

A Quintuple Helix Wellbeing Framework for Wellbeing Improvement

¹Wong Pit Yin, ^{1*}Tan Owee Kowang, ²Ong Choon Hee, ¹Goh Chin Fei, ³Lim Kim Yew

¹Faculty of Management, Universiti Teknologi Malaysia, Johor, Malaysia, ²Azman Hashim International Business School, Universiti Teknologi Malaysia, Johor, Malaysia, ³Faculty of Business & Communication, INTI International University, Nilai, Malaysia

Corresponding Author Email: oktan@utm.my

To Link this Article: <http://dx.doi.org/10.6007/IJAREMS/v14-i1/25024> DOI:10.6007/IJAREMS/v14-i1/25024

Published Online: 30 March 2025

Abstract

The ultimate aim of well-being improvement is to enhance the living standards of individuals through various dimensions, including wealth, health, social and civic engagement, education, knowledge and skills, and work and job quality. Achieving these well-being goals requires the active participation of all stakeholders within the well-being ecosystem, including individuals, the government or public sector, industry, and academia. However, empirical research on socio-economic well-being has primarily focused on the domains of "government" or "public" factors (e.g., factors that affect well-being) and "individual" factors (e.g., individual commitment, knowledge, skills, motivation, and performance). As a result, there appears to be an empirical gap in the existing literature. Specifically, there is a lack of rigorous research examining the roles played by industry and academia in socio-economic well-being improvement. This gap is particularly significant and merits investigation in the context of Malaysia's Bottom 40 (B40) income group. To address this gap, this paper adopts the Quintuple Helix Model to develop an interdisciplinary and transdisciplinary well-being theoretical framework. This framework is designed to analyse the interrelationships among stakeholders and to explore the roles played by each stakeholder in well-being improvement. The proposed Quintuple Helix-based B40 Well-Being Framework expands the traditional view of well-being improvement by exploring the dynamic interrelationships among the government, public, industry, and academia within the natural environment of the B40 society. This approach is especially important and worthy of investigation in the Malaysian B40 context.

Keywords: Social Economic Wellbeing, Quintuple Helix, Wellbeing Status, Job Performance, Work Related Factors, B40 Related Factors, Public Factors

Introduction

This paper adopts the Quintuple Helix Model to develop an interdisciplinary and transdisciplinary well-being theoretical framework. This framework is designed to analyse the

interrelationships among stakeholders and to explore the roles played by each stakeholder in well-being improvement.

Empirical findings share the common view that economic resiliency depends on socioeconomic well-being. Hence, one of the cores focuses of government policy is the development and protection of social well-being. Within the context of Malaysia, various strategies and improvement plans have been outlined in the MADANI Economy Plan to ensure the welfare of all levels of society is protected. The government's policy emphasizes a holistic approach to wellbeing, fostering a MADANI society by uplifting the population's dignity through spirituality, health, housing, social cohesion, and community empowerment.

The government of Malaysia classifies household income into three categories: Bottom 40 (B40), Middle 40 (M40), and Top 20 (T20). The Department of Statistics Malaysia (DOSM) defines household income as the total income of all household members. Based on this definition, households with incomes of less than RM4,850 per month fall under the B40 category. Elevating the socioeconomic well-being of the B40 group is one of the government's primary development focuses. Hence, the well-being status of individuals in the B40 category is viewed as a key outcome of the government's efforts to improve their socioeconomic performance.

Traditionally, the government plays a vital role in improving the well-being of civil society, including setting and implementing socioeconomic improvement policies and strategies, allocating budgets for well-being improvements in health, education, housing, and transportation, and enacting rules and regulations to promote economic well-being and equity across different socioeconomic classes. However, the current well-being ecosystem in Malaysia faces complex and multifaceted challenges, such as the socioeconomic impact of Covid-19, escalating commodity and food prices due to high inflation, an unemployment rate of 3.2% (as of November 2024), urban resilience, and urban sustainability. Addressing these challenges requires a wide spectrum of efforts and responses from various stakeholders (beyond the government) within the well-being ecosystem, including industry, civil society, and academia.

Prior Research on Wellbeing: An Empirical Gap

Social and economic well-being is one of the main research focuses within the social sciences and psychology domains. Empirical research on well-being can be categorized into four areas, as shown in Table 1. The first category involves research on the establishment of the concept of well-being for different population settings and the development of a set of attributes or dimensions to assess individual well-being status (Barsade and Gibson, 2007; Bakker et al., 2011; Warr and Nielsen, 2018; Atkinson et al., 2022).

