

# Rethinking PhD candidates' well-being: A participatory systems approach

N. Dhirasasna <sup>a, b</sup>, E. Suprun <sup>a, c, d, \*</sup>, S. MacAskill <sup>a, c, d, e</sup>, M. Hafezi <sup>a, c, d</sup>, and O. Sahin <sup>a, c, d</sup>

<sup>a</sup> Griffith University Systems Modelling Group, Griffith University, Gold Coast, QLD 4222, Australia

<sup>b</sup> School of Tourism, Griffith University, Gold Coast, QLD 4222, Australia

<sup>c</sup> School of Engineering and Built Environment, Griffith University, Gold Coast, QLD 4222, Australia

<sup>d</sup> Cities Research Institute, Griffith University, Gold Coast, QLD 4222, Australia

<sup>e</sup> Griffith Business School, Griffith University, Gold Coast, QLD 4222, Australia

\*Corresponding author: [e.suprun@griffith.edu.au](mailto:e.suprun@griffith.edu.au)

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## ABSTRACT

PhD candidates often face poor mental well-being because of many constituents of PhD life such as peer pressure, financial difficulties, low status and high workload to name a few (Schmidt & Hansson, 2018; Stubb *et al.* 2011). According to Agevall *et al.* (2018), PhD candidates may develop and carry on ineffective stress coping strategies as they transition to academia, having adverse effects on research productivity and teaching quality, and ultimately jeopardising the duration of their time in academia. Hence, understanding enablers and barriers to PhD candidates' well-being is crucial to the higher education institution quality. Nevertheless, previous research on PhD candidates' well-being has been limited to linear approaches and isolated determinants of well-being, resulting in the recommendations being limited to coping strategies to enhance well-being. This research contributes to the literature by applying a systems approach to explore the feedback mechanism among PhD candidates' well-being related variables. In particular, this research can also be perceived as a response to Fredrickson (2001) and Schmidt & Hansson (2018) call for a broader examination of candidates' well-being in PhD programs, including multidimensional perspectives and factors.

Systems thinking is a suitable approach to comprehend and to examine the dynamics of PhD candidates' well-being as a system. PhD candidates' well-being is not isolated, but in fact is a system of nonlinearly linked components. Changes in one component will affect the other components in the systems. For example, an unbalanced PhD candidates' work-life will affect candidates' lives generally. Moreover, personal relationships, supervisors and academic community can both promote and compensate well-being at times (Schmidt & Hansson, 2018).

This research is part of an ongoing study concerned with addressing how doctoral education system could be improved to support PhD candidates' well-being. This present study aimed to create a qualitative model in order to explore the complex well-being of PhD candidates in the Australian higher education context by applying a participatory systems approach that allows examination of the wide range of aspects influencing PhD candidates' well-being and their feedback mechanisms that may influence the system behaviour over time. The research objectives are as follows: (i) identifying variables and their roles related to PhD well-being; (2) illustrating the variable interactions within a causal loop diagram (CLD); and (3) using the CLD to understand the dynamic of the system and the role of drivers as potential enablers and barriers shaping PhD candidates' well-being.

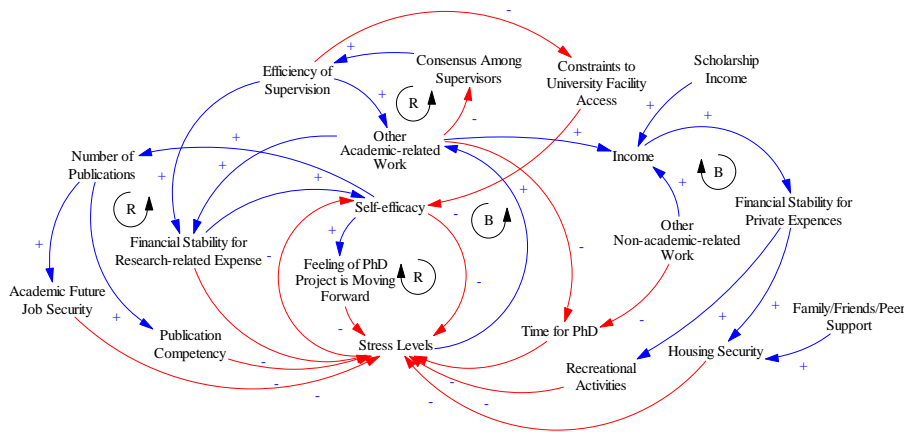
To represent interactions shaping the system of PhD candidates' well-being, the chosen research method combined a range of participatory and system-based approaches, such as face-to-face interviews, a stakeholder engagement workshop and structural analysis of key variables built on expert knowledge. Stakeholders engaged in this research included PhD supervisors, family members and friends, and PhD candidates themselves.

Figure 1 displays a high-level CLD produced from interviews, stakeholder engagement workshop, and discussion with university staff. Several feedback loops and system archetypes were identified within the CLD. For example, *limits to growth* archetype illustrates the reinforcing loop that represents the PhD candidates' high-stress level. It lowers PhD candidates' self-efficacy, and subsequently their ability to produce journal publications followed by unstable future academic job security in the Australian context. Over time, this reinforcing loop encounters a balancing loop, leading to the

lowering candidates' stress level. As PhD candidates become more stressed, they engage less in other academic-related work such as teaching, attending international conferences and academic networking. Subsequently, the PhD candidates will have more time to focus on their PhD research and become less stressful. However, PhD candidates' stress level will eventually heighten again because: (1) there is a maximum PhD thesis submission time; and (2) engaging less in other academic-related work diminishes the future academic job security. The leverage point to this archetype is to find an intervention that relaxes and removes the constraints (Maani &

Cavana, 2007), that is, time for PhD and maximum submission time.

The CLD presented in this research is subject to the subsequent systems approach steps including developing a quantitative system dynamics model based on the CLD, and performing policy analysis (Sterman, 2000). The quantitative system dynamics model could become a platform for universities that seek to understand the key variables which impact PhD candidates' well-being, and ultimately, help to reduce attrition rates of research programs through effective measures to mitigate these influences.



**Figure 1.** CLD representing PhD candidates' well-being system

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