intelligence, Enterprise Resources Planning, ERP, BI

INRODUCTION

Business Intelligence (BI), a concept first introduced in 1958 by Hans Peter Luhn, a German computer scientist working for IBM, revolves around the use of automated systems to distribute information within an organization (Yücel, 2023). In Luhn's foundational white paper, he defines intelligence as the capacity to understand the connections between facts, thereby guiding actions towards achieving specific goals. This early concept has evolved into sophisticated, computer-based systems, exemplified by the development of SAP BI, which began its development journey in 1997.

The transformational nature of BI, as outlined by the Gartner Group, is a process that converts raw data into information and subsequently transforms this information into actionable knowledge (Karındaş, 2019). This transformation is essential in the journey from data collection to knowledge application. Vriens & Philips, in 1999, emphasized BI as a critical process in the acquisition and processing of information to support and align with an organization's strategic objectives. Gupta (2014) extends this view by highlighting that BI encompasses various applications that aid in the analysis and reporting of corporate data, thereby enhancing decision-making and leading to more effective management of the company.

BI tools are instrumental for decision-makers in improving the decision-making process, reducing costs, and identifying new business opportunities. To effectively achieve these goals, decision-makers require access to reliable information derived from the vast amounts of raw data accumulated by the company (Sucu, 2020). The primary aim here is to transform these extensive data sets into valuable, actionable information. This transformation is often facilitated by common transactional software, which automates routine processes, such as invoice generation, and integrates them into the system, as discussed by Fries in 2006.

Historically, the compilation and processing of large datasets for reporting purposes were manually executed, often requiring considerable time and effort. This process has been significantly streamlined in modern times

with the advent of Enterprise Resource Planning (ERP) solutions equipped with Business Intelligence modules (Çelebi& Bulut, 2016). These advanced modules enable the generation of dynamic reports, offering detailed and specific information to end-users on demand, marking a significant shift from traditional data handling and reporting methods.

LITERATURE REVIEW

Rouhani and Mehri (2016) investigated how BI readiness is related to ERP implementation advantages. Based on seven ERP implementation advantages and four BI readiness criteria identified as a result of the literature review, the data obtained with the participation of 54 enterprises were analysed with Pearson correlation test. The results showed that ERP implementation advantages such as 'decision-making power', 'increased interaction with customers', 'improved decision-making process', 'increased flexibility in knowledge production', 'increased IT infrastructure capabilities', 'integrated information across the enterprise' and 'improved information flow between departments' have a positive impact on BI readiness.

Aldossari and Mokhtar (2020) examined a model for adopting ERP and BI among small and medium enterprises (SMEs) in Saudi Arabia. The focus of the study was to focus on key issues related to the intention to use ERPBI. The study is based on a qualitative research with the participation of 30 experts. The findings suggest that factors such as system quality, service quality, information quality, change management, effective communication, training, a clear vision and planning, competitive pressure and the role of government should be considered in order to effectively promote the ERPBI model.

Taşkın et al. (2022) examined the relationships between business strategy, IT strategy, strategic alignment of these strategies, flexibility and business performance. The study treats alignment as a matching approach. A survey was conducted to collect data from participants from service and manufacturing industries in North America. Partial Least Squares (PLS) method, a Structural Equation Modelling (SEM) based statistical tool, was used to analyse the data. The results of the study show that alignment has a significant and positive impact on performance. Alignment mediates the relationship between ERP's strategic flexibility and business performance. For ES to contribute to business value or performance, ES strategies should be aligned with business strategies. The practitioner-oriented version of this study and its methods can be used to continuously assess the realised business strategies of organisations, especially when there is a change in the business environment.

Chou et al. (2005) conducted a study on the integration of BI and ERP. The results of the study show that ERP systems integrate all aspects of business, making data available in real time, and BI tools have the ability to access this data directly from ERP modules.

In the study by Wu and Chen (2020), an implementation of the open source Odoo 9 Community Edition ERP system, which stands out as a cost-effective solution for SMEs, is examined. The study presents proposed business processes using Odoo ERP system, a scenario example, and management dashboards and reports for a manufacturing SME. Implementation results show that the business scenario of Odoo ERP system can be successfully implemented. It is emphasised that in order to increase the advantages of Odoo, issues such as localisation of application modules and training of professional consultants with practical skills for Odoo ERP system should be considered.