Table 1

Categorization of Prior Research on Wellbeing

Category	Research area	Researchers
1	Research on the development of wellbeing concept and dimensions	Barsade and Gibson (2007); Bakker et. al. (2011); Warr and Nielsen (2018); Atkinson et. al. (2022)
2	Research on exploring and identifying factors that affects wellbeing from policy maker perspective	Dolan et. al. (2008); O'Connor et. al. (2016); Li, Pang and Wong (2018)
3	Researches that assessed the association between wellbeing status and performance including organization performance, individual performance, job satisfaction	Knight and Eisenkraft (2015); Dijkhuizen et. al. (2017); Warr and Nielsen (2018)
4	The mediating and moderating rule of third variables, including perceived job insecurity and employee affective commitment; knowledge and skill; motivation.	Yasir et. al. (2020); Bowling et al. (2015); Ryan et. al. (2000)

The second category of well-being research focuses on exploring and identifying factors or determinants of individual well-being (Dolan et al., 2008; O'Connor et al., 2016; Li, Pang, and Wong, 2018). The third category assesses the relationship between individual well-being and performance, including organizational performance, individual performance, and job satisfaction (Knight and Eisenkraft, 2015; Dijkhuizen et al., 2017; Warr and Nielsen, 2018). The fourth category consists of research studying the mediating and moderating roles of third variables in the relationship between well-being determinants (or factors) and performance. These third variables include perceived job insecurity and employee affective commitment (Yasir et al., 2020); knowledge and skills (Bowling et al., 2015); and motivation (Ryan et al., 2000).

The ultimate aim of well-being improvement is to enhance the living standards of individuals from the perspectives of wealth, health, social and civil engagement, education, knowledge and skills, and work and job quality (Bonanomi and Rosina, 2020; Vasiliki et al., 2020). Achieving these well-being goals requires the participation of all stakeholders within the well-being ecosystem, including individuals, the government or public sector, industry, and academia (Wong et al., 2024).

However, as shown in Table 1, empirical research on socio-economic well-being tends to focus primarily on the domains of "government" or "public" factors (i.e., factors that affect well-being) and "individual" factors (i.e., individual commitment, knowledge, skills, motivation, and performance). Consequently, as indicated in Table 1, there appears to be an empirical gap in the existing literature. There is a lack of rigorous research examining the roles played by industry and academia in socio-economic well-being improvement—roles that are important and merit investigation, particularly in the context of Malaysia's B40 group.

To address this gap, this paper aims to develop an interdisciplinary and transdisciplinary well-being theoretical framework that can be applied to analyze the interrelationships among

stakeholders and explore the roles played by each stakeholder in well-being improvement and sustainability. In line with this aim and to bridge the empirical gap in prior research on the roles of industry and academia in socio-economic well-being improvement, this paper adopts the Quintuple Helix Model. This model examines the connections between the government and other sectors of society, including individual civil citizens, industry, academia, and the societal environment.

The Helix Models

The helix model system is started with the triple helix model (Figure 1). Etzkowitz and Leydesdorff (2000) devised and defined the Triple Helix model to characterize the dynamism of university-industry-government relations. The triple helix model is an innovation system that is created by a network of relationships and interconnections between academia, industry, and government (Marques, Caraca and Diz, 2006). This relationship's dynamic and complexity result in a comprehensive network of collaboration and stay competitive due to change in climate of scientific and technological evolution.

The triple helix model has been further expanded to be as quadruple helix model. There are four pillars in the quadruple helix innovation theory: academics, industry, government, and the public. Academia and industry, in conjunction with technical innovation infrastructures, establish an integrated innovation ecosystem in which all forms of creativity can flourish. Governments, in turn, provide financial support as well as a regulatory framework for the definition and implementation of innovative initiatives. As of public, they play the role in demanding for innovating goods and services (Afonso et al., 2010).

The helix model has recently been evolved into the quintuple helix innovation model, which contextualizes the quadruple helix and triple helix innovation models as shown in Figure 1. The quintuple helix incorporates the perspective of environment settings into innovation systems. The environment, or natural environments, is the fifth sphere of the quintuple helix innovation model (Carayannis and Campbell, 2011). The quintuple helix innovation model emphasizes the need for a socioeconomic and ecological transformation in the twenty-first century. As a result, this model is environmentally conscious. The natural settings of society and the economy should also be considered as drivers of knowledge generation and innovation in the context of the quintuple helix innovation model (Carayannis et al., 2012).

