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Human Capital Development and Its Contribution to Institutional Sustainability and Community Impact at Prince Sattam bin Abdulaziz University

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Conceptual and institutional analysis

ABSTRACT: Universities are increasingly judged not only by the education they provide and the research they publish, but also by their capacity to remain resilient and create visible value for the communities they serve. This article examines human capital development as the connecting mechanism between those expectations at Prince Sattam bin Abdulaziz University (PSAU). It adopts a theory-informed integrative review and institutional document analysis, bringing together research on human capital, sustainable human resource management, organizational learning, resilience, university sustainability, and the third mission of higher education. Official PSAU and Saudi Vision 2030 documents are read alongside this literature to identify how investment in faculty, professional staff, leaders, and students can generate durable institutional and social outcomes. Five mutually reinforcing pathways are identified: teaching and learning quality; research and innovation capacity; digital and administrative capability; leadership, succession, and organizational resilience; and community-engaged knowledge application. The analysis argues that counts of courses, participants, publications, or volunteer hours are insufficient on their own. PSAU needs an integrated measurement system that traces development inputs through capability gains, workplace transfer, institutional outcomes, and community-level effects. A Human Capital–Institutional Sustainability–Community Impact framework is proposed to connect workforce planning, professional learning, knowledge retention, partnerships, and impact evaluation. The framework offers a practical basis for aligning human capital policy with PSAU’s strategic goals, Saudi Arabia’s Human Capability Development Program, and the wider responsibilities of a regional public university.

1. INTRODUCTION

Human capital is often described in universities through familiar indicators: the number of faculty members holding doctoral degrees, the proportion of accredited programs, the volume of professional development, research productivity, or staff participation in training. These indicators are useful, but they can narrow the meaning of development. A university does not become sustainable simply because it delivers more workshops, recruits more qualified employees, or records more certificates. Human capital creates long-term institutional value only when knowledge, judgment, relationships, and professional commitment become embedded in teaching, research, administration, leadership, and partnerships with society.

This distinction matters for public universities working under rapid economic and social transformation. Saudi universities are expected to improve academic quality, support national innovation, develop labor-market-ready graduates, increase efficiency, strengthen social responsibility, and contribute to Saudi Vision 2030. The Human Capability Development Program places education, skills, lifelong learning, and global competitiveness at the center of national development. For Prince Sattam bin

Abdulaziz University (PSAU), which serves Al-Kharj and neighboring governorates, human capital development is therefore not an internal personnel matter. It is a strategic route through which the university can sustain its educational and research missions while expanding its value to the surrounding community.

PSAU's stated goals make this relationship explicit. They include attracting and developing exceptional human resources, strengthening quality, advancing research, building partnerships, ensuring financial sustainability, improving administrative support, and developing social responsibility programs (Prince Sattam bin Abdulaziz University [PSAU], 2026a). Its strategic plan links faculty development with academic quality, research support with innovation, digital transformation with efficiency, and community service with local sustainable development (PSAU, 2026b). The underlying logic is clear: capable people improve institutional processes; stronger processes support resilience and quality; and a resilient university is better able to create public value.

Yet these relationships are not automatic. Training can be disconnected from job needs. Research incentives can reward publication without strengthening local problem-solving. Leadership programs can identify talent without creating real succession pathways. Community initiatives can produce impressive participation figures while leaving their longer-term effects unknown. Development opportunities may also be unevenly distributed across colleges, branches, professional categories, or career stages. Without clear governance and evaluation, human capital programs risk becoming a collection of activities rather than a coherent institutional capability.

This article asks three questions. Through what mechanisms can human capital development strengthen institutional sustainability at PSAU? How can the same investments increase community impact? What governance and measurement framework can connect development activities to durable institutional and social outcomes? The article does not claim causal effects through a survey or experiment. Instead, it offers an integrative institutional analysis grounded in established scholarship and official policy documents.

