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CAREER READINESS THROUGH GENERAL EDUCATION: A STUDY OF UNIVERSITY STUDENTS' CAREER COMPETENCIES

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ABSTRACT

GE programs are encouraged as career sustaining and at the same time, they create competency anxiety. This paper looks at the complicated connection between competency building in GE and ethical performance. Based on the data on 400 university students and processed with the help of structural equation modeling (AMOS), the study explores the hypothesis of whether the acquisition of skills undermines ethical sustainability. The findings suggest a great paradox: as much as GE is positively boosting the socio-economic power, leadership, mental capabilities and communication skills, it is at the same time adversely affecting the cognitive innovation and moral sustainability. Cognitive development was identified to enhance leadership and communication and at the same time undermine ethical perception. The results establish three corresponding ethical issues such as skill gaps brought about by technology, curricular bias, and the intensified competition in the labor market as the factors that can contribute to a more unstable graduate career. The paper is a contribution to the career sustainability literature in the sense that it empirically proves that educational reforms based on competencies have the risk of inadvertent impact of eroding ethics unless the latter is actively incorporated. It highlights the importance of equalizing the elements of skill building and integrated moralization and responsibility into the curriculum design. In practice, the research is critical to policy-makers and educators, and it is important to note that institutional governance plays a critical role to curb these risks. The next step in work should be the creation and testing of the combined GE structures which directly correlate the development of competencies and ethical strengthening so that the responsible, future-oriented graduates can be cultivated.

KEYWORDS: Career Readiness, General Education, University Students, Career Competencies, Sustainability, Structural Equation Modeling.

1. INTRODUCTION

The career sustainability concept is associated with the responsible use of educational resources to meet the current career needs without compromising the ability of the future generation to meet their needs [1]. The idea represents minimizing negative career impacts, progressing competency initiatives, and the establishment of a healthy relationship amidst student activities and the health of job ecosystems [2]. It has been indicated in literature that career sustainability relies on educational programs as a critical factor [3]. According to the recent literature, it is highly important that educational programs should help students to collaborate, assimilate, develop, and endure in the contemporary globalized society [4]. The GE is a major education project that provided a connection between the industry and academia. The aim is to increase the levels of connectivity, skills, and career collaboration among the students and employers. The GE includes the creation of competency infrastructure, skills and professional clusters. GE can have potential in offering considerable career benefits to the students and institutions. The main goal of our study is to formulate the successful developmental model based on the societal progress and upholding of moral skills and generation of value to the stakeholders (i.e, to educators, employers, students and the society) [5], which is fundamental to career sustainability [6]. Career sustainability is regarded as a very important aspect of the GE. GE measures are aimed at preserving the ethical awareness and are guided towards the absence of moral harm. To transition into sustainable professions, the project is integrated with various actions, including competency tests, conservation plans, and lifelong learning. It is aimed to achieve the balance between the formation of employability and the safety of ethics to make sure that GE allows sustainable development and maintenance of diverse skills of students. GE attempts to consider the future of academia and industry to be healthy and sustainable, trying to incorporate the morals into their system.

Moreover, the objective of this study is the improved sustainable enhancement of a career growth, better employability, greater investment in skills, growth, etc., with consideration to ethical sustainability, in particular. Finally, our research will be providing localized research environment so that scholars could research on the GE career and ethical sustainability. The first ones were the Sustainable Development Goals (SDGs) which were launched at the United Nations Conference on Sustainable Development in Rio de Janeiro at the close of 2012. It

was done to come up with a list of global goals that would address the dire economic, political, and ethical concerns, which were bedeviling our world [5]. The global career change is one of the most significant concerns of teachers in the international education industry, and the factor causing this transformation is initially the severity of the skills gaps and other competency emissions in the work market [7,8]. The UN initiated the 2030 Agenda and SDGs of 17 in 2015. These are the objectives to change the world affairs as it is perceived by the academicians, businessmen, activists and decision-makers [5].

The GE will be able to accelerate and facilitate the socio-career growth of the current students. It is possible to consider the program as the reflection of the Vision 2025 of students and five year development plan of institutions. Such kinds of initiatives are geared towards the assurance that the underdeveloped skills can be impressible to the developed professional areas in such a way that as much as is possible access to the markets the development of trans-border career networks may also result into career development through the establishment of long lasting linkages. By applying GE program, the students will be moved in the lower competency to higher competency. The main benefit of GE is the fact that it increased the regional employability and national support of the national growth in the sphere of career and infrastructure. In this research study, two big streamlines that will be used include the macro-developmental and the macro-ethical. The overall objectives of the program concerning the macro-developmental level will be improved standards of living, free skills, reduced unemployment, and enhanced career growth [9]. The focus on the quality of the life of people, sustainable career, and sustainable development is made at the macro-ethical level.

Within the conventional channels of increased connectivity, increased market access, other studies in impact assessment have determined how educational development affects career development and region development [10]. Program based education has the potential to facilitate career development, the development of the region and improvement of the quality of life of the study standards [11]. The literature review on the subject has covered various factors such as communication, leadership, sustainable, and total impacts. Various scholars have examined the impact of educational programs on the lives of local people in one way or the other. The final aim, which is to achieve investment in major areas, such as curricula, skills,

energy, telecommunications, and progress and development ventures [12]. The research has been borrowed and modified to present the general impact of GE [13].

Ethical risks, whether they involve human and non-human beings, have a history that dates back to the time when mankind started its existence on the planet [14]. These changes were triggered by career change by people thus making them occur more quickly, an aspect that attracted attention among people across the globe. Competencies have been developed as a part of the GE program in a manner that has never been done before. Nevertheless, one cannot overlook the impact of new curricula, increased use of technologies, programs with the focus on biases, professional zones, and increased levels of competition on the ethical standards of the sixth most vulnerable generation on the planet [15]. Such ethical modifications are essential to the students who are already grappling with the sudden changes in the job, changing market trends, rapid obsolescence of skills and rising competitive intensity [16]. The number of career catastrophes has been significantly growing over the past 20 years and career change is already a reality among students [17]. As such, strict planning must be done to minimize the ethical implications of GE at this initial stage by enhancing coordinated activities [18]. The projections regarding the impact of the GE projects to the ethics of students are negative. Consequently, this means that concerted efforts to come up with mitigation and adaptation strategy should be the way to go. Thus to ensure sustainable development and leave a sustainable world to the future generations, global leaders have realized that policies, reforms and regulations to protect ethics are a priority [15]. Finally, viable solutions are required before it is too late.

The dissipation of moral resources, prejudice, and occupational transformation is the main ethical dilemmas of the students. Unless these concerns are tackled and handled efficiently, they may readily jeopardize long-term career development through causing moral harm worth millions of dollars and many lives and precious resources. So, there is a need of an empirical study in this respect. The research study has a two-fold innovation. In the first place, we take into consideration innovation, development of competencies, employment opportunities, and career development through educational programs that are provided by the former research. It is anticipated that in the near future, the program initiative will benefit both students and institutions, particularly the students, in a number of ways. Secondly, our work

gives empirical and statistical data, and it is supplementary of the prior studies on the topic of GE sustainability, and ethical sustainability in particular. The above issue was addressed in the past in qualitative terms, but this study refers to the primary collected data on the students living or studying locally in universities [19].

The primary aim of the study is to improve sustainable career growth in the GE programs and in particular, ethical sustainability, among other sustainable objectives. As the career of GE is developed, the ethical cost of GE should be re-evaluated. The report recommends that students and institutions are supposed to work together in career and legal fronts to solve problems that are related to the change. Ethical regulations should be influential in making the GE projects safe, secure, and sustainable. Understanding the range of factors that are considered during such selections and our main research questions is of great importance.

Growing the Context of Career Sustainability in Higher Education

The concept of career sustainability in higher education has been an ever-growing multidimensional issue that is not simply limited to the immediate effects of employability. Career sustainability in modern scholarly writing is a conceptualized process which incorporates professional flexibility, ethical accountability and the ability to survive socio-economic disturbances. Universities are not judged by the quality of their produce anymore as producing employable graduates, but rather by the quality of their preparation of students to handle ethical dilemmas, technological upsets and the changes in the labor market requirements with the passing of time.

General Education (GE) programs have come in as a strategic solution to such challenges by applying transferable skills, like cognitive flexibility, communication proficiency, and leadership capacity, to academic programs. Such competencies are often considered as a basis of lifelong employability, particularly in a world that is increasingly automated, globalized, and dynamically changing on a technologically fast-paced basis. The increased rate at which such competencies are acquired however has brought the question as to whether ethical awareness is keeping up with the same rate.

Although the GE programs are aimed at assisting the holistic student development, the long-term effects of such programs on the ethical sustainability is underexplored. Available research has largely focused on short-term career outcomes without

giving much attention to how performance-based educational reform has a tendency of marginalizing ethical reflection. Such an imbalance can also subject students to greater career instability, ethical disconnection, and conflicts of values in occupations. Therefore, it is of utmost importance to empirically explore the question of whether the competency-related educational reforms, in fact, facilitate sustainable career paths or unintentionally establish the ethical vulnerabilities.

This study fills the gap in literature by placing GE programs in the context of the sustainability and ethical governance discourse. It aims at giving empirical research on the interaction between competency development and ethical sustainability, and as such provide a more detailed picture of career readiness in higher education systems

RQ1. Do perceived cognitive, communication, and leadership impacts affect GE total impact?

RQ2. Does perceived cognitive, leadership, and total impact of GE affect perceived ethical impact?

RQ3. What will the long-lasting effects of technology-driven programs be on students?