Antoniadis et al. (2015) analysed the process of adoption and implementation of ERP systems by small and medium-sized enterprises (SMEs) in the region of West Macedonia. In particular, the importance of information and knowledge management was emphasised, but it was noted that most SMEs do not sufficiently understand the dynamics of Business Intelligence in the process of using ERP systems and market-oriented subsystems (e.g. Customer Relationship Management - CRM). The study focussed on the critical factors influencing SMEs in the process of adopting ERP systems and examined the business intelligence potential of ERP in times of crisis. The results show that SMEs understand the advantages of using these systems, but do not fully utilise the business intelligence capabilities of ERP systems.

Koupaei et al. (2016) analysed the application of BI in ERP systems and its added value to flexible manufacturing systems (FMS). The review presents how the use of BI in ERP systems of companies using flexible manufacturing systems affects the interaction between business processes, technology and environment. A comprehensive review of the literature assessed the impact of BI systems at four levels in the model proposed by Tenhiala et al. Based on cross-sectional data on 151 manufacturing plants, this model shows that ERP is important for FMS. The results of the study suggest that the question " How can we use the

potential data and intelligence of BI in ERP systems for the effective flexible manufacturing systems?" is approached with four hypotheses and the results of all of these hypotheses are confirmed.

Eren (2016), in his study aiming to determine the critical success factors in ERP applications in the Turkish textile sector, started with a literature review and identified critical success factors under three main headings: technological, individual and organisational factors. In order to understand whether these factors exist in real life or not, he applied questionnaires by sampling from TOBB Industry database. Analyses based on the survey results showed that individual factors are related to organisational factors and that business managers should take this relationship into consideration. It is also concluded that technological factors are more related to organisational factors and enterprises should pay attention to the acquisition of advanced manufacturing technology.

Bayraktar and Efe (2016) indicates a study, ERP systems are, first, IT projects and the classic reflects its characteristics. even so, when the targeted integration is taken into consideration, common IT systems are much more complicated than ordinary IT systems, as they're aimed at the way the entire association does business. It also carries rudiments beyond that. The biggest component in the success of ERP accomplishment in an association is the strong, ongoing support of top operation. Other important factors include business It's the redesign of processes and the harmony between the system and the way of doing business. The operation of change that these chapters reveal is extremely vital.

Çapa and Karakuş (2022) in a study examined the effect of ERP systems on the supply chain and it was determined that they had considerable goods. This system, which provides a reduction in labour and costs in businesses, an increase in traceability, profitability and effectiveness, also has environmental benefactions similar as effective energy use and reducing waste. In this environment, business directors should work on the transition to ERP systems, which is one of the introductory ways in digital transformation. It should be known that the criteria of education quality, design operation, design team, process enhancement and compliance with information technologies, which are important for the success of the system, are also important factors for perfecting the supply chain performance and the necessary preparations should be made consequently.

Ustasüleyman and Perçin (2015) described the structural model about the critical success factors on ERP implementation success. In the model proposed in this study, it was determined that project management and internal audit activities have a positive effect on the success of ERP applications. Ustasüleyman and Perçin (2015) could not establish a significant relationship between change management and the success of ERP applications.

BI ARCHITECTUre

Data Warehouse

The term "business data warehouse" was first introduced in the late 1980s by IBM researchers Barry Devlin and Paul Murphy. Bill Inmon, often referred to as the father of data warehousing, describes a data warehouse as a subject-oriented, integrated, non-volatile, and time-variant collection of data that supports management decisions (Khan, 2012).

In the context of Business Intelligence (BI) applications, which often operate on large and complex databases, several challenges can arise. Directly accessing data from operational databases can slow down the performance of the database management system (DBMS) and may lead to errors due to missing or incorrectly formatted values (Çoruh, 2017; Mollaoğulları, 2020). To address these issues, BI systems typically rely on a separate database, which involves extracting relevant data from the operational database. This process is known as data warehousing and primarily consists of three steps: extraction, transformation, and loading (ETL).

In the extraction phase, data is collected from various operational databases. This data is defined and structured according to specific models, with metadata providing details about the data's source, format, and other relevant aspects. For example, a sales performance model may include sales data in integer format collected by salesclerks in a particular region. Utilizing indexes can enhance the efficiency of this extraction process (Dinçer&Dinçer, 2011; Akçakanat, 2009).

The transformation phase involves ensuring data consistency across the data warehouse. This step includes converting data into the appropriate format and addressing any missing values. Some operational data, such as detailed transaction records, may be omitted to improve query response times.

