


Article

Role of Education, Training, and E-Learning in Sustainable Employment Generation and Social Empowerment in Saudi Arabia

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Abstract: This study analyzes the role of education, training, and e-learning (ETL) in empowering Saudi society, leading to sustainable employment generation in Saudi Arabia. It applies the theory of constructivism, scoping to human aspects of teaching and learning in sustainable employment generation and social empowerment. The study primarily collects the existing variable pools from the available literature on education (EDU), training (TRA), e-learning (ELRN), government policies (GPOL), national culture (NCUL), sustainable employment generation (SUEG), and social empowerment (SEMP). The study performs second-order partial least squares structural equation modeling (PLS-SEM) with moderation analysis. The study aims to obtain the combined effect of ETL on SUEG and SEMP in the presence of GPOL and NCUL in Saudi Arabia. Primarily, the results of the path diagram show that ETL has a significant direct impact on SEMP and SUEG. Secondly, the moderation analysis results show that GPOL has been a significant moderator between ETL and SUEG and ETL and SEMP. In contrast, the analysis results show that the NCUL is not a significant moderator between ETL and SUEG, or between ETL and SEMP. Additionally, the moderation analysis results show that NCUL directly impacts SEMP. In contrast, it does not show a significant direct relationship with SUEG. In the article, the theory of constructivism emphasizes the learners' active role in constructing knowledge, which is significant for both individuals and society, and the validity of constructed knowledge and its realistic representation in the real world. The practical implementation of the education and e-learning approach of constructivism will help to bridge the gap between the skilled workforce in Saudi Arabia and the rest of the world. Moreover, the students, as learners, will be able to assert their experiences by connecting with the outside world, constructing a sustainable society, leading to sustainable employment generation and social empowerment in Saudi Arabia. The study also has a broad scope for higher educational institutions, training centers, and organizations in Saudi Arabia and the rest of the world.

Keywords: constructivism; education; training; e-learning; social empowerment; sustainable employment; Saudi Arabia



Citation: Singh, A.; Singh, H.P.; Alam, F.; Agrawal, V. Role of Education, Training, and E-Learning in Sustainable Employment Generation and Social Empowerment in Saudi Arabia. *Sustainability* **2022**, *14*, 8822. <https://doi.org/10.3390/su14148822>

Academic Editor: José Antonio Marín-Marín

Received: 2 May 2022

Accepted: 7 July 2022

Published: 19 July 2022

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1. Introduction

Education, training, and skill development can significantly influence employment generation, economic growth, and social empowerment. Ala-Mutka et al. [1] highlighted that educational establishments should create a learning platform for digital skills of multiple courses for teaching and learning. Additionally, learners should be encouraged to acquire digital competency to keep up with the current changing learning environment [2].

The Eastern Mediterranean University (EMU) highlighted the service role of corporates towards their social responsibility by facilitating the students and academic staff with free internet services [3,4]. Higher educational planners should emphasize education and learning trends to create a knowledgeable workforce to make a knowledge-based economy [5]. Educational institutions became more flexible to e-learning post the advent of COVID-19. During the COVID-19, online learning became prevalent, and instructional activities became hybrid in Saudi Arabia. Such developments have transformed the opportunities for learning [6]. There is a need to recognize teaching and create learning value via online discussions, blended learning, and face-to-face learning [7]. The universities should increase their capabilities to develop missions to fulfil the current labor market's demand to meet community needs. They must make the transfer of knowledge and creativity a priority, along with innovative technology [8].

Technology has played a significant role in e-learning and overcoming many barriers in dispersing education to the community. Technology-enabled learning has played a successful role in teaching methods and is recognized as an appropriate model-building and interpersonal approach [9]. Hofstede and Minkov [10] stated that culture had penetrated every corner of our society's educational institutions and adopting information technology as a culture played a significant role. Computer-based collaborative learning has connected with the theories of constructivism and cooperative learning, indicating students' learning in social contexts. With a constructivist learning theory, students experience a variety of learnings (knowledge acquisition) and reflect their learning in knowledge construction (knowledge transformation) [11]. Online social interaction has shown superior outcomes compared to face-to-face interaction. Moreover, it provides lots of potential to teach professionally and offers more new educational opportunities than a face-to-face interaction in higher educational programs [12]. In the view of online education opponents, online courses' quality decreases because of the absence of cues present only in face-to-face learning [13]. However, in contrast, better outcomes have been seen in online education [14].

Despite the close relationship between religion and culture and Western influence, Saudi Arabia is still influenced by changing global trends in the economic and academic world. In addition, education and culture are closely integrated [15]. The influence of national culture and ideologies also influence an individual learner in opting to join his institution to graduate [5]. Education and culture are associated with each other, following a definite developmental pattern of employability and sustainability in Saudi Arabia. People's attitude, values, education, and learnings reflect their culture in society, which reflects their education, employment, and level of engagement [16].

Social empowerment recognizes that pedagogy needs to be reflective to transform and build a healthy and energetic environment [8]. In addition, the infrastructural framework must strengthen to deliver superior services to society during and after crises [17]. Francescato and Mebane [18] explored empowerment training aspects online and in-physical modes using 'interview' and 'focus group' methodology, and by sharing ideas over social media. In a socio-economic context, empowerment is mediating between the experiential learning approaches (poverty context) and gaining learning experience [19]. Santos et al. [16] proposed an empowerment model mediating social poverty and acquisition of learning outcomes.

Saudi Arabian education policy is mixed with the Islamic Sharia principles, and its theme centers on maintaining human dignity and respecting the rights of its citizens to follow Islamic values. Geographically, Saudi Arabia is a perfect destination for overseas markets and is ranked first in the list of oil-producing and exporting economies worldwide [20]. Therefore, Saudi Arabia allocated a high priority budget, which consisted of USD 51 billion, for education and training in 2018 [21]. A committee was set up for life-long education and training initiatives to achieve sustainability goals in Saudi Arabia, along with global citizenship concepts and diversified cultural aspects [22]. Under its Vision 2030 framework, Saudi Arabia has diversified opportunities overseas to attract and invest in the

country. The economic development objective of Saudi Arabia in pursuit of Vision 2030 is to reduce the unemployment rate to 7% [21].

This study applies the constructivism aspects of the teaching and learning process in higher education at the University of Hail, Saudi Arabia, among students as adult learners. It considers students as learners, provided that they build their knowledge in the classrooms during their academic life. The instructors develop their understanding and ability to deal with challenges and overcome a variety of problems to achieve their future goals. In general terms, they gain new experiences along their academic journey [23,24]. In the constructivist learning approach, human beings construct their knowledge and determine reality based on their experience [25,26]. The constructivism theory discusses various conventional approaches to student-centered learning, rather than traditional education and learning; an individual builds their knowledge with new understanding [27]. According to radical constructivism, knowledge is constructed rather than perceptual [28]. The study applied ontology's philosophical point of view to fit with constructed reality [29]. Vygotsky [30] emphasized the cognitive approach of community development in which a child grows and makes his knowledge.

This study revolves around the philosophy of constructivism, in which students and individual learners build new knowledge from their experiences during their time in higher education. Then, the student applies their assimilated expertise and experiences to an existing societal framework in Saudi Arabia, leading to social empowerment and sustainable employment generation. The student, as a learner, learns to accommodate and reflect on new experiences and reshape the model following the current challenging framework in which the tasks and responsibilities get carried out in the local setting, and outside in the global world [24,31,32].

The study significantly contributes to Saudi Arabia, the Middle East, and the rest of the world by aligning technology in education, training, and e-learning. Technological integration in higher education implementation of e-learning has been seen as a positive social impact on constructivism [33], as it has connected the learning and construction of knowledge globally. It has opened numerous opportunities for learners, leading to the building of a nation that enhances employment opportunities and societal empowerment. Constructivist-based audio–visual technologies have advanced the existing pedagogy that enhanced human competencies skills with increased social relationships [33]. From the social constructivist point of view, the world is mediated through active social interaction [34] with others, which in turn incorporates with social construction [35]. Social constructivism has a great emphasis on education through knowledge (as a product) to learning (as a process) [36]. The students, as professionals, can deal with real-world situations as committed lifelong learners [37]. The students, as social assets, will have been able to implement their knowledge in the outside world, which they constructed through innovation and positive learning [34]. Innovation in education results in social constructivism, leading to professional development for students and instructors [38,39]. Innovation in education also emphasizes constructive curriculum design, constructivist teaching, and active learning [40]. In active students' learning under constructivism, students, as learners, build their knowledge in particular social connectedness, along with cultural development, with real-world situations [41].

Saudi Arabia is experiencing sustainable development by executing the concept of sustainable education justice by replacing traditional education with open course resources and open courseware and expanding it worldwide [42]. In terms of constructivist views of acquiring knowledge: "learning is an active process, knowledge is constructed actively not passively, and knowledge is invented instead of discovered, knowledge is personal and peculiar and socially constructed; learning is concerned with getting connected with the world, and through robust learning individual learners can solve challenging world problems" [43]. The learning constructed through education and training with technological advancement will result in sustainable employment generation and social empowerment, leading to constructivism for a nation.

2. Theoretical Perspective and Hypotheses Development

2.1. Literature Review

Under the Vision 2030 framework, the strategic objectives of the Saudi National Transformation Policy (NTP) consist of improving Saudi recruitment, training and development policies of instructors, learning with creativity and innovation, an employment-oriented curriculum, and designing student's education according to the need of the nation's growth and education and private sectors' linkage as per labor market demand [22,44,45]. Reducing dependency on the oil sector, strategic partnership, increasing productivity, and creating job opportunities are the critical plans of Saudi Arabia, contributing to economic sustainability and leading to employment generation and the sustainable development of the country [46]. The Vision 2030 program of the Saudi government has emphasized its entrepreneurial training program to explore the growth opportunities for its existing young manpower [20,45]. Applying e-learning tools in online learning significantly affects the students' engagement [47]. Learners' social networking in exchanging and constructing knowledge is significant in the formal learning management system (LMS) [48]. Moreover, the students' portals help the higher educational institutions to upgrade their established services. The "Technology Acceptance Model (TAM)" results show that the highest acceptance level of education consists of e-lectures, then in-person classroom discussion, and finally, web-based platforms [49]. Raoufi et al. [50] determined seven components in developing e-learning models, including infrastructure, education culture, learner, and evaluation. In e-learning, the factors leading to successful pedagogical delivery consist of university learners' and instructors' competency, instructor attitude towards learners, approaches, content organization, teaching strategies, online technology, feedback process, and instructor's training [51].

Advancement in ICT has impacted the education system in the last two decades, especially in e-learning and virtual education, moving away from the traditional educational system's limitations in education, research, and entrepreneurship [52]. Khan [53], in his framework, stated that web-based systems have become powerful learning interface tools. In addition, he explored his framework in eight dimensions: "institutional, management, technological, pedagogical, ethical, interface design, resource support, and evaluation". The advancement in ICTs has improved the quality of humans worldwide in the context of sustainable education [54,55]. In addition, the online framework and relative pedagogical initiatives to students' engagement in higher education contributed to an essential improvement in the field of teaching and learning [56].

ICTs can help bridge the socio-economic gap in developing countries' female population. E-learning has contributed enormously to strengthening individuals and organizations [57]. Khan and Ghadially [58] emphasized the social, economic, educational, and psychological empowerment that came with computers and information technology. Duckworth and Maxwell [59] analyzed the mentor's role in the education sector, and their contribution to social empowerment. Martínez-Cerdá et al. [60] examined the issues concerning e-learning. They tested the validity of the "Socio-Technical E-learning Employability System of Measurement (STELEM)" framework, which focuses on employability based on education, knowledge acquisition, and students and organizational learning.