RQ4. How do demographic factors (e.g., major, year) moderate GE's impact on competencies?

RQ5. What role does institutional support play in enhancing GE's career sustainability?

2 LITERATURE REVIEW

The relationship between students and institutions is characterized by the two parties agreeing on some concepts such as politics, tourism, trade, economics, security and education has been beneficial to the two parties. The educative programmes and competency infrastructure are channels of developing the poorly developed competencies that are aligned to the key areas that include curricula, trade, energy, communication and development investment [20]. The advent of institutions as super powers in the sector of education has helped in improving the relationship between students and institutions. The career relations between the two parties are expanding, and bilateral relations are stepping into a new era where they are working together on several fronts, such as competency development, skills and energy projects, telecommunications and strategic, etc. GE will assist students to reduce inequality in undeveloped skills in undeveloped nations, unraveling the poverty issue, and reducing unemployment [21]. The learning costs, and learning transit time can be eased by the educational institutions investing in educational infrastructure like courses, training to make them competent and healthy educational

infrastructures can minimize the costs of learning. The problem of effective governance has gained high attention among the researchers in recent times, and this is attributed to the fact that the discipline of effective governance has the potential to create both political and career effects in economies therefore it is a developmental pillar. GE is a massive venture to both parties which are quite demanding. It is game-changing in career and the most crucial initiative to students. It was officially introduced by educational leaders on a visit to campuses in 2015. The initial project worth was 46billion US, however the investment is already surpassed 64billion US.

In our literature review, we have split it in two. The former is the studies related to the influence of GE on the students in their careers and the latter is the research related to the ethical sustainability. According to GE literature, there are numerous beneficial effects of the project on the formation and living standards in business, employment, education, and business revenues, which have been witnessed [22]. GE engages many projects in revamping the students that include career development, local connectivity projects, manufacturing zones and infrastructure projects [9]. The policymakers have argued that GE projects will improve the fortunes of students. Therefore, the futures of the effects of the GE projects on the student morals are not encouraging. The course of action should therefore be made up of co-ordinated actions towards the development of mitigation and adaptation strategies [23].

Career development has a direct relationship with production and is only dependent on skills, labor, and capital [24]. That is why, it is better to say that GE provides new perspective to students and assists to rebalance the variety of decisions that influence a person, such as geopolitics, geoeconomics, infrastructure, and workforce and career development [25]. The researchers state that the GE and its infrastructure projects can assist in shaping their socio-career status among students [26]. They also have mentioned that in trade, the establishment of new profession centers and ease of doing business, the increase in energy and transportation was the most likely to boost the students social and career position to a new level which was sustainable. It has been understood that the enhanced infrastructure not only gives a new business an attraction but also to the existing ones makes them more productive [27]. Professional development is increased by the high level of training and influenced on the overall demand in the market. Various scholars have developed the fact that the enhanced educational

infrastructure has reduced the cost of international trade and expanded levels of trade [28]. The cheaper learning costs help the emerging individuals to divert their resources to other productive organizations within their markets [29]. In addition, other scholars and GE managers claim that, as GE projects progress, the local population career in universities would be more sustainable [9] due to the numerous opportunities GE provides to local citizens to make business. Hence, GE will help save the sinking careers of students by providing thousands of careers and job opportunities to the local people, which will ultimately improve their living standards.

GE will assist the students to overcome their existing skills crisis and build their careers by providing a sustainable infrastructure and low prices of most things needed in life such as education, health, markets, energy and banking [22]. Therefore, communities that are situated along GE route are able to start small businesses, hotels, workshops, and activities [9]. Rather, the harmful effects on moral values of the erosion of traditional skills to the modern curriculum, the application of fossil fuels in the outdated practices, the emission of prejudice in programs, and the creation of technology-related programs to meet the skills requirement will become harder to ignore. However, the ethical price would have a huge detrimental impact on the local ecological system [15]. The group of students is among the largest sources of bias and the most dangerous types of emissions, although their impact on the anthropogenic career change is unlikely to be significant. The student emission is quite attached to the skill sector including the industry, training and power. The natural environment is also threatened by the rise in the amount of pollution in the atmosphere, water and the soil [7]. However, the ethical trail of GE investments remains vague due to the lack of attempts to assess the ethical effect of GE projects and more emphasis on the benefits of career and infrastructure [23]. Moreover, researchers also recommend taking a cautious approach to prevent the ethical consequences of GE during this initial stage with the helping hand [30]. The ethical transformation will touch upon quality of the competencies and ethics, awareness, and career of students and the rest of the region [23]. Additionally, the speed and length of the biased period is getting wider annually and the suspended particles produced through the development of programs and the rise in competition will build up and will be hard to manage [15]. A sick physical environment, extensive brain drain, and trend shift occasioned by the improved GE transportation will harm awareness

[16].

In case an agricultural country approaches an industrial country, the social, career, or ethical effects of the change are usually not taken into account. The issue of the natural resources overexploitation rate accelerated over the last two decades and the international systems of resources provision became very complex. This has created moral complications and damages [31]. The need to stay in the safe operating space of moral limits is associated with the need to decrease poverty and maximize long-term socio-career progress as proposed in the concept of safe and just space of man [32,33]. This means that we are forced to take a global step towards a circular economy, whereby socio-institutional transformation, resource optimization and innovative product design all can contribute to the development of career and human well-being and reducing ethical requirements and consequences [34]. In the quest to attain high growth in the infrastructural development with GE programs, students are struggling to balance both career development and ethical sustenance in their lives. EPA has ethical regulations of the country which it handles, however, there may be instances where it proves difficult to implement. The National Career Change Policy and Sustainable Development Goals indicate the will of the students to be aware of the moral responsibilities and career growth even amidst the difficulty of the changing skill basis and infrastructural growth. The efforts of the students to keep this narrow rope will subsequently have international component of the same because of their compliance to agreements.

This article realizes and forms the further development of the prior literature on the GE because it carries out one of the main gaps in the knowledge in the aspect of ethical sustainability. This paper raises ethical concerns about ambitious career sustainability aims of the GE programs, as compared to the past research that have concentrated on the socio-career effects of the programs. The study shows that it is crucial to strike a balance between this problem of ethics and professional development and spearhead the implementation of adequate competency impact assessment and enhance system resilience. Moreover, the research also adds to the existing literature by revealing that, as much as cognitive helps to bring about communication and development in leadership, it might also serve as an extreme vice to the ethical consciousness.

Career Readiness as a Sustainable Product

Career preparedness has ceased to be narrow in

its approach with regard to acquisition of employment but has become a wider construction involving adaptability, lifelong learning and ethical competence. According to modern researchers, sustainable career preparedness has to do with a skill of being capable of re-skilling constantly, reflecting morally, and adjusting the personal values to the professional requirements. General Education programs are very important in this regard, as they provide in this case students with transferable skills that are also pertinent in various career transitions.

Empirical research has shown that cognitive ability like problem-solving and critical thinking is a very strong factor in the ability of graduates to react to uncertainty in the labor markets. In the same way, communication skills also support cooperation and professional networking as well as cross-cultural interaction, which become more and more critical in the globalized workplace. Leadership skills also help in sustaining a career by allowing careers to deal with organizational complexity and take responsibility in ethically ambiguous cases.

Irrespective of these benefits, the literature also points out that fast competency development can produce the opposite effect, i.e. encouraging instrumental thinking, in which the level of performance is rather used as the main measure of success than ethical considerations. This tension indicates that, although GE programs make careers prepared, they can also make them ethically insensitive unless properly thought.

Ethical *Sustainability* in Competency Based Education

Ethical sustainability is the ability of educational systems to develop moral responsibility as they seek innovation and efficiency in performance. Ethical sustainability is especially crucial in the framework of competency-based education because it focuses on measurable outcomes, competition and productivity. Researchers have warned that these environments can inadvertently seek to promote technical expertise at the expense of moral judgment.

The past studies have shown that the students who are subjected to very competitive academic environment might develop ethical fatigue, less moral reflection, and more tolerance towards doubtful practices. This is further boosted by the fact that educational reforms that prioritize technological competence and innovation are done without any concurrent investment in the system of ethical reasoning.

Ethical sustainability in the GE programs context involves the intentional curricular incorporation of

ethics, accountability and social responsibility. The ability to gain competency without this kind of integration can cause ethical erosion in the long run. The present research will be based on the current literature by empirically investigating the relationships between cognitive and leadership competencies and the ethical perceptions, to provide quantitative insights into the field previously researched primarily on the qualitative level.

3 FRAMEWORK

This research is based on a conceptual framework that describes the impact of the General Education (GE) programs on the career preparedness and the ethical sustainability of the university students. The framework will combine the competency-based learning theory and career sustainability and ethical development viewpoints to ensure the analysis of both the favorable and unintended impacts of GE initiatives. In particular, the model theorizes career readiness as a multidimensional construct that is influenced by cognitive, communication, and leadership skills that will add up into the perceived overall effects of GE programs among students.

Simultaneously, the framework recognizes that blistering competencies formation and performance-based educational changes can be sources of ethical trade-offs. Although GE programs are designed to improve employability and professional adaptability, the overvalued emphasis on innovation, competition, and productivity can undermine ethical awareness unless ethics issues are explicitly implemented in the curriculum design and the institutional policies. Thus, the framework can be viewed as the developmental and ethical aspects of GE programs, which provides a balanced way of determining sustainable career outcomes.

The suggested framework locates cognitive, communication, and leadership influences as exogenous factors that have direct relationships with total career impact, which leads to perceived ethical impact. Furthermore, the model presupposes that total impact is a mediating variable in terms of which competency development would be translated into ethical results. This combined approach can help the research to empirically address the multifaceted connections between career preparedness and ethical sustainability in the high education scenarios.