The final step, loading, involves transferring the processed data into the data warehouse using the DBMS. The ETL process is a critical component of BI, as it ensures the link between the original data and the information provided to users. After the ETL process is complete, users can begin to derive insights and intelligence from the data (Çelebi&Çakmak, 2019).

In the field of data management, specialists who prepare data warehouses are considered experts. Their focus is on creating and refining data warehouses. However, from a business perspective, the creation of a data warehouse is just the initial step. Business analysts and departments such as marketing, sales, or finance often work with data marts, smaller subsets of the data warehouse that contain specific information relevant to their business area (Köklü, 2018). For instance, a marketing analyst might work with a data mart that includes sales data for a specific market segment.

Figure 1 conceptually demonstrates the linkage between operational databases, BI tools, and the data warehouse DBMS. It also highlights the role of metadata in the data warehousing process, including information about the data's origin, format, and time of creation (Gupta, 2014).
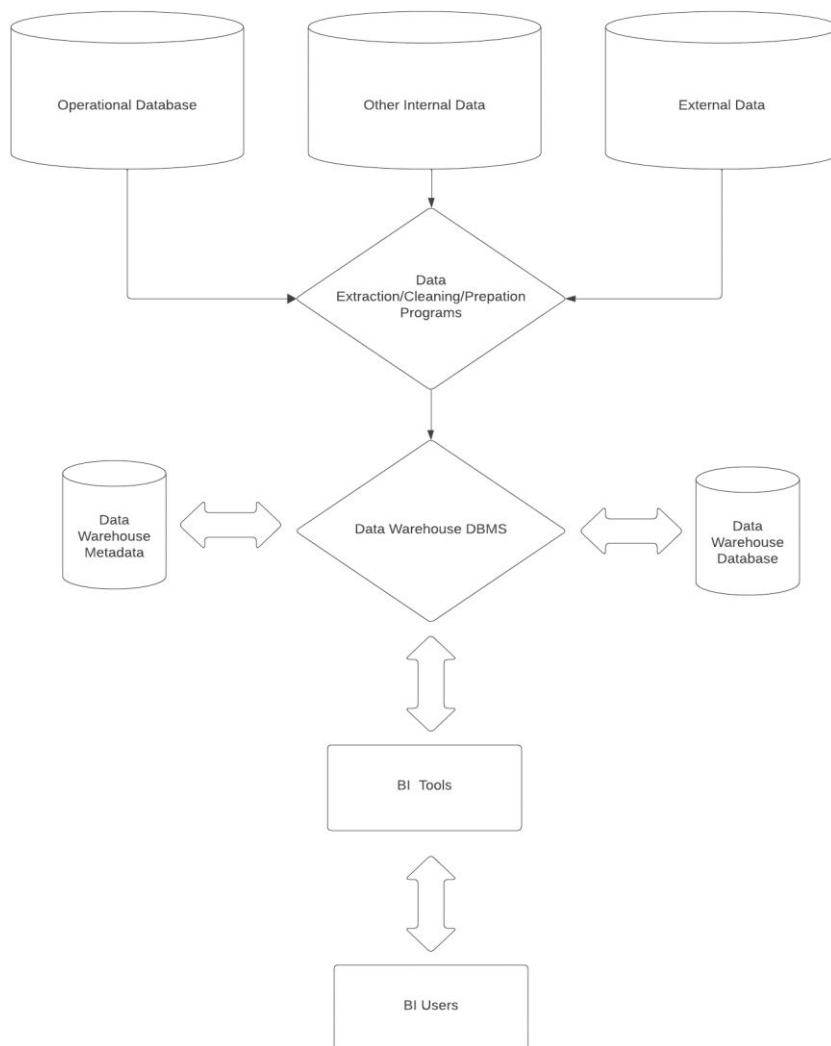

Figure 1. Showing components of a Data Warehouse (Gupta, 2014).

Components of the Data Warehouse (DW) and Business Intelligence Architecture

The considerable investment by companies in Data Warehousing and Business Intelligence (DW/BI) systems, often amounting to millions of dollars, contrasts sharply with the relatively scant academic research in this area. This discrepancy was noted by Ariyachandra and Watson in 2010. The significance of IT architecture selection for the effectiveness of DW/BI solutions was underscored in studies by Jarke and Vassiliou in 1997.

Further research by Ariyachandra and Watson in 2005, Sen and Sinha in 2005 and 2007, and Simoes in 2010, has identified seven distinct architectural types in the realm of DW/BI. These include Independent Data Marts (DMs), Data Mart Bus Architecture, Enterprise Data Warehousing (DW), DW incorporating Operational Data

Stores (ODS), Hub and Spoke architecture, Federated, and Distributed DW Architectures. Each of these architectures comprises unique components that, when integrated, form the complete system.

