



# Proceedings of the Informing Science + Information Technology Education Conference

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July 20 – 28, 2025

## CRACKING THE CODE OF SERVICE INNOVATION: HOW PSYCHOLOGICAL CAPITAL AND ENTREPRENEURIAL ORIENTATION INTERSECT – A CONCEPTUAL FRAMEWORK

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### ABSTRACT

Aim/Purpose	To address the critical need for service innovation in Higher Education Institutions (HEIs), this paper extends the Conservation of Resources (COR) theory. As HEIs navigate increasingly complex environments, a shift away from traditional innovation models becomes imperative.
Background	We propose a new framework for service innovation performance in higher education. Traditionally, innovation has been centered on product and process improvements, often with a strong emphasis on technological advancements. However, we advocate for service innovation in the context of HEIs and contend that non-technological factors, such as Psychological Capital (PsyCap) and Entrepreneurial Orientation (EO), are equally crucial for driving innovation and contributing to universities' third mission of research commercialization.
Methodology	Drawing on existing literature, this conceptual study integrates the Conservation of Resource (COR) theory with current innovation challenges faced by HEIs. A framework is proposed to emphasize the importance of PsyCap and EO in fostering service innovation.
Contribution	This study responds to the scholarly call for research on service innovation. In any case, this paper contributes to organizational behavior, entrepreneurship

Accepted by Editor Michael Jones | Received: (date) | Revised: (date) | Accepted: (date).

Cite as: Anjum, R., Mustamil, N., & Seng, T. L. (2025). Cracking the code of service innovation: How psychological capital and entrepreneurial orientation intersect – A conceptual framework. In M. Jones (Ed.), *Proceedings of InSITE 2025: Informing Science and Information Technology Education Conference*, Article 25. Informing Science Institute. <https://doi.org/10.28945/5564>

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	and innovation literature by applying COR theory to the context of service innovation in higher education.
Recommendations for Practitioners	HEIs should prioritize investments in developing PsyCap and EO to facilitate resource-constrained environments and drive service innovation.
Recommendations for Researchers	To further advance this research, future studies should empirically test the proposed model in different industries, such as the information and technology industry, and explore the interrelationships between PsyCap, entrepreneurship, and service innovation outcomes.
Impact on Society	Indubitably, HEIs enjoy the status of substantially amplifying their impact on society by embracing SEI through the proposed model. This approach opens doors for stronger collaboration with stakeholders and deeper engagement with communities, enabling HEIs to tackle pressing social challenges and extend their influence beyond traditional academic boundaries. In today's rapidly evolving world, HEIs face a complex global landscape that demands engagement with society. Central to this model is the cultivation of entrepreneurial skills that bring about the needed engagement, propel innovation, and drive meaningful social change for a brighter future.
Future Research	The focus of this study is the individual. In lieu of the fact that innovation is a complex process involving many actors, future studies, besides validating the proposed model, should study it at the team, organizational, industry, and societal levels. Besides, its expansion to other departments (architecture, engineering) may also be considered. Future studies can also measure it with managerial orientation.
Keywords	service innovation, entrepreneurial orientation, PsyCap, higher education institutions

## INTRODUCTION

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The field of Service Innovation (SEI) is evolving (Kumar et al., 2024). Barras (1986) was the first scholar to lay the foundation for services literature. He also recognized the persistent neglect of research on SEI since then (Condé & Bruno-Faria, 2024). Condé and Bruno-Faria (2024) also recommend future studies to focus on SEI in universities. Given this evolving landscape, it becomes pivotal to adapt to new trends such as the massification of HE, academic mobility, etc. (Altbach et al., 2019). Universities are ideal settings to nurture innovation and provide services by virtue of their direct contact with clients. To deliver superior services, universities need to manifest innovation and creativity in their respective fields (Majidi et al., 2023). The recommendation by Majidi et al. (2023) suggests that future research can explore and identify the requirements of implementing SEI in universities as service institutions, and it stands to reason because the concept of SEI is pivotal to avert stagnation and routine serving as a growth strategy (Ziaei et al., 2018).

Contemporary scholarly work underscores that innovation in higher education institutions (HEIs) has a bearing on workplace dynamics (Tate et al., 2018). However, a great deal of current scientific discourse prioritizes implementing innovations in the business sector, originating from university-based knowledge production. This emphasis obscures SEI in universities, particularly public ones (Heaton et al., 2019; Teece, 2018). SEI promotes the creation of novel ways of service delivery and ameliorates the quality of existing services. Innovation in services can take dozens of shapes, including the development of new services or the improvement of existing services (Kumar et al., 2024).