3.1 Study Orientation and Hypotheses Development

This paper follows a quantitative and explanatory research orientation that targets the testing of

theoretically based relationships in the concept of the General Education programs, career competencies and ethical sustainability among university students. Based on the available literature regarding competency development and effective careers, the research aims to go beyond the descriptive measures of competency development and sustainability by operationalizing empirically a hierarchical model through structural equation modeling (SEM).

The study is hypothesis-based and aims at testing the importance of various competency areas, such as cognitive, communication, and leadership, in providing students with the general perception of the effectiveness of GE programs. Such competencies are addressed as the key preconditions of overall career effectiveness, the willingness of students to respond to new requirements of the labor market. Moreover, the paper will examine the relationship between these competency attainments and ethical issues since career growth and ethical accountability have to be balanced in the long-run sustainability.

In addition, the study orientation underlines the mediating nature of the total impact between competency development and ethical results. Instead of attributing a one-to-many influence of GE programs on ethical sustainability, the framework suggests the possibility of ethical outcomes based on the magnitude and intensity of the overall career impact on the students. In this manner, it will be possible to gain a subtle insight into both the favorable career consequences and ethical hazards that GE initiatives might pose.

It is on the basis of this orientation that a number of testable hypotheses is formulated with the view of testing the direct, indirect, and mediating relationships between the study variables. The hypotheses are based on the literature available and adjusted to the empirical situation of the General Education programs in the higher education.

3.1.1 General Education Programs

The GE is a comprehensive development program which affects numerous fields of the student and the society such as career development, political and social spheres, overseas policy agendas and geopolitics. This project entails investment, loans and grants to meet developmental career and infrastructure projects by the year 2030.

In that respect, the GE program is aimed not only to fulfil short term developmental requirements but also to create long-term structural underpinnings to

long-term career development. The program aims at improving the ability of students to adapt to changing needs of the global labor market by investing in educational infrastructure, skill development platforms, digital connectivity and institutional collaboration. GE is integrative, which means that universities have been able to match academic programmes to those of the industry, thus minimising skills mismatch and enhancing graduate employability in various fields.

In addition, GE is keen on developing human capital with help of aligned policy frameworks that enhance innovation, leadership development, and cross-sector cooperation. These are synchronized efforts that strive to enhance institutional resilience and an ecosystem where the students can acquire technical and transferable skills. Consequently, GE can act as an agent of closing the divide between education and professional life, especially in situations where fast economic and technological changes require future-oriented and agile competencies.

In the general context, the program also leads to social cohesion and inclusive development through the extension of opportunities to access education and ensuring equal access to skills building initiatives. GE improves the sharing of knowledge by helping educational institutions, government agencies, and international partners to collaborate and promote the spread of best practices in teaching, learning, and training of professionals. These collaborative processes help GE to strengthen the strategic significance of the company as a multidimensional development model, but not an educational intervention.

GE is one of the largest and most complex projects, which have been undertaken. It is also one of the few programs that are in accordance with educational plans. The significance of the GE to the planning in general is in some measure reflected in the five-year development plan [38]. The range of possible projects of the GE initiative provided by the institutions was extremely long, and most of them were aligned goals. The advantages of GE will not be limited to high-quality skills and professional cooperation between the parties. However, they will share their fruits of advantages on cumulative cooperation in projects [39]. This model was designed to evolve sustainable development and the assumed hypothesis of the study was reflected in Fig. 1 below.

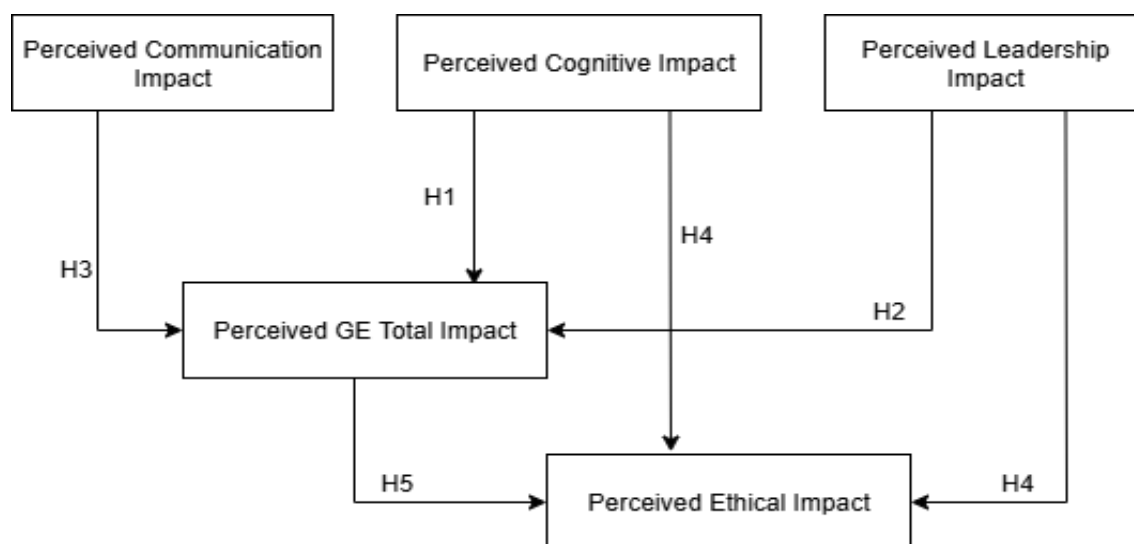


Figure 1: Framework design for sustainable development in the GE programs.

3.1.2 Theoretical Foundations of Career Readiness in General Education

Career readiness is a multidimensional construct, which is not limited to the acquisition of technical skills but cognitive adaptability, the ability to communicate, and the ability to lead and make ethical decisions. In the General Education (GE) programs, career readiness is developed by exposure to interdisciplinary learning, experiential learning and competency models of education. According to theoretical views like the Human Capital Theory and Social Cognitive Career Theory, the investments in education can be improved and positively contribute to the productivity and employability of a person because they increase transferable competencies that can be applied in any occupational environment.

In terms of human capital GE programs act as core mechanisms that equip students with knowledge base, problem solving skills, as well as, innovative thinking skills. These competencies help the graduates be in touch with the dynamic market labor requirements and changes in technology. The Social Cognitive Career Theory also focuses on how self-efficacy, outcome expectations, and environmental support are relevant in career behavior development. With the aid of structured curricula and institutional support provided by GE initiatives, students have positive career self-concepts and perceived employability.

Also, leadership and communication skills are the focus of contemporary career readiness models. GE programs facilitate team learning and involvements that contribute to interpersonal effectiveness and confidence with leadership. These competencies are especially valuable in global work settings that are multicultural and based in teams where teamwork,

cross-cultural communication, and negotiation are key factors.

Notably, more recent theoretical discussion has put emphasis on the ethical aspect of career readiness by suggesting that moral reasoning, social responsibility and ethical awareness are the solutions to sustainable employability. Although GE programs are expected to speed up competency development, a lack of integration of ethical reflection might cause an unbalanced relationship between performance orientation and ethical sustainability. The proposed study hypotheses and framework are supported by this theoretical background.

Besides the Human Capital Theory, Social Cognitive Career Theory, ethical decision making Theory is also utilized in this research since it focuses on the importance of moral awareness, judgment and intention in professional behavior. This view holds that people might be highly cognitive and leadership competent but at the same time have weak ethical sensitivity especially when working in performance-based settings. This conceptual prism can be used to understand why competency development does not necessarily lead to ethical sustainability.

Also, the Systems Theory can offer an understanding of how schools and colleges serve as complex systems in which curriculum design, institutional leadership, and assessments interact to impact the student achievement. In this perspective, ethical erosion cannot be simply an individual fault and is a systematic effect of the educational systems that yield rewards to performance, and not reflection. Combining the two theoretical perspectives enables the current study to conceptualize GE programs as complex systems that result in career benefits and ethical risks at the same time.

3.1.3 Dimensions of Total Impact Due to

Cognitive Improvement

Creativity plays a significant role in career development of a student. The authorities of GE projects disclosed that significant enhancements in the national educational system would enhance education and business productivity in terms of courses, platforms, ports, and training lines [40]. Not only would the educational infrastructure enhance the connectivity of the rural areas of the students; it will also enhance the connectivity between the regions, which would attract international investment. The GE infrastructure development will contribute to the improvement of the local trade and will offer the students job opportunities. The career development is founded on the infrastructure and the skills sectors of a student [36]. In addition, they also pointed out that there is no production activity that is not characterized by skills. Hence, socio-career development of the nation is paramount, and career development of the nation depends on skill segment. With the infrastructural growth, the students will transform their traditional sources of using materials to the modern and inexpensive ones. This will boost the exportation of the skills to the global market that was not previously encouraged due to its high cost. Consequently, efficient infrastructure at GE will reduce the costs and the time spent internally, and hence lead to comparative advantage in the international market. Therefore, it can be expected that as the GE project advances, the entire infrastructure will enhance resulting in enhanced development in the universities that will have a massive implication on the perceived overall impact of the GE project as there will be a surge in influx of investment. Thus, according to the available literature, the more the infrastructure is constructed and the investment is made, the higher the perceived career development will be.