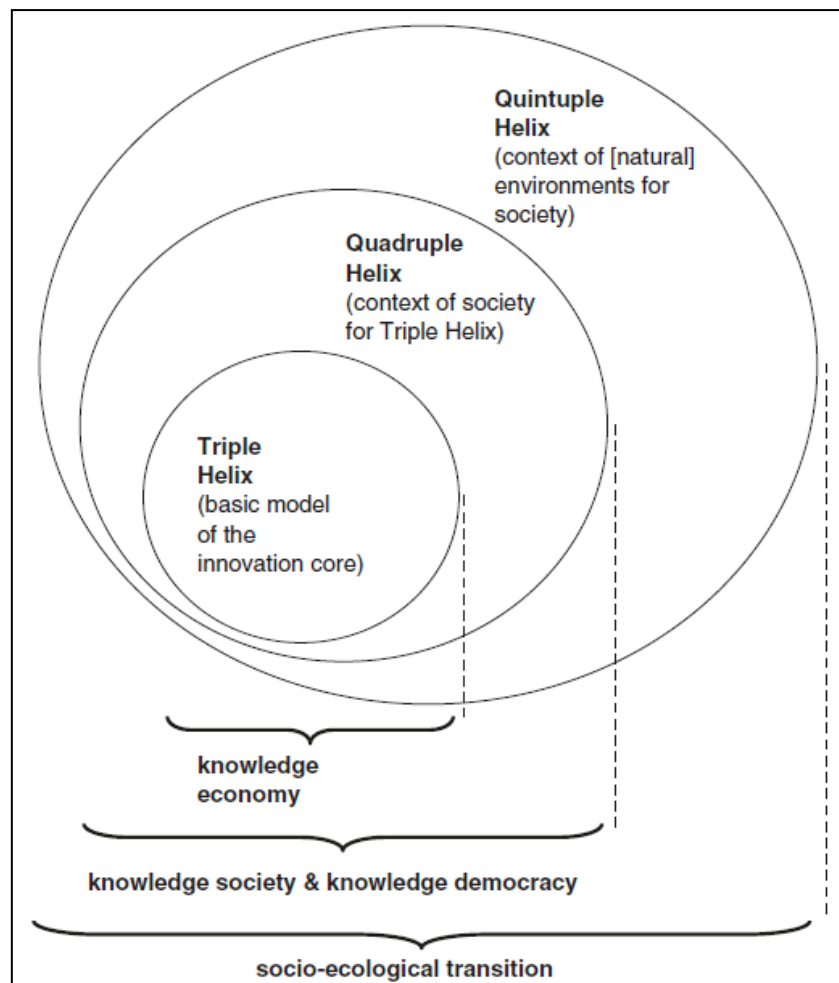


Figure 1 Quintuple Helix Model

The Quintuple Helix based B40 Wellbeing Framework

The application and adoption of Quintuple Helix model could go beyond innovation and entrepreneurship development. The Quintuple Helix model is also applied by prior scholars as instrument for government to promote facilitate rural and regional development (Bikse and Rivza, 2016), to address global warming (Carayannis et al., 2012); and for sustainability development (Elias and David, 2018). As such, this proposed research adopts the concept of Quintuple Helix and argue that within the context of B40 group in Malaysia, the objective for social economic wellbeing improvement is to improve the individual job performance of B40, in return, improve the living standard. Based on the concept of Quintuple Helix, this proposed research also argue that the performance of B40 should not purely depend on the effort from the government to improve individual wellbeing status. Additionally, it is also depending on the inter-relationship among the government, industry (the employer of B40 individual), the civil citizen (i.e. the B40 individual), the academic and nature environment of society (B40).

Figure 2 shown the theoretical framework for this proposed research. The conceptualization of this proposed research is based on the following:

- i. The empirical finding (Warr and Nielsen, 2018; Yasir et.al 2021) that suggested individual wellbeing status reflect the output of government's efforts on social economic improvement.
- ii. The empirical finding (Turban and Yan, 2016; Bakker et. al., 2019; Bayhan et al., 2020; Tisu et. al. 2020) on the association between wellbeing status and job performance.
- iii. The Quintuple Helix Model

