Article

Cultivating Success: Unveiling the Influence of Higher Education Strategies on Information Technology Governance, Academic Excellence, and Career Prospects in Saudi Arabia

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Abstract: The successful implementation of effective data governance in universities is crucial in complementing the massive information technology (IT) developments in higher education institutions globally. Hence, to identify the enablers of IT governance, this study examined the effects of knowledge value, knowledge-oriented culture, and knowledge-sharing process on the integration of IT governance in the curriculum and the latter's effects on academic performance and perceived employability among university students in Saudi Arabia. We used a cross-sectional approach to collect quantitative data from 280 university students and employed structural equation modelling and partial least squares to conduct the data analysis. Our results confirmed the significant positive effects of knowledge value and the knowledge-sharing process on IT governance, along with a positive significant effect of IT governance on academic performance and perceived employment. Moreover, the results revealed a direct, positive, and significant effect of academic performance on perceived employment, as well as the significant mediating effects of IT governance and academic performance between these two. Apart from extending the relevant literature, this study offers several policy implications.

Keywords: higher education strategies; IT governance; perceived employability; Saudi Arabia

1. Introduction

Universities play an indispensable role in ensuring economic and societal development [1]. For many years, universities have played a leading role as organisers for creating knowledge-based economies, particularly through innovations [1]. Higher education institutions (HEIs) demonstrate superior performance through research activities, innovations, and the production of employable graduates, who play a vibrant role in socioeconomic development [1]. In the local context, the high unemployment rate, coupled with the need for sustainable solutions to the unemployment crisis, which the Saudi Vision 2030 aims to address, calls for further investigations into the perceptions of Saudi students regarding employability skills developed by HEIs in the Kingdom [2].

'Employability' is defined as the attributes and skills that make individuals desirable to potential employers [3]. Perceived employability is a construct derived from the labour market phenomenon and psychological theory that deals with people's perceptions of

their existing circumstances and their potential labour market mobility in relation to their career opportunities [4]. Research has shown that people who consider themselves to be more employable are likelier to view work-related circumstances favourably, which, in turn, leads to improved health and well-being [4]. Regardless of the economic sector or industry, perceived employability skills encompass attributes that positively distinguish an individual from other graduates with comparable professional competencies [2].

In an earlier study, [5] found that selected employability skills were significantly associated with academic performance. Several previous studies have reported how information technology (IT) governance could help monitor and facilitate quality assurance outcomes through technology-enhanced learning, combining all relevant elements for improved academic performance [6]. Universities are acknowledged as playing an essential role in facilitating the generation, sharing, and transfer of useful knowledge [1,7,8], thus contributing to innovations across diverse institutional dimensions, including industries, businesses, and government and nongovernment agencies [9]. Related to this, IT governance is considered a significant determinant of the knowledge generation and sharing processes that positively impact organisational performance [10]. At the same time, data governance assists in mitigating issues related to accountability, transparency, discrimination, fairness, and trust [10]. Particularly in the context of higher education institutes, IT governance has emerged as an effective tool for improving performance through e-learning [6].

HEIs strive for superior performance to cope with the challenges of the contemporary academic environment [1]. Perceived employability—the cornerstone of university performance and a significant factor at the individual and organisational levels—is a construct that has not been fully investigated in previous years [4]. These challenges faced by HEIs are intensified by rapid technological advancements, the changing structures of state funding, and novel demands for higher education, both from society and industries [1]. According to research, HEIs must adopt global patterns to better play their roles as vehicles of innovation [11,12]. For this reason, innovation in HEIs has drawn increasing interest from scholars in recent years. However, the concept of IT governance related to this phenomenon has not only received inadequate research attention but has also been overlooked by professionals [10], particularly in the context of its effect on higher academic performance and perceived employability. Furthermore, the existing literature remains silent in relation to the complementary knowledge-based variables that facilitate the integration of effective IT governance in universities. Although it is evident that knowledge is most relevant for HEIs, the literature shows a clear gap in approaching IT governance in universities from a knowledge-based perspective, using knowledge-based strategies. Moreover, a holistic understanding of knowledge-based strategies, IT governance, academic performance, and perceived employability using a single framework is missing in the existing literature.