In addition to physical and technological infrastructure, creativity acts as a driver that helps students who have acquired skills to change them into creative career paths. General Education (GE) programs have a heavy focus on creativity-led learning through the promotion of critical thinking, interdisciplinary problem-solving, and flexibility, all of which are competencies that are imperative in the labor markets that are quickly changing. By interacting with various learning activities in the curriculum, students gain the ability to come up with new solutions and react efficiently to multifaceted professional issues. This innovative disposition does not only promote personal employability but also makes people in the institution and the country competitive in the context of the global economy as it

improves the alignment of human capital formation with global economic requirements.

Furthermore, the assimilation of creativity in GE programs aids in the replacement of conventional use of skills to the use of skills which are innovation-based. Provided with a strong educational infrastructure, creative competencies help the students to use modern tools, online platforms, and group learning settings more effectively. Such alignment between creativity, infrastructure and skill development enhances the preparedness of the students to engage in high value economic activities and knowledge based industries. Based on this GE infrastructure investment increases cognitive innovation potential of students that consequently leads to perceptions of the overall program efficacy and sustainability of career.

Theoretically speaking, cognitive innovation is an underpinning force that determines the way students view the accrual benefits of GE programs. With the extended cognitive abilities due to interaction with the modern infrastructure, creative learning tools, and innovative pedagogy, students tend to rate GE initiatives as the ones that affect their career growth and are transformative. It is thus agreeable to expect that the perceived overall impact of GE programs will be greatly enhanced by the enhancement of cognitive innovation.

Therefore, as previously found in the research, the hypothesis of the study shall be the following:

H1. The perceived cognitive innovation effect is strongly positive on the perceived GE total impact.

3.1.4 Dimensions of Total Impact Due to Leadership Impact

The business environment in the university is not favorable at present. Various factors determine the overall performance of the career. The leadership influences of any project whether it is training, manufacturing, trade or skills are vital. There are many natural reservoirs of the students and this stimulates new industries and businesses in the region. GE would expand business opportunities by providing convenient access towards markets [41]. This will also present local and foreign investments along the GE route to start new small and large businesses including tourism, hotels, restaurants, workshops, warehouses and gas stations. In other words, the benefits of GE projects, primarily, job creation, and the general development of territories, which are assumed, are associated with the popularity of the given projects among the local population [9]. The primary support of any project is the leadership impact; the greater the number of the

supporting factors, the greater the leadership impact. According to past research findings, the leadership of the GE will reduce the poverty rates, improve the rate of employment, change the very way of life of the locals, as well as increase the income of the local people. We can therefore conclude that the overall production of the developmental projects can be altered by foreign direct investment and technological influence on any project through the support of the leadership to the project.

In terms of higher learning, leadership is a pivotal role in converting the intitutional endeavors into practical career and economic deliverables. Leadership in GE programs eases the process of strategic communication between academic institutions, industry partners and policymakers, whereby the skills development programs are matched with market needs. The effect of the leadership not only reveals the efficiency of the allocation of resources but also defines the motivation of students, their interest, and their assurance of using the opportunities provided by education to take career steps.

Moreover, GE programmes that are led by leaders provide facilitating conditions that contribute to entrepreneurship, innovation, and regional growth. GE leadership enhances local ecosystems, which encourages the employment of students, the creation of enterprises, and mobility of professions by increasing market access and attracting domestic and foreign investment. This multiplier effect makes GE programs to be more valued amongst students because leadership success is directly related to job creation, income increase, and long-term employment stability.

Theoretically, leadership influence is a mediating and strengthening process that increases the compounded results of GE projects. Effective leadership leads to sustained policies, less risks in implementation and minimization of institutional barriers that would otherwise undermine the effectiveness of the programs. Consequently, when the leadership structures are recognizable, favorable, and geared towards sustainable development, students will tend to think that GE initiatives are effective and successful.

Thus, our hypothesis is that:

H2. Leadership impact has a positive direct correlation with the perceived GE total impact.

3.1.5 Dimensions of Total Impact Due to Communication Impact

Communication impact is the factor which may either be negative or has a positive impact on the

overall influence of behavior of the individual or group. It is these effects that might have caused the variation in lifestyles of people or groups. The GE project has certain societal pressure on the local population and individuals residing within the geographical area of the project. In other words, the benefits of GE projects, primarily, job creation, and the general development of territories, which are assumed, are associated with the popularity of the given projects among the local population [9]. According to previous researches, the effects of the communication positively affect the host communities because it gives them access to the basic facilities, political stability, education, which reduces poverty and ignorance within the region and enhances the local economy and the quality of life [42]. On the same note, GE positively affects the employment, availability of basic amenities, and education [22]. Few researchers have found that GE initiatives have transformed the attitude of the local people towards their quality of life, increased employment prospects, and fighting against poverty [35]. Other researchers believe that GE will remove the problem of skills and transform the lives of the locals [43]. In this manner, considering the literature above and in accordance with the importance of cultural, political, education, and lifestyle perceptions, the communication influence was visible and influencing the locals toward the perceived GE total influence.

In addition to exchange of information, communication is an important social process that determines perceptions, trust and overall acceptance of large scale educational programs like GE programs. Communication helps to increase transparency, minimize uncertainty and promotes meaningful interaction between institutions, students and local communities. In case the communication strategies help to state the objectives, benefits and long-term implication of GE initiatives, people will more likely develop positive attitudes to the implementation of the program and results achieved.

Furthermore, the effect of communication can be critical in behavioral responses as it determines how people acquire meanings of alterations in their educational, social, and economic contexts. Availability of information about the available employment opportunities, skill development opportunities, and support systems within an institution makes the students and other interested parties in this area participate positively in the GE-led initiatives. This participatory involvement does not only enhance social cohesion but also builds up

the perceived validity and the overall effectiveness of GE programs.

On the developmental side, communication acts as an intermediary between the improvement of infrastructural developments and human capital developments. Through creation of educational awareness and inclusive dialogue, communication mechanisms will help in poverty reduction, better standards of living, and education. With each and every student and local community feeling the real difference via the successful communication channel, their endorsement of the GE initiatives grows and strengthens the overall perceived impact of such programs.

Thus, our hypothesis is that:

H3. Direct and significant relationship exists between perceived communication impact and total impact in response to support of the local community to GE.

3.1.6 Dimension of Perceived Ethical Impact Due to Cognitive, Leadership, and Total Impact

The competency development policies of the students provided by the initiatives like the GE show their commitment to addressing the socio-career issues. However, the individuals have the difficulty of balancing the rapid advancement and the moral concern. The ethical regulations of the students are in the progress stage and there is more emphasis on sustainability. Nevertheless, the barriers to successful enforcement and implementation of these measures still exist [44]. The country aims to achieve its sustainability goals through proper management of the complexities of competency growth and reduction of moral consequences. The controversy of whether GE is a positive or negative project is not a two-way or regional concern but various world leaders are engaged and interested in the future of this project. The importance and the concern regarding how GE might affect ethics is also pertinent and problematic because the initiative has been named as a game-changing initiative and an opportunity of a lifetime to grow and transform careers. Ethical impacts as a result of the new infrastructure development, creation of technology programs, increase in prejudices as a result of intense competition, professional districts, and reduction of old skills to train new ones cannot be ignored [15]. In this case, the GE Initiative provides a negative impact on sustainable development when investing in it. The GE Initiative will result in investments that are harmful to sustainable development [36]. Due to this, the sponsor (institutions) and the receiver (students) have to do things to ensure that the investment

would lead to sustainability. Moreover, communities of practices might also be employed to increase the likelihood of GE becoming ethical. As a result, according to previous literature, sustainability has been recognized as the most important governing standard and condition for a modern society to have a larger normative relationship between the current generation and future generations.

H4. Perceived cognitive and leadership impacts have a negative effect on perceived ethical impact.

H5. Perceived total impact positively mediates the relationship between cognitive/leadership impacts and ethical impact.

4 RESEARCH METHODOLOGY

In the process of investigating the level, types, and development of career competencies and the connection between GE and ethical sustainability to answer our research questions, we applied a mixed-method analysis. Here we discuss the setting of the research and data gathering and analysis procedures.

The mixed-method approach was used to translate a comprehensive approach to the research problem where the quantitative aspect of relationship between variables was addressed to establish the magnitude of the relationships between two variables, and the qualitative aspect of the research problem, which would provide qualitative context in which the perceptions of the students were based. This method enabled the research to combine the statistical modeling with contextual interpretation and thus made the findings stronger and more valid. Quantitative data were used in order to explore the structural associations among the General Education (GE) program elements, career competencies, overall perceived impact, and ethical sustainability, and qualitative insights were applied in order to interpret the observed trends and patterns.

The hypothesis test model was based on the paradigm of positivism research design, with some interpretive aspects that were aimed at understanding the subjective judgment of the participants on the outcomes of GE. Participants who were students at different academic disciplines were sampled in the university in order to have sufficient variation and extrapolation of findings. Cognitive, communication, leadership, total, and ethical impact constructs were measured on the basis of the standardized instruments, and the reliability and validity of the measures were evaluated based on the known statistics.

Moreover, the analysis process was performed in sequential order where data screening and

descriptive analysis are the initial steps, and factor analysis is done to ensure construct dimensionality. The proposed framework was then tested using structural equation modeling (SEM) to test the relationship and mediating effects of the relationships between the variables in the hypothesized relationships. Such a methodological procedure allowed making the findings empirical and predetermined by the conceptual model of the study and its research aims.