Radcliffe [61] stated that the labor force's knowledge and skills are a crucial determinant of economic growth and have a distinguishing impact on developed and developing countries. He further elaborated that the increasing effect of education on the workforce of a country has a growing impact on the nation's productivity. Whalley [62] demonstrated that revenues in an economy increase with the growing level of education in society. Various studies have reported the role of education, training, and skill development in employment generation and economic growth. Hodson and Phelps [63] studied the role of education and skills in the emerging knowledge economy, and emphasized the importance of education and training to increase the earning potential of individuals. Giarini [64] stated that higher education reduces the default risk of unemployment and leads to excellent labor market stability. As suggested by Ionela [65], people with higher education and training

have a better participation rate and an extended period of active life in the labor market than others. Moreover, a higher-level education and training enables individuals to better integrate and adapt to labor market demands.

Khan and Ghadially [58] stated four dimensions of socio-economic empowerment, namely, societal, economic, psychological, and educational, and emphasized computer education and internet technology usage. Francescato and Mebane [18] illustrated the contextual factors that foster personal, organizational, and community empowerment. Their study elaborated that online and face-to-face learning significantly affect students' professional development and social empowerment. E-learning enhances IT skills, which leads to societal employability and competitiveness in industry [66]. Lambrechts et al. [32] suggested that empowerment and a sustainable development framework for employees' professional development led to organizational change. Social networking and web-based collaborative learning technologies are critical to improving society's quality and satisfaction with learning [67].

Educational institutions and telecommunication industries can collaborate to promote online learning to learners and instructors/trainers to fulfill corporate social responsibilities on their part [6]. Academic empowerment of women has an indirect effect on their economic, social, and managerial status, and a positive direct effect on political empowerment. Women's economic, social, and political status can be managed by designing a suitable academic and political framework [68]. Salloum et al. [69] defined the factors that affect students' learning in higher education. In addition, they developed a model to evaluate the impact of innovation, trust, quality of teaching, and knowledge sharing through the e-learning mode. Rahmani et al. [70] emphasized virtual learning, evaluation tools, cloud-based learning, and employee creativity through e-learning programs. Bekmanova et al. [71] examined three models based on intelligent learning and presented the effectiveness criteria for evaluation training courses.

Arab people's career prospects depend on their education level, family values, and loyalty to a particular cultural group or organization [72]. Islamic principles and Arab countries' values have a significant cultural dimension. Human activities concerning cultural, social, emotional, and intellectual perspectives connect with information and pedagogical technology [73]. Hamdan [74] examined learning cultural relationships with e-learning strategies and applied technologies. "Educating yourself in Empowerment (EYE)" is a self-learning tool for student empowerment, leading to sustainable development while achieving higher education [75]. Weber et al. [76] aligned teaching with transformative learning by applying a tool of network science, and evaluated that network science is a valuable tool to solve complex students' problems [67]. Turnbull et al. [77] experienced five challenges in e-learning and teaching: "synchronous/asynchronous learning, technology, competence, academic dishonesty, and privacy and confidentiality" during the COVID-19 pandemic.

The constructivist learning environment is student-centered, engaging, and reflective, and provides a framework for the students to learn and explore their experiences [78]. Such an environment presumes an attentive and thoughtful pattern of learning [20,79,80]. Aldossari [20] critically evaluated the lifelong learning landscape in Saudi Arabia compared to the performance of OECD countries. Critical pedagogy is significant for learners; it creates social consciousness leading to personal and social empowerment [81]. Kamoche and Mueller [82] focused on consolidating the knowledge and learning to enhance the competence and capabilities of employees at the workplace. Lejeune et al. [83] examined the relationship between employees' development plans, learnings, and perceived performance. Research demonstrates that digitalization is essentially required in higher education to create well-qualified professionals to align with industry demand [84]. The study by Smith et al. [85] elucidated how designing a learning framework can improve education. Pedagogical techniques and learning tools facilitate the students to effectively acquire knowledge and develop their minds with global competence [86]. The instructors with more teaching experience in the online environment show a higher level of pedagogical

exposure [87]. The academic staff, cultural foundation, and corporate alignment of the universities/higher institutions provide a strong base for leadership and sustainability [88].

Constructivism has appeared as a solid theoretical base to explore how students learn and construct their knowledge in association with real-world situations [89]. In an empirical study based on 910 students at times t1 and t2, constructivism emphasized students' engagement in knowledge construction and meaningful reflection [90–92]. Živkovic [37], in a study based on ESP (English for specific purposes), emphasized preparing students as professionals to deal with real-world situations as committed lifelong learners. Technology (ICT) in education, empowering the society (learners), has been playing a significant role in transforming intellectuals (teachers' role) by implementing pedagogical technology, leading to sustainable development [42]. In a study conducted on 3757 students [93], final-year university students were analyzed to determine the university's role in social transformation. The study's outcomes stated that sustainability justice-oriented education needs ideal and committed instructors who can take a challenge and apply their best effort to develop a sustainable society. In a triangulation study by Yildirim and Kasapogulu [40], data were collected on constructivist teaching and learning by distributing questionnaires to students and conducting interviews with the teachers. In another empirical study conducted on 298 male and female students, the social constructivism theory emphasized the active students' learning, in which students, as the learners, built their knowledge in a particular social connectedness, along with cultural development, with real-world situations [41].

2.2. Constructivism Approach to Learning and Teaching

The current research applies constructivism, an approach to human-centric learning in which the learners build their knowledge by themselves and are measured by their experiences [26]. Arends [94] believes constructivism means the personal construction of learners through their own experiences, and affected by their prior experience, knowledge, and nearby events. The principle of constructivism states that learners construct new knowledge about their previous learning. Past learnings influence the new learning or knowledge a person has built from his current knowledge and experience [27]. Constructivism states that learning is a dynamic process in which learners individually or as a group make their knowledge through their active involvement with real-world problems. Dewey [25] noted that learning is a social phenomenon where humans act and interact with others, rather than just an idea. Therefore, society plays a prominent role in building an environment where young learners grow and develop their intellectual competence [30]. The constructivist theory states that learners constantly try to enhance their knowledge by experiencing real-world phenomena. As they receive any learnings or experiences from the outside world, they quickly update their mental frame to reflect the unique experience and access the latest information from their interpretation.

Constructivism theory of teaching–learning narrates how learning occurs, regardless of whether students, as learners, use their instruction in education or in manufacturing a product [11]. Social constructivism is the sociocultural theory of learning [24,30], in which human beings construct their knowledge in their respective fields. This is affected by politics, power, economics, ideologies, and social factors [27], through education, training (mentor as an educator), and learning (students as learners), and through effective and meaningful instructional and educational practices. Later, they apply their knowledge and experience to build a society through social empowerment and sustainable development. Furthermore, psychological constructivism is the development approach to learning; an individual learner actively builds their knowledge around their background knowledge [24]. Personal growth occurs when the individual within the group becomes an individual member with a relationship with others, and formally gives social meaning to their knowledge [95,96].

This study mainly applies social and psychological constructivism and the cognitive approach to education and learning. In the cognitive learning framework, the students add new knowledge to existing knowledge. They make appropriate updates in the current

knowledge base to fit current information. Secondly, this research applied the principles of social constructivism. Vygotsky defined social constructivism [30], stating that it is collaborative learning and the knowledge generated through learners' interactions in collaboration with society and culture. Glasersfeld [28] identified the notion of radical constructs; according to him, knowledge is invented rather than gained from human perception or discovery. The learning theory of constructivism also focuses on technology-based teaching methods rather than traditional ones. Among the technologically advanced economies, Saudi Arabia is one of the major economies globally, being technologically advanced and implementing technology-based teaching and learning to educate learners [45]. As per the constructivist classroom, the teachers' role is to facilitate students, and the students are the learners [96]. Honebein [97] stated seven teaching goals, summarized as the knowledge construction process, providing experience and appreciation, learning in a natural context, student-centered learning, using multiple technological tools of representation, and reflecting on the knowledge construction process.

2.3. Hypotheses Development

Learners build their knowledge [26], resulting in personal construction [94], and their previous learning influences new learning [27]; individual development gives social meaning to society [30,95,96]. Education and training leads to productive human capital, the knowledge base of an economy, and economic growth [98]. The Saudi government's entrepreneurial training program under the Vision 2030 program explores the growth opportunities for its existing young workforce [20,45]. As stated in the cognitive psychological principle, constructivism is a view in which an individual learner constructs knowledge based on his experience [37]. Knowledge is a societal artifact built as an outcome of the interchange between instructor and learner [99]. Personal constructivism emphasizes knowledge construction in which individuals construct knowledge to fulfill their needs [99]. Learning turns into the construction of new knowledge through reading/listening/exploring (education, training, and learning) and experiencing, which causes the assimilation and accommodation of knowledge, and leads to new understandings and cognitivism [33]. Learners apply their knowledge and experience to build a society through social empowerment and sustainable development [18,32]. Social innovation in higher education integrates the nation's responsibility toward social empowerment and sustainable development [100] (Hypotheses H1 and H2). The theory of constructivism emphasizes the learners' active role in the construction of knowledge that is significant for both individuals and society, and the validity of constructed knowledge and its representation in the real-world [101]. Constructivism in higher education allows learners to gain real-world experience, as well as increased understanding of social and scientific concepts and their applications in a societal context, and its reflection on the personal and social lives of the learners [33]. According to Glasersfeld [35], knowledge is primarily not passively acquired but actively constructed by individuals. Secondly, the goal of learning has been recognized as the meaningful experience of the world [99].

Constructivism is explored here as the human-centric approach of constructivism to teaching and learning, in which the instructors facilitate active discussion with their students as learners. This process of knowledge construction created a social and sustainable environment [27], resulting in employment generation and social empowerment. Finally, it helps build a nation with proposed government policies [21,45]. Educational policies, learning models, students' support, and facilities are the essential factors in learners' satisfaction, engagement, and outcome [102,103]. Similar to the Adams [104] study, we explore performance-based educational policy (Hypotheses H3 and H4).

The constructivist theory also emphasizes that knowledge develops a particular environment, such as cultural and social context, with connectedness to others [34]. The science of gaining knowledge (through ETL) and developing understanding, leading to constructivism, has a combined impact on socio-cultural development [33]. The constructivism theory asserts experience-based constructive learning, which stresses the direct experi-

ence of acquiring knowledge, in which students get involved with the world by applying their perspectives [105]. The social constructivism theory emphasizes the students' active learning, in which students as the learners build their knowledge in a particular social connectedness, along with cultural development with real-world situations [41]. Social constructivism is the socio-cultural learning theory [24,30], and student-centered learning reflects the knowledge construction process [97] (Hypotheses H5 and H6).

Saudi Arabia is an emerging economy, and education, training, and e-learning are significant aspects in the generation of social empowerment and sustainable employment, following the national culture and government policy of the kingdom [34]. This study develops hypotheses by applying the constructivism approach of teaching and learning in the context of Saudi society, leading to social empowerment and sustainable development. First, the study attempts to explore the hypotheses through the knowledge construction of the community (students as a learner) and its development by applying the constructivist approach to teaching (training-led education) and learning (student-led learning) (ETL). Then, the knowledgeable/developed society results in societal empowerment in a healthy national culture and conducive government policies, leading to sustainable employment generation in the kingdom [20,34]. The study uses the technology-based education method to evaluate the influence of education, training, and e-learning on sustainable employment generation and social empowerment. Furthermore, it applies the government policies and national culture as the moderating variables, and develops the hypotheses accordingly.

Based on the literature review, we propose the following hypotheses for this study:

H1. *Education, training and e-learning have a significant relationship with sustainable employment generation in Saudi Arabia in the COVID-19 era.*

H2. *Education, training and e-learning have a significant relationship with social empowerment in Saudi Arabia in the COVID-19 era.*

H3. *Government policies moderate the relationship between education, training, and e-learning and sustainable employment generation in Saudi Arabia in the COVID-19 era.*

H4. *Government policies moderate the relationship between education, training, and e-learning and social empowerment in the Saudi Arabia in the COVID-19 era.*

H5. *National culture of Saudi Arabia moderates the relationship between education, training, and e-learning and sustainable employment generation in the COVID-19 era.*

H6. *National culture of Saudi Arabia moderates the relationship between education, training, and e-learning and social empowerment in the COVID-19 era.*

3. Measurement Model

The study developed a second-order measurement model to evaluate the effect of education, training, and e-learning on sustainable employment generation and social empowerment, with government policies and national culture as the moderators, by applying partial least square structure equation modeling. Figure 1 shows the measurement model.