Hence, to address the abovementioned gap, the present study aimed to determine the impacts of selected higher education strategies (i.e., knowledge-oriented culture, knowledge value, and knowledge-sharing process) on IT governance, academic performance, and perceived employability among university students through the lens of the knowledge-based view. In particular, this study uses a cross-sectional research design to analyse quantitative data collected from university students in Saudi Arabia. The next section presents a discussion of the relevant literature, followed by details regarding the methods and measures used, data analysis results, a discussion of the results, and the paper's conclusion.

2. Literature Review

2.1. Sustainability and Higher Education

Sustainability has attracted significant attention globally across disciplines over the last two decades, paving the way for concepts like "education for sustainable development" and "education for sustainability", with an emerging emphasis on sustainability through higher education [13]. HEIs, as key agents for educating future leaders, are thus perceived to play an essential role in sustainability and contribute to the successful implementation of the United Nations Sustainable Development Goals (SDGs) [14]. According to Sibbel [15],

the barriers to sustainability are mostly associated with the lack of resources, responsibilities, and potential of higher education institutions. Universities bear a significant portion of responsibility for sustainability, thanks to their ability to influence academic freedom to explore ideas and society at large. However, the Consultation on Sustainable Development in Prague in 2003 noted that HEIs failed to forward graduates with the knowledge, motivation, and skills needed to acquire and advance sustainability [15]. On a positive note, Wals [16] defended that putting the past behind HEIs has begun to make advanced systemic progress towards sustainability by restructuring their academic, research, and community activities. In a more recent study, Al-Rahmi [17] highlighted that sustainability is a vital concern across educational institutions as they continue substantial investments in learning associated with technologies to advance "education for sustainability". In fact, Ahel and Lingenau [18] argued that digitalisation in universities represents the key to enlarging the students' scope of accessing "Education for Sustainable Development". Despite the significance, no research has attempted to explore the potential of technological aspects, such as IT governance, to shape students' academic performance and perceived employability in the context of HEIs, which, in turn, could progress educational sustainability. Hence, using data from Saudi Arabia, this study aimed to determine the impacts of selected higher education strategies on IT governance and the consequent influence of IT governance on academic performance, as well as perceived employability among university students.

2.2. Theoretical Foundation

Employers depend on universities to address the growing demand for digital and transferable competencies among their graduates [2]. Drawing on the knowledge-based view, the current study aspires to determine the influence of higher education strategies (knowledge-oriented culture, institutional knowledge value, and knowledge-sharing process) on IT governance and its consequent effect on Saudi university students' academic performance and their perceived employment. The knowledge-based perspective argues that knowledge is a highly significant strategic asset that serves as a prominent source of innovation, such as IT governance, which in turn leads to superior academic performance [1,19–21]. Particularly in the context of HEIs, the theoretical approach is deemed relevant, as universities are considered knowledge-intensive entities due to their major role in creating knowledge and engaging it through teaching, learning, and research.

Through effective knowledge management, HEIs can build intellectual capital and enhance their performance through innovation, which could be IT governance [1,20–22]. Hence, the present study focused on selected knowledge-based strategies as enablers of IT governance, thereby leading to superior academic performance and enhanced perceived employability among students. According to Iqbal [1], knowledge-based rewards, knowledge value, and a knowledge-oriented culture can positively affect innovation, in which the knowledge-sharing process mediates the effect of such strategies on innovation quality and speed. The knowledge-sharing process is highly relevant to achieving successful knowledge management and is closely linked to innovation in HEIs [1]. It has been argued that knowledge-sharing activities do not work alone but rather combine organisational factors, such as organisational culture, structure, work systems, knowledge value, and reward systems, to cause innovation, which, in turn, facilitates greater performance.

2.3. Knowledge-Based Strategies and IT Governance

On the one hand, 'knowledge value' is defined as the degree to which organisational leadership integrates and supports knowledge management activities into organisational strategies and behaviours, thereby fostering learning [1]. On the other hand, an organisation's 'knowledge-oriented culture' refers to a particular trait that is characterised by a complex web of human values, behaviours, and attitudes that encourage problem-solving, knowledge-sharing, and teamwork among organisational members [1]. Having a knowledge-oriented culture in organisations helps overcome human-related obstacles to managing knowledge and innovation, thus enabling firms to achieve superior innovation

levels [23]. Furthermore, a knowledge-oriented culture represents a knowledge-sharing climate that is characterised by psychological safety, communication, tolerance for errors, empowerment, trust, openness, and inclusive decision-making [1]. In a separate study, Romanelli [24] stressed that a knowledge-oriented culture drives changes and innovation in organisations related to managing and using knowledge by improving administrative, democratic, and managerial processes; supporting the formulation of relevant policies; and improving the quality of service production and delivery.