The central argument is that human capital should be treated as a renewable institutional asset rather than a stock of individual qualifications. It grows when people learn, collaborate, mentor others, and apply knowledge to meaningful problems. It deteriorates when expertise is isolated, workloads prevent learning, incentives reward short-term outputs, or experienced employees leave without transferring what they know. Institutional sustainability depends not merely on possessing talent, but on developing, retaining, sharing, and directing it toward public value.

2. CONCEPTUAL AND THEORETICAL FOUNDATIONS

Human capital theory proposes that education, training, experience, and health increase people's productive capacities (Becker, 1993; Schultz, 1961). In higher education, the concept extends beyond labor productivity. Faculty contribute disciplinary expertise, pedagogical knowledge, research judgment, professional networks, and mentoring capacity. Administrative and technical staff hold essential knowledge about regulations, systems, budgets, quality assurance, laboratories, and stakeholder relationships. Students develop human capital through curricular learning, applied experience, research, entrepreneurship, volunteering, and professional identity formation.

The resource-based view adds an institutional perspective. Organizations achieve durable advantage when they possess valuable capabilities that are difficult to imitate or substitute (Barney, 1991). Buildings and technologies can often be replicated, but a mature culture of collaboration, a trusted community network, a high-performing research team, or a deeply embedded quality system is harder to copy. Meta-analytic evidence indicates that human capital is positively associated with organizational performance, especially when knowledge is organization-specific and connected to operational outcomes (Crook et al., 2011). PSAU therefore gains more when employees learn to solve its actual academic, administrative, and community problems, rather than merely accumulating general credentials.

Dynamic capability theory explains why development matters under changing conditions. Institutions must sense emerging needs, seize opportunities, and reconfigure resources (Teece et al., 1997). In a university, those processes depend on people who can interpret labor-market shifts, redesign curricula, adopt teaching technologies, establish interdisciplinary research, respond to regulation, and build partnerships. Digital transformation, for example, is not achieved through software procurement alone. It requires process redesign, data governance, cybersecurity awareness, and attention to educational purpose (Vial, 2019).

Organizational learning connects individual competence to collective capability. Knowledge becomes institutionally valuable when it is articulated, exchanged, tested, and incorporated into routines (Nonaka, 1994). A lecturer who attends a course on assessment contributes little to organizational learning if the knowledge remains personal. Broader value appears when the lecturer redesigns assessment, shares the approach, contributes to program review, and produces evidence of improved learning. Absorptive capacity similarly describes the ability to recognize, assimilate, and apply external knowledge (Cohen & Levinthal, 1990). Partnerships and exchanges yield value only when ideas are adapted and retained.

Sustainable human resource management broadens the discussion beyond immediate performance. It asks whether human resource practices preserve employee capability, well-being, employability, fairness, and social legitimacy over time (Kramar, 2014). This field warns against treating people as resources to be consumed for short-term output. Sustainable practice balances institutional goals with employee development and societal benefit (Aust et al., 2020; Macke & Genari, 2019). Ambitious research and accreditation targets must therefore be supported by reasonable workloads, transparent opportunities, recognition, and career pathways.

Institutional sustainability is defined here as a university's capacity to preserve mission quality, adapt to change, use resources responsibly, retain essential knowledge, and maintain legitimacy across generations. It includes financial and environmental dimensions, but also academic, organizational, and social ones. Sustainable-university research emphasizes whole-institution approaches connecting governance, education, research, operations, and external engagement (Lozano et al., 2015; Velazquez et al., 2006).

Community impact refers to demonstrable changes in knowledge, capability, health, opportunity, organizational practice, economic activity, social cohesion, or environmental conditions that are reasonably connected to university engagement. It is more demanding than counting activities. The third mission literature distinguishes service delivery from reciprocal knowledge exchange, innovation, entrepreneurship, policy support, and civic engagement (Benneworth & Jongbloed, 2010; Compagnucci & Spigarelli, 2020; Perkmann et al., 2013). A community course is an output; improved professional practice is an outcome; a sustained improvement in service quality or local employment is an impact.