Variables Extracted from the Existing Literature

Table 1 depicts the variables extracted from the extant literature.

Table 2 presents the variables extracted from the extant literature for the moderating variables.

Table 3 shows the variables extracted from the extant literature for the dependent variables.

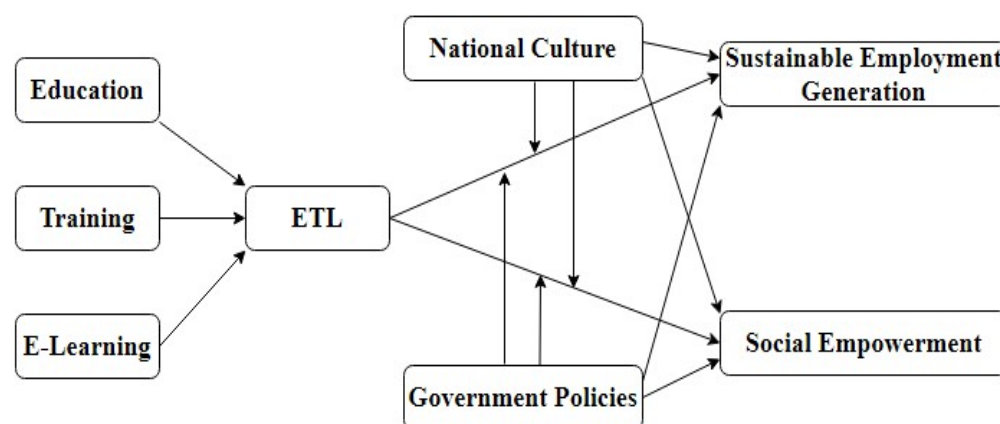


Figure 1. Measurement Model.

Table 1. Variables Extracted for Independent Variables.

Education (EDU)	Training (TRA)	E-Learning (ELRN)
Higher educational policies [100]	Institutional design [50]	System design [106]
Curriculum and educational content [22,44]	Aligned technology [55]	Academic quality and management [106]
Technical infrastructure of the country [20,60]	Audio–visual interface [20,58]	Knowledge acquisition and application [57,60]
Pedagogy [81,87]	Training materials [55,107]	Learning management system [48,108]
Evaluation and improvement [50,70,71]	Learner’s engagement [87]	Satisfaction of learner [67,109]
Research and development [55]	Job/entrepreneurial orientation [32,110]	Learning materials and assessment criteria [77]
Linkage with industry [52]	Transformational intellectuals [20,76]	Audio–visual e-learning applications [20,58,73]
		Perceived performance and use [83]
		Social influence [58,59,68,83]
		Learner’s engagement techniques [48,87,102]

Table 2. Variables Extracted for Moderating Variables.

Government Policies (GPOL)	National Culture (NCUL)
Digitalization of education [49,111]	Support to community [59,111]
National strategy [21,88]	Source of our progress and creativity [112,113]
Alignment of corporates and education [21,88]	Encourages the education and learning [32,58]
Private–public partnership in education [21,88]	Sustainability development [69,76]
Development of key performance indicators (KPIs) at ministry level [114,115]	Closely associated with national measures [5,116]

Table 3. Variables Extracted for Dependent Variables.

Sustainable Employment Generation (SUEG)	Social Empowerment (SEMP)
Employment capacity building [110]	Per capita income [21]
Entrepreneurial capacity building [117,118]	Literacy [84]
Personal and professional development [32,87,119]	Human resource pool generation [82]
Supportive technology [49,85]	Gender equity [58]
Knowledge-based society [69]	Women empowerment [68]
Global localization [86]	No poverty, no hunger [21,120]
Strengthened community [59,111]	Good health and wellbeing [21,120]
Social constructions [58,68]	Life-long skills [60,71]

4. Research Methodology

The research primarily elucidates the demographic data of the respondents. Secondly, the method and techniques of data collection and student samples are presented. Thirdly, the data interpretation techniques chosen by the researcher are described. Fourthly, the results and discussion obtained from the measurement model are presented after interpreting the data. Finally, the structure equation model (SEM) hypotheses testing outcomes are presented to justify the research.

4.1. Pilot Study

A pilot study was performed to confirm the survey questionnaire which was structured based on relevant items from the available past studies. The pilot study was performed on 30 initial responses, consisting of 25 students and five instructors at the professor's rank. The survey questionnaire was finalized after incorporating the relevant recommendations from the students and professors.

4.2. Research Method

4.2.1. Sample and Study Instrument

The study applied the online survey questionnaire approach to gather data from the male and female respondents. The study surveyed undergraduate students, both male and female, at the University of Hail, Saudi Arabia. The survey questionnaire was divided into six sections. The first section described the personal and demographic characteristics of the respondents. The second part of the questionnaire consisted of six items representing education. The third part consisted of seven items describing the training. The fourth part of the questionnaire consisted of seven items defining e-learning.

Then, the fifth part described the five items regarding sustainable employment generation. Finally, the sixth part described six items representing social empowerment. In addition, the study consisted of two moderators: government policy and national culture; the government policy and national culture comprised five items each in the respective constructs. The study used a five-point Likert scale for the collection of students' data—consisting of following scale: *strongly agree* (5), *somewhat agree* (4), *neither agree nor disagree* (3), *somewhat disagree* (2), and *strongly disagree* (1)—to measure the items in the study. Out of 600 responses, a total of 396 responses were recorded correctly for analysis, while 204 were not considered helpful for the research and were rejected from the analysis. Out of 204 invalidated responses, the incomplete response rate was 19% (113), and invalidated responses were 15% (91). The records for returned blank questionnaires were not recorded. The students were communicated three times each semester for two semesters to get more responses. The final responses after complete effort were 396. In addition, the undergraduate students all expressed informed consent to participate in the study.

4.2.2. Variables and Measurement

The independent variables in the model included three categories: education, training, and e-learning (ETL). The two moderating variables considered in this analysis were: national culture (NCUL) and government policies (GPOL). The dependent variables of the measure were sustainable employment generation (SUEG) and social empowerment (SEP). We examined the impact of education, training, and learning on social empowerment and sustainable employment generation in the presence of two moderators, i.e., national culture and government policies. The study applied partial least squares structure equation modeling (PLS-SEM) technique to analyze the data.

5. Results

Table 4 presents the descriptive statistics of data collected from the survey.

Table 4. Statistics of the Students' Personal Data.

Variable	Frequency	Percentage
Age		
Less than 20	18	4.50
21–25	367	92.70
26–30	8	2.00
31–35	3	0.80
Gender		
Female	105	26.50
Male	291	73.50
Specialization		
Accounting	67	16.90
Economics and Finance	30	7.60
Management	168	42.40
Management information systems	131	33.10
Year of study		
First Year	48	12.12
Second Year	81	20.45
Third Year	113	28.54
Final Year	154	38.89
Total	396	100.00

Initially, the first-order structural model consisting of 27 items for the 5 constructs was analyzed with the help of PLS-SEM software. The constructs stated were education (EDU), training (TRA), e-learning (ELRN), sustainable employment generation (SUEG) and social empowerment (SEMP). The study did not consider any moderators in the first stage.

Table 5 shows the factor loadings from the first-order structural equation model. All items were considered relevant to proceed to second-order modeling. Each factor loading had a loading above 0.70.

Table 5. Factor loadings: First-order constructs without moderators.

	ELRN	EDU	SEMP	SUEG	TRA
ELRN1	0.838				
ELRN2	0.862				
ELRN3	0.844				
ELRN4	0.844				
ELRN5	0.779				
ELRN6	0.746				
EDU1		0.876			
EDU2		0.856			
EDU3		0.829			
EDU4		0.858			
EDU5		0.840			

Table 5. *Cont.*

	ELRN	EDU	SEMP	SUEG	TRA
SEMP1			0.848		
SEMP2			0.852		
SEMP3			0.842		
SEMP4			0.878		
SEMP5			0.870		
SEMP6			0.860		
SUEG1				0.856	
SUEG2				0.862	
SUEG3				0.872	
SUEG4				0.809	
SUEG5				0.817	
TRA1					0.850
TRA2					0.803
TRA3					0.886
TRA4					0.761
TRA5					0.793

Table 6 shows the factor loadings from the second-order structural equation model. In this model, we examine the combined effect of education, training, and e-learning on social empowerment and sustainable employment generation, along with two moderators, government policies and national culture. Each factor loading has a loading above 0.70. This shows that the researchers can proceed further with data analysis.

Table 6. Factor Loading: Second-Order Construct with Moderators.

	ETL	GOPL	NCUL	SEMP	SUEG
E-Learning	0.789				
Education	0.893				
Training	0.722				
GPOL1		0.793			
GPOL2		0.827			
GPOL3		0.853			
GPOL4		0.808			
GPOL5		0.898			
NCUL1			0.827		
NCUL2			0.839		
NCUL3			0.830		
NCUL4			0.823		
NCUL5			0.890		
SEMP1				0.847	
SEMP2				0.857	
SEMP3				0.855	
SEMP4				0.871	
SEMP5				0.860	
SEMP6				0.863	
SUEG1					0.856
SUEG2					0.860
SUEG3					0.871
SUEG4					0.809
SUEG5					0.820

Figure 2 depicts the second-order structural equation model results.

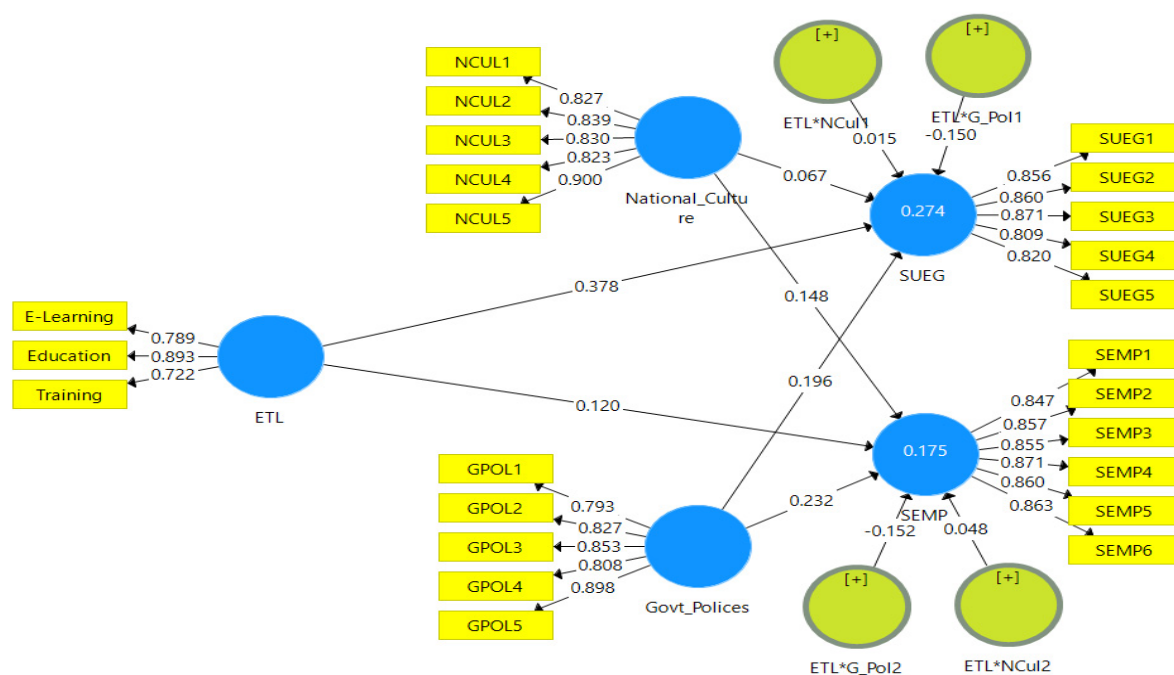


Figure 2. Structural Equation Model: Second Order Construct.

