Drivers of Agility in Context of Higher Education Institutions: A Systematic Review& Conceptualization

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Abstract

Higher education institutions (HEIs) need to be more agile, especially in terms of being flexible and creative, to keep up with global standards as competition heats up. This study looks at ways in which HEIs could do so to enrich the teaching-learning experience. This study used the Scopus and Web of Science databases to source relevant articles. Through our literature review, we noticed increasing trend in publications from 2016–2022. Additionally, we did not find any substantial information on resource agility or the process agility in the context of HEIs. This review helped us gain a two-dimensional view of 'agility' (i.e., resource agility and process agility), besides identifying their significant 'enablers' that go on to support the dynamic requirements of HEIs. Therefore, we propose a conceptual model based on an input-process-output model. In the future, this model could be tested for its universal applicability; nevertheless, this is our primary contribution to the extant literature.

Keywords: Agility, Resource Agility, Process Agility, Higher Education Institutions

1. Introduction

Considering society's ever-changing requirements, higher education institutions (HEIs) are under increased pressure to remain relevant by evolving with industrial demands, adapting new forms of governance, and by the acquisition of new skill sets (Alsharari, 2018). Continuous professional development and educational re-design are critical for survival (Banker & Bhal, 2020) and to achieve this new key ideal that will guide the future of higher education is agility, but how to achieve this is still a question to be addressed. Agility in HEIs means that they should be fast in sensing changes in the environment, ready to innovate their processes and practices, and flexible in realigning their valuable resources (Ghosh et al., 2022). However, it is still unclear what factors contribute to sensing the environment, and what processes and resources can be realigned to support agility in HEIs. Therefore, the aim of this study is to comprehend the

development of the literature on agility over time and identify the factors that influence agility in the context of HEIs.

Nowadays, agility has become a buzzword. Every organization, whether in service or manufacturing, is debating the adoption of agile practices that enable them to adapt to changing conditions. Agility being a multifaceted concept; encompasses changes in organizational structure and infrastructure. It is a way of thinking that generates more value with less effort. Agility includes not only responsiveness but also the ability to anticipate and prepare for potential changes (Teece et al., 2016). Ramasesh et al. (2001) noted that agility involves the exploration of competitive bases through the integration of resources in a knowledge-rich environment, which enables the delivery of customer-driven products and services in rapidly changing market conditions.

The importance of agility was highlighted during the COVID-19 pandemic, as institutions had to quickly adapt to new teaching and learning modalities, demonstrating the potential of agile approaches and adaptable practices, especially in the context of remote learning (Ramasesh & Jayaram, 2001). Agile practices can enable more effective problemsolving and pave the way for the transformation of university business models. As time passes, education must also evolve; therefore, Gupta and Bharadwaj (2012) defined education agility as a paradigm. Our studyattempts to define agilityas that entails speed, flexibility, and creativity in order to foster adaptability and responsiveness, adapt to change in a timely manner, and ensure that change becomes the norm within the organization.

Based on the preceding discussions, our study tried to reveal: how the literature has evolved over a period of time in the context of agility in HEIs, and what resources and processes could help make HEIs more agile. In particular, the study attempts to explain the different ways that HEIs can look at the idea of agility in terms of their resource agility and the process agility. This study also develops an input-process-output conceptual framework to understand the agility in HEIs. Broadly, this study looks to answer the following questions: RQ1. How did the literature on agility in HEIs evolve? RQ2. What are the dominant themes originating from agility in HEIs? RQ3. What are the enablers of agility in HEIs? Our study data revealed that agility is needed for HEIs to emphasize flexible and adaptable curricula, to foster interdisciplinary collaboration and innovation across academic disciplines, faculties, and departments.

The remainder of the work is organized as follows: The following section provides information on SLR methodology. Then, we present the findings of our data analysis. Subsequently, we critically analyse and discuss our findings and implications to suggest a future research area for agility in HEIs. The study concludes by mentioning some limitations.

2. Methodology

We used a method called a systematic literature review (SLR) to gather and carefully review all the relevant literature (Figure1). This technique enables systematic information gathering,

filtration, and interpretation (Gessler & Siemer, 2020) of various dimensions of agility in HEIs. Notably, the SLR measures used in this study have been appropriately followed and were adopted from Kitchenham's (2004) recommendations for a literature review with minor customizations to suit the objectives of our study. A thorough search was undertaken across the Scopus and Web of Science (WoS) databases, while omitting gray literature.

In content analysis (Seuring & Gold, 2012), we followed two search steps to gather relevant information on this topic.The first search began with a review of the exploratory and empirical literature on agility and HEIs. Herein, we collated 100 articles in the process; we restricted our search query to the titles of the papers only to select studies that had ‘agility’ and ‘higher education’ as a central part of discussion and analysis.

The second search focused on agility and HEIs (included as keywords) with the following search terms: agile and higher education institutions, resource-based agility, process-based agility, and organizational agility. During this search, we only looked at peer-reviewed journal articles that came out between 2000 and March 2022, which finally led to 79 papers after omitting 21 papers. We further reduced the number of articles based on exclusion criteria such as publications not published in English or belong to categories such as conference papers, books, book chapters, or academic reviews to find relevant and useful sources. After all, these steps of exclusion criteria, 35 papers were chosen (Figure 2).Once the articles were chosen, we studied each paper extensively to extract the related material and relevant data to the research questions specified in the spreadsheet columns. The data that was retrieved was put together and put into groups by date to make a pattern of understanding about agility in HEIs, to confront uncertainties that stem from the external world.