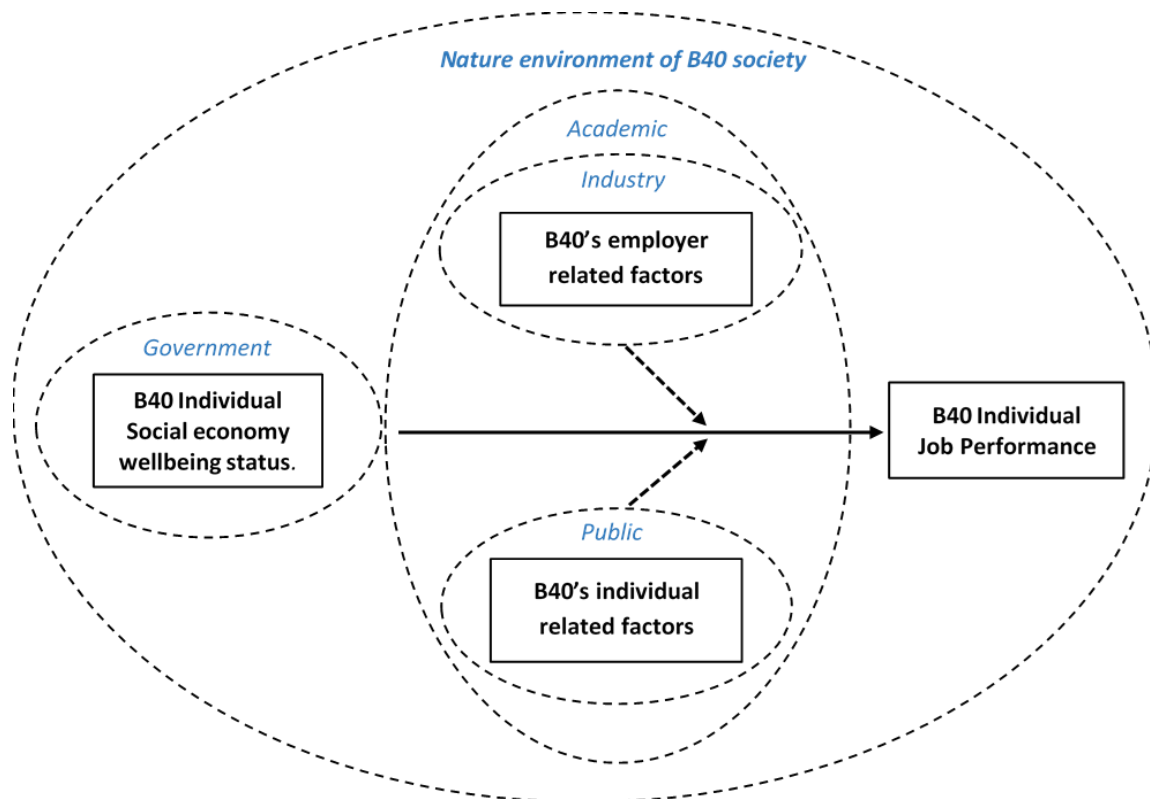


Figure 2. Quintuple Helix Wellbeing Framework

As refer to Figure 2, the Quintuple Helix based theoretical model confined within nature environment of B40 society. The framework views the output of government effort on B40 social economic wellbeing via B40's individual wellbeing status, and regards that the B40's individual wellbeing status affects the individual job performance. Based on the concept of Quintuple Helix Model, the framework argues that industry related factors, civil society or B40 individual related factors influence the relationship between wellbeing status and job performance. Additionally, the academic plays an important role to explore the interrelationship between government efforts (i.e. individual wellbeing status) and industry and public related factors.

B40 Individual Job Performance

Job performance is a critical aspect of any professional setting all over the world and it refers to the effectiveness and efficiency with which an individual carries out their assigned tasks and responsibilities in an organization. Employee's job performance refers to the expected valued output by the organization on an individual employee from a sequence of pre-defined activities carried out by the employee over a fixed period of time (Warr and Nielsen, 2018;

Yasir et.al 2021). Krekel et al. (2019)'s research explored the impact of individual wellbeing status on job performance in term of employee's skill level, engagement, work output, customer satisfaction, work quality and safety. From a broader perspective, empirical finding (Viswesvaran & Ones, 2000; Koopmans et al., 2011; Warr and Nielsen, 2018) on job performance that related to wellbeing viewed job performance as an expected organizational output of an individual behaviour, and job performance differentiates between sets of behaviour of two different individual. As such, job performance could be assessed by the behavioural based Campbell's Multifactor Model that assesses individual job performance based on eight behavioural dimensions, which are,

- Job-specific task proficiency
- Non-job-specific task proficiency
- Written and oral communications
- Demonstrating effort
- Maintaining personal discipline
- Facilitating team and peer performance
- Supervision
- Management and administration

B40 Individual Social Economy Wellbeing Status

Vasiliki et. al. (2020) reviewed the objective and subjective methodology for wellbeing assessment, and proposed a wellbeing status framework that consist of six dimensions, which are health, job opportunities, socioeconomic development, environment, safety and politics. In contrast, Michel (2021) proposed an individual's wellbeing status model from different perspective. The model viewed individual wellbeing status from physical, emotional, financial, social and personality attributes. However, Michel (2021) argued that the status of an individual's wellbeing affects the individual job quality and work performance.