5.1. Construct Reliability and Validity

Table 6 shows that each variable's indicator factor loading score was above 0.70 ($\beta > 0.70$), meaning that the five factors construct a valid score. As shown in Table 7, the internal consistency reliability values (Cronbach alpha and Rho value) for all the factors range from 0.70 to 0.90, except SEMP (0.929), which is slightly higher but acceptable. The convergent validity of the construct shows that the composite reliability score of all the factors is above the recommended threshold value of 0.7, and the average variance extracted (AVE) value is above the suggested threshold value of 0.05. Thus, we confirmed that the scales used in this study possess convergent validity. These findings demonstrate that the scales are robust and reliable [121].

Table 7. Construct Reliability and Validity Scores.

	Cronbach's Alpha	Rho_A	CR *	AVE **
ETL	0.727	0.771	0.845	0.647
GPOL	0.893	0.903	0.921	0.700
NCUL	0.899	0.906	0.925	0.713
SEMP	0.929	0.929	0.944	0.738
SUEG	0.899	0.903	0.925	0.712

* Composite Reliability (CR); ** Average Variance Extracted (AVE).

5.2. Discriminant Validity

In Table 8, the discriminant validity of the scale was examined following the suggested guidelines by Fornell and Larcker's [122]. The analysis results reported that none of the scale dimensions exceeded the threshold of 0.80 [122]. Thus, the results confirm that the discriminant validity was established. Furthermore, all these analyses supported that the scales satisfy the psychometric properties, such as validity and reliability.

Table 8. Discriminant Validity Scores.

	ETL	GOPL	NCUL	SEMP	SUEG
ETL	0.805				
GPOL	0.079	0.837			
NCUL	0.033	0.439	0.844		
SEMP	0.171	0.322	0.267	0.859	

5.3. Collinearity Statistics

In Table 9, out of 24 variables, 23 VIF (Variable Inflation factor) values are less than 3.0, and 1 variable (GOP5) VIF value lies between 3.0 to 3.50, below the threshold value of 5.0 [123]. Values greater than 4.0 [124] are generally considered problematic, leading to high multi-collinearity. However, the results in Table 9 show no multi-collinearity problem in the existing data.

Table 9. Collinearity Statistics (VIF).

ETL		GOPL		NCUL		SEMP		SUEG	
E-Learning	1.448	GPOL1	1.983	NCUL1	2.274	SEMP1	2.558	SUEG1	2.446
Education	1.745	GPOL2	2.343	NCUL2	2.368	SEMP2	2.728	SUEG2	2.464
Training	1.375	GPOL3	2.482	NCUL3	2.101	SEMP3	2.709	SUEG3	2.607
		GPOL4	2.056	NCUL4	2.331	SEMP4	2.924	SUEG4	2.006
		GPOL5	3.226	NCUL5	3.347	SEMP5	2.864	SUEG5	2.228
						SEMP6	2.772		

5.4. Measuring the Effect of f^2

Table 10 shows that education, training, and e-learning have a weak effect on social empowerment (0.017) in Saudi Arabia. Further, education, training, and e-learning moderately impact sustainable employment generation (0.190). Moreover, the results of f^2 show that the government policies, considered the first moderator in the study, have a moderate effect on social empowerment and sustainable development, while the national culture, considered the second moderator in the study, has a weak impact on social empowerment and sustainable development in Saudi Arabia. According to Cohen [125] guidelines, $f^2 \geq 0.02$, $f^2 \geq 0.15$, and $f^2 \geq 0.35$ represent weak, moderate, and strong effects, respectively.

Table 10. Measuring the Effect of f^2 .

	SEMP	SUEG
ETL	0.017	0.190
Government Policies	0.051	0.042
National Culture	0.021	0.005

5.5. Measuring the Effect of R^2

The different authors have given other points of view about R^2 values. Falk and Miller [126] have suggested that $R^2 \geq 0.10$ is acceptable for the endogenous construct to the variance explained. Cohen [125] recommended the R^2 values of 0.26, 0.13, and 0.02 as substantial, moderate, and weak, respectively, for the endogenous construct to the variance explained. Chin [127] suggested that R^2 values of 0.67, 0.33, and 0.19 are substantial, moderate, and weak, respectively. The recommended R^2 values based on their market-related issues are 0.75, 0.50, and 0.25, representing substantial, moderate, and weak, respectively, for the endogenous construct to the variance explained [128,129]. Table 11 shows that the social empowerment R^2 (0.17) value is moderate [130] and weak [127–129].

Moreover, the sustainable employment generation R^2 (0.274) value is substantial [130] and moderate [127–129].

Table 11. Measuring the Effect of R^2 .

Ingredients	R Square	R Square Adjusted
SEMP	0.175	0.164
SUEG	0.274	0.265

5.6. Predictive Relevance of the Model (Q^2)

The study performed a cross-validity redundancy test to measure the quality of the Smart-PLS path model by using blind-folding procedures. Table 12 shows the Q^2 value of social empowerment of the endogenous latent construct (0.125); the Q^2 value of sustainable employment generation of the endogenous construct (0.189) were all greater than zero indicating sound predictive relevance of exogenous constructs in the structured equation model. Q^2 values of 0.02 (small), 0.15 (medium), and 0.35 (large) show predictive relevance [123]. The Q^2 value of the predictive relevance model shows that the second-order structure equation model in the study has predictive relevance.

Table 12. Predictive Relevance of the Model (Q^2): Blindfolding Test.

	Q^2 Value
Construct Cross-validated Redundancy	
SEMP	0.125
SUEG	0.189
Construct Cross-validated Communality	
ETL	0.311
Government Policies	0.539
National Culture	0.550
SEMP	0.626
SUEG	0.561

5.7. Path Coefficients and Hypothesis Testing Results

From Table 13 (path coefficient), it is evident that education, training, and e-learning have a significant impact on social empowerment (ETL~SEMP: $T = 2.529$, $p \leq 0.01$; $p = 0.011$) and sustainable employment generation (ETL~SUEG: $T = 8.482$, $p \leq 0.01$; $p = 0.000$) in the absence of the government policies and national culture as moderators. When the study examines the effect of the government policies of Saudi Arabia as a moderator between education, training, and e-learning and sustainable employment generation, then the moderator government policies show a significant moderating effect on sustainable employment generation (ETL~GPOL~SUEG: $T = 3.469$, $p \leq 0.01$). Similarly, when the study considers the government policies as a moderator between education, training, and e-learning and social empowerment, the moderator shows a significant moderating effect between education, training, and e-learning and social empowerment (ETL~GPOL~SEMP: $T = 3.211$, $p \leq 0.01$; $p = 0.001$) in Saudi Arabia. On the other hand, when the study considers national culture as a moderator between education, training, and e-learning and sustainable employment generation, the national culture does not show any significant moderator effect on sustainable employment generation (ETL~NCUL~SUEG: $T = 0.315$, $p \geq 0.01$ and $p \geq 0.05$; $p = 0.753$). Similarly, when the study considers national culture as a moderator between education, training, and e-learning and social empowerment, the national culture also does not show any significant moderation effect between education, training, and e-learning on social empowerment (ETL~NCUL~SEMP: $T = 0.958$, $p \geq 0.01$ and $p \geq 0.05$; $p = 0.338$). On the other hand, when the study examines the direct effect of government policies on social empowerment and sustainable employment generation,

the results show that the government policies have a significant relationship with social empowerment (GPOL~SEMP: $T = 3.979$, $p \leq 0.01$; $p = 0.000$) and sustainable employment generation (GPOL~SUEG: $T = 3.600$, $p \leq 0.01$; $p = 0.000$). In the same sequence, when the study examines the direct effect of national culture on social empowerment and sustainable employment generation, the results of the analysis show that national culture has a significant direct effect on social empowerment generation (NCUL~SEMP: $T = 2.808$, $p \leq 0.01$; $p = 0.005$), while the national culture does not show a significant effect on sustainable employment generation (NCUL~SUEG: $T = 1.186$, $p \geq 0.01$ and $p \geq 0.05$; $p = 0.236$).

Table 13. Path Coefficients and Hypothesis Testing Results.

Model Path Coefficient	STDEV *	T Statistics	p Values
ETL → SEMP	0.047	2.529	0.011 **
ETL → SUEG	0.045	8.482	0.000 **
ETL*GPOL → SUEG	0.043	3.469	0.001 **
ETL*GPOL → SEMP	0.047	3.211	0.001 **
ETL*NCUL → SUEG	0.049	0.315	0.753
ETL*NCUL → SEMP	0.050	0.958	0.338
GPOL → SEMP	0.058	3.979	0.000 **
GPOL → SUEG	0.054	3.600	0.000 **
NCUL → SEMP	0.053	2.808	0.005 **
NCUL → SUEG	0.057	1.186	0.236

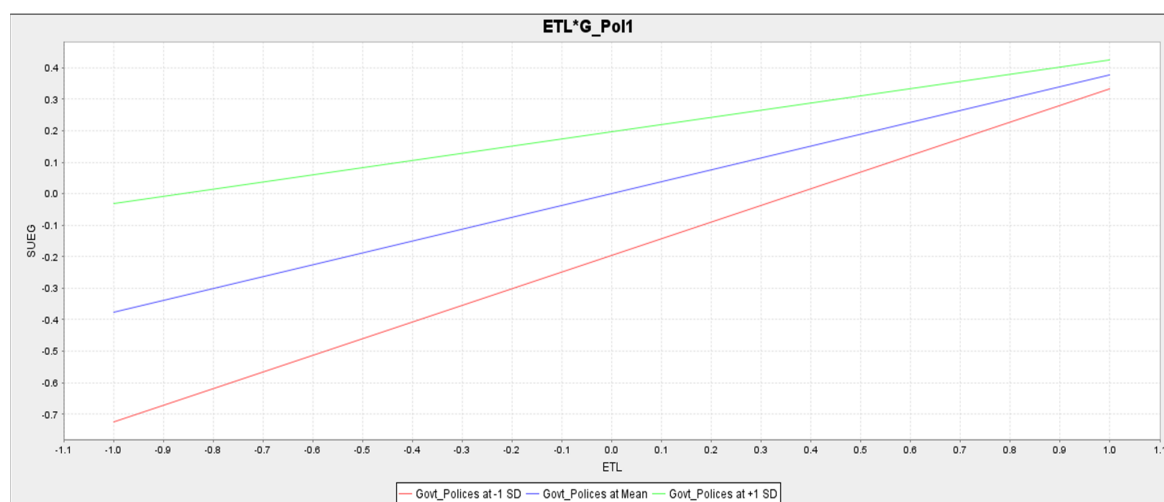
* STDEV—Standard Deviation; ** ($p \leq 0.01$)

Figure 3a shows the significant moderating effect of government policies on education, training, and e-learning and sustainable employment generation.

Figure 3b shows the significant moderating effect of government policies on education, training, and e-learning and social empowerment.