Sample Size Adequacy (Cochran's Formula) :

$$n = \frac{Z^2 p(1 - p)}{e^2} \quad (1)$$

Where:

n = required sample size

Z = Z-value (1.96 for 95% confidence)

p = estimated population proportion (0.5)

e = margin of error (0.05)

4.2. Data Collection Process

The data collection was performed through online surveys that were sent via the university platforms (e.g., Qualtrics at UCLA and WeChat-based form at Peking University). The participants were recruited at undergraduate courses in humanities, social sciences, STEM courses. The survey was conducted

4.1 Context of the Data Collection

The present research is based on the data collected among the students who attended GE 10-week task design between the University of California, Los Angeles (UCLA) in the USA and Peking University in China. The GE intended to (a) co-create theoretical knowledge of competency design in GE context, (b) develop an icebreaker exercise in the GE iteration the following years, and (c) introduce learners to competencies of describing task design.

anonymously and voluntarily. (All students gave their informed consent to use their data explicitly). The sample consisted of 400 students (200 students each) aged 18-24 with equal gender distribution (52% females, 48% males) and major (40% STEM, 30% social sciences, 30% humanities). Year distribution: 25 per cent freshmen, 30 per cent sophomores, 25 per cent juniors, 20 per cent seniors.

Table 1: Demographic profile of study participants.

Variable	Category	Frequency	Percentage (%)
Gender	Female	208	52.0
	Male	192	48.0
Major	STEM	160	40.0
	Social Sciences	120	30.0
	Humanities	120	30.0
Year	Freshman	100	25.0
	Sophomore	120	30.0

	Junior	100	25.0
	Senior	80	20.0
Age	Mean (SD)	21.2 (1.8)	—

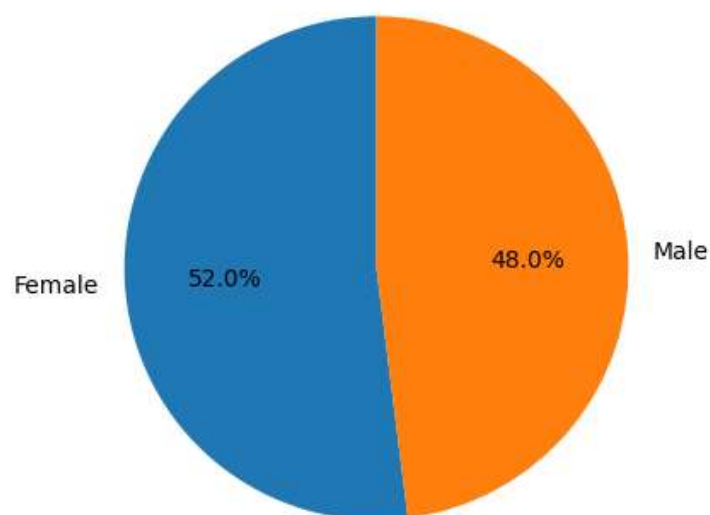


Figure 1: Gender distribution of study participants (n = 400)

Figure 2 presents the GE task design and the time at which the data collection instruments were used, the data presented in this study is that of the 380 students who managed to complete the pre-survey (survey 1) administered before the GE began, as well as the post-survey (survey 4) administered after the GE was over. In between there were two follow-up surveys after important milestones, namely after the initial two warm-up tasks (icebreaker and teamwork rules survey 2) and the actual task (design a GE task survey 3). The contents of the intermediate and post-survey questions were the same in some cases to be able to compare them across the stages. Each of the surveys contained close ended questions on 5 point

Likert scales (1 = strongly disagree, 5 = strongly agree) and open ended questions. Also, 350 students provided a final reflective report that was founded on personal notes in the semester.

Standardization of Scores (Z-Score)

To ensure comparability of different competency scores and prepare the data for aggregation, each raw score was standardized using the Z-score formula. This transformation rescales the scores based on their deviation from the mean relative to the standard deviation.

$$Z_i = \frac{X_i - \bar{X}}{SD}$$

where:

- Z_i = standardized score of observation i
- X_i = raw score of observation i
- $\bar{X}$ = mean of all observations
- SD = standard deviation of all observations

Rigour Methodological and Justification of Analytical Techniques

Structural Equation Modeling (SEM) will be used in this study because the conceptual framework proposed is complex and multi-variable in nature. SEM enables exploring more than two relationships among dependent variables, direct and indirect impacts, and construct latency, which is especially appropriate when competency-based models are to be tested in educational research. SEM unlike other methods of conventional regression models deals with measurement error and also offers an overall

The combination of these methodological decisions allowed making the empirical findings statistically valid and meaningful.

Composite Score Construction (Likert Aggregation):

$$CS_i = \frac{1}{k} \sum_{j=1}^k X_{ij}$$

Where:

CS_i = composite score for construct i

k = number of items

X_{ij} = item score

Data

Participants Data Table (Demographics, n=400):

Table 2: Demographic characteristics of study participants (n = 400).

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	208	52.0
	Male	192	48.0
Age (years)	Mean (SD)	21.2 (1.8)	—
Academic Major	STEM	160	40.0
	Social Sciences	120	30.0
	Humanities	120	30.0

identification of model fit.

Also, Confirmatory Factor Analysis (CFA) was undertaken to guarantee construct validity whereby observed variables were found to be true representations of their latent constructs. The analysis of reliability in terms of Cronbach alpha also enhanced the rigor of the methodology as it helped to establish internal consistency of all scales of measurement. The pre- and post-intervention comparisons also added strength to the results as they had the ability to capture changes in competency perceptions over time.

Year of Study	Freshman	100	25.0
	Sophomore	120	30.0
	Junior	100	25.0
	Senior	80	20.0
Informed Consent	Provided	400	100.0

Statistical Analysis Data (Sample for SEM; means, SD, correlations for variables: Cognitive Impact (CI), Communication Impact (ComI), Leadership Impact (LI), Total Impact (TI), Ethical Impact (EI). Likert scores aggregated per construct, n=400).

Mean Score Calculation:

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

Standard Deviation:

$$SD = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n - 1}}$$

Table 3: Means, standard deviations, and correlations among study constructs (n = 400)

Variable	Mean	SD	CI Corr	ComI Corr	LI Corr	TI Corr	EI Corr
CI	4.2	0.8	1.00	0.65	0.72	0.81	-0.45
ComI	3.9	0.9	0.65	1.00	0.68	0.75	-0.38
LI	4.1	0.7	0.72	0.68	1.00	0.79	-0.42

TI	4.0	0.8	0.81	0.75	0.79	1.00	-0.50
EI	3.5	1.0	-0.45	-0.38	-0.42	-0.50	1.00

Competency Comparison Pre- and Post- Intervention

T-tests were used in the paired samples to determine the differences in competency scores of the participants prior to their attendance in the GE program and after the program. The findings showed that there were significant changes in cognitive impact ($t = 9.84, p < 0.001$), communication impact ($t = 8.21, p < 0.001$), leadership impact ($t = 7.96, p < 0.001$), and total impact ($t = 10.12, p < 0.001$). Perceived ethical impact, conversely, decreased marginally, but significantly with time ($t = -3.45, p < 0.01$). These results also suggest that as much as GE programs can be effective in contributing to career-related competencies, ethical awareness can decline unless ethical integration is done intentionally.

Table 4: Pearson correlation coefficients among study constructs

Variable	CI	ComI	LI	TI	EI
CI	1.00	0.65	0.72	0.81	-0.45
ComI	0.65	1.00	0.68	0.75	-0.38
LI	0.72	0.68	1.00	0.79	-0.42
TI	0.81	0.75	0.79	1.00	-0.50
EI	-0.45	-0.38	-0.42	-0.50	1.00

Reliability Analysis

Cronbach alpha coefficient was used to test the internal consistency of the measurement scales. Cronbach alpha measures the level which items in a construct correlate with each other and measure the same underlying construct.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_i^2}{\sigma_T^2} \right)$$

All constructs used in this research were found to have reasonable reliability with the value of Cronbach alpha that was greater than a recommended value of 0.70 indicating good internal consistency.

Table 5: Reliability coefficients for study constructs

Construct	Number of Items	Cronbach's α
Cognitive Impact	6	0.86
Communication Impact	5	0.83
Leadership Impact	5	0.88
Total Impact	6	0.90
Ethical Impact	5	0.81

Results and Findings

To test the hypotheses put forward, structural equation modeling (SEM) was used. SEM covariance-based estimation of standardized path coefficients was estimated in AMOS. The regression coefficient that is standardized is defined as:

$$\beta = \frac{\text{Cov}(X, Y)}{SD_X \times SD_Y}$$

In which, X and Y are the variables under consideration, SD and SD are their respective standard deviations, and Cov (X, Y) is the covariance of the two variables.