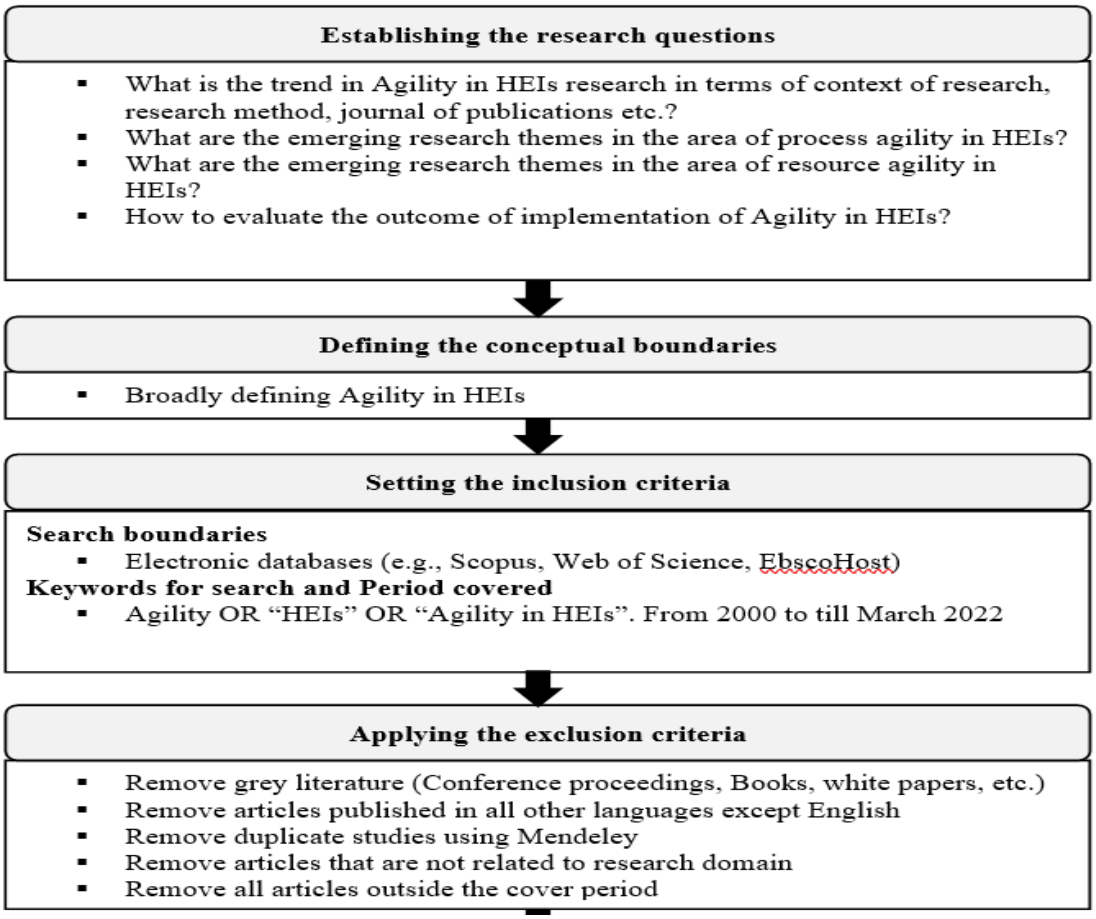

Figure 1: Flow diagram of SLR methodology

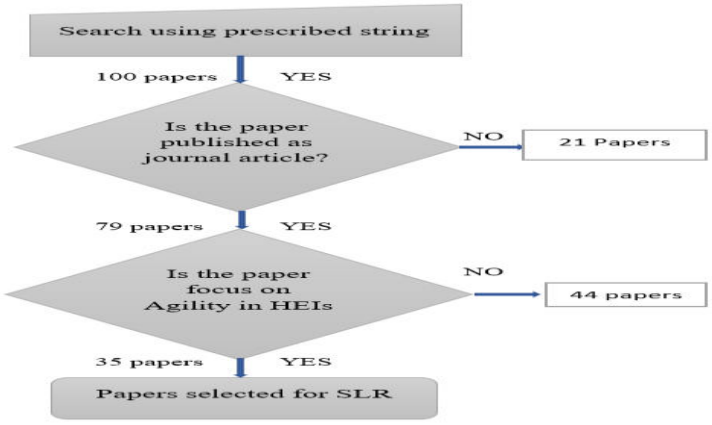

Figure 2: Exclusion & Inclusion criteria of SLR papers

3. Literature and descriptive analysis: publications, trends, and distributions

3.1 Year-wise publication trends

This structured review consists of 35 research articles published up to 2022. The first research article on agility in higher education was published in the International Journal of Educational Reform (1998). Then, the following year, only one paper was published, and this trend of one or a few papers every year continued until 2015. After that, momentum gradually built up, from 2016 onwards. The average number of publications increased from 1.85 articles in 1998–2016 to 12 publications per year in 2016–2022. Fig. 3 shows the three peaks with n = 8 approximately, starting from 2018, 2020, and 2021. The rigid and intricate structure of HEIs, which makes it challenging for the education system as a whole to adapt its practices considering changing circumstances, may be the root of this gap.However, the Covid 19 pandemic has highlighted the importance of agility in context of HEIs, which is equally reflected in the increase in the number of publications.