Service innovation, which includes new ways that service systems – including HEIs – can adopt to improve services, is recognized as one of the three strategic research priorities of service institutions

(Helkkula et al., 2018). All the same, despite being regarded as the engine of growth and competition for institutions, research in this field remains limited, and understanding of the real impact of SEI lags behind (Den Hertog, 2010). A key issue pertaining to SEI and its management is the misconception that innovation is exclusively technological (Helkkula et al., 2018). The literature hints that non-technological factors are equally important and relevant. Therefore, this study has touched upon non-technological factors such as PsyCap.

Before delving deeper, it is important to define what SEI truly means. In their study, Chen et al. (2020) outlined innovation in public services as “the development and implementation of a new idea by a public service organization to generate or enhance public value within an ecosystem.” They also noted that this innovation in public universities is shaped by internal and external forces and actors. In any case, internal factors, among many others, include specialized skills and resource availability. This is one reason why this paper has focused on instrumental resources, contrary to the private sector because innovation in public services is predominantly driven by resource availability rather than technological changes (Condé & Bruno-Faria, 2024).

To understand SEI in HEIs, the workforce’s role must be examined. Bearing the evolving landscape of SEI in mind, it becomes pivotal to adapt to new trends. The success of service institutions depends on their ability to keep their employees ahead. To put it fairly, faculty members have long been at the heart of research, knowledge creation, and innovation (Etzkowitz et al., 2022). This emphasizes that to implement any SEI endeavor, the faculty has to be at the core, and boosting service innovation performance (SIP) must be the top priority of the service institutions.

Now that the significance of the workforce has been established, the following discussion will highlight why investing in psyCap as a resource is essential. It is widely recognized that the workforce of an organization is paramount in helping organizations achieve success (Luthans et al., 2015; Ouari & Lefkir, 2022). In lieu of this, it is critical for HEIs to invest in employees’ PsyCap (Mutonyi, 2021). PsyCap can effectively enhance the mental and physical health of individuals (Lupşa & Vîrgă, 2020). According to COR theory, PsyCap is an instrumental resource (Hobfoll et al., 2018). Therefore, PsyCap research is valuable and significant in a broad sense, contributing to a deeper understanding of the beneficial effects of individual factors and boosting innovation (Pham et al., 2024). Given the paramount importance of innovation, the study assesses the impact of psychological capital (PsyCap) on service innovation performance (SIP), with EO as the mediator that can enrich the workforce and elevate innovation.

The discussion now moves toward understanding the necessity of SIP in universities in a developing nation, i.e., Pakistan. In all likelihood, SIP is crucial for addressing Pakistan’s education challenges and bridging its developmental gaps. The country lags in key global rankings, with low patent filings, fewer PhDs per million people, and a weak innovation ecosystem – evident in its 91st position in the 2024 Global Innovation Index. Its 164th rank on the Human Development Index and decline in the Youth Development Index highlight systemic failures in education and workforce preparedness (Laghari, 2024). In Pakistan, lenient benchmark performance indicators create little pressure for faculty improvement, leading to stagnation.

In contrast, China’s strict educational reforms enhance faculty performance and attract international students (M. Hu et al., 2019). With continuous progress, China now competes globally (Raza et al., 2023). Pakistan, however, still lags, as its academic system is less developed and not well connected globally, making it difficult to attract international students. A comparison of Pakistan’s education system with India and Iran leads to the same conclusion. In fact, public universities in Pakistan are deeply affected by a culture of corruption (Hoodbhoy, 2009). When comparing Pakistan’s higher education system to the UK, the differences become even more pronounced. The UK offers state-of-the-art facilities, well-equipped libraries, and access to cutting-edge research materials, while Pakistan struggles with inadequate infrastructure and limited resources. Moreover, the UK’s education system

emphasizes contemporary knowledge, ensuring that students are prepared to tackle real-world challenges and contribute effectively to the job market. In contrast, Pakistan's universities often rely on outdated and less relevant material, making it difficult for graduates to meet modern job market demands (Rohra, 2024).