Finally, knowledge sharing could be considered a social interaction activity [8] that is directed towards the exchange of knowledge, including skills, suggestions, experiences, and expertise, between organisational members or teams [1]. Knowledge sharing concerns knowledge collection and diffusion processes that enable firms to acquire innovative problem-solving methods, master work-related processes, and create core competencies among employees [25]. Knowledge sharing—both tangible and intangible—also enables firms to develop their knowledge-based resources [1,21]. In an earlier study, Cao and Xiang [26] showed the effect of knowledge sharing on knowledge governance. Furthermore, organisational members who are engaged in data sharing affirm collaborative trust and a shared vision among stakeholders, allowing them to overcome common barriers resulting from application and interpretation requirements and achieve effective data governance [27]. Similarly, Janssen et al. [10] revealed that data governance depends on collaboration between individuals, groups, and firms that make up a system—a process that can be considered reliable data sharing. In a more recent study, Graef and Prüfer [28] suggested that for data-driven markets, data sharing is a mandatory feature of a good governance structure. Based on these findings, the following hypotheses are drawn:

Hypothesis 1 (H$_1$): *There is a perceived significant and positive influence of knowledge value on the integration of IT governance in the curriculum among university students in Saudi Arabia.*

Hypothesis 2 (H$_2$): *There is a perceived significant and positive influence of a knowledge-oriented culture on the integration of IT governance in the curriculum among university students in Saudi Arabia.*

Hypothesis 3 (H$_3$): *There is a perceived significant and positive influence of knowledge sharing on the integration of IT governance in the curriculum among university students in Saudi Arabia.*

2.4. IT Governance, Academic Performance, and Perceived Employability

'IT governance' refers to the effective allocation of authority and control over data and the exercise of such authority through decision-making in data-related matters in ways that increase the value of the data and minimise data-related risks and costs [10]. The organisational approach to data governance emphasises responsibility, structure, reporting, and accountability; using principles of top-level design; setting up organisational structures; and acknowledging data governance as a defining authority [10]. 'Data governance' could be further understood in terms of how firms define, oversee, and implement procedures and policies that regulate how data and algorithms are used inside and across organisations, along with proper accountability for such functions [10]. In the Saudi Arabian context, Hamdan et al. [29] empirically showed a positive effect of IT governance on operational performance at the organisational level. Through learning management systems and technology-enhanced learning, IT governance can actively facilitate the assessment of both group and individual student work under close control [6]. Hence, we expect that effective IT governance also influences learning and academic performance.

Academic performance, meanwhile, has been found to be significantly associated with selected employability skills [5]. According to Pinto and Ramalheira [30], academic performance is crucial to raising graduates' employability, wherein high academic performance combined with participation in extracurricular activities could lead to higher perceived employability. Tymon and Batistic [31] argued that academic grades and a proactive disposition are important to certain employers and universities, thereby acting as

valuable employability assets among students and potential employees. In a more recent study, Manjunath [3] demonstrated that high academic performance leads to employability, particularly for graduates who possess the soft skills required by hiring organisations. In addition, Cruz and Encarnacion [32] found that, in the context of HEIs, academic performance is the primary determinant of employability, wherein the integration of data mining techniques in academia enhances the performance of such institutions. Based on the abovementioned findings, we propose the following hypotheses:

Hypothesis 4 (H$_4$): *The integration of IT governance has a significant positive effect on the academic performance of university students in Saudi Arabia.*

Hypothesis 5 (H$_5$): *The integration of IT governance has a significant positive effect on perceived employability among university students in Saudi Arabia.*

Hypothesis 6 (H$_6$): *Academic performance has a significant positive effect on perceived employability among university students in Saudi Arabia.*