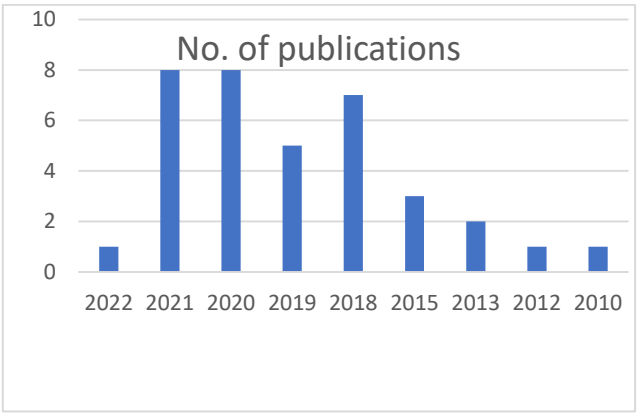

Figure 3: Year-wise distribution of publication trends

3.2 Distribution based on the research methodology of publications

Out of 35 articles, 12 were empirical research papers (mixed-method and quantitative), 13 conceptual papers (literature reviews and conceptual papers), and 10 case studies (Fig. 4). We discovered that the case-study approach as a standalone methodology was the most popular (n =10, 28.57 %). The case-study approach probably supports, the in-depth investigation due to highly customized operations of HEIs and discourages the generalization of findings. But when we look in totality, conceptual paper with(n = 13) is the most popular methodology. The reason being the agility is context specific and conceptual papers help in unwinding the nuances of agility in HEIs due to varying degree of uncertainty faced by institutes depending on their resources and how fast they sense the changes.

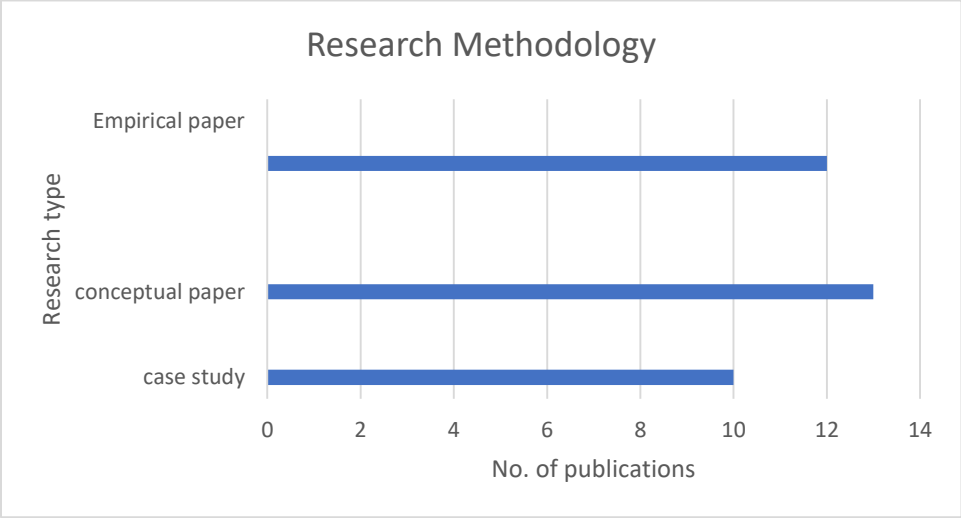

Figure 4: Distribution based on research methodology

3.3 Classification based on Geographic Distribution

The geographical distribution shows that India (n = 4, 1.4%) has been the leading country in terms of publications, followed by the UK (n = 3, 1.05%), the US (n = 3, 1.05%), and Malaysia (n = 3, 1.05%) (Figure 5). Specifically, in India's, the inquiry on agility in HEIs began in the new millennium with a quantitative study on workforce agility (Menon & Suresh, 2021) and organizational agility (Menon & Suresh, 2020). Although developed countries dominated the existing literature on agility in HEIs in common (n = 22, 62.05%).

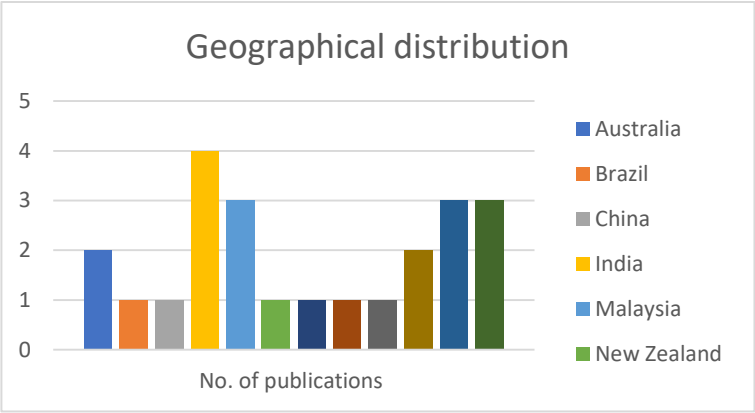

Figure 5: Publications distribution based on geographic distribution

3.4 Categorization based on Publication Distribution among Leading Journals

Research on agility in HEIs has been published in a several journals, and both managerial and practical implications have been brought up. Notably, "Studies in Higher Education" was the journal that made up about 5% of the total number of journals. This shows how varied the chosen theme is.