To bridge the quality gaps, this study is pivotal. Nevertheless, to bridge this gap, one needs a foundation. PsyCap and EO serve as substructures on which the SIP can rest. To bolster EO for employees, the service institutions of a developing country like Pakistan can rely on PsyCap. The findings of the study of Goswami et al. (2022) suggest that institutions in South Asian countries should leverage various psychological capital interventions. The South Asian region, being densely populated, experiences low per capita resource availability, which puts immense pressure on national resources and makes life challenging for its inhabitants. In this context, psychological capital can significantly enhance the performance of individuals. As South Asian economies are emerging, psychological capital can help address the region's challenges.

Now that the importance of SIP has been outlined for universities of Pakistan, it is pertinent to discuss internal factors like PsyCap that drive it. Şeşen et al. (2019) confirm that PsyCap has a positive bearing on employees. Although prior studies have investigated and delineated a relationship between Psychological Capital (PsyCap) and innovation, this relationship has been understudied. Grözinger et al. (2022) and R. Hu et al. (2023) studied the direct impact of PsyCap on creative innovation and breakthrough innovation, respectively. Other studies have also probed into the direct relation between PsyCap and innovation (Sartori et al., 2013; Sartori & Scalco, 2014). Studies that have used PsyCap as a mediator of innovative behavior also abound (Fang et al., 2019; Kim et al., 2018; Wojtczuk-Turek & Turek, 2015). Nevertheless, the relation of PsyCap with innovation has not been studied as widely. Researchers have neglected SIP as a factor of innovation in relation to PsyCap, and that is why this study has made SIP the center of investigation.

Next, it's important to discuss why exploring the two internal factors, i.e., PsyCap and EO, holds value. Though there are studies related to PsyCap and EO, the body of literature is relatively sparse. Keeping in mind the crucial role that PsyCap can play with respect to EO, it is startling to see that little research has been carried out to capitalize on its potential for lessening fears of failure and enhancing success (Baluku et al., 2016). The study of Al Issa (2021) also touched upon only a few components of EO, such as risk-taking, but EO as a whole remains neglected. In the same vein, the mediation of EO lacks sufficient scholarly research. However, few sub-dimensions of it have been taken as mediators. For instance, the mediating role of proactiveness has been ascertained by Li (2021).

As a final point, SIP is an intricate and resource-intensive process with considerable long-term benefits for institutions. To establish a more sustainable, innovation-focused strategic position, institutions should evaluate their intellectual resources, among other assets (Majidi et al., 2023). Given the paramount importance of innovation, the study attempts to assess the impact of psychological capital (PsyCap) on service innovation performance (SIP) with the mediating role of the EO, which can enrich the workforce and elevate innovation.

### ***SIGNIFICANCE OF STUDY***

Given the multifaceted challenges facing HEIs today, SEI has emerged as a critical driver of competitive advantage (Ziaei et al., 2018). As a consequence, there has been a recent upsurge in SEI research in general but a startling scarcity of such research in academia (Condé & Bruno-Faria, 2024; Den Hertog, 2010; Heaton et al., 2019).

This research contributes to the existing body of knowledge on SEI in HEIs in several ways. First, prior research on innovation in HEI has mainly focused on product and process innovation (Ghasemzadeh et al., 2019) or the technological component of innovation (Helkkula et al., 2018). This study addresses the gap in empirical evidence regarding the role and significance of SEI in HEI

settings. By doing so, it responds to recent calls (Grözinger et al., 2022; Majidi et al., 2023) and provides initial empirical evidence supporting the crucial role of PsyCap (T. D. Nguyen et al., 2024; Pham et al., 2024) and EO (Al Issa, 2021) in driving SEI.

Second, by leveraging the Conservation of Resources (COR) theory, this research offers a novel contribution to the existing literature by extending its application. Thus, this study advances a significant stream of existing research. Predominantly, the COR theory emerged to explicate stress and coping (Kiazad et al., 2014). For that reason, a great deal of research has targeted stress and emotional responses (Wheeler et al., 2012). By understanding its core principles (i.e., resource loss and resource acquisition), we hope to better understand other behavioral outcomes, such as SEI. Therefore, this study widens the range of outcomes linked to COR theory within educational settings.

Third, this study delves into the interplay between SEI, PsyCap, and EO, a relatively unexplored area in existing literature. By doing so, this research aligns with repeated scholarly calls to empirically examine SEI in academia and foster innovation in HEIs.