The research work carried by the Organization for Economic Cooperation and Development (OECD) revealed that the national macro-economic measures or statistics, such as national wellbeing insect, Gross Domestic Product (GDP) is insufficient to reflect the actual idea of the individual wellbeing status, such as living conditions of the ordinary people within the nation. As such, OECD proposed a framework for measuring individual wellbeing status via 11 dimensions. The Quintuple Helix Wellbeing Framework views individual wellbeing status dimension for B40 population based on the OECD's 11 wellbeing status dimension that consist of measures for economic (income and wealth), social (social connection, civil engagement), living condition (housing, environment quality, safety, health), and diverse work-related experiences including work and job quality, knowledge and skills and work-life balance.

Industry Related Factors

Sherman (2014)'s research on workforce health and business performance explored the impart of work and workplace related factors on the relationship between workforce health and individual performance. The research viewed work and workplace related factors from the perspective of workplace culture, workplace practices and direct work-related factors. The same factors were adopted by Michael (2018) in the study of healthy health care workplace. The three workplace related factors proposed by Sherman (2014) and Michael

(2018) are adapted as the industry related factors for the Quintuple Helix Wellbeing Framework.

Workplace Culture

Workplace culture refers to the overall attribute or characters of the workplace (André, 2017). Flynn et. al. (2018) conducted a comprehensive review on workplace culture of health and suggested that workplace environment, policies, procedure and communication are the main attributes for workplace culture. Marlon et. al. (2021) view workplace culture as the employees' perception, belief as well as attitude toward the workplace policies and practices. A positive workplace culture promotes worker productivity and job performance.

Work Factors

Work factors refer to factors that directly associated with the nature and attribute of the works (Loeppke et. al., 2015). Sherman (2014)'s research assessed work related factors based on four dimensions, which are

- the importance of the work in the process or the role of the work in the organization
- working relationship with others
- Career development, and Work-life interactions

Additionally, research by Loeppke et. al (2015) also revealed that work factors are associated with higher employer's productivity and performance.

Workplace Practices

Workplace practices refer to the assessment scheme or method used to measure the workplace activities. Such as workplace performance measure, performance incentive, leave management (Sherman, 2014). Study by Naval et. al. suggested that high performance workplace practices have positive impact on both individual and organization level performance.

Individual Related Factors

Research by Fleurbaey and Leppanen (2021) explored social welfare from multiple perspectives. The research revealed that normalized individual capacities and capability in respond to the changes within social wellbeing ecosystem in favor the development of social wellbeing. From the perspective of urban development, the "individual capability" that revealed by Fleurbaey and Leppanen (2021) refer to the resilience of urbanization. Zeng et. al. (2022) conducted a literature review on concept and dimensions of urban resilience for urban sustainability. The study shared the same finding and view with Fleurbaey and Leppanen (2021) that adaptive capability, absorptive capability and transformative capability are the three major elements of urban resilience for urban sustainability. As such, The Quintuple Helix Wellbeing Framework adopts the three urban resilience concept and dimensions proposed by Zeng et. al. (2022) to view the impact of individual related factors on the relationship between B40 wellbeing status and individual job performance.

B40 Adaptive Capability

Adaptive capability refers to the ability of creating flexibility of making a small but conscious change in respond to changes within the wellbeing eco system driven by urbanization. Zeng

et. al. (2022) viewed that in respond to the urbanization changes that might alter the basic living structure, such as food, water, land, education, knowledge, skill, health, accommodation and social network, an individual need to make an adjustment to accommodate or respond to the basic living structure changes that driven by urbanization, and the capability of making such minor changes and adaptation is crucial to sustain the basic living structure (Sarkar et. al. 2021).

B40 Absorptive Capability

Absorptive capability refers to the ability to consciously take precautionary measures to deal with the predetermined shocks and stresses driven by urbanization (Wubneh. 2021). Prior scholars (Allen et. al, 2020; Huan and Wang, 2020; Xu and Zhang 2021, Andronie et. al. 2021) viewed changes related to legal and policy system, access to transportation, community support, govern credit and resource distribution might not affect the basic living structure of individual, however create stress and shocks to individual during the urbanization process. As such, an individual's capability to prepare, deal and recover from the stress and shocks are crucial for the urban resilience for urban sustainability from individual perspective.

B40 Transformative Capability

Addressing the roof cause of risk and vulnerability that driven by urbanization required a dramatic transformation on an individual. Hence, transformative capability refers to an individual's capability to take action or implement changes that will prevent, or at least reduce the causes, risk and vulnerability of urbanization, and to create urban resilience (Coaffee, 2013). Transformative capability involves upgrading of individual skill and knowledge (Zeng et. al., 2022), involvement in community cooperation, citizen engagement in policy process (Riberiro and Goncalves, 2014), self-organization and risk management (Wubneh, 2021). Empirical finding also suggested that transformative capability could reduce the roof cause and risk of poverty (Zeng et.al., 2022).