3.5 Distribution based on components of resource agility and process agility

The distribution shows that out of 35 papers, 12 papers are on one or other aspect of resource agility, 20 papers are on process agility, and 3 papers have overlapping data themes, i.e., a mix of resource or process agility (Figure 6). In resource agility, infrastructure has been a leading resource (n = 8, 22.85%), with faculty and students coming in second and third (n = 4, 11.42%). Whereas process agility, on the other hand, included teaching pedagogy (n = 11, 2.42%), curriculum design (n = 11, 2.42%), assessment strategies (n = 1, 0.22%), industry interaction (n = 4, 0.88%), social interaction (n = 3, 0.66%), and research excellence (n = 2, 0.44%).

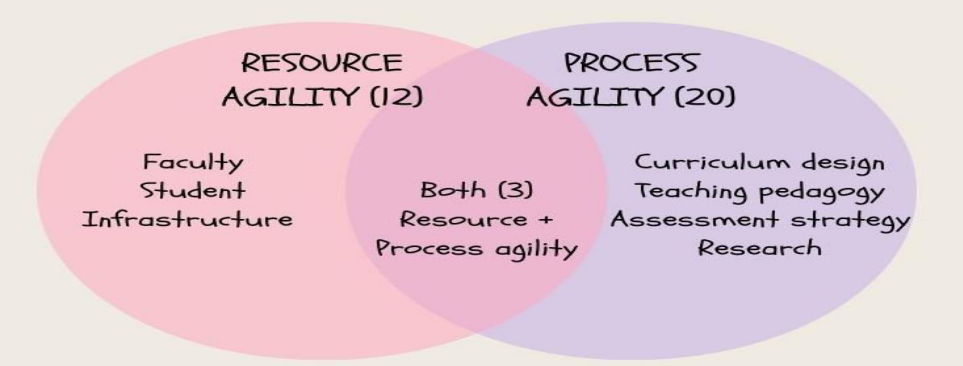

Figure 6: Distribution based on cumulative components of resource agility and process agility

4. Qualitative analysis: themes for agility in HEIs

According to Becker et al. (2018), resources in learning environments must be updated to meet the demands of today's educational techniques. Therefore, it is no coincidence that many of the recent changes at HEIs are related to applying new pedagogical approaches, the rapid development of educational technology, the growing diversity of non-traditional student populations, and the need for flexible courses (Dobrowolski, 2021). Henceforth, HEIs should be flexible in terms of service qualityand, technical skills and adapt to environments that change quickly.Barr and Tagg's (1995) described this transition from a "teaching paradigm" to a "learning paradigm," or from "broadcasting knowledge to students" to "knowledge generation." In this co-creation and knowledge generation, it is not just about curriculum and content but also about learning approaches (i.e., learning modalities).

To figure this out, our study analysis led to two main themes: (a) resource agility – a way to enhance the learning environment in HEIs, and (b) process agility – a way to enhance the learning process in HEIs. These themes help in analysing the role of resources (faculty, students, and infrastructure) and processes (curriculum design, teaching pedagogy, assessment strategies& collaborative research. Based on these themes, we think that they will help us figure out what makes HEIs agile, and so we propose:

Proposition 1: Right alignment of resource agility and process agility leads to operational agility in HEIs

Proposition 1.1: Both resource and process agility, positively influence agility in the context of HEIs.

4.1 Resource agility: ways to enhance the learning environment in HEIs

Resource agility in the context of HEIs refers to the ability of institutions to effectively and efficiently, allocate and use their resources in response to changing needs and demands. According to Smith et al. (2014), resource agility in HEIs is crucial for maintaining competitiveness and relevance in an ever-changing educational landscape. Resource agility allows institutions to seize new opportunities, address emerging challenges, and meet the evolving needs of their students and stakeholders. Research by Johnson and Brown (2020) highlights the importance of strategic planning and decision-making processes in achieving resource agility. Furthermore, Davis et al. (2021) emphasizes the role of effective leadership in fostering resource agility.

Moreover, technology as a part of infrastructure also plays a crucial role in resource agility. Lee and Chen (2023) highlight the use of data analytics and predictive modeling to inform resource allocation decisions. Collaboration and partnerships are also important factors in achieving resource agility. Kessler and Smith (2021) suggest that HEIs should actively seek collaborations with industry, government agencies, and other educational institutions to share resources, expertize, and funding opportunities. Such partnerships enhance the institution's capacity to access additional resources and leverage external support for specific initiatives.