The focus of this discussion is to explore how each component within these architectures can impact Information Quality (IQ) in a DW/BI environment, either enhancing or limiting the IQ accessible to end-users. The study considers nine critical components of DW/BI architecture:

Transactional System (TS): These are either legacy systems or current transactional systems that perform daily operations within an organization. They act as a primary data source for the DW/BI environment. Examples include Enterprise Resource Planning Systems and Online Transaction Processing (OLTP) systems, as discussed in studies by Simoes (2010) and Inmon (2005). This analysis aims to understand the role of each component and its influence on the overall efficacy and quality of information in the DW/BI framework.
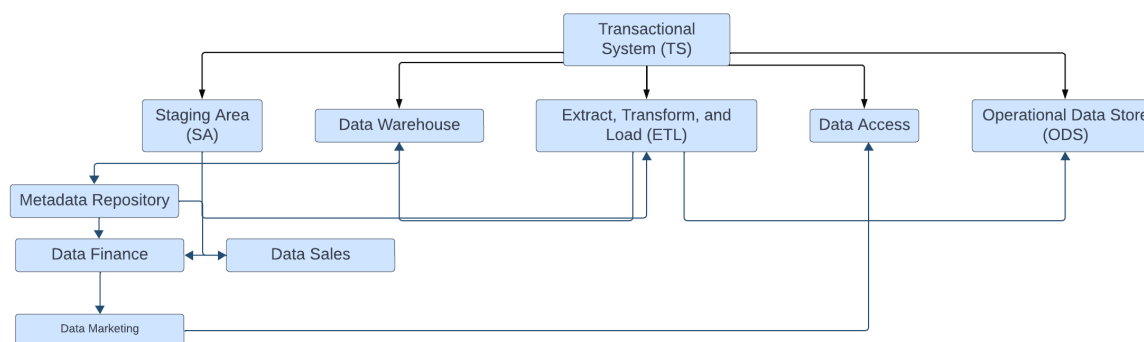

Figure 2. General overview of the nine components of DW/BI architecture.

In the context of Data Warehousing and Business Intelligence (DW/BI), several crucial components form the backbone of these systems, each serving a specific function and contributing to the overall effectiveness and efficiency of data management. These components are as follows:

Staging Area (SA): This is either a database or a storage space that acts as a bridge between Transactional Systems (TS) and other elements like the Data Warehouse (DW), Operational Data Store (ODS), or Data Marts (DM). The existence and structure of the SA are dictated by two primary objectives: firstly, to transfer data from TS to the final destination as swiftly as possible, and secondly, to enable efficient data extraction and recovery processes, minimizing the need to restart these processes. This approach is essential for maintaining data flow efficiency (Simoes, 2010; Inmon, 2005).

Metadata Repository (MR): The MR is a critical component that informs users about how to interpret data, its origin, security levels, and quality metrics, such as access frequency. The repository can either be distributed locally or centralized alongside the DW. Its configuration plays a key role in ensuring data is comprehensible and secure (Inmon, 2005; Kimball & Ross, 2002).

Extract, Transform, and Load (ETL): ETL processes are central to DW/BI systems. They involve extracting data from TS and processing it for integration into other components like DW, DM, ODS, or MR. This process includes data transformation and integration, ensuring that the information is in the correct format and structure for loading into the respective storage or analysis component.

Data Mart (DM): A DM is a specialized database that stores and manages data relevant to specific departmental areas, such as Marketing, Sales, HR, or Finance. Typically, DMs contain aggregated data based on dimensional modeling. In certain architectures, like bus architectures, DMs can integrate data through conformed dimensions, thereby serving as a component of the broader DW system (Kimball & Ross, 2002; Silvers, 2008).

Operational Data Store (ODS): The ODS is designed to provide immediate access to operational data extracted from TSs. Its main purpose is to facilitate the generation of management reports, offering real-time data analysis capabilities. This component is crucial for operational decision-making and report generation (Silvers, 2008; Sen & Sinha, 2005; Kimball & Ross, 2002).

These components collectively constitute the infrastructure of DW/BI systems, each playing a distinct and vital role in the overall data management and analysis process.

Table 1. Information quality dimensions in DW/BI environments (Samuel and Edmir, 2014).