3. NATIONAL AND INSTITUTIONAL CONTEXT

Saudi Arabia's development agenda gives human capability a prominent role in economic diversification and social transformation. The Human Capability Development Program emphasizes educational foundations, future-ready skills, lifelong learning, and alignment between education and labor-market needs (Saudi Vision 2030, 2026). Universities are expected to develop graduates for a knowledge-based economy while strengthening research, innovation, public-sector capability, and quality of life.

PSAU's strategic architecture is closely aligned with this direction. The university identifies human resource attraction and development as a strategic goal and connects it with student competitiveness, teaching quality, research growth, partnerships, financial sustainability, administrative support, and social responsibility (PSAU, 2026a). Its Vision 2030 initiatives include a Future Leaders Initiative and an initiative to establish a Talent Management Department, both linked to outstanding human capital (PSAU, 2026c). Its SDG and ESG reporting describes targets concerning distinguished recruitment, employee satisfaction, professional development, exchange with leading universities, incentives, skills improvement, and human resource service units (PSAU, 2024).

The community dimension is substantial. PSAU reports educational programs, consultations, medical services, volunteer opportunities, and partnerships serving internal and external beneficiaries. Official data indicate growth in programs, beneficiaries, volunteers, and volunteer hours between 2023 and 2025, alongside extensive health services delivered through university colleges (PSAU, 2026d). These figures demonstrate reach, but they also raise the next evaluative question: what lasting difference did the activities make, and which capabilities produced that difference?

Research and innovation provide another bridge. PSAU identifies health, sustainability, energy and industry, and future economies as priority areas and reports structures for emerging technologies and technology transfer (PSAU, 2026e). Such structures create value only when researchers, technicians, administrators, students, and partners possess the complementary skills required to move from ideas to adoption. Human capital development is therefore the operating system connecting PSAU's strategic ambitions.

4. METHODOLOGICAL APPROACH

The article uses a theory-informed integrative review combined with qualitative document analysis. This approach is appropriate because the problem crosses disciplinary boundaries and requires the synthesis of conceptual, empirical, and policy literature. The reviewed scholarship covers human capital, strategic and sustainable human resource management, training transfer, organizational learning, dynamic capabilities, resilience, digital transformation, university sustainability, employability, and the third mission.

The institutional component draws on public PSAU materials concerning its vision and goals, strategic plan, Vision 2030 initiatives, SDG and ESG reporting, community service, and research and innovation. The Human Capability Development Program was included as the principal national policy reference. Documents were selected because they directly state objectives, initiatives, activities, or indicators relevant to people development, sustainability, and engagement.

Following established principles of document analysis and directed content analysis (Bowen, 2009; Hsieh & Shannon, 2005), concepts from the literature supplied initial categories—capability formation, knowledge conversion, resilience, sustainable work, partnership, and impact—while additional themes were developed from the institutional documents. Official figures are treated as institutional reports rather than independently audited causal evidence. The study offers an analytical framework and evidence-informed propositions, not a statistical evaluation of PSAU programs.

5. HUMAN CAPITAL DEVELOPMENT AS AN INSTITUTIONAL CAPABILITY

5.1 From training volume to strategic capability

Professional development is most effective when it begins with a diagnosed need, is designed around authentic work, includes practice and feedback, and is supported after the formal event (Aguinis & Kraiger, 2009; Salas et al., 2012). This challenges a common institutional habit: judging success by the number of courses delivered or attendees registered. Participation confirms access, but it does not establish learning, transfer, or organizational benefit.

At PSAU, development planning should begin with a capability map derived from strategic goals. Academic quality requires curriculum design, student-centered pedagogy, assessment, advising, program review, and accreditation. Research growth requires methods expertise, grant development, project management, ethics, data stewardship, interdisciplinary collaboration, and knowledge transfer. Digital transformation requires process analysis, data literacy, cybersecurity, accessible design, and change management. Community responsibility requires consultation, co-design, public communication, volunteer management, impact evaluation, and partnership governance.