Resource agility is a critical factor for HEIs to thrive in a dynamic and competitive environment. By embracing strategic planning, effective leadership and stakeholders' opinions and infrastructural advancements, institutions can enhance their ability to allocate and use resources efficiently, thereby ensuring their continued success and impact in providing quality education.Therefore, we posit:

Proposition 2: In HEIs, the coordination and cooperation of the resources (i.e., faculty, students, and infrastructure, etc.) contribute positively to resource agility.

4.1.1 Faculty as an enabler of resource agility

As per Narenji Thani et al. (2021), the ability of people to respond innovatively to uncertainty and adapt to rapidly changing environments has been termed 'workforce agility'. It involves developing human resource competencies and knowledge transformation (Zahedi et al., 2013). Amin and Mir (2016) affirmed that agile workers have the best potential for conquering new markets with breakthrough innovation. In another research by Menon and Suresh (2020) identified 16 enablers that indirectly impact workforce agility. Menon and Suresh (2021) iterated that human resources are the most important agility enabler regarding the innovation process. According to them, HEIs must look to individual human resource competencies, which possibly would greatly add value to their existing workforce's agility and, eventually, organizational agility at large.

Therefore, in the context of HEIs, faculties represent the human resources that can impact organizational innovation trends.In a dynamic environment, a faculty member's role is not just restricted to encouraging or facilitating students in procuring information or knowledge but also has a responsibility to design and deliver a problem-based curriculum (Schmidt & Moust, 1995). HEIs that want to be agile and inventive must have faculties that are prepared with both knowledge and expertize to deal with a dynamic environment. Based on the discussion above, we posit:

Proposition 3: Workforce quality can positively influence resource agility in HEIs.

4.1.2 Students as enablers of resource agility

Mills et al. (1983) said anything that goes into making a product is treated as input. In the case of HEIs, students and their knowledge are considered input because HEIs, as part of the service industry, have students' direct involvement in the production process (Mamo, 2015). Students can be seen as an input resource from two different points of view: first, as a source of revenue for HEIs and second, as co-producers of services. It is up to the HEIs to decide which part of the student's experience should be considered. Mamo (2015) says that the main way HEIs make money is through student contributions or tuition fees. However, HEIs sometimes get moneyfrom other sources like regional and local governments, volunteer donors, and corporations. Thus, it may be affirmed that students are a critical resource for HEIs, as they lead to revenue generation.

Second, students may also be considered as coproducers of services. Students, as input resourcesand co-producers, ably assist the teaching process as active learners, which in turn goes on to impact the performance of institutions (Dobrowolski et al., 2021). This effectively means that a student as a resource does provide new opportunities for HEIs as they strive for excellence through continuous improvement. Based on this understanding, we posit:

Proposition 4: Students can positively influence resource agility in HEIs.

4.1.3 Infrastructure as an enabler of resource agility

Educational infrastructure contributes to the teaching and learning process and adds value to the educational system at large (Musa & Ahmad, 2012). Infrastructure is the only tangible component that serves as a resource in education delivery (Ivy, 2008).In HEIs, state-of-the-art technology such as,buildings, stadiums, hostels, and computer labs etc., have a big impact on students' satisfaction and performance as it is a piece of physical evidence (Musa & Ahmad, 2012). Building infrastructure and facilities are hard and expensive, and having the right infrastructure is one way to give students a good place to learn.

In the dynamic world, not only non-technical but also technical infrastructure is also seen as valuable and necessary for HEIs to stay relevant (Chan & Muthuveloo, 2018). Higher education should build technology infrastructure and keep it running because of the way people learn and teach now. To compete well, HEIs must invest in and diversify their technology (Kim, Lee &Cho, 2016). Macheridis (2018) says that HEIs might be more flexible and creative if it were easier for them to use technology in their processes. We posit thereby:

Proposition 5: Technical and non-technical infrastructure can positively influence resource agility in HEIs.

4.2 Process agility: a way to enhance the learning process in HEIs

Process agility in HEIs is the capacity of institutions to quickly adapt and respond to changes in the educational environment, technological developments, and changing student needs. It entails using adaptable and dynamic processes. According to Smith (2014), process agility in HEIs necessitates a proactive strategy for anticipating and embracing changes in curriculum design, teaching methodologies, and operational procedures. This adaptability is essential for fostering innovation and ensuring that HEIs continue to be effective at educating students for the challenges they will face in the future (Johnson, 2017). Furthermore, Jones et al. (2014) emphasize the value of teamwork and interdisciplinary approaches in fostering process agility, the reason being, HEIs involve a variety of stakeholders, including faculty, administrators, industry partners, and students, in order to have a meaningful change.

Technology integration is essential for improving process agility in HEIs. According to Brown (2021), HEIs can streamline administrative procedures, customize learning experiences, and collect insightful data for ongoing improvement by using learning management systems, online collaboration tools, and data analytics. Process agility in HEIs presents some difficulties while implementing agile practices, such as bureaucratic structures, cultural resistance to change, and a lack of resources (Smith, 2014). Therefore, it is crucial for HEIs to promote an innovation culture, enable stakeholders to accept change, and strategically allocate resources to support process agility initiatives (Jones, 2014).