2.5. The Mediating Roles of IT Governance and Academic Performance

This study hypothesised the direct effects of knowledge-based institutional strategies (i.e., knowledge value, knowledge-oriented culture, and knowledge sharing) on the integration of IT governance. At the same time, we also hypothesised the direct effect of IT governance on the academic performance and perceived employability of students. Thus, the research framework posits a mediating role of IT governance between knowledge-based institutional strategies (i.e., knowledge value, knowledge-oriented culture, and knowledge sharing) and academic performance. Similarly, IT governance is expected to mediate the effect of such knowledge-based institutional strategies on perceived employability. The study further hypothesised a direct effect of IT governance on academic performance, along with a direct effect of academic performance on perceived employability, thereby suggesting a mediating role of academic performance between IT governance and perceived employability. In a related context, Li et al. [33] found that academic performance significantly mediates the effect of achievement motivation on employability. Hence, based on the above, the following hypotheses are proposed:

Hypothesis M1 (H$_{M1}$): *The integration of IT governance significantly mediates the effect of knowledge value on the academic performance of university students in Saudi Arabia.*

Hypothesis M2 (H$_{M2}$): *The integration of IT governance significantly mediates the effect of knowledge value on the perceived employability of university students in Saudi Arabia.*

Hypothesis M3 (H$_{M3}$): *The integration of IT governance significantly mediates the effect of a knowledge-oriented culture on the academic performance of university students in Saudi Arabia.*

Hypothesis M4 (H$_{M4}$): *The integration of IT governance significantly mediates the effect of a knowledge-oriented culture on the perceived employability of university students in Saudi Arabia.*

Hypothesis M5 (H$_{M5}$): *The integration of IT governance significantly mediates the effect of knowledge sharing on the academic performance of university students in Saudi Arabia.*

Hypothesis M6 (H$_{M6}$): *The integration of IT governance significantly mediates the effect of knowledge sharing on the perceived employability of university students in Saudi Arabia.*

Hypothesis M7 (H$_{M7}$): *Academic performance significantly mediates the effect of IT governance on the perceived employability of university students in Saudi Arabia.*

3. Methodology

We used a cross-sectional design and collected quantitative data from university students in Saudi Arabia to assess the effects of KNV, KOC, and KSP on ITG, along with the consequent impact of ITG on ACP and PE among the study sample. The nonprobability-

based convenience sampling technique was used in this study [34,35]. The data were collected through an online survey conducted between November 2023 and January 2024. For the variables of interest, we used a 5-point Likert scale, as they were asked to answer items validated by previous studies. These items, which were originally in English, were translated into Arabic to cater to an Arabic-speaking audience. This study received 280 complete and usable responses.

3.1. Research Instrument

The indicators used to measure KNW, KOC, and KSP were borrowed from Iqbal [1], while the items for ITG were borrowed from Qasim et al. [36]. The items for ACP were adopted from Alam et al. [37], while the indicators for PE were adopted from Berntson and Marklund [4]. We used a 5-point Likert scale (1 = 'strongly disagree', 5 = 'strongly agree') for all variables.

3.2. Data Analysis

We used PLS-SEM [38] to analyse the data [39,40], following Hulland's [41] procedure. The results were reported following the recommendations of Hair et al. [42,43].

4. Results

4.1. Demographic Analysis

As shown in Table 1, data were gathered from 280 university students in Saudi Arabia (72.5.% males, 27.5% females). Most of the respondents were between the ages of 41 and 45 years (45%). The majority of the respondents (91.07%) were enrolled at the University of Hail. As for their respective colleges, the majority (75.71%) of the respondents were from the Business Administration College.

Table 1. Respondents' profiles.

	n	%		n	%
Gender			*Age*		
Male	203	72.5	Less than 30 years old	1	0.36
Female	77	27.5	30–40 years old	1	0.36
Total	280	100	41–45 years old	126	45.0
University			Above 45 years old	152	54.28
University of Hail	255	91.07	Total	280	100
King Faisal University	24	08.57	*College*		
Al Qaseem University	1	0.36	Business Administration	212	75.71
Total	280	100	Computer Science	46	16.43
Marital Status			Applied	22	7.86
Single	271	96.8	Total	280	100
Married	9	3.2			
Total	280	100			

4.2. Validity and Reliability

As shown in Table 2, the Cronbach's alpha values for all variables exceeded 0.85. Hence, following Chin [44], we assumed that all items used in this study were reliable. Furthermore, the composite reliability (CR) values of all variables were higher than 0.85, proving the reliability of the items [43], while the average variance extracted (AVE) values of all variables exceeded 0.65, thus indicating convergent validity. The cross-loading values in Table 3 also confirmed discriminant validity. Moreover, the Fornell–Larcker criterion [45] and heterotrait–monotrait ratio (HTMT) values shown in Tables 4 and 5, respectively, revealed satisfactory discriminant validity. Finally, the variance inflation factor (VIF) values for all constructs dismissed any multicollinearity in the data [44].