A capability map would distinguish university-wide needs from specialized needs in colleges, campuses, and professional units. It would also make development cumulative. Instead of isolated workshops, employees could progress through pathways combining formal learning, applied projects, mentoring, peer observation, and evidence of practice. Research shows that sustained, interactive, context-sensitive faculty development is more likely to change teaching than one-off events (Gibbs & Coffey, 2004; Steinert et al., 2016).

5.2 Faculty capability and educational sustainability

Teaching quality is one of the most direct ways in which human capital supports sustainability. Programs remain viable when they are coherent, responsive to labor-market and societal needs, and capable of producing credible learning outcomes. Faculty need more than subject expertise. They require pedagogical judgment, assessment literacy, digital competence, inclusive practice, and the ability to use evidence for course improvement.

Development should be connected to program-level work. Faculty learning might center on revising a course specification, designing an authentic assessment, improving a high-failure module, integrating sustainability into a discipline, or analyzing student progression. Resulting artifacts can be peer reviewed and used in quality assurance. Professional development then produces an immediate institutional asset rather than an attendance certificate.

Structured mentoring is especially important for new faculty and early-career researchers. It can help newcomers understand academic standards, institutional processes, research expectations, student needs, and the local community. Mentoring also protects institutional memory by transferring tacit knowledge that is rarely captured in manuals, especially across geographically distributed colleges.

5.3 Research, innovation, and knowledge-transfer capability

Research capacity is not the same as publication volume. A sustainable ecosystem also depends on formulating relevant questions, building teams, securing resources, managing projects, maintaining ethical and methodological quality, sharing infrastructure, supervising students, and translating findings for users. PSAU's priority areas invite interdisciplinary work that isolated specialists cannot deliver.

Development should support team science and knowledge exchange. Researchers need to collaborate across disciplinary languages, engage government and industry, manage intellectual property, assess readiness for application, and communicate with non-academic audiences. Technology transfer structures are effective only when researchers and administrators understand one another's responsibilities and incentives recognize engagement as legitimate academic work.

Absorptive capacity is relevant on both sides. The university must learn from partners, while external organizations must be able to use university knowledge. Joint problem-framing workshops, partner secondments, practitioner fellowships, and co-supervised student projects can create relationships through which knowledge is interpreted and adapted rather than simply delivered.

5.4 Digital and administrative capability

Digital transformation is frequently described as a technical project, yet failures often reveal organizational weaknesses. New systems alter roles, workflows, evidence requirements, communication, and authority. Employees need space to question inefficient routines before those routines are automated, as well as confidence to interpret data and responsibility to protect privacy and security.

PSAU can combine technical instruction with process improvement. Cross-functional teams could examine a service—such as advising, research approvals, procurement, community registration, or development records—map the current process, identify duplication, and redesign it around user needs. Staff would learn while solving an institutional problem.

Administrative development deserves the same strategic attention as faculty development. Professional staff sustain the systems on which teaching, research, finance, quality, and engagement depend. Career pathways, communities of practice, job rotation, and recognition for process innovation can improve retention and reduce dependence on a few experienced individuals.

5.5 Leadership, succession, and sustainable work

Leadership development should build the capacity to coordinate across boundaries, make evidence-informed decisions, manage conflict, lead change, and enable others. Day (2000) distinguishes individual leader development from leadership capacity embedded across relationships. Universities need both.

PSAU's Future Leaders Initiative can contribute to sustainability when selection is transparent, participation is diverse, and development is connected to institutional challenges. Participants might lead improvement projects, work with senior mentors, rotate across units, and present evidence of results. Succession planning should identify critical roles and capabilities rather than preselect positions for particular individuals.