Conclusion

Based on the Quintuple Helix Theoretical Model, the empirical review on industry related factors and individual related factors, the The Quintuple Helix based B40 Wellbeing Framework (Figure 3) is developed based on the concept that B40 individual wellbeing status affects B40 individual job performance, additionally, industry related factors (workplace culture, work factors and workplace practices) and public related factors (B40 adaptive, absorptive and transformative capability) mediate the relationship between B40 individual wellbeing status and B40 individual job performance. The new Quintuple Helix based B40 Wellbeing Model expand the traditional view of wellbeing improvement, explore the interrelationship among government, public, industry and academic within the nature environment of B40 society. Which is important and worthy of investigation especially in the context of Malaysian B40 group.

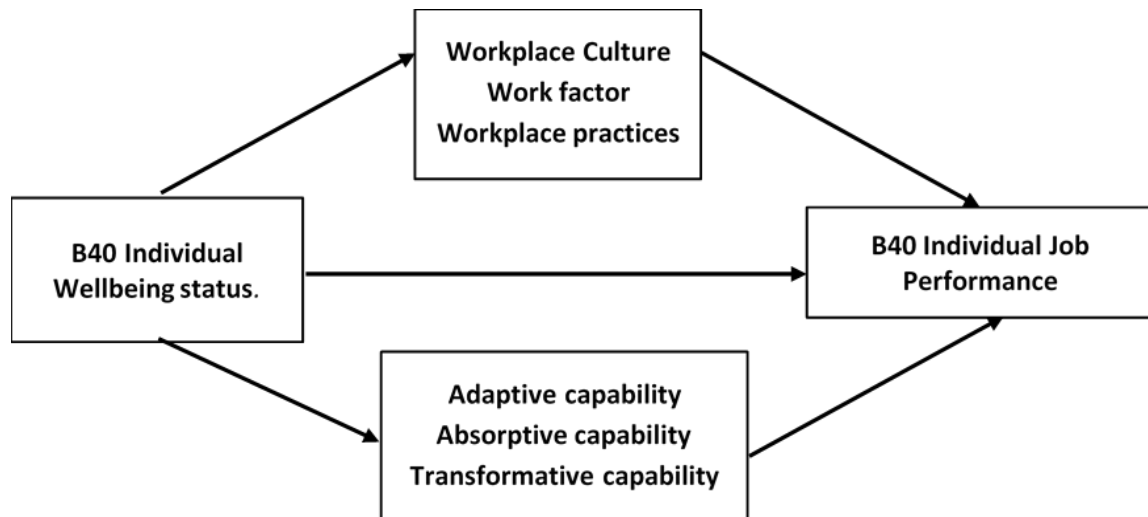


Figure 3: The Quintuple Helix based B40 Wellbeing Framework

Acknowledgements

This work was supported/funded by the Ministry of Higher Education under Fundamental Research Grant Scheme (FRGS/1/2022/SS10/UTM/02/10).

References

- Afonso, A., Schuknecht, L., & Tanzi, V. (2009). Public sector efficiency: evidence for new EU member states and emerging markets. *Applied Economics*, 42(17), 2147–2164. <https://doi.org/10.1080/00036840701765460>
- Allen, J., Burns, N., Garrett, L., Haass, R. N., Ikenberry, G. J., Mahbubani, K., ... & Walt, S. M. (2020). How the world will look after the coronavirus pandemic. *Foreign Policy*, 20(2020), 97-103.
- André, B., & Sjøvold, E. (2017). What characterizes the work culture at a hospital unit that successfully implements change – a correlation study. *BMC Health Services Research*, 17(1), 486. <https://doi.org/10.1186/s12913-017-2436-4>
- Andronie, M., Lăzăroiu, G., Iatagan, M., Hurloiu, I., & Dijmărescu, I. (2021). Sustainable cyber-physical production systems in big data-driven smart urban economy: a systematic literature review. *Sustainability*, 13(2), 751.
- Atkinson, S., Bagnall, A. M., Corcoran, R., South, J., & Curtis, S. (2020). Being well together: Individual subjective and community wellbeing. *Journal of Happiness Studies*, 21(5), 1903-1921.
- Bakker, A. B., Hetland, J., Olsen, O. K., & Espevik, R. (2019). Daily strengths use and employee well-being: The moderating role of personality. *Journal of Occupational and Organizational Psychology*, 92(1), pp. 144-168.
- Barsade, S. G., & Gibson, D. E. (2007). Why does affect matter in organizations? *Academy of management perspectives*, 21(1), 36-59.
- Bayhan Karapinar, P., Metin Camgoz, S., & Tayfur Ekmekci, O. (2020). Employee wellbeing, workaholism, work–family conflict and instrumental spousal support: A moderated mediation model. *Journal of Happiness Studies*, 21(7), 2451-2471.
- Bikse, V., & Rivza, B. (2016). The Helix Model system as a challenge and driver for rural and regional development. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 2(6), 24-34.