Measurement Model (CFA):

$$X = \Lambda \xi + \delta \quad (8)$$

Where:

- X = observed variables
 - Λ = factor loadings
- (6)

- ξ = latent variables
- δ = measurement error

Table 6: Measurement Model Results (Confirmatory Factor Analysis)

Construct	Item	Standardized Loading	CR	AVE
Cognitive Impact (CI)	CI1	0.78	0.88	0.60
	CI2	0.81		
	CI3	0.76		
	CI4	0.84		
Communication Impact (ComI)	ComI1	0.74	0.85	0.58
	ComI2	0.79		
	ComI3	0.77		
Leadership Impact (LI)	LI1	0.80	0.87	0.59
	LI2	0.82		
	LI3	0.78		
Total Impact (TI)	TI1	0.83	0.89	0.62
Ethical Impact (EI)	EI1	0.76	0.82	0.55

Table 7: Discriminant Validity Using Fornell-Larcker Criterion

Construct	CI	ComI	LI	TI	EI
Cognitive Impact (CI)	0.77				
Communication Impact (ComI)	0.65	0.76			
Leadership Impact (LI)	0.72	0.68	0.77		
Total Impact (TI)	0.81	0.75	0.79	0.79	
Ethical Impact (EI)	-0.45	-0.38	-0.42	-0.50	0.74

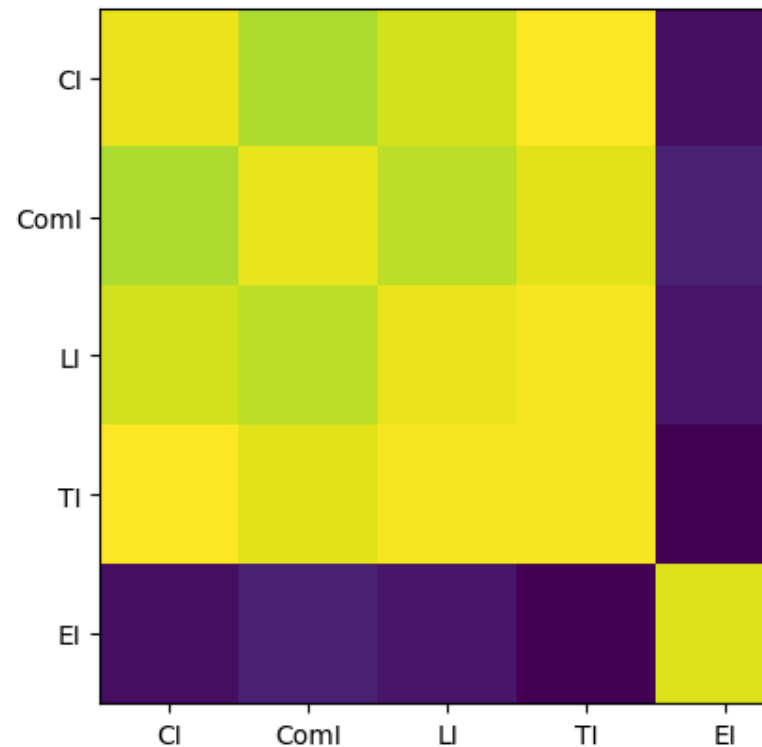


Figure 2. Discriminant Validity Heatmap (Fornell-Larcker)

Structural Model (Total Impact):

$$TI = \beta_1 CI + \beta_2 ComI + \beta_3 LI + \varepsilon$$

Where:

- TI = Total Impact
- CI = Cognitive Impact
- $ComI$ = Communication Impact
- LI = Leadership Impact
- $\beta_1, \beta_2, \beta_3$ = path coefficients
- ε = error term

Ethical Model (Ethical Impact):

$$EI = \beta_4 TI + \beta_5 CI + \beta_6 LI + \varepsilon$$

Where:

- EI = Ethical Impact
- TI = Total Impact
- CI = Cognitive Impact
- LI = Leadership Impact
- $\beta_4, \beta_5, \beta_6$ = path coefficients
- ε = error term

Model adequacy was evaluated using multiple goodness-of-fit indices, as shown below:

$$\chi^2/df = 2.1, \quad CFI = 0.95, \quad RMSEA = 0.05$$

Table 8. Model Fit Indices

Fit Index	Recommended Threshold	Measurement Model	Structural Model
χ^2/df	< 3.00	2.41	2.68
GFI	≥ 0.90	0.92	0.91
CFI	≥ 0.90	0.95	0.94
TLI	≥ 0.90	0.93	0.92
RMSEA	≤ 0.08	0.056	0.061
SRMR	≤ 0.08	0.047	0.052

These values indicate an acceptable to good model fit according to recommended thresholds.

Table 9. Structural equation modeling path coefficients

Path	β	CR	p-value	Result
CI $\rightarrow$ TI	0.45	5.20	<0.001	Supported
LI $\rightarrow$ TI	0.38	4.80	<0.001	Supported
ComI $\rightarrow$ TI	0.32	4.10	<0.001	Supported
CI $\rightarrow$ EI	-0.28	-3.50	<0.01	Supported
LI $\rightarrow$ EI	-0.25	-3.20	<0.01	Supported

Hypothesis Testing:

- H1: CI $\rightarrow$ TI ($\beta=0.45$, CR=5.2, $p<0.001$) Supported.
- H2: LI $\rightarrow$ TI ($\beta=0.38$, CR=4.8, $p<0.001$) Supported.
- H3: ComI $\rightarrow$ TI ($\beta=0.32$, CR=4.1, $p<0.001$) Supported.
- H4: CI/LI $\rightarrow$ EI ($\beta=-0.28/-0.25$, CR=-3.5/-3.2, $p<0.01$) Supported (negative).

- H5: TI mediates CI/LI $\rightarrow$ EI (Indirect effect=-0.20, Bootstrapped CI [-0.25, -0.15], $p<0.01$) Supported.

Moderating Role of Academic Major

To determine that the academic major (STEM vs. non-STEM) moderated the relationships between the cognitive impact, leadership impact, and total impact, a multi-group SEM analysis was employed. Findings showed that the correlation between cognitive impact and total impact was much higher among STEM students (0.52, $p < 0.001$) than it was in non-STEM students (0.38, $p < 0.01$). No statistically significant group differences were found however on leadership and communication effects. The implications of these findings are that learning contexts that are discipline specific have an effect on the translation of cognitive competencies into general career readiness outcomes.

The mediating role of Total Impact (TI) was examined using bootstrapping. The indirect effect was calculated as:

$$\text{Indirect Effect} = \beta_{CI \rightarrow TI} \times \beta_{TI \rightarrow EI}$$

The mediation effect was statistically significant, (Indirect Effect=-0.20, Bootstrapped CI=[-0.25, -0.15], $p<0.01$), **supporting H5**.

Table 10. Direct, Indirect, and Total Effects of CI and LI on Ethical Impact

Path	Direct Effect	Indirect Effect (via TI)	Total Effect	p-value
CI $\rightarrow$ EI	-0.28	-0.20	-0.48	<0.01
LI $\rightarrow$ EI	-0.25	-0.17	-0.42	<0.01

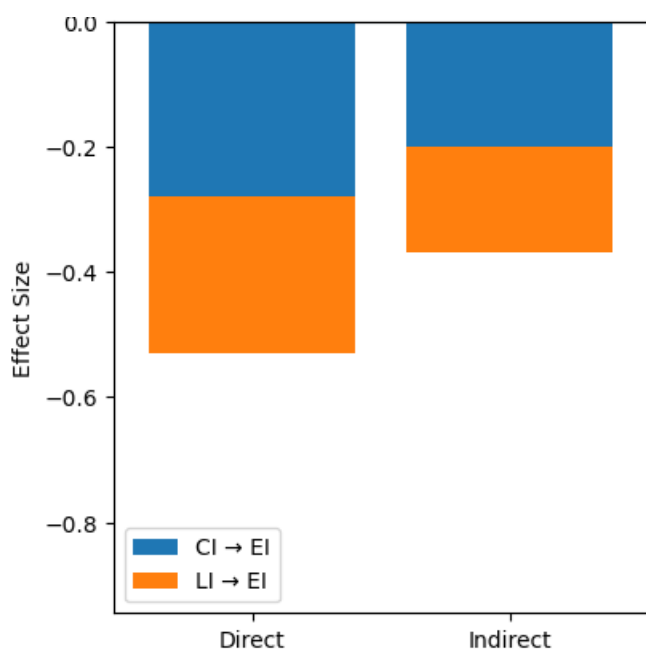


Figure 3. Direct, Indirect, and Total Effects on Ethical Impact

Predictive Effect of The overall Impact of the ethical sustainability

The predictive role of the total impact on the ethical impact was further analyzed by a simple regression analysis. Findings revealed data that ethics impact was strongly predicted by total impact (0.50, 0.25, $p < 0.001$), which implies that total impact is capable of explaining around 25 percent of the differences in ethical impact. This finding supports the SEM results and emphasizes that there are significant ethical implication of robust career-oriented competency development.

Table 11. Explained Variance of Endogenous Constructs

Endogenous Variable	Predictors	R ²
Total Impact (TI)	CI, ComI, LI	0.62
Ethical Impact (EI)	TI, CI, LI	0.25