Dimensions	Definition
Data Sources	The origins of data, including databases, spreadsheets, and external systems feeding into DW/BI.
Data Integration	The process of combining data from various sources to provide a unified view in the data warehouse.
Data Warehouse	A centralized repository that stores historical and current data, optimized for analysis and reporting.
Data Marts	Subsets of a data warehouse designed for specific business lines or departments.
ETL Processes	Extract, Transform, Load processes responsible for data extraction, transformation, and loading into the data warehouse.
OLAP Cubes	Online Analytical Processing structures for multidimensional analysis of data.
Reports and Dashboards	Visualization tools presenting data insights to end-users.
Metadata	Data about data, providing information on the structure, meaning, and usage of data.
Security and Access Control	Measures and protocols to ensure data security and control access to sensitive information.

In the architecture of Data Warehousing and Business Intelligence (DW/BI) systems, two additional components play a pivotal role in the functionality and success of these systems:

Data Access (DA): This component represents the final layer where data exploration and analysis occur. It primarily utilizes Online Analytical Processing (OLAP) and dashboard tools to provide insights into various dimensions and facts. These tools are crucial for users to understand and interact with the data in meaningful ways, enabling them to glean valuable insights from the complex data stored within the data warehouse. This layer is essential for transforming data into actionable intelligence and is a key component of the user interface of DW/BI systems (Kimball and Ross, 2002).

Transportation Agent (TA): Transportation Agents are responsible for the scheduling and control of data transfers and managing the network infrastructure that facilitates communication among all components of the DW/BI system. Given that DW/BI systems often handle large volumes of data, the capacity and speed of TAs are critical factors that can influence the overall success of the architecture. Efficient TAs ensure that data flows smoothly between different parts of the system, which is essential for maintaining the responsiveness and reliability of the DW/BI system (Samuel and Edmir, 2014).

Both Data Access and Transportation Agent are integral to the efficient operation of DW/BI systems, each serving specific roles in data handling, analysis, and transfer within the broader architecture.

BI Platform Location

Enterprise Resource Planning (ERP) systems are widely recognized as the foundational data source in most Business Intelligence (BI) solutions. These transactional systems are instrumental in managing and documenting the core activities within an organization. Although ERP systems are not classified as BI components themselves, they are often the primary data source for BI projects.

The functionality enabled within an ERP system varies by organization, but typically includes critical data on sales, finance, operations, human resources, and inventory management. When it comes to extracting this information, organizations generally have two options: accessing it via an Application Programming Interface (API) or directly querying the ERP system's underlying database.

The API method is often preferred if the ERP system supports it. This approach reduces dependency on the stability of the database's table structure, which can be subject to change. Moreover, an API can provide a stable communication interface that evolves with the ERP system, whereas direct database access may be complicated by confidential table structures and require extensive research to identify relevant data.

However, using an API might pose challenges in terms of performance. ERP systems are typically optimized for transactional efficiency with smaller data volumes, whereas Extract, Transform, Load (ETL) processes can involve handling large quantities of data. Therefore, organizations must assess the performance capabilities of both methods to determine the most suitable approach for their needs.

Once the BI components are identified, the next step is deciding their deployment location. This decision should align with the organization's overall server policy and consider various factors, particularly for licensed solutions. These factors include the cost differences between on-premises and cloud-based licensing, which encompass both operating system and tool licenses. Security considerations, particularly regarding sensitive data, also play a crucial role in this decision-making process. Generally, organizations have three options:

On-Premise: This option involves hosting servers within the organization's own network. It requires the organization to manage the maintenance and upgrading of both the operating system and installed software.

Cloud-Based: Opting for cloud infrastructure means utilizing a shared network of virtual servers. In this model, the responsibility for maintenance and upgrades lies with the cloud service provider, allowing the organization to access the latest software versions without managing the upgrade process themselves.

Hybrid: A hybrid solution combines on-premise and cloud-based elements. Typically, organizations might choose to keep their databases on-premise due to stringent security policies, while deploying their BI front-end tools in the cloud, given that these tools do not store data and thus offer more flexibility in terms of deployment location. (Adapted from Nogues and Valladares, 2017)

ERP SYSTEM IMPLEMENTATION

Enterprise Resource Planning (ERP) systems are generally available as standardized packages designed by vendors. These systems are tailored for a broad range of industries, promoting the concept that they are built upon universally applicable best business practices. According to Sumner (2000), vendors advocate for the implementation of these systems without any code modifications, a process known as a 'vanilla implementation'. Research by Vidyaranya and Brady (2005) supports the view that 'vanilla' implementations, which avoid altering the core source code of the ERP systems, tend to have a higher success rate compared to customized implementations.