Table 2. Validity and reliability.

Variable	Items	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	Variance Inflation Factor (VIF)
KNV	4	0.904	0.913	0.775	2.462
KOC	3	0.872	0.878	0.796	2.856
KSP	3	0.887	0.891	0.815	3.047
ITG	16	0.971	0.971	0.696	2.393
ACP	6	0.942	0.943	0.776	2.393
PE	7	0.929	0.937	0.705	-

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability. Source: Author's data analysis.

Table 3. Loadings and cross-loadings.

Item	KNV	KOC	KSP	ITG	ACP	PE
KNV1	0.902	0.626	0.657	0.644	0.588	0.633
KNV2	0.867	0.523	0.576	0.628	0.566	0.661
KNV3	0.855	0.679	0.628	0.577	0.600	0.647
KNV4	0.897	0.687	0.720	0.757	0.613	0.662
KOC3	0.653	0.897	0.697	0.587	0.572	0.575
KOC4	0.619	0.909	0.707	0.618	0.533	0.538
KOC5	0.647	0.870	0.680	0.531	0.547	0.585
KSP1	0.644	0.720	0.898	0.640	0.648	0.607
KSP2	0.649	0.700	0.925	0.663	0.705	0.651
KSP4	0.695	0.688	0.885	0.748	0.731	0.653
ITG1	0.614	0.597	0.727	0.788	0.715	0.619
ITG10	0.628	0.545	0.648	0.866	0.597	0.629
ITG11	0.575	0.495	0.606	0.826	0.597	0.593
ITG12	0.595	0.549	0.614	0.830	0.614	0.599
ITG13	0.595	0.546	0.611	0.850	0.613	0.617
ITG14	0.608	0.526	0.613	0.833	0.610	0.605
ITG15	0.585	0.499	0.590	0.814	0.629	0.599
ITG16	0.490	0.494	0.561	0.739	0.566	0.532
ITG2	0.722	0.560	0.663	0.836	0.623	0.689
ITG3	0.616	0.515	0.650	0.860	0.622	0.625
ITG4	0.621	0.547	0.650	0.868	0.652	0.635
ITG5	0.629	0.499	0.590	0.808	0.647	0.629
ITG6	0.657	0.560	0.654	0.885	0.678	0.659
ITG7	0.670	0.601	0.659	0.841	0.683	0.664
ITG8	0.668	0.594	0.673	0.828	0.665	0.637
ITG9	0.656	0.539	0.636	0.868	0.653	0.654
ACP1	0.604	0.577	0.740	0.717	0.840	0.713
ACP2	0.576	0.537	0.652	0.686	0.879	0.699
ACP3	0.586	0.501	0.630	0.634	0.902	0.756
ACP4	0.645	0.536	0.694	0.714	0.915	0.771
ACP5	0.561	0.561	0.686	0.627	0.864	0.743
ACP6	0.576	0.545	0.678	0.652	0.884	0.771
PE1	0.588	0.556	0.616	0.648	0.731	0.839
PE2	0.571	0.521	0.562	0.660	0.668	0.836
PE3	0.601	0.534	0.661	0.686	0.801	0.878
PE4	0.691	0.565	0.641	0.654	0.803	0.905
PE5	0.692	0.572	0.613	0.629	0.751	0.880
PE6	0.645	0.533	0.559	0.545	0.647	0.827
PE7	0.554	0.422	0.485	0.580	0.497	0.697

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability. Source: Author's data analysis.

Table 4. Fornell–Larcker criterion.

	KNV	**KOC**	**KSP**	**ITG**	**ACP**	**PE**
KNV	0.880					
KOC	0.715	0.892				
KSP	0.737	0.778	0.903			
ITG	0.746	0.651	0.762	0.834		
ACP	0.672	0.616	0.772	0.763	0.881	
PE	0.739	0.632	0.708	0.750	0.843	0.840

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability.