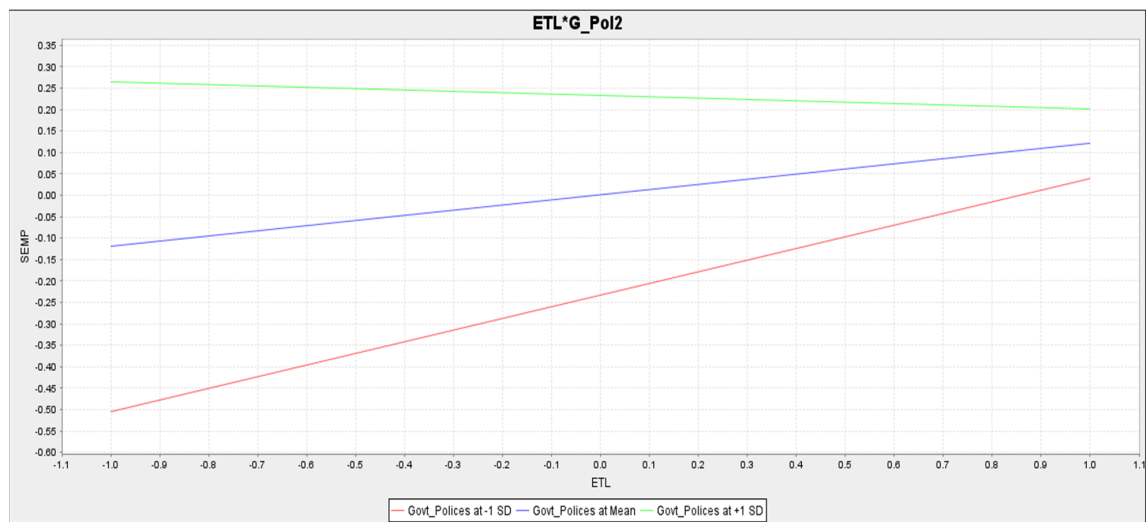
Figure 3c shows that national culture does not have a significant moderating effect on education, training, and e-learning and sustainable employment generation.

Figure 3d shows that national culture does not have a significant moderating effect on education, training, and e-learning and social empowerment.

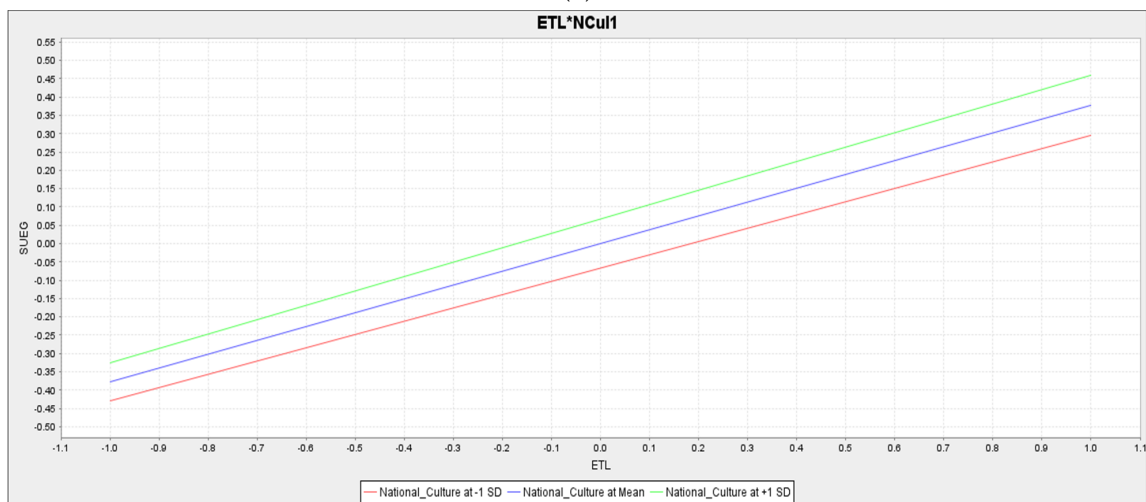


(a)

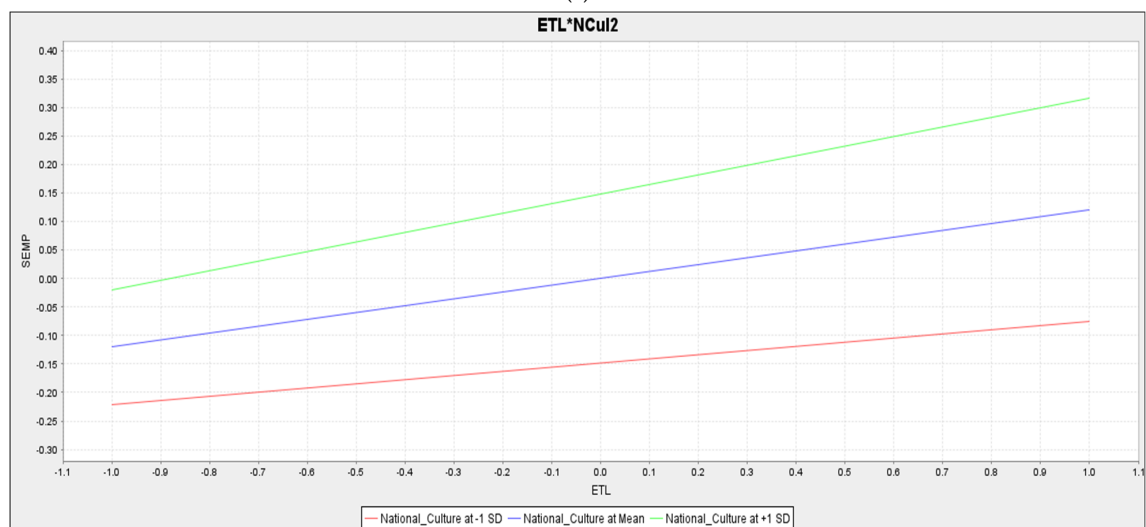
Figure 3. Cont.



(b)



(c)



(d)

Figure 3. (a) Moderating Effect of Govt. Policies on Sustainable Employment Generation. (b) Moderating Effect of Govt. Policies on Social Empowerment. (c) Moderating Effect of National Culture on Sustainable Employment Generation. (d) Moderating Effect of National Culture on Social Empowerment.

5.8. Model Fit Summary

Table 14 results show that the Standardized Root Mean Square Residual (SRMR) value of the estimated model is 0.067, less than the threshold value of 0.08 [131]. Moreover, the Normed Fit Index (NFI) value of the estimated model is 0.895, which is close to the threshold value of 0.90 [132]. Hence, the model fit summary is considered a good fit measure for the second-order structure equation model.

Table 14. Model Fit Summary.

Ingredient	Saturated Model	Estimated Model
SRMR	0.042	0.067
Chi-Square	734.968	767.984
NFI	0.899	0.895

6. Discussion

The study determines the effect of education, training, and e-learning on social empowerment and sustainable employment generation in the presence of two moderator variables, government policies, and national culture. Primarily, the study analyzes the structural equation model (SEM) in direct relation to sustainable employment generation and social empowerment, without considering the moderators—the government policies and national culture. It is evident from the results that education, training, and e-learning have a significant direct relationship with sustainable employment generation and social empowerment in Saudi Arabia. Therefore, it justifies that education, training, and e-learning have continually contributed to sustainable employment development, leading to social empowerment in Saudi society. Kaufman [33] linked learning with the change, development, and the construction of learners' knowledge, leading to sustainable employment generation and social empowerment.

Secondly, the study analyzes the model considering the government policies as moderators. The analysis shows that educational government policies in Saudi Arabia work as a significant moderator between education, training, e-learning, and sustainable employment generation, and also between education, training, and e-learning social empowerment. The results support the Saudi government policies aligning with the Vision 2030 framework to prioritize high levels of education in Saudi Arabia [32]. Government educational policies and facilities help build a nation, and are the essential factors in learners' satisfaction, engagement, and outcome [21,45,102,103]. Adams [104], in a study, explored performance-based educational policy. Innovation in education and constructive curriculum design results in social constructivism, leading to professional development for students and instructors [38,40]. The Saudi government allocated a USD 51 billion budget for general education and life-long educational goals, leading to sustainable development in Saudi Arabia [21]. Education for people with disabilities, employment training of graduates, and establishing a bridge between industry and academia are part of the Saudi government policies under its Vision 2030 framework [21,32].

Thirdly, the study analyzes the model using national culture as a moderator. The results of the analysis were different from the preliminary results. The results show that national culture is not a significant moderator between ETL and sustainable employment generation, or between ETL and social empowerment. The study contradicts Kaufman [33], who stated that, in Saudi Arabia, at some level, the science of gaining knowledge (through education, learning, and training) and developing understanding leading to constructivism, in turn, have a combined impact on socio-cultural development. The literature reviews of reports from the Ministry of Education of Saudi Arabia show that the kingdom has been committed to promoting the culture to sustainable development in appreciation of cultural diversity [21] in the field of education, training, and e-learning. Acquiring education is a social learning process influenced by the respected national culture and sub-culture [43]. The study supports that the global citizenship concept prioritizes strategic educational

objectives and the Saudi Arabia's vision of 2030. It encourages the Saudi society to enrich with the skills and knowledge, leading to national and international platforms. Learning in higher education has expanded the developmental opportunities for the learners and instructors at local and global platforms, resulting in a deep understanding of real-world phenomena [33]. The government of Saudi Arabia emphasizes its educational policy in a quest for development and sustainability in education [44]. It allocates a considerable budget for scientific research of creativity, infrastructure, and industrialization. In this regard, Saudi Arabia has initiated curricula development, teacher training programs, and application of the concept of "learning for sustainable development", implemented as a part of educational policies [21,45]. The social constructivism theory emphasizes the active students' learning, in which students as the learners build their knowledge in a particular social connectedness, along with cultural development with the real-world situations [41]. Promoting women's education and ensuring their employment in the labor market in Saudi Arabia is another step towards sustainable employment generation and social empowerment [20,46].

In the article, the theory of constructivism emphasizes the learners' active role in the construction of knowledge that is significant for both individuals and society, and the validity of constructed knowledge and its realistic representation in the real-world [34,37,89,101]. From the social constructivist point of view, the world is mediated through active social interaction [34] with others, which in turn is incorporated with social construction [35]. Therefore, exploring how students learn and construct their knowledge in association with real-world situations appeared to be a solid theoretical base [89]. Constructivism in higher education allows learners to gain real-world experience, and increased understanding of social and scientific concepts and their applications in a societal context, and its reflection on the personal and social lives of the learners [33]. Implementing the educational and learning approach of constructivism helps to bridge the gap in the skilled workforce [133,134]. Moreover, the students, as learners, assert their experiences and become connected with the outside world [105], constructing a sustainable society [42], leading to sustainable employment generation and social empowerment in Saudi Arabia.

7. Conclusions

Technological integration in higher education and implementation of e-learning expanded developmental opportunities for learners and educators in Saudi Arabia and worldwide and produced a positive social impact on constructivism [33,42]. This study examines the effects of education, training, and e-learning on sustainable employment generation and social empowerment, applying the human-centric constructivist approach to teaching and learning [42]. It follows the initiatives of the Vision 2030 framework initiated by the government of Saudi Arabia, in association with existing and proposed employment-enhancing programs and maintaining cultural diversity in Saudi Arabia [20,21,44–46]. Firstly, the study analyses education, training, and e-learning on sustainable employment generation and social empowerment. The hypothesis test results show a significant direct relationship between ETL on sustainable employment generation and social empowerment. Secondly, the study attempts to determine the moderation effect of government policies between ETL and sustainable employment generation, and between ETL and social empowerment. The study findings show that government policies have a significant moderating effect on the relationship between ETL and sustainable employment generation, and on ETL and social empowerment [21,44,45]. Thirdly, the study attempts to determine the moderation effect of national culture between ETL and sustainable employment generation, and ETL and social empowerment. The study's findings show that national culture does not have any moderating effect on the relationship between ETL and sustainable employment generation, or on ETL and social empowerment. The analysis results also show that national culture directly and significantly relates to social empowerment, but not to sustainable employment generation. This means that national culture does not moderate between ETL and sustainable employment generation, or between ETL and social empowerment.

However, national culture has a significant direct relationship with employment generation in Saudi Arabia [20,45]. As stated by Kaufman [33], the science of gaining knowledge and developing understanding has a combined impact on socio-cultural development. The study supports the educational policy of the Saudi Arabia leading to Vision 2030, as the Saudi government is committed to promoting the culture to sustainable development in appreciation of cultural diversity [21] in the field of education, training, and e-learning.