Development cannot compensate for chronic overload, ambiguous expectations, weak recognition, or unequal access to opportunity. Sustainable human resource management emphasizes well-being, continued employability, and long-term capability alongside performance (Ehnert et al., 2016; Kramar, 2014). PSAU should therefore examine who receives development, who has time to apply it, and whether evaluation and promotion systems reward teaching improvement, collaboration, mentoring, administrative innovation, and community engagement.

6. CONTRIBUTIONS TO INSTITUTIONAL SUSTAINABILITY

Human capital strengthens institutional sustainability through connected mechanisms. The first is continuity of knowledge. Universities depend on expertise that accumulates over years: how to maintain accreditation evidence, manage laboratories, support particular student populations, negotiate partnerships, or interpret regulations. Documentation is necessary, but it cannot capture all professional judgment. Mentoring, team-based work, communities of practice, and planned handovers reduce the loss that occurs when experienced staff move or retire.

The second mechanism is adaptive capacity. Sustainable institutions do not merely preserve routines; they recognize when routines no longer fit. Faculty who understand emerging practice can update curricula. Researchers can redirect projects toward new needs. Staff who analyze service data can identify bottlenecks. Leaders who encourage constructive challenge can convert local observations into institutional decisions.

The third mechanism is organizational resilience. Resilience involves anticipation, coping, and adaptation rather than simple recovery (Duchek, 2020). Strategic human resource systems contribute by building flexible expertise, social networks, shared purpose, and distributed decision capacity (Lengnick-Hall et al., 2011). A university with cross-trained teams, clear communication, trusted leaders, and accessible knowledge can maintain essential functions during disruption more effectively than one dependent on rigid roles and informal gatekeepers.

The fourth mechanism is quality and legitimacy. Quality assurance becomes sustainable when it is professional inquiry rather than periodic document production. Employees need to interpret evidence, identify causes, test changes, and learn from results. Harvey and Green (1993) show that quality includes fitness for purpose and transformation. For PSAU, the question is not only whether procedures were followed, but whether students, partners, and communities experienced meaningful benefit.

The fifth mechanism is responsible resource use. Human capital affects financial and environmental sustainability because knowledgeable employees design better processes, avoid duplication, maintain assets, and use data for planning. A program that reduces procurement errors or energy waste may generate value beyond its delivery cost. Financial sustainability should not be pursued through development cuts that weaken future capability. It is more durable when improvement and workforce planning reduce avoidable cost while protecting mission quality.

These mechanisms reinforce one another. Strong professional networks improve resilience; resilience protects quality; quality strengthens reputation and partnerships; partnerships create new learning and resource opportunities. Weak development can produce the opposite cycle of overload, error, turnover, and lost trust.

7. CONTRIBUTIONS TO COMMUNITY IMPACT

A regional university's community impact is shaped by the relevance and accessibility of its knowledge. PSAU's reported training, consultations, medical services, awareness programs, volunteering, and partnerships show that it already operates through multiple engagement channels (PSAU, 2026d). Human capital development can deepen their effect in four ways.

First, it improves engagement quality. Faculty and students may possess strong disciplinary knowledge but still need skills in listening, co-design, cultural responsiveness, plain-language communication, safeguarding, and partnership ethics. Engagement should begin with a jointly defined problem rather than a university-designed activity seeking beneficiaries. Training in participatory methods recognizes community members as knowledge holders.

Second, it connects engagement with teaching and research. Service-learning, community-based research, clinical placements, consulting projects, and capstone assignments can create reciprocal value when carefully supervised. Students gain applied competence and civic responsibility; partners gain analysis, services, or innovation; faculty generate new questions. These arrangements also strengthen graduate capital because students build experience, networks, and the ability to explain how learning applies beyond the classroom (Bridgstock, 2009; Tomlinson, 2017).