Table 5. Heterotrait–monotrait ratio (HTMT).

	KNV	**KOC**	**KSP**	**ITG**	**ACP**	**PE**
KNV	-					
KOC	0.806	-				
KSP	0.816	0.885	-			
ITG	0.788	0.704	0.815	-		
ACP	0.728	0.681	0.841	0.796	-	
PE	0.818	0.703	0.775	0.789	0.892	-

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability.

4.3. Path Analysis

Figure 1 represents the Path Analysis. The path coefficients (Table 6) showed that the coefficient value for KNV on ITG (Hypothesis H_1) was 0.405 with a *p*-value of 0.000 (5% significance level), thus indicating that KNV had a statistically significant effect on ITG. The f^2 value of 0.193 indicated that KNV had a medium effect on ITG. The coefficient value for KOC on ITG (Hypothesis H_2) appeared positive (0.009) with a *p*-value of 0.497, reflecting that KOC had no significant effect on ITG. The coefficient for KSP on ITG showed a positive value (0.463) and a *p*-value of 0.000 (Hypothesis H_3), suggesting that KSP had a significant influence on ITG. The f^2 value of 0.204 revealed that KSP had a medium effect on ITG.

Table 6. Path analysis.

Hypothesis	Association	Coefficient	*t* Value	*p* Value	Decision	r^2	f^2	Q^2
H_1	KNV → ITG	0.405	3.512	0.000	Supported		0.193	
H_2	KOC → ITG	0.001	0.009	0.497	Rejected	0.655	0.000	0.448
H_3	KSP → ITG	0.463	4.543	0.000	Supported		0.204	
H_4	ITG → ACP	0.763	14.610	0.000	Supported	0.582	1.393	0.437
H_5	ITG → PE	0.256	2.543	0.006	Supported	0.737	0.104	0.504
H_6	ACP → PE	0.648	7.228	0.000	Supported		0.667	

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability. Source: Author's data analysis.

The path coefficient value for ITG on ACP (Hypothesis H_4) was 0.763 with a *p*-value of 0.000, indicating that ITG had a significant positive effect on ACP. The f^2 value of 1.393 revealed a large effect of ITG on ACP. Furthermore, the path coefficient value for ITG on PE (Hypothesis H_5) was 0.256 with a *p*-value of 0.006, indicating that ITG had a significant positive influence on PE across the sample of the study. The f^2 value of 0.104 denotes a small effect size of ITG on PE. Finally, the path coefficient value for ACP on PE (Hypothesis H_6) was 0.648 with a *p*-value of 0.000. This suggests a significant positive effect of ACP on PE, wherein the f^2 value of 0.667 denotes a large effect size of ACP on PE.

On the one hand, the r^2 value was 0.665 for ITG, indicating that 66.5% of the variance in the construct could be explained by KNV and KSP. On the other hand, the r^2 value of