Education, training, and e-learning consistently lead to social empowerment and sustainable employment generation through creating a talented human resource pool, and further provide a platform to obtain training through various e-learning platforms without distracting employees from their jobs in Saudi Arabia. However, it is evident from the analysis that the Saudi government policies have been playing a significant moderating role in social empowerment and sustainable employment generation. The existing literature shows that the National Transformation Policy (NTP) 2020, of the Saudi Vision 2030 framework, has initiated Ministry of Education initiatives; these include digitalization of education, an e-services framework in higher education, entrepreneurship development, public–private sector partnership, international collaboration, life-long learning, and sustainable development, among others [47]. In addition, the literature reviews reveal a strong emphasis on Saudi society learning the local and regional culture and acquiring local and regional knowledge to take the national intellectual presence to global platforms, leading to the Saudi Vision 2030 framework [49]. The existing literature also shows that the national strategy of the Saudi government under Vision 2030 has avenues by which national culture will contribute to sustainable economic development, leading to social empowerment in Saudi Arabia [20,44,45]. Therefore, the recent initiatives of the Saudi Arabia under Vision 2030 framework will be expected to include the national culture as a strong moderating contributor between ETL and sustainable employment generation, and ETL and social empowerment [21,45].

8. Limitations and Further Research

This study has some limitations. First, the study outlines that a large percentage of students studying at the University of Hail are from different locations in Saudi Arabia. Therefore, it is correct to say that the study is limited to the University of Hail, Saudi Arabia, to study the impact of education, training, and e-learning on social empowerment and sustainable employment generation in Saudi Arabia. Secondly, the study has considered only two moderators, government policies and national culture, to evaluate the moderation effect on social empowerment and sustainable employment generation. As such, the present study has further scope to add more moderators such as gender, religion, etc., to widen the horizon of the study. Finally, the research can be further refined by increasing the sample size by collecting data from more respondents from different locations in Saudi Arabia.

9. Practical Implications

The study has implications for Saudi Arabia to become a knowledge-based economy by linking education, training, and e-learning with the Saudi Government National Transformation Program (NTP) 2020, in support of Saudi Vision 2030 [49]. The would promote the achievement of local and global opportunities in the field of employment and sustainable economic development, which will empower the Saudi society on national and international platforms. Furthermore, the study also has implications for establishing a healthy and sustainable society, promoting local and regional cultural initiatives linking education, training, and e-learning to economic growth, and by having continuous improvement producing a skilled workforce to fill in the market gap, aligned with the global workforce. The study provides an exciting scenario in the scope of education, training, and e-learning in Saudi Arabia. The study has a broad scope for educational institutions, training centers, and public and private organizations to follow up on the government policy initiatives at their workplace, in order to empower the Saudi society, leading to sustainable employment generation. The study has not shown any specific moderation

effect of national culture between ETL and social empowerment, or between ETL and sustainable employment generation; however, the study does show that national culture is directly related to employment generation. Therefore, the study has the scope to analyze the kingdom's cultural aspects and further investigate the relationship of the national culture to education, training, and e-learning.

Author Contributions: Conceptualization, A.S.; methodology, A.S.; validation, A.S. and H.P.S.; data analysis, interpretation and discussion, A.S. and F.A.; investigation, A.S., H.P.S., F.A. and V.A.; resources—primary and secondary, A.S., H.P.S. and F.A.; data curation, H.P.S., A.S. and F.A.; writing—original draft preparation, A.S.; writing—review and editing, A.S., H.P.S., F.A. and V.A.; supervision, A.S., H.P.S. and V.A.; funding acquisition, H.P.S.; project administration, H.P.S. and V.A. All authors have read and agreed to the published version of the manuscript.

Funding: This paper is a part of an approved research project (Project Number RG-20 185), titled “Investigating the Role of Education, Training, and E-Learning for Sustainable Employment Generation, Economic Growth, and Social Empowerment in the COVID-19 Era in Saudi Arabia”. The authors would like to express their gratitude to the Deanship of Scientific Research at the University of Hail, Saudi Arabia, for funding this study.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from the respondents before taking part in the survey.

Data Availability Statement: The corresponding author can make the data available upon request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Ala-Mutka, K.; Punie, Y.; Redecker, C. *Digital Competence for Lifelong Learning: Policy Brief*; European Commission: Brussels, Belgium, 2008; p. 10. [\[CrossRef\]](#)
2. Omotayo, F.O.; Haliru, A.R. Perception of Task-Technology Fit of Digital Library among Undergraduates in Selected Universities in Nigeria. *J. Acad. Librariansh.* **2020**, *46*, 102097. [\[CrossRef\]](#)
3. Ogunmokun, O.; Unverdi-Creig, G.I.; Said, H.; Avci, T.; Eluwole, K. Consumer Well-Being through Engagement and Innovation in Higher Education: A Conceptual Model and Research Propositions. *J. Public Aff.* **2020**, *21*, e2100. [\[CrossRef\]](#)
4. Ogunmokun, O.A.; Eluwole, K.K.; Avci, T.; Lasisi, T.T.; Ikhide, J.E. Propensity to Trust and Knowledge Sharing Behavior: An Evaluation of Importance-Performance Analysis among Nigerian Restaurant Employees. *Tour. Manag. Perspect.* **2020**, *33*, 100590. [\[CrossRef\]](#)
5. Alfalih, A.A. The Impact of Background Characteristics on Graduate School Attendance: Evidence from a Developing Economy. *J. Knowl. Econ.* **2020**, *12*, 363–383. [\[CrossRef\]](#)
6. Adedoyin, O.B.; Soykan, E. COVID-19 Pandemic and Online Learning: The Challenges and Opportunities. *Interact. Learn. Environ.* **2020**, 1–14. [\[CrossRef\]](#)
7. Han, F.; Ellis, R.A. Identifying Consistent Patterns of Quality Learning Discussions in Blended Learning. *Internet High. Educ.* **2019**, *40*, 12–19. [\[CrossRef\]](#)
8. Ferlie, E.; Musselin, C.; Andresani, G. The Steering of Higher Education Systems: A Public Management Perspective. *High. Educ.* **2008**, *56*, 325–348. [\[CrossRef\]](#)
9. Eitzel, M.V.; Hove, E.M.; Solera, J.; Madzoro, S.; Changarara, A.; Ndlovu, D.; Chirindira, A.; Ndlovu, A.; Gwatipedza, S.; Mhizha, M.; et al. Sustainable Development as Successful Technology Transfer: Empowerment through Teaching, Learning, and Using Digital Participatory Mapping Techniques in Mazvihwa, Zimbabwe. *Dev. Eng.* **2018**, *3*, 196–208. [\[CrossRef\]](#)
10. Hofstede, G.; Minkov, M. *Cultures and Organizations: Software of the Mind*; McGraw-Hill: New York, NY, USA, 2005; Volume 2.
11. Yilmaz, K. Constructivism: Its Theoretical Underpinnings, Variations, and Implications for Classroom Instruction. *Educ. Horiz.* **2008**, *86*, 161–172.
12. Biuk-Aghai, R.P.; Simoff, S.J. Patterns of Virtual Collaboration in Online Collaboration Systems. In Proceedings of the IASTED International Conference on Knowledge Sharing and Collaborative Engineering, St. Thomas, ND, USA, 22–24 November 2004; pp. 22–24.
13. Walther, J.B.; Loh, T.; Granka, L. Let Me Count the Ways. The Interchange of Verbal and Nonverbal Cues in Computer-Mediated and Face-to-Face Affinity. *J. Lang. Soc. Psychol.* **2005**, *24*, 36–65. [\[CrossRef\]](#)
14. Jahng, N.; Krug, D.; Zhang, Z. Student Achievement in Online Distance Education Compared to Face-to-Face Education. *Eur. J. Open Distance E-Learn.* **2007**, *10*, 1–16.
15. Ardila, A.; Ostrosky-Solis, F.; Mendoza, V.U. Learning to Read Is Much More than Learning to Read: A Neuropsychologically Based Reading Program. *J. Int. Neuropsychol. Soc.* **2000**, *6*, 789–801. [\[CrossRef\]](#)

16. Santos, S.C.; Neumeyer, X.; Morris, M.H. Entrepreneurship Education in a Poverty Context: An Empowerment Perspective. *J. Small Bus. Manag.* **2019**, *57*, 6–32. [\[CrossRef\]](#)
17. Dhawan, S. Online Learning: A Panacea in the Time of COVID-19 Crisis. *J. Educ. Technol. Syst.* **2020**, *49*, 5–22. [\[CrossRef\]](#)
18. Francescato, D.; Mebane, M.M. Learning Innovative Methodologies to Foster Personal, Organizational and Community Empowerment through Online and Faceto-Face Community Psychology Courses. *Univ. Psychol.* **2015**, *14*, 1209–1220. [\[CrossRef\]](#)
19. Neal, M. Learning from Poverty: Why Business Schools Should Address Poverty, and How They Can Go about It. *Acad. Manag. Learn. Educ.* **2017**, *16*, 54–69. [\[CrossRef\]](#)
20. Aldossari, A.S. Vision 2030 and Reducing the Stigma of Vocational and Technical Training among Saudi Arabian Students. *Empir. Res. Vocat. Educ. Train.* **2020**, *12*, 3. [\[CrossRef\]](#)
21. General Authority of Statistics. *Sustainable Development Goals (SDGs) in KSA (Status-Quo Statistical Report)*; General Authority of Statistics: Riyadh, Saudi Arabia, 2018; p. 145.
22. Patalong, F.; Associate, S.; Mergers, C.; Mediation, A.C. *Vision 2030 and the Transformation of Education in Saudi Arabia*; Vision of The Vision 2030 Vision 2030?: Strategic Objectives of the National Transformation Program (NTP) Accountability?: Highlights of Vision 2030 in Education; Al Tamimi & Company: Sheikh Zayed, Dubai United Arab Emirates, 2021; pp. 1–2.
23. Gunduz, N.; Hursen, C. Constructivism in Teaching and Learning; Content Analysis Evaluation. *Procedia Soc. Behav. Sci.* **2015**, *191*, 526–533. [\[CrossRef\]](#)
24. Richardson, V. Constructivist Pedagogy. *Teach. Coll. Rec.* **2003**, *105*, 1623–1640. [\[CrossRef\]](#)
25. Dewey, J. *How We Think*; Houghton Mifflin: Boston, MA, USA, 1938.
26. Elliott, S.N.; Kratochwill, T.R.; Littlefield Cook, J.; Travers, J. *Educational Psychology: Effective Teaching, Effective Learning*, 3rd ed.; McGraw-Hill College: Boston, MA, USA, 2000.
27. Phillips, D.C. The Good, the Bad, and the Ugly: The Many Faces of Constructivism. *Educ. Res.* **2005**, *24*, 5–12. [\[CrossRef\]](#)
28. Glasersfeld, E. Von Piaget and the Radical Constructivist Epistemology. *Key Work. Radic. Constr.* **2019**, 73–87. [\[CrossRef\]](#)
29. Ernest, P. Varieties of Constructivism: Their Metaphors, Epistemologies and Pedagogical Implications. *Hiroshima J. Math. Educ.* **1994**, *2*, 1–14.
30. Vygotsky, L.S. *Mind in Society: The Development of Higher Psychological Processes*; Harvard University Press: Cambridge, MA, USA, 1978; ISBN 0674576292.
31. Fischer, E.; Hänze, M. Back from “Guide on the Side” to “Sage on the Stage”? Effects of Teacher-Guided and Student-Activating Teaching Methods on Student Learning in Higher Education. *Int. J. Educ. Res.* **2019**, *95*, 26–35. [\[CrossRef\]](#)
32. Lambrechts, W.; Verhulst, E.; Rymenams, S. Professional Development of Sustainability Competences in Higher Education: The Role of Empowerment. *Int. J. Sustain. High. Educ.* **2017**, *18*, 697–714. [\[CrossRef\]](#)
33. Kaufman, D. Constructivist Issues in Language Learning and Teaching. *Annu. Rev. Appl. Linguist.* **2004**, *24*, 303–319. [\[CrossRef\]](#)
34. Xu, D. Construction of an English Research Learning Model Based on Constructivism and Data Mining under a Cloud Computing Platform. *Wirel. Commun. Mob. Comput.* **2022**, *2022*, 4579547. [\[CrossRef\]](#)
35. Glasersfeld, E. von Introduction: Aspects of Constructivism. In *Constructivism: Theory Perspectives, and Practice*; Fosnot, C., Ed.; Teacher College Press: New York, NY, USA, 1995; pp. 3–7.
36. Jones, M.G.; Brader-Araje, L. The Impact of Constructivism on Education: Language, Discourse, and Meaning. *Am. Commun. J.* **2002**, *5*, 1–10.
37. Živkovic, S. An Overview of the Constructivist Theories and Their Possible Implications in the Design of the ESP Digital Learning Environment. *Eur. J. Multidiscip. Stud.* **2016**, *3*, 88–94. [\[CrossRef\]](#)
38. Palincsar, A.S. Social constructivist perspectives on teaching and learning. *Annu. Rev. Psychol.* **1998**, *49*, 345–375. [\[CrossRef\]](#)
39. Kroll, L.R. Constructing Constructivism: How Student?teachers Construct Ideas of Development, Knowledge, Learning, and Teaching. *Teach. Teach.* **2004**, *10*, 199–221. [\[CrossRef\]](#)
40. Yildirim, A.; Kasapoglu, K. Teachers’ Perceptions of Constructivist Curriculum Change as a Predictor of Their Perceptions of the Implementation of Constructivist Teaching–Learning Activities. *Asia Pacific Educ. Rev.* **2015**, *16*, 565–577. [\[CrossRef\]](#)
41. Bizimana, E.; Mutangana, D.; Mwesigye, A. Students’ Perceptions of the Classroom Learning Environment and Engagement in Cooperative Mastery Learning-Based Biology Classroom Instruction. *Educ. Res. Int.* **2022**, *2022*, 5793394. [\[CrossRef\]](#)
42. Makrakis, V. Unlocking the Potentiality and Actuality of ICTs in Developing Sustainability-Justice Curricula and Society. *Knowl. Cult.* **2017**, *5*, 103. [\[CrossRef\]](#)
43. Fox, R. Constructivism Examined. *Oxford Rev. Educ.* **2001**, *27*, 23–35. [\[CrossRef\]](#)
44. Alshuwaikhat, H.M.; Mohammed, I. Sustainability Matters in National Development Visions-Evidence from Saudi Arabia’s Vision for 2030. *Sustainability* **2017**, *9*, 408. [\[CrossRef\]](#)
45. Mitchell, B.; Alfuraih, A. The Kingdom of Saudi Arabia: Achieving the Aspirations of the National Transformation Program 2020 and Saudi Vision 2030 Through Education. *J. Educ. Dev.* **2018**, *2*, 36. [\[CrossRef\]](#)
46. Faudot, A. Saudi Arabia and the Rentier Regime Trap: A Critical Assessment of the Plan Vision 2030. *Resour. Policy* **2019**, *62*, 94–101. [\[CrossRef\]](#)
47. Imlawi, J. Students’ Engagement in E-Learning Applications: The Impact of Sound’s Elements. *Educ. Inf. Technol.* **2021**, *26*, 6227–6239. [\[CrossRef\]](#)
48. Costley, J.; Southam, A.; Bailey, D.; Haji, S.A. How Use of Learning Management System Mediates the Relationships between Learner Interactions and Learner Outcomes. *Interact. Technol. Smart Educ.* **2021**, *19*, 184–201. [\[CrossRef\]](#)