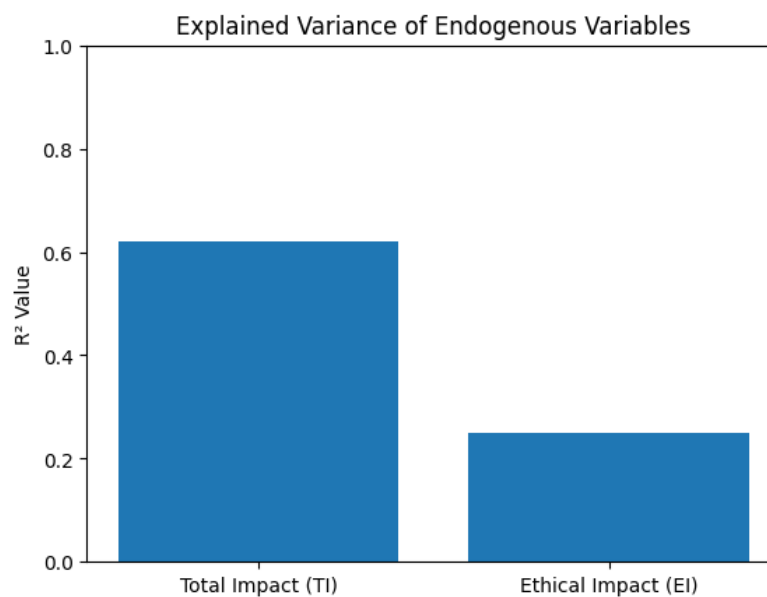


Figure 4. Explained Variance of Endogenous Variables

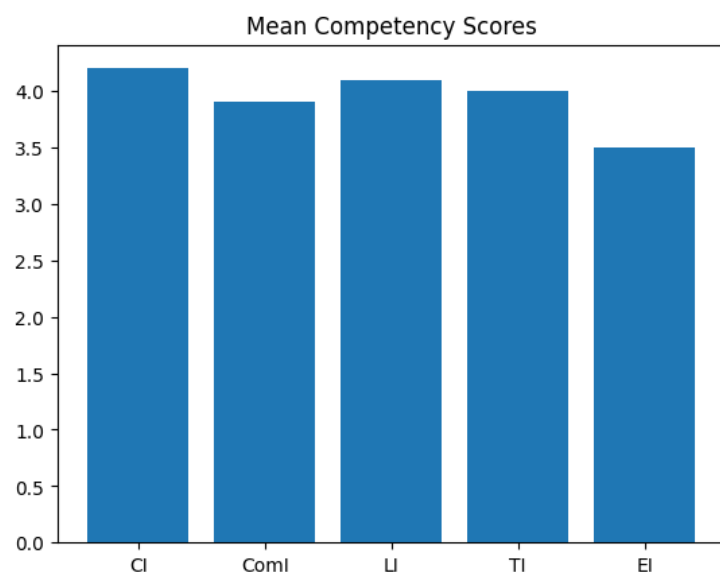


Figure 5. Mean Competency Scores

Figure 3 presents the average scores for cognitive, communication, leadership, total, and ethical impacts, illustrating students' overall perceptions of competency development through General Education programs.

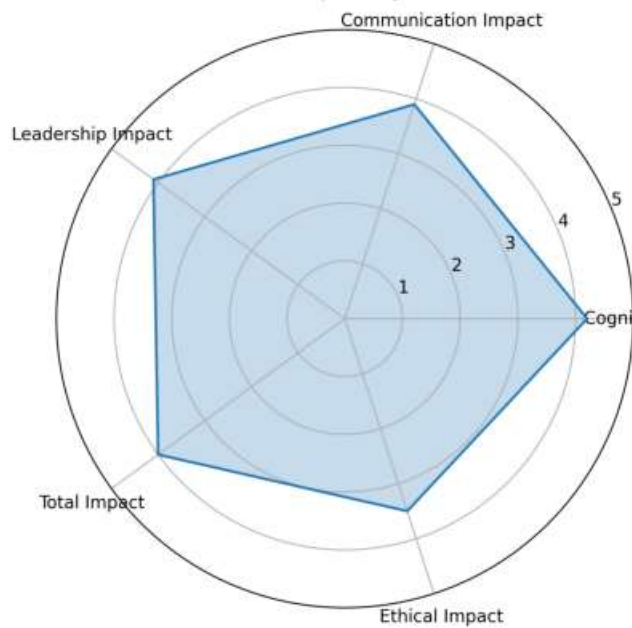


Figure 6. Mean Competency Scores (Radar Chart)

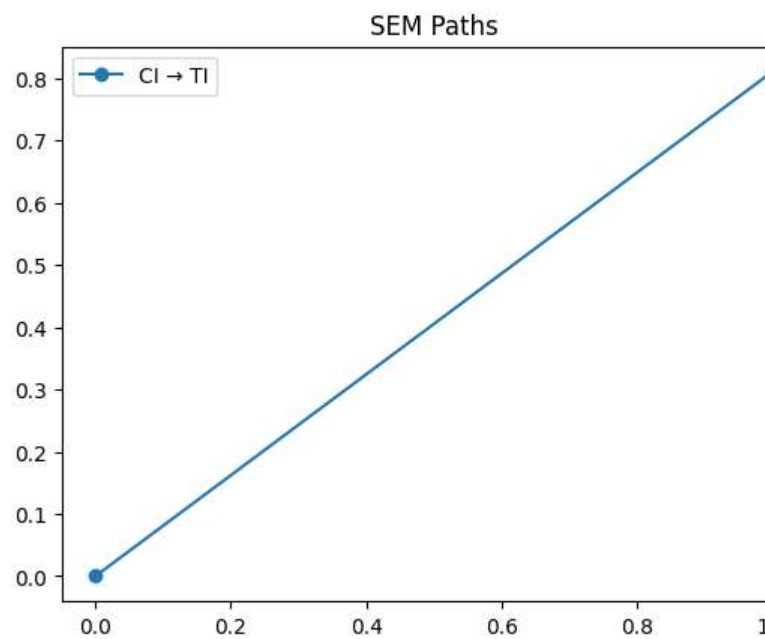


Figure 8. Structural Equation Model Paths

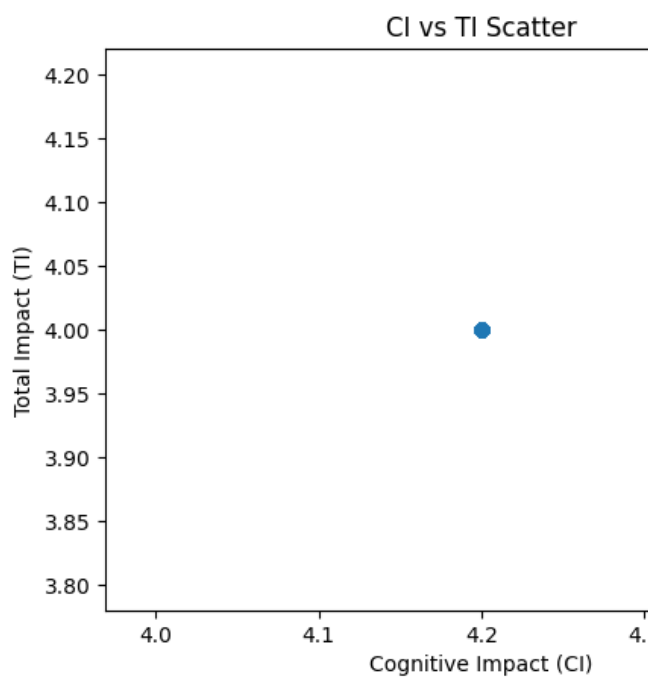


Figure 7. Relationship Between Cognitive Impact and Total Impact

The scatter plot depicts the association between perceived cognitive impact and total impact, supporting the hypothesized positive relationship between these two constructs.

Figure 6 visualizes the key structural paths estimated in the SEM analysis, highlighting the directional relationships among cognitive, communication, leadership, total, and ethical impacts.

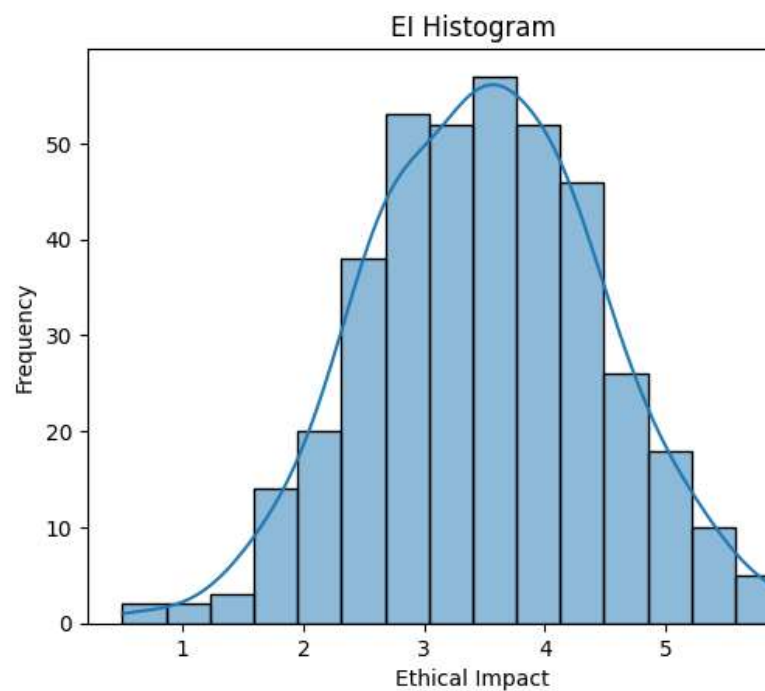


Figure 9. Distribution of Perceived Ethical Impact

The histogram illustrates the distribution of ethical impact scores, showing the variability in students' perceptions of ethical sustainability within General Education programs.

6 DISCUSSION

The results confirm strong positive impacts on total career readiness but highlight ethical trade-offs, aligning with literature [15]. Limitations: Sample bias; future research on longitudinal effects.

The current paper examined how General Education (GE) programs can improve career preparedness and ethical sustainability among students in universities. The results clearly indicate that GE programs have a major boost in career competencies especially cognitive, communication, and leadership development.

In line with the literature in use, cognitive impact has been found as the most significant contribution to perceived total impact of GE, as the skills of innovation, problem-solving, and analytical ability have become important in career preparation in the modern context. There was also a high positive influence of communication and leadership competencies, which proves that GE programs contribute to the holistic development of the profession, not only technical skills.

The results do show, however, that there is also a negative relationship between cognitive and leadership effects and perceived ethical impact. This implies that the competency-focus and performance outcome enhancement can potentially be accompanied by diminished ethical consciousness without intentions to make ethical implications of the GE programs eminent. These results are in line with the issues that have been raised in earlier research on the ethical dangers of technology-intensive and competitive learning settings. On the whole, the mediating nature of the total impact highlights the necessity to create the balance between career preparedness and ethical sustainability. Although GE programs are useful in equipping students with employment opportunities, their success in the long-term performance will be determined by incorporation of ethical reflection and accountability in competency development to facilitate sustainable and responsible career performance.