- Bonanomi, A., & Rosina, A. (2022). Employment status and well-being: a longitudinal study on young Italian people. *Social Indicators Research*, 161(2), 581-598. DOI: <https://doi.org/10.1007/s11205-020-02376-x>
- Bowling, N. A., Khazon, S., Meyer, R. D., & Burrus, C. J. (2015). Situational strength as a moderator of the relationship between job satisfaction and job performance: A meta-analytic examination. *Journal of Business and Psychology*, 30(1), 89–104. <https://doi.org/10.1007/s10869-013-9340-7>
- Carayannis, E. G., & Campbell, D. F. (2011). Open innovation diplomacy and a 21st century fractal research, education and innovation (FREIE) ecosystem: building on the quadruple and quintuple helix innovation concepts and the “mode 3” knowledge production system. *Journal of the Knowledge Economy*, 2, 327-372. <https://doi.org/10.1007/s13132-011-0058-3>
- Carayannis, E. G., Barth, T. D., & Campbell, D. F. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of innovation and entrepreneurship*, 1, 1-12. <https://doi.org/10.1186/2192-5372-1-2>
- Coaffee, J. (2013). From securitisation to integrated place making: Towards next generation urban resilience in planning practice. *Planning Practice and Research*, 28(3), 323– 339.
- Dijkhuizen, J., Veldhoven, M. V., & Schalk, R. (2017). Well-being, personal success and business performance among entrepreneurs: A two-wave study. *Journal of Happiness Studies*, 19, 2187–2204. <https://doi.org/10.1007/s10902-017-9914-6>
- Dolan, P., & Peasgood, T. (2008). Measuring well-being for public policy: preferences or experiences?. *The Journal of legal studies*, 37(S2), S5-S31.
- Elias, E., Schrader, T. S., Abatzoglou, J. T., James, D., Crimmins, M., Weiss, J., & Rango, A. (2018). County-level climate change information to support decision-making on working lands. *Climatic Change*, 148, 355-369.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and “Mode 2” to a Triple Helix of university–industry–government relations. *Research policy*, 29(2), 109-123.
- Fleurbaey, M., & Leppanen, C. (2021). Toward a theory of ecosystem well-being. *Journal of Bioeconomics*, 23(3), 257-295. <https://doi.org/10.1007/s10818-021-09315-x>
- Flynn, J. P., Gascon, G., Doyle, S., Matson Koffman, D. M., Saringer, C., Grossmeier, J., ... & Terry, P. (2018). Supporting a culture of health in the workplace: a review of evidence-based elements. *American Journal of Health Promotion*, 32(8), 1755-1788.
- Hosseini, S. H. (2023). The well-living paradigm: reimagining quality of life in our turbulent world. *Discover Global Society*, 1(1), 19. Doi: <https://doi.org/10.1007/s44282-023-00022-8>
- Huang, S., Hou, J., Sun, L., Dou, D., Liu, S., & Zhang, H. (2017). The effects of objective and subjective socioeconomic status on subjective well-being among rural-to-urban migrants in china: the moderating role of subjective social mobility. *Front. Psychol.* 8:819. doi: 10.3389/fpsyg.2017.00819
- Knight, A. P., & Eisenkraft, N. (2015). Positive is usually good, negative is not always bad: The effects of group affect on social integration and task performance. *Journal of Applied Psychology*, 100(4), 1214–1227. <https://doi.org/10.1037/apl0000006>
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., de Vet Henrica, C. W., & Van Der Beek, A. J. (2011). Conceptual frameworks of individual work performance: A systematic review. *Journal of occupational and environmental medicine*, 53(8), 856-866.