Customization of ERP systems, while sometimes necessary to meet specific business requirements, can introduce significant additional costs and extend implementation timelines (Bancroft et al, 1998; Brown and Vessey, 1999). Furthermore, these modifications often lack support in subsequent versions of the system. Studies, including those by Soh and Sia (2005) and Markus and Tanis (2000), indicate that most ERP implementations are not purely vanilla, as some level of customization is usually undertaken. Davenport et al. (2003) found that 47% of organizations had customized their ERP systems. However, limiting these modifications is critical for the success of both the ERP project and the overall business operations, as argued by Brehm et al. (2001). A notable example of the pitfalls of extensive customization is the failed implementation at Royal Melbourne Institute of Technology (RMIT), where the rejection of the system's best practices in favor of heavy customization led to a costly failure (Gray, 2003).

ERP systems are often adopted with the intent to replace legacy systems, but in practice, complete replacement is rare (Shang and Seddon, 2000). The reasons range from the ERP not offering specific functionalities, budget constraints, or plans to upgrade legacy systems in subsequent phases (Deloitte, 1999). This partial replacement necessitates the development of interfaces between the new ERP and existing legacy systems, adding complexity to the implementation process.

The broad functionality of ERP systems inherently makes them complex. Many organizations underestimate this complexity and the impact on their operations, leading to initial implementation challenges (Barker and Frolic, 2003). A lack of skilled resources and experience with large-scale projects can pose significant barriers, as observed by Calegero (2000). Themistocleous et al. (2001) reported that most ERP implementations tend to exceed budgets and timelines. Similarly, a Gartner Group survey involving 1,300 companies revealed that 32% of ERP projects ran overtime (Hunter, 1999). Furthermore, a Standish Group report highlighted that ERP implementations often take much longer than anticipated and fail to deliver the expected benefits (Krumbholz et al., 2000).

SUCCESS FACTORS FOR bI AND ERP IMPLEMENTATION

Critical Success Factors Associated with ERP Systems Implementation

In order to provide a company to help practitioners in their ERP system implementations, many critical success factors have been identified in the literature. These include:

✓ Strong support and commitment from senior management to the change process.

✓ Establishment of clear and effective communication channels.

✓ Involvement of a high-level executive sponsor for the project.

✓ Minimizing or avoiding system customization to suit standard practices.

✓ Inclusion of essential staff members in the project team.

✓ Adoption of a robust project methodology with defined milestones.

✓ Provision of thorough end-user training and continuous support.

✓ Creation of comprehensive and detailed requirements analysis reports.

✓ Embracing organizational cultural change and process reengineering.

Critical Success Factors Associated with BI Systems Implementation

The implementation and effective utilization of Business Intelligence (BI) systems, like other information systems, encounter various obstacles. While the importance of BI in both practical application and academic research is widely acknowledged, there's a notable scarcity of comprehensive studies focused on BI practices and, more specifically, on identifying the critical success factors for its implementation. This gap is observed in the works of Yeoh and Koronios (2010), Chenoweth et al. (2006), Sammon and Adam (2004), Srivastava and Chen (1999), Mukherjee and Souza (2003), and Arnott (2008). Although there are numerous practitioner-based reports offering insights and recommendations for successful BI implementation, academic literature on this subject remains somewhat limited, as highlighted in the studies by Farley (1998), Atre (2003), and Rowan (2003).

This lack of extensive academic research contrasts with the wealth of experiential knowledge and guidelines available from industry professionals. The need for more in-depth academic investigation into BI practices and success factors is evident, considering the critical role BI plays in modern business operations and decision-making processes.

Table 2 Business intelligence critical success factors (Hawking,2013)

BI Critical Success Factors	Description
Data Quality	Ensuring that data used for analysis and reporting is accurate, consistent, and reliable.
User Engagement	Active involvement and collaboration of end-users in the BI process to meet their needs.
Executive Sponsorship	Support and involvement of top-level executives in BI initiatives for organizational alignment.
Scalability	The ability of BI systems to handle growing data volumes and user demands effectively.
Training and Education	Providing users with the necessary skills and knowledge to leverage BI tools effectively.
Flexibility	Adaptability of BI systems to evolving business requirements and changing analytical needs.
Data Security	Implementing measures to protect sensitive data and ensure compliance with regulations.
Performance Management	Establishing key performance indicators (KPIs) and monitoring BI performance against goals.
Collaboration	Fostering a culture of collaboration and knowledge sharing within the organization.