Third, development improves partnership durability. Partnerships often depend on personal relationships, but institutional continuity requires shared objectives, agreed responsibilities, data protocols, review points, and multiple contacts. Staff who understand partnership governance can prevent collaboration from ending when one person changes role. The Triple Helix perspective emphasizes that innovation emerges through interaction among universities, industry, and government (Etzkowitz & Leydesdorff, 2000). In Al-Kharj, such interaction can address health, agriculture, logistics, environmental management, public administration, entrepreneurship, and workforce development.

Fourth, development strengthens impact evaluation. Before an intervention, teams can define the need, target group, expected change, baseline, and timeframe. Afterward, they can assess learning, behavior, service improvement, health or social outcomes, partner capacity, or policy use. Not every program requires an experiment, but every program should explain what changed and why the evidence is credible.

Existing indicators can serve as an output layer. Numbers of programs, beneficiaries, volunteers, examinations, and hours show scale. A second layer should assess quality and outcomes: beneficiary learning, accessibility, repeated participation, adoption of

recommendations, or skills applied at work. A third layer should examine longer-term impact where feasible: improved health management, employment, enterprise development, environmental practice, or community capability. This layered approach distinguishes broad reach from deep effect without dismissing either.

8. A HUMAN CAPITAL–INSTITUTIONAL SUSTAINABILITY–COMMUNITY IMPACT FRAMEWORK

The analysis supports an integrated framework, abbreviated HCI-SCI, intended to prevent human capital development, institutional sustainability, and community engagement from being managed as separate portfolios. It contains five linked stages.

The first stage is strategic need. Capability priorities should derive from PSAU’s mission, risk profile, program reviews, labor-market evidence, community needs, and national priorities. The question is what the university must be able to do better, not merely what training employees wish to attend.

The second stage is inclusive development. Methods may include courses, mentoring, coaching, peer observation, job rotation, communities of practice, research teams, exchange, action learning, and applied projects. Access should be monitored across employee groups, campuses, disciplines, career stages, and demographic categories.

The third stage is capability conversion. Participants apply learning to work. Managers agree on application goals, provide time and resources, remove barriers, and review evidence. Knowledge is shared through repositories, demonstrations, revised procedures, team meetings, and mentoring. This converts individual learning into organizational capital.

The fourth stage is institutional and community outcomes. Institutional outcomes include improved learning, research quality, service efficiency, digital maturity, engagement, knowledge continuity, partnership performance, resource efficiency, and resilience. Community outcomes include access to expertise, stronger organizations, better professional practice, health and well-being gains, entrepreneurship, environmental improvement, and civic participation.

The fifth stage is learning and renewal. Evaluation findings influence workforce planning, budgets, program design, incentives, and partnership decisions. Unsuccessful initiatives should provide evidence about assumptions, implementation barriers, and changing needs rather than being concealed.

A balanced dashboard can operationalize the framework. Input indicators include development investment, protected learning time, mentor availability, and participation equity. Capability indicators assess demonstrated competencies. Transfer indicators record applied projects, revised courses, improved processes, shared resources, and mentoring. Institutional outcomes include student success, research collaboration, service time, staff retention, savings, and continuity in critical roles. Community outcomes include beneficiary knowledge, behavior change, partner adoption, employment or enterprise effects, health outcomes, and sustained collaboration. Higher education impact assessment supports this movement from activity measurement toward evidence of outcomes and contribution (Findler et al., 2019).

Measurement must avoid two errors. The first is reductionism: assigning a financial value to every academic or social contribution. The second is vagueness: claiming broad impact without evidence. A mixed dashboard respects different kinds of value while requiring each claim to be supported by an appropriate indicator. Because community change emerges with government, employers, civil society, families, and beneficiaries, evaluation should explain PSAU’s credible contribution rather than claim sole causation.