### ***LITERATURE REVIEW***

In general, prior studies looking into antecedents of innovation in HEIs paid heed to two key dimensions of innovation: product and process innovation (Elrehail et al., 2018). While these dimensions have been linked to better performance in HEIs (Rehman & Iqbal, 2020), it is equally important to consider the role of employees' Psychological Capital (PsyCap) in driving SEI. HEI employees' PsyCap, encompassing hope, self-efficacy, resilience, and optimism, play an overarching role in fostering a culture of innovation within the institution. Over and above, entrepreneurial behaviors, such as proactivity and risk-taking, are instrumental in nurturing an innovative mindset that fuels innovation. Thus, this paper shifts the focus from traditional innovation dimensions to the role of PsyCap and entrepreneurial behavior in shaping SEI within HEIs.

The Triple Helix Model places a premium on the collaborative relationship between universities, industry, and government, with universities generally taking the lead in propelling innovation (Al-Mansoori & Koç, 2019; Paoloni et al., 2019). Developing countries like Pakistan are increasingly relying on HEIs to contribute to social and economic progress (Iqbal, 2021). All the same, these HEIs face numerous challenges, including reduced government funding, rapid technological advancements, and rising societal and industrial demands for higher education (Elrehail et al., 2018; Rehman & Iqbal, 2020). To combat these challenges, HEIs are under pressure to excel in innovation, research, and producing skilled graduates (Elrehail et al., 2018). As a result, innovation within HEIs has become a significant focus of scholarly research, particularly in developing contexts (Al-Mansoori & Koç, 2019; Elrehail et al., 2018; Rehman & Iqbal, 2020).

Presently, Pakistan is home to 216 universities and degree-awarding institutions, with 133 being operated by federal and provincial governments and 83 by the private sector (Iqbal, 2021). In the face of numerous efforts by the Higher Education Commission of Pakistan (HECP) and the establishment of research and innovation centers in numerous universities, HEIs still trail behind in global and regional rankings concerning efficiency, research, and innovation (Sahibzada et al., 2020). As HEIs in the global south must innovate to contribute to growth and advancement, it is essential to identify factors that may enrich innovation in these institutions.

A deep dive into the literature reveals that modern universities should put a value not only on the creation of knowledge but also on its commercialization (Pereira & Franco, 2022). Fostering an entrepreneurial mindset through research and education is an overriding aspect of the universities' third mission (Marczewska et al., 2024). Thereupon, universities must adapt their learning models to bolster entrepreneurship, preparing employees and students for the skills needed to innovate. This approach also helps individuals transform their ideas into tangible innovations (Abusamra, 2022).

It has been established that this study is dealing with PsyCap and EO as key resources to drive SIP. Before proceeding, it is important to clarify what this resource encompasses. Fitz-Enz (2000) proposed that human capital (HC) accounts for four central components viz., Psycap, intellectual capital, emotional capital, and social capital – collectively referred to as “PIES.” Of these, PsyCap is viewed as the leading component, having the potential to reckon with distinct challenges within an organization (Y. Tang & Shao, 2019). PsyCap accounts for four facets, viz., hope, self-efficacy, resilience, and optimism (HERO) (Avey et al., 2022; Luthans & Youssef-Morgan, 2017; Zhu et al., 2022). Specifically, self-efficacy means that one is confident in taking on challenging tasks and putting forth efforts to attain success; optimism involves one’s positive attribution of succeeding now and in the future; hope reflects one’s belief in persevering toward goals and adjusting paths to achieve goals (Luthans et al., 2006; Song et al., 2024) and resilience is the capacity to sustain and; bounce back and even beyond to achieve success when one is confronted with adversity (Avey et al., 2023).

A recent review by L. D. Q. Nguyen (2020) reveals that there is increasing global interest among scholars pertaining to Psycap. PsyCap is an essential ingredient for employees to innovate. Luthans and his co-authors outlined PsyCap as an individual’s positive psychological state of evolution that encompasses four psychological resources stated above as HERO. Psychological capital has a significant impact on employees’ behaviors in the workplace (T. D. Nguyen et al., 2024). Likewise, the EO of the members of the workforce inflates the innovative performance of the workforce (Almasri & Ahmad, 2020). The extant literature on EO reveals that there is a dearth of research in the area in the academic context (Abidi et al., 2022).