For HEIs to remain adaptable, creative, and current in a rapidly changing educational environment, process agility is essential. HEIs can more easily adapt to changes, meet the needs of students and society, and improve the overall quality of education by implementing flexible processes in terms of teaching and learning and encouraging collaboration. It is a lifelong journey that calls for dedication, stakeholder involvement, and a continuous improvement culture (Brown, 2021). Mangold et al. (2000) says that a service process in HEIs is one in which students are actively involved on a cognitive, emotional, and physical level. In other words, this means that processes should be flexible enough to handle all the changes and updates that are needed to meet customer needs. Therefore, when we looked at the research on process agility, we found four things that help make it happen: teaching pedagogy, assessment strategies, curriculum design, and collaborative research (industry and society). They help HEIs by being both agile and innovative. Based on this understanding, we posit:

Proposition 6: In HEIs, curriculum design, teaching pedagogy, assessment strategies, and research contributes positively to process agility.

4.2.1 Curriculum Design

The curriculum is the focus of any educational institution. The strength of a curriculum affects both the quality and effectiveness of education given to students. A curriculum is like a roadmap provided to students with certain conditions to fight any ambiguous conditions that arisewithout feeling helpless. Thus, HEIs need to be agile in their curriculum design process to equip students with the latest tools and techniques. To accomplish the same, we must build our understanding of the requirements of curriculum design.

He, Schultz, and Schubert (2015) say that you cannot fully understand a curriculum without knowing how it relates to three important factors: the faculty, the students, and the environment. In fact, these parameters act as an essential element in curriculum design. Faculty work, for instance, serves as a critical input in designing the curriculum. They not only design and deliver the course as per the students' requirements but also share their experience and knowledge along with the content delivery, which gives a critical dimension to curriculum design. Students act as facilitators and co-producers of services regarding curriculum design (Royle & Nikolic, 2013). For example, students from diversified cultures, regions, and economic strata share their experiences, along with' creativity and innovation, which in turn work as input for curriculum design. We thereby posit:

Proposition 7: Curriculum design positively influences process agility in HEIs.

4.2.2 Teaching Pedagogy

To make learning agile, we need to develop an agile pedagogy (Lyn & Muthuveloo, 2021). To implement agile pedagogy, a more individualized, social, open, dynamic, emergent, and knowledge-pull model must replace the conventional model with top-down, centralized, static learning solutions (Chatti et al., 2010). This new pedagogical approach in turn requires integrating technologies effectively into the curriculum to improve learner outcomes (Noguera et al., 2017). This new approach will focus more on informal learning because an informal and formal learning environment effectively equips learners with autonomy and builds their confidence.

Sharp and Lang (2018) say that, from the instructor's point of view, there should be the right infrastructure,i.e., both technical and non-technical, to support agile teaching pedagogy. Technical teaching pedagogy uses technologies to disseminate knowledge (Christensen & Eyring, 2012; Lyn & Muthuveloo, 2021), such as flipped classrooms, e-learning resources (Alharbi & Drew, 2014), collaborative learning (Noguera et al., 2017), massive open online courses (MOOCs) (Alraimi et al., 2015), and big data analytics (Lyn & Muthuveloo, 2021), among others, while non-technical teaching pedagogy encompasses laboratories, workshops, meeting rooms, and interactive exercises (Steghöfer et al., 2016). This combination of technical and non-technical teaching pedagogies must be integrated and aligned in such a way that they complement each other in achieving process agility. Thus, we posit:

Proposition 8: Teaching pedagogy positively influences process agility in HEIs.

4.2.3 Assessment Strategies

Schwenk and Whitman (1984) say that evaluating students is an important part of teaching as it helps in building a relationship with them and showing that you care. Crosby (2000) says that assessment is a way to check how well students are learning regularly. In other words, assessment is a result of what students learn in the classroom evaluated by instructors using different modes of evaluation. Some of the most common traditional modes of evaluation include quizzes, assessments, administered examinations, and essays. As assessment had significance in students' lives and careers Murray et al. (1996) recommended that instructors should take the necessary precautions to guarantee that student evaluations are accurate, transparent, fair, and consistent with the course objectives. Student learning clearly indicates the HEI outcomes, which include student success, graduation rates, and quick employment rates (Murray et. al,1996).

Therefore, it is important to go beyond traditional forms of assessment and try new ways to figure out how well the learning environment works (Bloxham et. al, 2015). Many teachers have been looking for new ways to evaluate, especially when it comes to judge the content of a lesson taught. In addition, instructors should be aware that different students do better in different types of assessments and should thereforeuse a various way to evaluate students. This helps students to move from being passive to active learners, which helps them understand their strengths and

weaknesses, find learning gaps, and come up with solutions to get results that matter (Bloxham et. al, 2015). We posit thereby:

Proposition 9: Assessment strategies positively influencing process agility in HEIs

4.2.4 Collaborative Research (industry & society)

HEIs being centers of knowledge and learning, maintain relationships with many stakeholders on and off campus (Chan & Muthuveloo, 2020). This supports them in opening their boundaries to new ideas and knowledge from external sources since they do not necessarily possess all the internal resources to innovate successfully (Philbin, 2015). For HEIs, external sources comprise industry and society. Edmondson et al. (2012) stated that HEIs should be encouraged to develop strategic collaborations with industry and society to strengthen their R&D activities and learn about emerging technologies, as these interactions lead to higher productivity rates than companies that do not have much interaction. In fact, these interactions have become imperative for overcoming organizational challenges arising from uncertainties (Overby et al., 2006).