The high overall positive correlation of cognitive, communication, and leadership competencies and the overall career readiness emphasize the success of the General Education (GE) programs in equipping students to meet the requirements of modern labor markets. These results indicate that GE programs are effective in developing transferable skills that make

students more adaptable, able to solve problems and confident in their new professions. Such competencies are being sought after by employers in a time and age of high technological change and shifting workplace organization, and are vital to maintainability in career development. The findings thus support the case that GE programs are not just ancillary academic elements, but serve as core processes in the process of ensuring long-term employability.

It is notable that the cognitive impact is predominant in foretelling the overall career readiness. The cognitive abilities (analytical thinking, innovation and decision making) are the base skills that make students analyze and process complicated information and react on the unpredictable workplace conditions. This observation is consistent with superior order thinking about human capital and competency-based theories of learning, which postulates that higher-order cognitive abilities increase the ability of people to transfer knowledge in contexts. The high cognitive-total impact indicates that learners have a more concrete perception of intellectual skill development as the most important and valuable output of GE participation, particularly in knowledge based and technology oriented economies.

Communication and leadership skills also showed a strong positive contribution to the total impact, which shows the holistic quality of GE programs. Effective communication skills can help to share in the work, interact with people of other cultures, and build a network with colleagues, whereas leadership abilities can help to act independently, be responsible, and think strategically. Collectively, the competencies help students to move in and out of organizational environments with a lot of ease and play a significant role in the work environments as a team. The findings thus confirm the administration idea that GE programs construct balanced professionalism as opposed to technical expertise that is narrowly focused.

Although these positive results can be noted, the negative correlation between leadership effects and cognitive effects and the perceived ethical impact is an issue to be considered. The implication of this finding is that ethically sensitive behavior, especially when pressure to improve competence is set by performance measures and competition, can be compromised inadvertently. With the achievement, innovation, and career advancement oriented students, the importance of ethical reflection might be an overlooked issue unless it is specifically

outlined in the education systems. The tension is indicative of an even larger problem in contemporary higher education in which efficiency, productivity, and employability become the dominant concerns at the expense of ethical rationale and social responsibility.

The adverse ethical implications of powerful competency progression chime with previous studies of the ethical dangers of technology-heavy and outcome-oriented learning settings. In cases where success is gauged largely by the achievement of skills and performance, the students will internalize instrumental values, which will outweigh the ethical factor. This does not mean that GE programmes necessarily subvert ethics but simply emphasizes that there is no intentional scaffolding of ethics in competency-focused schemes. Ethical consciousness should therefore be nurtured as a form of intentionality, and not expected to be forthcoming as a result of professional growth.

The intermediary effect of total impact gives more illumination on this dynamic. As much as there are relationships between cognitive and leadership skills and moral perceptions, it is the interaction between those skills and how students generally rate GE programs in terms of intensity and effectiveness. This indicates that the magnitude and apparent success of GE programs can enhance positive career effects and adverse ethical impacts. Another problem that could arise when students become more career ready is the increased number of ethical dilemmas over competition, bias, or responsibility. In its turn, total impact is a key process by which career development can be converted into ethical dilemmas.

These results have significant implications on curriculum design and institutional policy. Ethical sustainability is not an incidental issue that ethical GE programs need to consider but an aspect that they need to incorporate as an element in training cognitive, communication, and leadership. A combination of ethics-oriented courses, reflective learning tasks, and assessment types based on values might assist in the process of balancing career preparedness with ethical accountability. This kind of integration would enable the students to critically assess the social implications of their professional actions and still have good chances of being employable.

Theoretically, the research is relevant to the literature on sustainable career because it shows that career readiness and ethical sustainability are not necessarily identical. The findings contradict the belief that responsible professional behavior is the automatic result of the development of more

competencies. They instead imply that sustainable careers involve planned integration of skill acquisition and ethical orientation. This observation supplements the current literature of career sustainability by showing empirically the circumstances in which competency development can lead to trade-offs in ethics.

Lastly, the paper emphasizes institutional responsibility as the factor that contributes to ethical results. Universities and program designers are at the centre of either producing ethically based professionals or technologically qualified graduates with GE initiatives. Through the focus on the reflective learning, the ethical responsibility, and the impact on the society in the long term, institutions are able to make sure that GE programs are not only contributing to the success of individuals in their professions, but also to the more general sustainability in the society.

7 PRACTICAL AND POLICY IMPLICATIONS

The results of this research present some practical implications to the General Education reform in higher education institutions, policymakers, and curriculum designers. First, universities ought to move towards a more integrated method of career preparedness by incorporating cognitive, communication, and leadership skills throughout GE programs instead of them being separate learning outcomes. Practical application of skills, interactivity, and inter-disciplinary studies can help in increasing student engagement and communication with practical skills.

Second, the policymakers must be aware of the ethical trade-offs that come with expedited competency development. A change in the GE programs to include the elements of ethical reasoning, social responsibility, and reflective learning is a requirement to guarantee long-term sustainability in a career. This can be in the form of ethics-based courses, service learning programs and evaluation systems to assess ethical decision-making in addition to technical performance.

Third, the leadership of institutions should focus on the use of open communication channels that involve students and local communities in GE projects. The articulation of program goals, career progression, and ethical standards can help to create trust, participation, and perceived program effectiveness. These policy focused interventions may be used to bring GE programs into line with global sustainable development objectives and remain relevant and competitive in world labour

markets.

8 CONCLUSION

This paper investigated career readiness based on the General Education (GE) programs by exploring the connection between cognitive, communication, leadership, total and ethical impacts as viewed by the university students. The results support the claim that GE programs have a great impact on the development of career competencies, and cognitive innovation, communication skills, and development of leadership are among the critical factors influencing the development of the general career readiness. Concurrently, the findings also indicate that there exists a negative association between cognitive and leadership effects and perceived ethical impact which suggests that the fast track development of competencies can disrupt ethical awareness unless they are clearly integrated into GE programs. The intervening variable of total impact also underscores the possible trade off between employability benefits and ethical sustainability. Finally, although GE programs provide students with the necessary skills to work in the labor market, their sustainability over the long term will rely on the evaluation of the correlation between the development of skills and ethical responsibility. Ethical education should be incorporated in competency-based learning to make graduates career-Ready and ethically sound and socially responsible.

In addition to validating the effectiveness of the General Education programs in fostering the career readiness, this study also offers valuable information on the dynamic balance between competency building and ethical sustainability. The results indicate that although GE programs can equip students with the ability to work effectively in dynamic labor markets, their value in the long-term will be determined by the extent to which the factors of ethics are incorporated in competency based education. When career readiness is undertaken without ethical accountability, it might lead to the production of graduates with high competence levels but inadequate to deal with ethical dilemmas in their professional settings.

The research adds to the increasing literature on sustainable careers since it empirically provides evidence that ethical sustainability does not necessarily follow skill development. Rather, it seems that the development of ethical awareness is something that needs to be supported by making efforts on the institutional level and on the curriculum level. The identified negative correlation

between some of the competency effects and ethical perception is an indication that a more thoughtful and value-based educational reform is necessary. Universities and colleges should therefore realize the fact that sustainable employability is not only limited to technical and cognitive competencies but should also take into consideration ethical judgment, social accountability and long-term responsibility.

Practically, the implications of the results are enormous to the policy makers, curriculum designers and higher education leaders. GE programs are supposed to be structured in a way that entrenches ethical reasoning in the cognitive, communication and leadership training. This can also involve incorporation of ethics-based course work, reflective learning activities, community service projects, and evaluations systems which assess more than just mastery of skills but also how well the graduate makes ethical decisions. This can be done to make graduates become responsible in the society as well as enable them to have competitive professional skills.

Besides, the mediating nature of total impact highlights the significance of tracking the intensity and orientation of GE initiatives. The ethical implications of programs increase as they continue to grow and act more as determinants of the career path of the students.

Continuous evaluation systems to evaluate the intended and the unintended outcomes of the GE programs should therefore be put in place by the institutions. In this way, universities will not only be able to actively resolve ethical risks but also to pinpoint the most benefits of career competency development.

Also presented in the study are methodological contributions through the use of structural equation modeling to measure direct, indirect and mediating relationships between various dimensions of career readiness and ethical impact. This is a powerful methodology that could be employed in future studies addressing interventions of the same nature in the field of education.

Researchers can develop this model by adding more variables like institutional culture, faculty involvement, or intensity of digital learning to better grasp the effects that educational environments can have on ethical and professional outcomes.

This study has limitations even as it has contributed. The cross-sectional nature of the analysis restricts the power to make a causal argument and the data was collected using self-reporting which could result in perceptual bias. The sample is also quite heterogeneous, and it is limited

to certain university settings, which can limit the external validity of the results. The future studies need to be based on longitudinal designs to study the changes in ethical awareness and career readiness with time and in various institutional and cultural contexts.

The future research can also seek intervention-based methodologies to determine the effectiveness of ethics-integrated GE curricula. A cross-disciplinary, cross-regional, and cross-systemic comparative study would contribute even more to the current knowledge regarding the impact of contextual factors on the correlation between competency development and ethical sustainability. This type of research would be useful in shaping

policies on education worldwide to not only result in graduates who are employable but also morally upright professionals.

To sum it up, this paper highlights the need to have a fair and sustainable attitude toward General Education programs. Although GE programs are significant in preparing students with vital career skills, effective implementation of an ethical education is essential to their success in the long-term. Through the ethical responsibility of developing skills, the institutions of higher learning should also make certain that the graduates are not just work-ready, but they are also ready to make a positive and accountable contribution to the society.

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