Table 1. *Core pathways in the HCI-SCI framework*

Development domain	Capability created	Institutional sustainability outcome	Community impact pathway
Teaching and assessment	Curriculum, pedagogy, assessment, and advising	Program quality, student success, and accreditation readiness	Graduate competence, professional practice, and lifelong learning
Research and innovation	Methods, collaboration, project management, and transfer skills	Research quality, diversified teams, and innovation capacity	Evidence for policy and services, technology transfer, and knowledge exchange

Development domain	Capability created	Institutional sustainability outcome	Community impact pathway
Digital and administrative development	Data literacy, process redesign, cybersecurity, and service design	Efficiency, continuity, transparency, and adaptive capacity	Easier access to services, faster collaboration, and better public information
Leadership and succession	Strategic judgment, coordination, mentoring, and change leadership	Resilience, knowledge retention, trust, and continuity	Stable partnerships, responsive public service, and institutional credibility
Community-engagement capability	Co-design, communication, partnership, and evaluation skills	Mission alignment, legitimacy, and relational capital	Health, education, economic, environmental, and civic outcomes

9. DISCUSSION AND PRACTICAL IMPLICATIONS

PSAU has a strong strategic basis for connecting human capital, sustainability, and community responsibility. The main challenge is not the absence of initiatives, but the need to make the relationships among them visible and governable. Human resources, development and quality, research and innovation, information technology, student affairs, community service, colleges, and branch campuses all influence the same capability system. If each unit reports only its own activities, the university may see outputs without understanding institutional change.

A cross-university Human Capital and Impact Council could provide coordination without centralizing all delivery. Its role would be to agree priority capabilities, review participation equity, connect development with strategic risks, and examine whether major programs produce transfer and outcomes. Membership should include academic and professional staff, students where relevant, and community or sector partners. Colleges and units would retain flexibility, while the council would establish common standards and data definitions.

Development portfolios could record not only courses attended but applied evidence: a redesigned assessment, a published protocol, a research collaboration, a process improvement, a mentoring contribution, or a community outcome. Portfolios could inform appraisal and promotion without assuming that every employee contributes identically. Academic careers are diverse, and professional staff require equally credible recognition.

Partnerships should be treated as learning infrastructures. Agreements are useful, but their value depends on activity, reciprocity, and results. Each strategic partnership could include a capability-development plan identifying what university and partner personnel need to learn, how knowledge will be shared, and how continuity will be maintained. Joint appointments, secondments, co-supervision, workshops, and challenge-based projects can develop both institutional and community capacity.

Evaluation should remain developmental rather than punitive. Employees are less likely to report problems when data are used mainly for blame. A learning-oriented system asks whether a program was relevant, whether participants had time to apply it, whether supervisors supported experimentation, and whether policies or systems blocked transfer. These questions produce actionable evidence.

Several cautions are necessary. International recruitment and exchange can enrich the university, but imported models must be adapted to institutional and regional realities. Talent programs can undermine trust if selection is opaque. Digital capability should not become technology-centered or disregard accessibility and privacy. Research incentives should not privilege publication counts at the expense of quality, collaboration, student development, and social relevance. Community impact should not be equated with publicity.

The framework also has implications for research. Future empirical work at PSAU could use a longitudinal mixed-method design linking baseline capability, participation in structured development pathways, evidence of transfer, institutional

indicators, and selected community outcomes. A useful design would follow several strategic projects over two or three years. Interviews and observations would explain mechanisms, while administrative and beneficiary data would estimate change. Comparative analysis across colleges could identify contextual conditions rather than assuming one uniform effect.

More training does not necessarily produce more sustainability or impact. The decisive issue is conversion. Human capital creates institutional value when learning changes practice; practice becomes reliable when embedded in systems and relationships; and institutional capability becomes socially valuable when it addresses needs defined with the community. PSAU's strategic goals already contain the elements of this chain. The next step is to manage and measure the chain as a whole.