So, EO is another crucial resource that needs understanding for the overall understanding of the framework. EO is defined as the extent to which individual workers proactively engage in the creation, introduction, and application of opportunities at work, marked by taking entrepreneurial risks (Jong et al., 2015). In their influential work, Lumpkin and Dess (1996) made an important distinction between entrepreneurship and EO. They clarified that EO pertains to the processes involved in undertaking new ventures, while the term entrepreneurship relates to the specific content of entrepreneurial decisions and actions (Okholina, 2010). Miller’s seminal paper from 1983 (as cited in George, 2011) is considered a significant contribution to EO research, where he explored EO as a phenomenon consisting of three dimensions: risk-taking, innovativeness, and proactiveness (RIP). According to the study of Dal-Soto et al. (2021), the facets of RIP align well with the academic environment. A risk-taking attitude delineates the degree of willingness to use resources in order to realize the implementation of projects whose outcome is balanced and the cost of failure appears to be high (Wiklund & Shepherd, 2005). Innovativeness depicts a propensity to hunt for new ideas while partaking in creative processes seeking the development of a new service (Lumpkin & Dess, 1996). Proactivity portrays the tendency to recognize an opportunity before one’s competitors (Wiklund & Shepherd, 2005).

Next, it’s important to see how the variable EO fits within the model, as entrepreneurship is often perceived as exclusive to SMEs. Drucker (1998) outlined innovation as the “specific function of entrepreneurship.” Essentially, HEIs face increased international competition, which presents new challenges requiring them to reinvent themselves in terms of attracting new students and preparing them for the labor market (Pucciarelli & Kaplan, 2016). Still worse, Pedro et al. (2020) mention that HEIs are grappling with shrinking budgets, leading them to implement efficiency measures and cost-cutting strategies. As noted by Hasan et al. (2015), this increased competition forces HEIs to reinvent themselves and seek ways to differentiate while maintaining superior quality in the service provided and ensuring satisfying experiences for both internal and external stakeholders. In this context, Alves et al. (2010) elucidate that HEIs must cultivate prolific relationships with stakeholders, which can be achieved by the integration of non-academic knowledge. Furthermore, Soini et al. (2018) and Tozzi (2021) propound that HEIs must engage with the outside world by interacting with stakeholders beyond the academic campus. Mainardes (2010) classified the stakeholders of the public universities of

Portugal by importance, with that importance being of influence or power/ urgency. His final classification of 21 stakeholders identified the top five as (1) national government/ministries, (2) senior university management (rectoral team, general counsel), (3) teaching staff and/or researchers, (4) students, and (5) research and development partner companies (Oliveira et al., 2024). Molas-Gallart et al. (2004) suggested that alongside teaching (first mission) and research (second mission), the concept of a third mission has emerged to identify the interactions between universities and their other stakeholders. However, as future employers of students attend HEIs, companies should also have a say since this is where students will demonstrate and expand the knowledge they have acquired (Plewa et al., 2015; Thatcher et al., 2016). The above underscores the significance of bringing together the different stakeholders of the academic landscape, and this can be brought about when entrepreneurship is in place. Hence, the mediator-EO.

## THEORETICAL DEVELOPMENT

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This study employed the Conservation of Resource (COR) theory. We contend that COR theory provides fresh perspectives into the PsyCap and SEI relationship. The theory of COR is relevant to innovation literature. The study of P. T. Nguyen et al. (2022) and Hunter et al. (2017), while making team innovation and innovation achievement respectively the focus of their study, employed COR theory.

To refine the theoretical foundation, a contrast of two very similar theories is outlined here to illustrate why one is more applicable than the other. Social Exchange Theory (SET) and COR theory both deal with resources, but they approach them from different perspectives. SET, rooted in sociology, focuses on the exchange of resources in social interactions. On the other hand, COR theory was originally put forth as a theory of motivation, but it goes beyond that. Hobfoll (2001) asserts the application of COR to stress literature, organizational behavior literature, and areas of psychology and management. However, a forte of COR theory is that it goes beyond predictions of stress and strain to understand motivation following the experience of strain (Hobfoll, 2001). Salminen et al. (2019, as cited in Niazi et al., 2024) posited that in organizational psychology COR is used to analyze individuals' work-related attitudes and behaviors.

SET also talks about resources, but it talks about the exchange of resources in social interactions. Both perspectives deal with resources, yet the idea is different. Think of it like this: SET is like a marketplace where people exchange goods (resources), while COR theory is like checking if everyone has enough supplies in their own storage (resource pool) (Bordia et al., 2017). COR not only talks about resources; it defines them. It sheds light on different types of it (such as personal, contextual, and internal resources (Niazi et al., 2024) or object, condition, and energy resources (Hobfoll, 1989), their interplay, synergy, etc. One resource ratchets up the usefulness of others (Niazi et al., 2024), leading to another, mobilizing other resources and creating a caravan. In fact, COR cannot be explained without a proper definition of resources (Bardoel & Drago, 2021). That's why there have been articles specially dedicated to explaining and putting forth a definition of resources (Halbesleben et al., 2014).