49. Sprenger, D.A.; Schwaninger, A. Technology Acceptance of Four Digital Learning Technologies (Classroom Response System, Classroom Chat, e-Lectures, and Mobile Virtual Reality) after Three Months' Usage. *Int. J. Educ. Technol. High. Educ.* **2021**, *18*, 8. [CrossRef]
50. Raoufi, S.; Manoochehri, H.; Zarifsanaiey, N.; Nikravanmofrad, M. Developing an E-Learning Model for Nursing Education. *J. Clin. Diagn. Res.* **2020**, *14*, 11–16. [CrossRef]
51. Czerkowski, B.C.; Lyman, E.W. An Instructional Design Framework for Fostering Student Engagement in Online Learning Environments. *TechTrends* **2016**, *60*, 532–539. [CrossRef]
52. Asgarimehr, M.; Shirazi, B.; Jafari, M.; Rostami, S. A Strategic Framework for Designing E-Learning System with Focus on University Entrepreneurship. *Int. J. Comput. Sci.* **2012**, *9*, 129–138.
53. Khan, B.H. A Framework for Web-Based Learning. *TechTrends* **2000**, *44*, 51. [CrossRef]
54. Carrión-Martínez, J.J.; Luque-de la Rosa, A.; Fernández-Cerero, J.; Montenegro-Rueda, M. Information and Communications Technologies (ICTs) in Education for Sustainable Development: A Bibliographic Review. *Sustainability* **2020**, *12*, 3288. [CrossRef]
55. Lytras, M.D.; Visvizi, A.; Daniela, L.; Sarirete, A.; De Pablos, P.O. Social Networks Research for Sustainable Smart Education. *Sustainability* **2018**, *10*, 2974. [CrossRef]
56. Kravariti, E.; Gillespie, A.; Diederer, K.; Smart, S.E.; Mayberry, C.; Meehan, A.J.; Bream, D.; Musiat, P.; Vitoratou, S.; Stahl, D.; et al. Applying the Higher Education Academy Framework for Partnership in Learning and Teaching in Higher Education to Online Partnership Learning Communities: A Case Study and an Extended Model. *Teach. Learn. Inq.* **2018**, *6*, 143–164. [CrossRef]
57. Hur, H.M.; Im, Y. The Influence of E-Learning on Individual and Collective Empowerment in the Public Sector: An Empirical Study of Korean Government Employees. *Int. Rev. Res. Open Distance Learn.* **2013**, *14*, 191–213. [CrossRef]
58. Khan, F.; Ghadially, R. Empowerment through ICT Education, Access and Use: A Gender Analysis of Muslim Youth in India. *J. Int. Dev.* **2010**, *22*, 659–673. [CrossRef]
59. Duckworth, V.; Maxwell, B. Extending the Mentor Role in Initial Teacher Education: Embracing Social Justice. *Int. J. Mentor. Coach. Educ.* **2015**, *4*, 4–20. [CrossRef]
60. Martínez-Cerdá, J.F.; Torrent-Sellens, J.; González-González, I.; Ficapal-Cusí, P. Opening the Black-Box in Lifelong E-Learning for Employability: A Framework for a Socio-Technical E-Learning Employability System of Measurement (STELEM). *Sustainability* **2018**, *10*, 1014. [CrossRef]
61. Radcliffe, B. How Education and Training Affect the Economy. 2020. Available online: <https://www.investopedia.com/articles/economics/09/education-training-advantages.asp> (accessed on 10 April 2022).
62. Whalley, A. Education and Labor Market Risk: Understanding the Role of Data Cleaning. *Econ. Educ. Rev.* **2011**, *30*, 528–545. [CrossRef]
63. Hodson, R.; Phelps, E.S. Rewarding Work: How to Restore Participation and Self-Support to Free Enterprise. *Contemp. Sociol.* **1998**, *27*, 64. [CrossRef]
64. Giarini, O. The Double Helix of Learning and Work. *Cadmus* **2013**, *2*, 34–58.
65. Ionela, A.M. The Role of Lifelong Learning in the Growth of Employment and Labour Efficiency. The Case of Romania. *Procedia Soc. Behav. Sci.* **2012**, *46*, 4399–4403. [CrossRef]
66. Stephenson, J. *Teaching and Learning Online: Pedagogies for New Technologies*; Routledge: London, UK, 2001.
67. Salam, M.; Farooq, M.S. Does Sociability Quality of Web-Based Collaborative Learning Information System Influence Students' Satisfaction and System Usage? *Int. J. Educ. Technol. High. Educ.* **2020**, *17*, 26. [CrossRef]
68. Al-Qahtani, M.M.Z.; Alkhateeb, T.T.Y.; Mahmood, H.; Abdalla, M.A.Z.; Qaralleh, T.J.O.T. The Role of the Academic and Political Empowerment of Women in Economic, Social and Managerial Empowerment: The Case of Saudi Arabia. *Economies* **2020**, *8*, 45. [CrossRef]
69. Salloum, S.A.; Al-Emran, M.; Shaalan, K.; Tarhini, A. Factors Affecting the E-Learning Acceptance: A Case Study from UAE. *Educ. Inf. Technol.* **2019**, *24*, 509–530. [CrossRef]
70. Rahmani, A.M.; Ehsani, A.; Mohammadi, M.; Mohammed, A.H.; Karim, S.H.T.; Hosseinzadeh, M. A New Model for Analyzing the Role of New ICT-Based Technologies on the Success of Employees' Learning Programs. *Kybernetes* **2021**, *51*, 2156–2171. [CrossRef]
71. Bekmanova, G.; Ongarbayev, Y.; Somzhurek, B.; Mukatayev, N. Personalized Training Model for Organizing Blended and Lifelong Distance Learning Courses and Its Effectiveness in Higher Education. *J. Comput. High. Educ.* **2021**, *33*, 668–683. [CrossRef]
72. Dabbagh, N.; Fake, H. College Students' Perceptions of Personal Learning Environments through the Lens of Digital Tools, Processes and Spaces. *J. New Approaches Educ. Res.* **2017**, *6*, 28–36. [CrossRef]
73. Kerimbayev, N. Virtual Learning: Possibilities and Realization. *Educ. Inf. Technol.* **2016**, *21*, 1521–1533. [CrossRef]
74. Hamdan, A.K. The Reciprocal and Correlative Relationship between Learning Culture and Online Education: A Case from Saudi Arabia. *Int. Rev. Res. Open Distance Learn.* **2014**, *15*, 309–336. [CrossRef]
75. Tassone, V.C.; Dik, G.; van Lingen, T.A. Empowerment for Sustainability in Higher Education through the EYE Learning Tool. *Int. J. Sustain. High. Educ.* **2017**, *18*, 341–358. [CrossRef]
76. Weber, J.M.; Lindenmeyer, C.P.; Liò, P.; Lapkin, A.A. Teaching Sustainability as Complex Systems Approach: A Sustainable Development Goals Workshop. *Int. J. Sustain. High. Educ.* **2021**, *22*, 25–41. [CrossRef]
77. Turnbull, D.; Chugh, R.; Luck, J. Transitioning to E-Learning during the COVID-19 Pandemic: How Have Higher Education Institutions Responded to the Challenge? *Educ. Inf. Technol.* **2021**, *26*, 6401–6419. [CrossRef]