10. IMPLEMENTATION ROADMAP FOR PSAU

A staged implementation would make the HCI-SCI framework manageable and prevent it from becoming another reporting layer. In the first year, PSAU could establish shared governance, identify a limited set of strategically critical capabilities, and create baselines. The diagnostic process should combine workforce and performance data with interviews, focus groups, program reviews, risk registers, and partner feedback. Its purpose would not be to rank employees, but to identify where the university depends on scarce expertise, where development access is unequal, and where strategic goals are being constrained by capability gaps. A concise institutional dashboard should be agreed at this stage, with responsibility for each measure and safeguards against excessive data collection.

The second year could focus on a small portfolio of applied pilots. One pathway might support faculty teams redesigning assessment and curricula; another might bring academic and professional staff together to improve a digital service; a third might build community-engagement and impact-evaluation capability around a regional challenge. Each pilot should include a clearly stated need, expected competence, protected learning time, an applied project, supervisory support, evidence of transfer, and a review with intended beneficiaries. This structure would allow PSAU to compare not merely attendance, but the conditions under which learning becomes improved practice.

In the third year, successful pathways could be scaled and connected to workforce planning, budgeting, appraisal, promotion, succession, and partnership management. Development records should show contributions to teams and institutional assets, not only personal completion. Mentors, project sponsors, and employees who share expertise should receive visible recognition. The university could also publish an annual human capital and impact report explaining participation, transfer, outcomes, lessons, and remaining capability risks. Honest reporting would include initiatives that did not work as expected and the changes made in response.

Throughout the three stages, implementation should remain participatory. Colleges and professional units need room to adapt common principles to their missions. Community partners should help define relevant outcomes, and employees should be able to challenge indicators that create perverse incentives. The value of the roadmap lies in disciplined learning: diagnose carefully, test at a workable scale, retain what creates value, and revise what does not.

11. LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

This analysis has several limitations. It draws on public institutional documents and published scholarship rather than internal workforce records, interviews, observation, or independently verified outcome data. Official sources are valuable for identifying strategic intent and reported activity, but they cannot establish that a particular development initiative caused an institutional or community result. The proposed framework also brings diverse colleges, roles, and forms of engagement into a common model; empirical research may reveal that capability formation and transfer operate differently across academic, clinical, technical, and administrative settings. Public reporting can overrepresent visible programs while overlooking informal mentoring, routine problem-solving, and relational work that sustain universities every day.

The HCI-SCI framework should therefore be treated as a testable governance model, not a completed evaluation of PSAU. Future studies could validate its pathways through longitudinal case studies, staff and partner interviews, social-network analysis, and matched institutional indicators. Comparative research across colleges or Saudi universities could examine which combinations of leadership support, protected time, incentives, and partnership quality are most strongly associated with sustained transfer and public value.

12. CONCLUSION

Human capital development is not a supporting activity at the edge of university strategy. It is the means through which strategy becomes practice. At PSAU, investment in faculty, professional staff, leaders, and students can strengthen teaching quality, research and innovation, digital administration, organizational resilience, resource stewardship, and community engagement. These contributions are most durable when development is aligned with real needs, accessible across the institution, supported in the workplace, shared through teams, and evaluated beyond attendance.

The proposed HCI-SCI framework connects strategic need, inclusive development, capability conversion, institutional outcomes, community outcomes, and organizational learning. It also replaces a narrow focus on activity counts with a layered view of inputs, capability, transfer, outcomes, and impact. By adopting such an approach, PSAU can demonstrate not simply that it develops people, but how that development sustains the institution and improves its contribution to Al-Kharj, the wider region, and national development. The core principle is straightforward: a sustainable university continually renews its people, converts their learning into collective capability, and directs that capability toward public value.

Declarations

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Author Contributions

The author conceived the study, designed the analytical framework, reviewed the literature and institutional documents, interpreted the findings, and prepared the manuscript.

Ethics Statement

This article is based on publicly available documents and published literature and did not involve human participants, personal data, or animal subjects. Ethical approval was therefore not required.

Data Availability

All institutional and policy materials analyzed in this article are publicly available through the official websites identified in the reference list.

Conflict of Interest

The author declares no conflict of interest.

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