With these shifting dynamics, HEIs today are focusing on collaborative research. Collaborative research occurs when persons with varied interests work together to attain a similar goal through interactions, information exchange, and activity coordination (Vasyakin et al., 2016). Collaboration between industry and university is thereby considered a highly complex and sophisticated ecosystem, which is facilitated through the multidimensionality of knowledge transfer processes, which can either be formal or informal (Overby et al., 2006) such as internships, research, and placements (Mukerjee, 2014). This helps HEIs in collecting feedback on changing customer needs, new ideas, and the skills and competencies required by employers.

Almost similar conditions in case Society interaction where Urdari et al. (2017) mentioned that the most important thing for social interaction in HEIs is to include social innovation in their model of how they work and what they do. HEIs, require proper planning and strategies to be involved in the process of social interaction to overcome the gap created by the institutional structure & function. To overcome this, HEIs should work with residents to analyse their problems, provide information, and provide consulting resources and practical assistance to the community that aid in social development (Kumari et al., 2019). Therefore, university society collaboration can add great value to the community by making the best use of resources and building scientific bodies of knowledge to help people deal with uncertainty. Based on this understanding, we posit:

Proposition 10: Collaborative research (industry and society) positively influences process agility in HEIs.

5. Findings and Discussions

The review of literature showed that agility is a continuous process, which helps in progressing toward achieving institutional efficiency and effectiveness in terms of teaching and research excellence. We sorted and considered 35 papers published in 33 academic journals until 2022. The trend analysis depicted that there has been consistent growth in the number of publications; however, these publications were spread across an extended range of journals. Among various research methods, the case-study method with qualitative analysis appears to be the most popular.

The analysis led to two main themes: (a) resource agility- a way to enhance the learning environment in HEIs, and (b) process agility- a way to enhance the learning process in HEIs. These themes help in analysing the role of resources (faculty, students, and infrastructure) and processes (curriculum design, teaching pedagogy, assessment strategies, and research) that enable the agile system to perform more efficiently. We put the publications into groups based on their main topics and sub-themes to determine thefocus of research and gray areas in the context of agility at HEIs. The systematic review of the literature showed that researchers in the past have focused on one or other aspects of agility like recognizing the value of infrastructure in teaching and learning (Seale et al., 2010; Jaggars & Jones, 2018), the role of technology (Kamat & Sardesai, 2012), teamwork and project management techniques for teaching agile, and the role of faculty in implementing agile methodologies (Lyn Chan & Muthuveloo, 2021; Macheridis, 2018). teaching pedagogy (Noguera et al., 2018; Einum, 2019); curriculum development (Owen & Wasiuk, 2021; Bolmsten & Kitada, 2020); assessment strategies (Sharp & Lang, 2018) andworkforce (Chan & Muthuveloo, 2018).However, there is a paucity of research on the factors that influence agility in HEIs, thereby addressing research question one (RQ1& RQ2).

To overcome this problem, we proposed the input-process-output conceptual (Figure 7) to understand how the enablers for each identifier, i.e., resource and process, must be integrated to maximize the output. As per our findings, excellence in teaching and research is a function of resource and process agility. For the optimum utilization of resources, the processes must be sufficiently flexible to increase output. Thus, while addressing our RQ3, we **suggested** that HEIs include competencies and the teaching approaches that support them in their curricula. Faculties need to be agile in designing curriculum, using the appropriate teaching pedagogy to deliver the content of the curriculum, and evaluating the students as per the curriculum design. Similarly, infrastructure should always support teaching pedagogy, such as availability of IT infrastructure for delivering lectures and online portals and software to evaluate students. Students as resources should be well integrated with resources in the sense that they should give their valuable input to faculties in developing the curriculum, support them by using two-way communication while having discussion in the class, and participate in all modes of assessment strategies.Thus, in this way, our model helps integrate resources with processes.

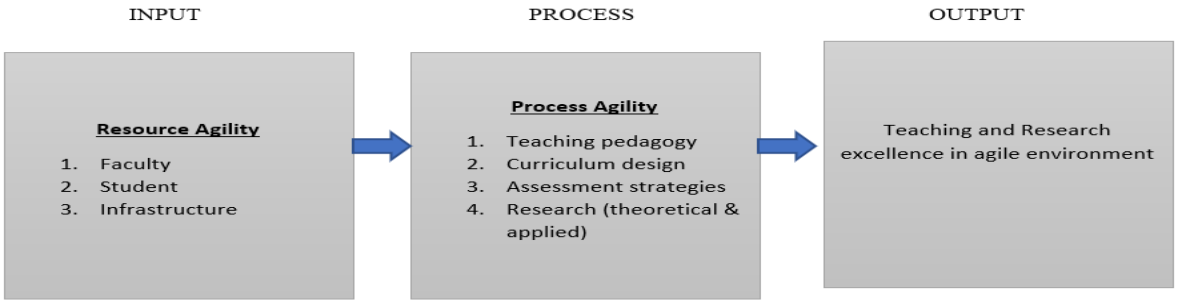

Figure 7: Agile HEI Input-Process-Output framework

Our review of the literature revealed that there is still a lack of knowledge regarding the finer points of agility, such as when and how to incorporate the learning environment's resources—faculty, students, infrastructure, and staff—with the procedures involved in learning (teaching pedagogy, curriculum development, assessment strategies, and collaborative research). And how the agility of HEIs will be impacted by this resource and process integration. However, due to the lack of resources and rigidity in changing processes, HEIs face many difficulties when allocating resources. As a result, we made a few claims based on qualitative analysis to create a link between two themes. We