In public institutions, where resources are often scarce, the Conservation of Resources (COR) theory provides a valuable framework for fostering SEI by advocating for Psychological Capital (PsyCap) among employees. In public universities, where financial and physical resources are limited, investing in PsyCap (hope, self-efficacy, resilience, and optimism) can help employees maximize existing resources rather than feeling constrained by scarcity. In universities where faculty feel overburdened due to low funding and bureaucratic constraints, fostering PsyCap can prevent burnout, sustain motivation, and encourage proactive problem-solving, leading to service innovations. What is more, PsyCap is a catalyst for EO, and EO is a surefire way of generating funds through ventures, startups, and patents, all of which fuel innovation. PsyCap and EO play crucial roles in fostering innovation, especially when viewed through the principles of COR theory. PsyCap – comprising HERO – acts as

a key psychological resource that supports both the daily functions of university employees and their entrepreneurial activities, ultimately driving innovative outcomes. Clearly, COR posits that the components of PsyCap (HERO) function as a solid resource reservoir (Hobfoll, 2002).

Further, it posits that people tend to acquire, retain, nurture, and safeguard the resources that they deem of value (Halbesleben et al., 2014; Hobfoll, 1989). The theory centers on two basic principles (Halbesleben et al., 2014; Hobfoll, 2011). The first asserts that resource loss, be it actual or prospective, is more important to individuals relative to resource gain. This principle propounds that resource loss is prone to having more power in shaping individuals' behaviors compared to resource gain. The second core principle states that individuals need to secure resources to safeguard against resource loss and invest in acquiring new resources to prevent future depletion. Put differently, when individuals face the possibility of losing a valued resource, they are driven to adopt behaviors that help them manage and mitigate the loss (P. T. Nguyen et al., 2022).

According to the first principle of COR, resource loss is highly salient. Educationists, whether involved in teaching, research, or new ventures, encounter scores of challenges putting critical psychological resources at risk, such as positive thinking, self-efficacy, and emotional stability. These challenges can forestall innovation by promoting an environment of panic and risk aversion. PsyCap assists in toning this down by providing the psychological strength needed to manage resource loss. For instance, resilience allows employees to bounce back from setbacks in research or project development, while efficacy ratchets up confidence in their competencies to contribute new ideas and solutions.

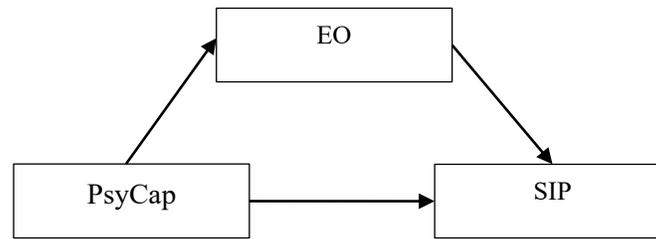
The second principle of COR suggests that individuals aspire to shield and replenish their resources. With regard to SEI, PsyCap serves as a replenishing mechanism that sustains employees' psychological resources. In connection with EO within universities, PsyCap enables employees to navigate the uncertainties and risks associated with innovation, contributing to the development of new programs, startups, or research breakthroughs. Furthermore, the synergy between PsyCap and EO creates a climate that is propitious for innovation.

Resources are arguably the most unclear aspect of the theory (Halbesleben et al., 2014). To encourage positive employee responses to resource loss, organizations should find ways to ratchet up employees' instrumental social and psychological resources. Instrumental resources are tools that help people achieve what they value and gain even more resources along the way. Think of things like autonomy, or supportive coaching—they empower employees to do their jobs better and stay motivated. As a result, they might unlock more opportunities, such as better pay, better opportunities, or chances to move up the career ladder (Kiazad et al., 2014).

Commonly, EO within universities calls for collaboration, experimentation, and the willingness to challenge the status quo – all of which are shored up by PsyCap. By protecting against resource loss and facilitating resource replenishment, PsyCap creates a positive feedback loop. This synergy fosters a resilient and motivated workforce, enhancing the university's overall capacity for innovation. This not only drives individual innovation but also fosters a collective resource pool that enhances the university's overall innovative capacity. Innovation itself is a form of resource gain, thus enhancing the overall resource pool of the university, benefiting both individuals and the institution.