78. Jonassen, D.H. Constructivist Learning Environments on the Web: Engaging Students in Meaningful Learning. In Proceedings of the educational Technology Conference and Exhibition, Singapore, 11 February 1999.
79. Wang, Y. Technology Projects as a Vehicle to Empower Students. *Educ. Media Int.* **2006**, *43*, 315–330. [\[CrossRef\]](#)
80. Katai, Z. Promoting Computational Thinking of Both Sciences- and Humanities-Oriented Students: An Instructional and Motivational Design Perspective. *Educ. Technol. Res. Dev.* **2020**, *68*, 2239–2261. [\[CrossRef\]](#)
81. Jeyaraj, J.J. Drawing on Students' Lived Experiences in Emergency Remote Teaching (ERT): Reflections from a Critical Pedagogy Inspired Writing Class. *Asia Pacific J. Educ.* **2021**, 1–13. [\[CrossRef\]](#)
82. Kamoche, K.; Mueller, F. Human Resource Management and the Appropriation Learning Perspective. *Hum. Relations* **1998**, *51*, 1033–1060. [\[CrossRef\]](#)
83. Lejeune, C.; Mercuri, D.; Beusaert, S.; Raemdonck, I. Personal Development Plans Supporting Employee Learning and Perceived Performance: The Moderating Role of Self-Directedness. *Hum. Resour. Dev. Int.* **2016**, *19*, 307–328. [\[CrossRef\]](#)
84. Krajco, K.; Habanik, J.; Grecikova, A. The Impact of New Technology on Sustainable Development. *Eng. Econ.* **2019**, *30*, 41–49. [\[CrossRef\]](#)
85. Smith, K.A.; Douglas, T.C.; Cox, M.F. Supportive Teaching and Learning Strategies in STEM Education. *New Dir. Teach. Learn.* **2009**, *2009*, 19–32. [\[CrossRef\]](#)
86. Aggarwal, R.; Zhan, F. Student Characteristics and Pedagogies in Developing Global Mindsets: Introduction to This Issue. *J. Teach. Int. Bus.* **2016**, *27*, 143–146. [\[CrossRef\]](#)
87. Carril, P.C.M.; Sanmamed, M.G.; Hernández-Sellés, N. Pedagogical Roles and Competencies of University Teachers Practicing in the E-Learning Environment. *Int. Rev. Res. Open Distance Learn.* **2013**, *14*, 462–487. [\[CrossRef\]](#)
88. Curtis, T.; Abratt, R.; Minor, W. Corporate Brand Management in Higher Education: The Case of ERAU. *J. Prod. Brand Manag.* **2009**, *18*, 404–413. [\[CrossRef\]](#)
89. Gordon, M. Between Constructivism and Connectedness. *J. Teach. Educ.* **2008**, *59*, 322–331. [\[CrossRef\]](#)
90. Guaman-Quintanilla, S.; Everaert, P.; Chiluiza, K.; Valcke, M. Fostering Teamwork through Design Thinking: Evidence from a Multi-Actor Perspective. *Educ. Sci.* **2022**, *12*, 279. [\[CrossRef\]](#)
91. Sońta, M. Designing Playful Employee Experience through Serious Play—Reflections from Pre-Pandemic Corporate Learning Events in Poland. *J. Work. Appl. Manag.* **2021**, *14*, 126–144. [\[CrossRef\]](#)
92. Shumba, A.; Ndofirepi, A.P.; Gwirayi, P. A Critique of Constructivist Theory in Science Teaching and Learning. *J. Soc. Sci.* **2012**, *31*, 11–18. [\[CrossRef\]](#)
93. Makrakis, V.; Kostoulas-Makrakis, N. A Methodology for Reorienting University Curricula to Address Sustainability: The RUCAS-Tempus Project Initiative. In *Sustainability Assessment Tools in Higher Education Institutions*; Springer International Publishing: Cham, Switzerland, 2013; pp. 323–344.
94. Arends, R.I. Resource Handbook. In *Learning to Teach*; McGraw-Hill: Boston, MA, USA, 1998.
95. Merce, B.; Gardner, R.C. Teacher Motivation Strategies, Student Perceptions, Student Motivation and English Achievement. *Mod. Lang. J.* **2001**, *92*, 387–401. [\[CrossRef\]](#)
96. Tam, M. Constructivism, Instructional Design, and Technology: Implications for Transforming Distance Learning. *Educ. Technol. Soc.* **2000**, *3*, 50–60.
97. Honebein, P.C. Seven Goals for the Design of Constructivist Learning Environments. *Case Stud. Instr. Des.* **1996**, 11–24.
98. Lipsey, R.G.; Chrystal, K.A. *Economics*; Oxford University Press: Oxford, UK, 2011.
99. Garrison, D.R. A Cognitive Constructivist View of Distance Education: An Analysis of Teaching-learning Assumptions. *Distance Educ.* **1993**, *14*, 199–211. [\[CrossRef\]](#)
100. Kumari, R.; Kwon, K.S.; Lee, B.H.; Choi, K. Co-Creation for Social Innovation in the Ecosystem Context: The Role of Higher Educational Institutions. *Sustainability* **2020**, *12*, 307. [\[CrossRef\]](#)
101. Thi Yen Phuong, N. Theory of Constructivism and the Orientation of Hanoi Retraining College for Teachers and Educational Managers in Building a Model of Constructive School in Vietnam. *Am. J. Educ. Res.* **2018**, *6*, 703–709. [\[CrossRef\]](#)
102. Rajabalee, Y.B.; Santally, M.I. Learner Satisfaction, Engagement and Performances in an Online Module: Implications for Institutional e-Learning Policy. *Educ. Inf. Technol.* **2021**, *26*, 2623–2656. [\[CrossRef\]](#)
103. Singh, H.P.; Alhulail, H.N. Predicting Student-Teachers Dropout Risk and Early Identification: A Four-Step Logistic Regression Approach. *IEEE Access* **2022**, *10*, 6470–6482. [\[CrossRef\]](#)
104. Adams, P. Exploring Social Constructivism: Theories and Practicalities. *Education* **2006**, *34*, 243–257. [\[CrossRef\]](#)
105. Asad, M.M.; Naz, A.; Churi, P.; Guerrero, A.J.M.; Salameh, A.A. Mix Method Approach of Measuring VR as a Pedagogical Tool to Enhance Experimental Learning: Motivation from Literature Survey of Previous Study. *Educ. Res. Int.* **2022**, *2022*, 8262304. [\[CrossRef\]](#)
106. Roffe, I. E-Learning: Engagement, Enhancement and Execution. *Qual. Assur. Educ.* **2002**, *10*, 40–50. [\[CrossRef\]](#)
107. Alatawi, S.S.T.; Miskon, S.; Abdullah, N.S.; Ghabban, F.; Saeed, F.; Alfadli, I.; Ameerbakhsh, O. A New Model for Enhancing Student Portal Usage in Saudi Arabia Universities. *Eng. Technol. Appl. Sci. Res.* **2021**, *11*, 7158–7171. [\[CrossRef\]](#)
108. Raza, S.A.; Qazi, W.; Khan, K.A.; Salam, J. Social Isolation and Acceptance of the Learning Management System (LMS) in the Time of COVID-19 Pandemic: An Expansion of the UTAUT Model. *J. Educ. Comput. Res.* **2021**, *59*, 183–208. [\[CrossRef\]](#)
109. Kumar, P.; Saxena, C.; Baber, H. Learner-Content Interaction in e-Learning- the Moderating Role of Perceived Harm of COVID-19 in Assessing the Satisfaction of Learners. *Smart Learn. Environ.* **2021**, *8*, 5. [\[CrossRef\]](#)

110. Siddike, A.K. Knowledge Management & E-Learning Towards a Service System for Social Innovation in Education: A Possible Application of MOOCs. *Knowl. Manag. E-Learning* **2016**, *8*, 124–137.
111. Blayone, T.J.B.; vanOostveen, R.; Barber, W.; DiGiuseppe, M.; Childs, E. Democratizing Digital Learning: Theorizing the Fully Online Learning Community Model. *Int. J. Educ. Technol. High. Educ.* **2017**, *14*, 13. [\[CrossRef\]](#)
112. Goodchild, T.; Speed, E. TEL as Transformative Innovation—A Note on the Enduring Myth of TEL. *Teach. High. Educ.* **2018**, *24*, 948–963. [\[CrossRef\]](#)
113. Ellaway, R.; Masters, K. AMEE Guide 32: E-Learning in Medical Education Part 1: Learning, Teaching and Assessment. *Med. Teach.* **2008**, *30*, 455–473. [\[CrossRef\]](#)
114. Bird, S.M.; Farewell, V.T. Performance Indicators: Good, Bad, and Ugly Membership of the Working Party Specific Recommendations. *J. R. Stat. Soc. A* **2005**, *168*, 1–27. [\[CrossRef\]](#)
115. Albats, E.; Fiegenbaum, I.; Cunningham, J.A. A Micro Level Study of University Industry Collaborative Lifecycle Key Performance Indicators. *J. Technol. Transf.* **2018**, *43*, 389–431. [\[CrossRef\]](#)
116. van de Bunt-Kokhuis, S.; Weir, D. Serving Culturally Diverse E-Learners in Business Schools. *Multicult. Educ. Technol. J.* **2013**, *7*, 17–45. [\[CrossRef\]](#)
117. Towers, N.; Santoso, A.S.; Sulkowski, N.; Jameson, J. Entrepreneurial Capacity-Building in HEIs for Embedding Entrepreneurship and Enterprise Creation—A Tripartite Approach. *Int. J. Retail Distrib. Manag.* **2020**, *48*, 881–899. [\[CrossRef\]](#)
118. Carayannis, E.G.; Popescu, D.; Sipp, C.; Stewart, M. Technological Learning for Entrepreneurial Development (TL4ED) in the Knowledge Economy (KE): Case Studies and Lessons Learned. *Technovation* **2006**, *26*, 419–443. [\[CrossRef\]](#)
119. Salovaara, J.J.; Soini, K. Educated Professionals of Sustainability and the Dimensions of Practices. *Int. J. Sustain. High. Educ.* **2021**, *22*, 69–87. [\[CrossRef\]](#)
120. AlArjani, A.; Modibbo, U.M.; Ali, I.; Sarkar, B. A New Framework for the Sustainable Development Goals of Saudi Arabia. *J. King Saud Univ. Sci.* **2021**, *33*, 101477. [\[CrossRef\]](#)
121. Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Thousand, O., Ed.; SAGE Publications: Newbury Park, CA, USA, 2016.
122. Fornell, C.; Larcker, D.F. SEM with Unobservable Variables and Measurement Error: Algebra and Statistics. *J. Mark. Res.* **1981**, *18*, 39–50. [\[CrossRef\]](#)
123. Hair, J.F.; Risher, J.J.; Sarstedt, M.; Ringle, C.M. When to Use and How to Report the Results of PLS-SEM. *Eur. Bus. Rev.* **2019**, *31*, 2–24. [\[CrossRef\]](#)
124. Dakduk, S.; González, Á.; Portalanza, A. *Learn about Structural Equation Modeling in SmartPLS with Data from the Customer Behavior in Electronic Commerce Study in Ecuador (2017)*; SAGE Publications, Limited: Newbury Park, CA, USA, 2019.
125. Cohen, J. *Statistical Power Analysis for Behavioral Sciences*; Lawrence Earlbaum Associates: Hillsdale, NJ, USA, 1988.
126. Falk, R.F.; Miller, N.B. *A Primer for Soft Modeling*; University of Akron Press: Akron, OH, USA, 1992.
127. Chin, W.W. The Partial Least Squares Approach to Structural Equation Modelling. *Mod. Methods Bus. Res.* **1998**, *295*, 295–336.
128. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a Silver Bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [\[CrossRef\]](#)
129. Henseler, J.; Hubona, G.; Ray, P.A. Using PLS Path Modeling in New Technology Research: Updated Guidelines. *Ind. Manag. Data Syst.* **2016**, *116*, 2–20. [\[CrossRef\]](#)
130. Cohen, J. A Power Primer. *Psychol. Bull.* **1992**, *112*, 155–159. [\[CrossRef\]](#) [\[PubMed\]](#)
131. Hu, L.T.; Bentler, P.M. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Struct. Equ. Model.* **1999**, *6*, 1–55. [\[CrossRef\]](#)
132. Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M.; Thiele, K.O. Mirror, Mirror on the Wall: A Comparative Evaluation of Composite-Based Structural Equation Modeling Methods. *J. Acad. Mark. Sci.* **2017**, *45*, 616–632. [\[CrossRef\]](#)
133. Pande, M.; Bharathi, S.V. Theoretical Foundations of Design Thinking—A Constructivism Learning Approach to Design Thinking. *Think. Ski. Create.* **2020**, *36*, 100637. [\[CrossRef\]](#)
134. Scheer, A.; Noweski, C.; Meinel, C. Transforming Constructivist Learning into Action: Design Thinking in Education. *Des. Technol. Educ. Int. J.* **2012**, *17*, 8–19.