In 2001, a study was conducted that examined both the factors influencing the implementation of Business Intelligence systems and the elements contributing to their success. This comprehensive research involved an analysis of existing literature, surveys conducted with participants at a data warehouse conference, and interviews with professionals skilled in data warehousing. Based on these diverse sources of information, the researchers developed a model to understand the success of data warehousing projects. This model visually represented how different factors are interconnected and how they collectively influence the successful implementation and overall effectiveness of these systems.

Management Support

Commitment from senior leadership is a universally acknowledged key factor for the success of Information Systems projects, including Business Intelligence initiatives. This concept is supported by various studies including those by Wixom and Watson (2001), Hwang and Hongjiang (2007), Watson et al. (2002), Sammon and Adam (2004), Chenoweth et al. (2006), Yeoh et al. (2006), Eckerson (2005), and Havenstein (2006). The backing of top management is crucial as it facilitates the smooth allocation of financial resources, human capital, and the efficient coordination of various internal resources essential for the deployment of a Business Intelligence system. An integral aspect of this support is the role of a high-level executive champion who is dedicated to overseeing the implementation, dedicating their time and effort to guide the project's progress. This individual should possess a realistic understanding of both the strengths and limitations of the Business Intelligence system. The likelihood of end-user acceptance of the system increases when it is visibly backed by the organization's upper management.

Champion

In the context of Business Intelligence (BI) initiatives, the role of 'champions' is crucial. These individuals are typically high-ranking employees within an organization, tasked with the vital role of fostering and endorsing BI adoption among their colleagues. Their responsibilities extend to facilitating access to necessary information, offering assistance, and providing political support to encourage staff engagement with BI initiatives. These champions are well-regarded by their peers and possess a comprehensive understanding of

both the necessity and practical application of BI strategies. Their active involvement in projects is often instrumental in mitigating resistance from users. Due to their close association with the project team and ongoing developments, champions are well-placed to comprehend the advantages and consequences of BI implementations. This perspective is supported by various studies and authors, including Wixom and Watson (2001), Hwang et al. (2004), Chenweth et al. (2006), Eckerson (2005), and Yeoh et al. (2006), who highlight the significance of champions in the successful deployment of Business Intelligence initiatives.

Resources

Having the right resources is a key factor in the success of Business Intelligence initiatives. Generally, these resources include essential elements like manpower, time, and financial investment. A lack of these resources can adversely affect the outcome of a Business Intelligence project. Such projects often demand considerable time, extensive manpower, and hence can be expensive, particularly as they frequently rely on external consultants for the necessary expertise and support. Therefore, ensuring that a project team is well-equipped with the necessary resources is crucial for meeting the set milestones and achieving the project's business goals, as observed in studies conducted around the early 2000s.

User Participation

The degree of involvement of end users in creating a Business Intelligence (BI) solution, particularly their engagement in the implementation's tasks and responsibilities, is a significant factor influencing its success. This perspective is supported by findings from Wixom and Watson (2001), Mukherjee and D'Souza (2003), and Yeoh et al. (2006). Active user participation is crucial for accurately capturing and conveying user requirements, especially in situations where system requirements are not initially well-defined, as suggested by Wixom and Watson (2001). Involving end users in the development process enhances their understanding and appreciation of the BI system, its potential, and its practical applications. This involvement is instrumental in managing user expectations, leading to higher levels of satisfaction with the BI solution, as observed by Yeoh et al. (2006).

The acceptance and adoption of the BI initiative by end users are vital for the success of the project. Resistance is often encountered when new systems that alter existing work practices are introduced. While Wixom and Watson (2001) did not explicitly mention effective change management as a key implementation factor, several other researchers have highlighted its importance (Adelman and Moss, 2002; Mukherjee and D'Souza, 2003; Williams and Williams, 2003; Gangadharan and Swami, 2004; Eckerson, 2005). A robust change management strategy is essential to mitigate end-user resistance and foster adoption of the BI system. Such a strategy should encompass clear communication about the business goals of the project and its implications for individuals. Furthermore, it's imperative to develop and provide adequate training to end users, equipping them with the necessary skills and knowledge to efficiently utilize the new BI solution, as noted by Foster et al. (2004).