### ***THEORETICAL FRAMEWORK***

The conceptual framework of the study is depicted in Figure 1. The generation and installation of innovation hinge on the capital changes in an organization (Mohanty, 2009). Capital has been transitioned from its conventional form of economic capital to human capital at first, then to social capital, and finally to psychological capital (Jafri, 2012). Psychological capital is believed to harbor innovation inside the corporations through the creation of good context. And this has given prominence to this notion to a fair degree (Avey et al., 2011; Jafri, 2012; Luthans et al., 2007; Rego et al., 2012).



**Figure 1. Propositions**

In keeping with the literature, one of the decisive factors for developing innovation appears to be the “psychological traits of the workforce of any organization” (Lee et al., 2008). As a matter of fact, innovation is pivotal for the efficacious performance of the organization. A study in Pakistan focusing on the banking sector revealed that individuals with high self-efficacy, hope, resilience, and optimism exhibit greater innovative behaviors (Hmieleski & Corbett, 2006). The results of Ziyae et al.’s (2015) study depicted a significant effect of PsyCap on innovation in IT. Owing to the indisputable impact of PsyCap on innovation, the study at hand seeks to look into this effect in Pakistan’s HEIs.

Despite the paramount importance of human resource development (HRD) in universities, research on the role of PsyCap within HEIs is lacking (Mutonyi, 2021). This paper, thence, contends that further investigation of employees’ PsyCap in this HE sector is pivotal as it can positively impact the overall outcomes (Decramer et al., 2013).

**Proposition 1:** PsyCap has a positive and significant impact on SIP in HEIs.

Empowered employees possess the capability to foster innovation and delve into novel concepts, thereby influencing innovation (Al-Jinini et al., 2019; Tassabehji et al., 2019). EO, recognized as a pivotal factor in the generation and execution of innovation (Ejdys, 2016), encompasses the trait known as RIP. These traits, in turn, stimulate employees’ curiosity to explore novel ideas. This notion is supported by Vafaei-Zadeh et al. (2019), who emphasize that EO contributes to enhanced firm innovativeness. An array of studies has consistently demonstrated the substantial influence of EO on innovative performance (G. Tang et al., 2015; Zhou et al., 2008).

**Proposition 2:** Entrepreneurial orientation has a positive and significant impact on the SIP in HEIs.

The study of Sulistyani and Suhariadi (2022) revealed that social capital (SC) is positively related to entrepreneurial orientation (EO). In effect, PsyCap is nothing but an elevated version of SC. Ziyae et al. (2015) hold that capital has transitioned from its conventional form of economic capital to human capital at first, then to social capital, and finally to psychological capital (Jafri, 2012). The study at hand, thereupon, aspires to ascertain the impact of PsyCap on EO as a host of behavioral and psychological factors are believed to bear upon the intrapreneurial behavior (Farrukh et al., 2017).

Prior studies have consistently demonstrated the pivotal role of self-efficacy in mitigating perceptions of risk and diminishing the likelihood of failure (Goel & Karri, 2006; Krueger & Dickson, 1994). Similarly, optimism plays a pivotal role by fostering the anticipation of ultimate rewards and sustaining entrepreneurs during challenging phases (Al Issa, 2021).

Even so, the relation between PsyCap and EO has been sparsely studied, but the above arguments make a case for the strong existence of EO/PsyCap relations. Therefore, this study holds that EO is significantly related to PsyCap. Based on the above description, the following hypothesis is formulated:

**Proposition 3:** PsyCap has a positive and significant impact on EO in HEIs.

Innovation hinges on cognitive faculties, hopefulness, and factors like self-efficacy. This is in recognition of the fact that in order to tap into opportunities, people need to feel in control and shrug off naysayers and cynics. By the same token, optimists cash in on opportunities so they can see their chances of success better than others. Optimists see things in a positive light, which makes their belief stronger that they have good control over things, and this helps them make capital out of opportunities (Al Issa, 2021). Likewise, self-efficacy augments one's belief in one's capabilities, which in turn enhances one's conviction that problems can be dealt with (Al Issa, 2021). These indicators resonate within the theoretical restraint of the social cognitive theory (SCT) that spotlights success as being influenced by PsyCap, and we define success in terms of increased innovation (Al Issa, 2021).