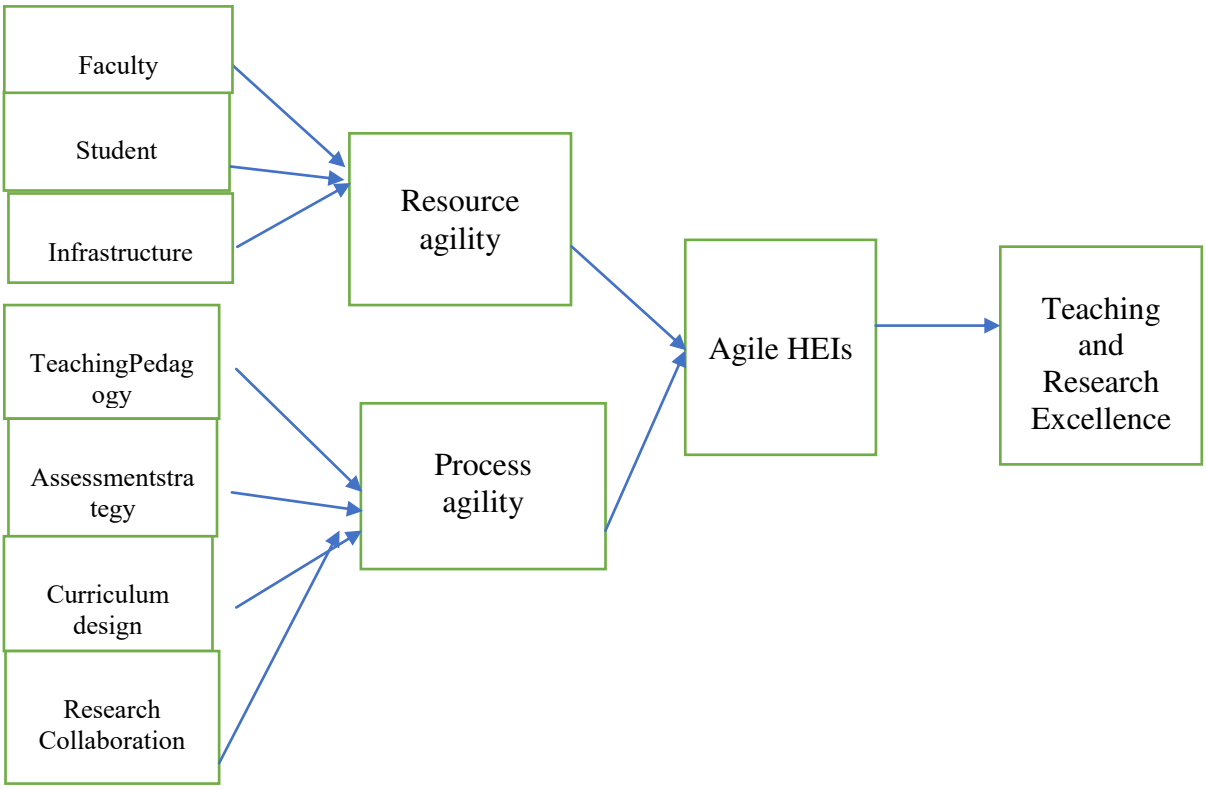

Figure 8: Conceptual Framework Based on Propositions

The list of research issues that follows is a summary of some of the most serious problem that research to date has brought up. This would possibly guide further research on agility in HEIs. (a) What major challenges are faced by HEIs in being agile in their resources and processes? (b) Can agility help HEIs become more competitive and sustainable in a dynamic environment? We might be able to better understand how agility functions and learn how HEIs can derive the most benefits from being agile with more research that addresses some, if not all, of these questions.

6. Conclusion

According to the findings of our study, to improve teaching and learning, HEIs must be able to adjust to shifts societal and industrial needs. Our study adds to the body of knowledge on how to improve the agility of HEIs. The two themes of resource agility and process agility are derived as two potential identifiers of achieving agility in HEIs in this dynamic environment.

In addition, our study will like to highlight few avenues for further research. These concepts can be used to create an input-process-output model that illustrates the connection between resource and process agility. Although we lack a convincing argument or solution, how HEIs be allowed to benefit from resource and process agility. Since acquiring resources costs money, HEIs must devise ways to combine them to do their best teaching and research with the least amount of resources. Additionally, the findings from our study will assist academics in developing their curricula and instructional strategies so that they complement their current resources and support their assessment plans.

However, this conceptual framework will aid in our understanding of how to combine resource and process agility enablers required for HEIs to be agile. Future research may empirically test this conceptual framework to assess the propositions.

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