- Krekel, C., Ward, G., & De Neve, J. E. (2019). Employee well-being, productivity, and firm performance: Evidence and case studies. *Global happiness and wellbeing*, 99-140.
- Li, J., Pang, D., & Wong, C. (2018). The impact of social policy on mental health: A systematic review. *Journal of Public Health Policy*, 39(4), 478–491. <https://doi.org/10.1057/s41271-018-0145-8>
- Loeppke, R. R., Hohn, T., Baase, C., Bunn, W. B., Burton, W. N., Eisenberg, B. S., & Siuba, J. (2015). Integrating health and safety in the workplace: how closely aligning health and safety strategies can yield measurable benefits. *Journal of Occupational and Environmental Medicine*, 57(5), 585-597. DOI: 10.1097/JOM.0000000000000467
- Marques, J. P., Caraça, J. M., & Diz, H. (2006). How can university–industry–government interactions change the innovation scenario in Portugal?—the case of the University of Coimbra. *Technovation*, 26(4), 534-542. <https://doi.org/10.1016/j.technovation.2005.04.005>
- Marlon, M. (2021). Work life balance: A catalyst for effective teachers’ performance. *International Journal of Scientific Research in Education*, 14(4), 513-530.
- Michel, J. S., Rotch, M. A., Carson, J. E., Bowling, N. A., & Shifrin, N. V. (2021). Flattening the latent growth curve? Explaining within-person changes in employee well-being during the COVID-19 pandemic. *Occupational Health Science*, 5(3), 247-275.
- O’Connor, D. B., Thayer, J. F., & Vedhara, K. (2016). Stress and health: A review of psychobiological processes. *Annual Review of Psychology*, 67, 439–462. <https://doi.org/10.1146/annurev-psych-122414-033710>
- Organization For Economic Cooperation and Development Oecd. (2011). *How's life?: measuring well-being*. OECD publishing.
- Parkinson M. D. (2018). The Healthy Health Care Workplace: a Competitive Advantage. *Current cardiology reports*, 20(10), 98. <https://doi.org/10.1007/s11886-018-1042-3>
- Ribeiro, P. J. G., & Pena Jardim Gonçalves, L. A. (2019). Urban resilience: A conceptual framework. *Sustainable Cities and Society*, 50, 101625. <https://doi.org/10.1016/j.scs.2019.101625>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Sarkar, S., & Clegg, S. R. (2021). Resilience in a time of contagion: Lessons from small businesses during the COVID-19 pandemic. *Journal of Change Management*, 21(2), 242–267. <https://doi.org/10.1080/14697017.2021.1917495>
- Sherman, B. W., & Lynch, W. D. (2014). Connecting the dots: examining the link between workforce health and business performance. *The American journal of managed care*, 20(2), 115–120.
- Tisu, L., Lupşa, D., Vîrgă, D., & Rusu, A. (2020). Personality characteristics, job performance and mental health: the mediating role of work engagement. *Personality and Individual Differences*, 153, 109644.
- Turban, D. B., & Yan, W. (2016). Relationship of eudaimonia and hedonia with work outcomes. *Journal of Managerial Psychology*, 31(6), 1006-1020. <https://doi.org/10.1108/JMP-07-2015-0271>
- Viswesvaran, C., & Ones, D. S. (2000). Perspectives on models of job performance. *International Journal of Selection and Assessment*, 8(4), 216-226. <https://doi.org/10.1111/1468-2389.00151>

- Wubneh, M. (2021). Urban resilience and sustainability of the city of Gondar (Ethiopia) in the face of adverse historical changes. *Planning Perspectives*, 36(2), 363-391. <https://doi.org/10.1080/02665433.2020.1753104>
- Xu, L., & Zhang, Y. (2021). A quality function deployment–based resource allocation approach for elderly care service: Perspective of government procurement of public service. *International Social Work*, 64(6), 992-1008. doi:10.1177/0020872819884987
- Wang, H., & Wang, X. (2023). Sentiment analysis of tweets and government translations: Assessing China's post-COVID-19 landscape for signs of withering or booming. *Global Media and China*, 8(2), 213-233.
- Warr, P., & Nielsen, K. (2018). Wellbeing and work performance. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. Salt Lake City, 1-23.
- Wong, P. Y, Tan, O. K, Goh, C. F., Ong, C. H and Lim, K. Y. (2024), Prioritizing Actions for Improving the Social Economic Wellbeing in Malaysia Based on Quality Function Deployment Methods, *ASR Chiang Mai University Journal of Social Sciences and Humanities*, 11(2), 1-16.
- Yasir, M., Imran, R., Irshad, M. K., Mohamad, N. A., & Khan, M. M. (2020). Leadership styles and organizational citizenship behavior: The mediating role of employee engagement. *SAGE Open*, 10(3). <https://doi.org/10.1177/2158244020935882>
- Zeng, X., Yu, Y., Yang, S., Lv, Y., & Sarker, M. N. I. (2022). Urban Resilience for Urban Sustainability: Concepts, Dimensions, and Perspectives. *Sustainability*, 14(5), 2481. <https://doi.org/10.3390/su14052481>