Essentially, the dynamic interplay among self-efficacy, optimism, and hope forms a robust trio that not only propels entrepreneurial pursuits but also steers their course by molding perceptions of risk, facilitating the recognition of opportunities, and nurturing the resilience to persist in the face of adversities (Al Issa, 2021). It can be asserted that the higher the PsyCap, the higher the EO, which will be reflected in increased innovation. Therefore, HERO can promote success through proactiveness, innovativeness, and risk-taking (Al Issa, 2021).

**Proposition 4:** EO mediates the relation between PsyCap and SIP in HEIs

## METHODOLOGY

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An extensive review of existing literature sets effective research in motion. It maps the research landscape, defines boundaries, and develops questions that advance knowledge. The theoretical foundation of this study is rooted in the COR theory (Hobfoll, 1989), which highlights the critical role of resource acquisition, preservation, and utilization in achieving sustainable outcomes. EO is a central mediator in this model, linking PsyCap and SIP. By examining how psychological resources leverage EO to foster innovation, this study explores a dynamic and interconnected relationship.

The review process combined resources from Scopus, Web of Science (WOS), Google Scholar, and other academic databases. This multi-database approach ensured comprehensive coverage of relevant studies. Keywords such as “psychological capital,” “innovation,” “EO,” “resource conservation,” “resilience,” “innovativeness,” “competitive advantage,” etc., were employed to identify a wide range of pertinent literature.

By synthesizing COR theory and the mediating role of EO, this research model captures the complex interplay between PsyCap, SIP, and EO. The methodology blends theoretical rigor with practical insights, offering a structured framework to explore the transformational potential of PsyCap in driving innovative performance through EO.

## THEORETICAL IMPLICATION

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This study makes significant contributions to the theoretical landscape by extending the COR theory and literature on SEI through the conceptual model it presents. By integrating PsyCap as a key driver of SEI and highlighting EO as a mediator, the study expands COR theory. Specifically, it demonstrates how the psychological resources of employees, such as hope, resilience, and self-efficacy (Avey et al., 2022; Luthans et al., 2007; Zhu et al., 2022), can be leveraged not only for individual outcomes but also for fostering innovative service performance.

Building on COR theory (Hobfoll et al., 2018), our paper extends the SEI literature by illustrating that the threat of losing vital resources – such as PsyCap – can spring up among employees owing to countless challenges (Hofhuis et al., 2015). This threat emboldens employees to protect or replenish these resources, fostering the emergence of specific psychological states and entrepreneurial behaviors that drive SEI.

In the realm of SEI literature, this paper provides a novel perspective by linking PsyCap directly to SIP. While much of the existing research explores technological factors influencing innovation, this study focuses on the non-technological factors, such as PsyCap, that drive EO, particularly within universities. By positioning EO as a mediating factor, the research also introduces a fresh theoretical approach to understanding how individual PsyCap can translate into innovative service performance through EO.

This broader conceptualization adds depth to the understanding of PsyCap's potential in shaping SIP and underscores the importance of fostering psychological resources to drive SEI in academic institutions. This study enriches COR theory, innovation, and PsyCap literature by introducing a comprehensive model that connects psychological resources, EO, and SIP in the context of HEIs. This approach opens new pathways for understanding how cognitive processes influence service innovation outcomes.

Predominantly, the COR theory emerged to explicate stress and coping (Kiazad et al., 2014). As a result, a great deal of research has targeted stress and emotional responses (Wheeler et al., 2012). By understanding its core principles (i.e., resource loss and resource acquisition), we hope to better understand other behavioral outcomes, such as SEI. Thereupon, this study widens the range of outcomes linked to COR theory within educational settings.

## CONCLUSION

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This paper has carefully developed a theoretical framework that offers valuable insights for future research in this field. This piece of work manifests that COR theory provides a valuable framework for understanding responses to SEI. It sheds light on the crucial role of psychological capital in fostering service innovation performance within HEIs, with EO mediating this role. The findings suggest that universities aiming to boost service innovation should invest in developing their staff's PsyCap and EO. This approach not only promotes creativity and adaptability but also strengthens the institution's ability to respond to evolving educational demands and challenges. Moreover, this study emphasizes the potential of PsyCap-driven EO to enhance SIP, encouraging universities to adopt targeted strategies that foster innovation within the academic setting. By understanding the interconnected roles of PsyCap, EO, and SIP, HEIs can better position themselves as hubs of creativity and excellence.

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