Data and Information Accuracy and Integrity

For the effective implementation of a Business Intelligence (BI) system, the quality of data, especially from the originating systems, is essential. The main goal of a BI system is to consolidate various isolated data sources within an organization, facilitating advanced analysis to enhance decision-making processes. Often, issues related to data in back-end systems only become apparent when this data is integrated and analyzed within the BI system. It's important for management to engage in data governance and stewardship to enhance the data quality of these back-end systems. This is crucial because the reliability of the data sources significantly impacts the effectiveness of BI applications and influences the results of their design and adoption.

CRITICAL SUCCESS FACTORS IN TURKEY

Sönmeztürk's 2008 study highlights the critical role of top management support in the successful implementation of ERP and BI systems. It underscores that decisions made by the top management are pivotal in facilitating the integration of ERP and BI systems across all departments and business processes. This support from the highest level of management not only motivates the ERP project team and its users but also is instrumental in the triumphant completion of the ERP project.

The composition and competence of the ERP project team are crucial factors in determining the success of the project. Members of this team need to possess a comprehensive understanding of both the company's workflow and the ERP system. Their ability to grasp user needs and communicate effectively with the ERP provider is vital. Therefore, assembling a project team with the right mix of skills and knowledge is essential for a fruitful ERP implementation.

Inter-departmental collaboration emerges as another key element for success in both ERP and BI implementations. The integration of information flow and business processes across various departments can be effectively achieved through collaborative efforts between these departments.

Moreover, accurately identifying the requirements of each department is a critical success criterion. Misidentification of these requirements can lead to misguided goals and expectations, ultimately leading to the failure of ERP and BI implementations at the project's outset. Therefore, selecting the appropriate ERP and BI solutions based on correctly identified needs is a decisive step in an organization's transition to an ERP system.

CONCLUSION

Research indicates that several critical success factors recognized for ERP systems are also pertinent to Business Intelligence, particularly when BI is integrated as a part of an ERP system. Shared critical success factors between these systems include User Participation, Data Quality, Management Support, and Strategic Alignment.

The development of both BI and ERP systems is a complex process that fundamentally begins with the identification of an enterprise's business objectives and requirements. These objectives provide a framework for the enterprise's current and future knowledge needs. Studies emphasize that support from top management is one of the most vital factors for successful implementation. Such support is essential to ensure that employees comprehend the program thoroughly, facilitating the transmission of business requirements throughout all levels of the organization.

In the context of BI implementation as an extension of an ERP system, data quality emerges as a paramount success factor. The adage "Garbage in, Garbage out" often cited in analytics underscores the importance of data quality. The quality of the input data directly impacts the reliability of reporting and the decisions derived from these reports. Recognizing and addressing issues related to data quality is a significant concern in Business Intelligence.

Each factor plays a critical role in the overall success of Business Intelligence implementations. Additionally, the relevance of these critical success factors may change during the installation of business processes. The diversity in implementation approaches across different organizations adds complexity to applying these critical success factors effectively in Business Intelligence.

The important conclusions and recommendations reached as a result of the study are as follows

1.Top Management Support:

✓ Recommendation: Top management support is indispensable in the integration of business intelligence (BI) and enterprise resource planning (ERP) systems. Management support for these systems is critical to successful implementation. This support makes it easier for employees to fully understand the programme and communicate business requirements to all levels of the organisation.

2. User Involvement:

✓ Recommendation: User involvement is a critical success factor in both systems. The active participation of users in these systems is important for ease of use and functionality. It is recommended to involve users in the system development process through training programmes and user feedback mechanisms.

3. Data Quality:

✓ Recommendation: The "garbage in, garbage out" principle emphasises the importance of data quality in analysis. As an extension of ERP systems as part of BI applications, data quality is a decisive success factor. Identifying and resolving data quality issues directly affects reliable reporting and the decisions derived from these reports.

4. Strategic Alignment:

✓ Recommendation: Strategic alignment is an important success factor in both systems. Business intelligence and enterprise resource planning require business processes to be integrated in accordance with strategic objectives. A coherent strategy ensures that the systems are effectively integrated and contributes to the overall success of the organisation.

5. Awareness of Data Quality:

✓ Recommendation: Emphasising the principle "garbage in, garbage out" can increase awareness of data quality. Users and managers should understand the importance of feeding the system with reliable and accurate data. Organising training programmes on data quality and establishing continuous monitoring mechanisms can reinforce this awareness.

6. Various Implementation Approaches:

✓ Recommendation: The diversity of implementation approaches in different organisations can make it difficult to effectively apply the success factors of BI implementations. In this context, it is important to evaluate industry- and organisation-specific applications and to develop solutions that meet specific requirements.

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