0.582 for ACP translated to a 58.2% variance in the construct, which could be determined by ITG. In addition, the r^2 value of 0.737 for PE suggested that the 73.7% variance could be explained by ITG and ACP. Finally, the Q^2 values of 0.448, 0.437 and 0.504 (all above 0) revealed that the respective variables had predictive relevance for ITG, ACP, and PE.
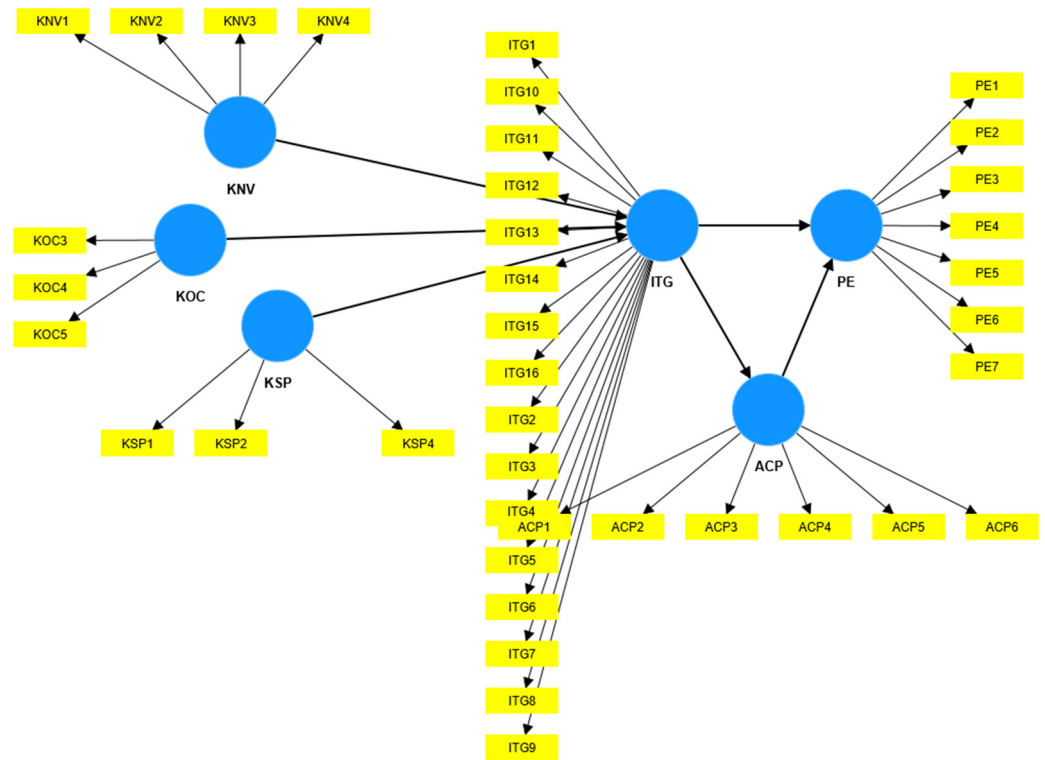

Figure 1. Path coefficient. Source: Primary data.

4.4. Mediating Effects

As observed in Table 7, KNV (Hypothesis H_{M1}) had a significant indirect effect on ACP, showing a significant mediation of ITG on the correlation between KNV and ACP. KNV further showed a significant indirect effect (*p*-value < 0.05) on PE, revealing significant mediation of ITG on the association between KNV and PE (Hypothesis H_{M2}). However, KOC showed no significant indirect effect on ACP (Hypothesis H_{M3}) as well as PE (Hypothesis H_{M4}). In Table 7, we can see a significant indirect effect of KSP on ACP, suggesting that ITG mediated the effect of KSP on ACP (Hypothesis H_{M5}). As for KSP, a significant indirect effect was further observed on PE, thereby confirming the mediating effect of ITG between KSP and PE (Hypothesis H_{M6}). Finally, ITG showed a significant indirect effect on PE (Hypothesis H_{M7}), thus confirming the mediating role of ACP between ITG and PE across the study sample.

Table 7. Mediating effects.

Hypothesis	Path	Beta	CI-Min	CI-Max	Sig.	Decision
H_{M1}	KNV → ITG → ACP	0.309	0.168	0.647	0.000	Mediation
H_{M2}	KNV → ITG → PE	0.304	0.159	0.457	0.000	Mediation
H_{M3}	KOC → ITG → ACP	0.001	−0.114	0.142	0.497	No Mediation
H_{M4}	KOC → ITG → PE	0.001	−0.114	0.135	0.497	No Mediation
H_{M5}	KSP → ITG → ACP	0.353	0.206	0.500	0.000	Mediation
H_{M6}	KSP → ITG → PE	0.347	0.211	0.481	0.000	Mediation
H_{M7}	ITG → ACP → PE	0.494	0.365	0.647	0.000	Mediation

Note: KNV—knowledge value, KOC—knowledge-oriented culture, KSP—knowledge-sharing process, ITG—IT governance, ACP—academic performance, PE—perceived employability. Source: Author's own compilation.

5. Discussion

The results confirmed that KNV had a statistically significant effect on ITG. In line with Iqbal [1], who studied academics in various HEIs in Pakistan, our finding suggests that the extent to which HEIs instil support for knowledge management activities within their strategies determines the effective integration of IT governance in the curricula of Saudi universities. KOC had no significant influence on ITG. However, its positive coefficient value means that, in the case of an association, the effect of KOC on ITG would be a positive one. Meanwhile, KSP had a significant positive effect on ITG. In accordance with the study of Iqbal [1], our findings suggest that successfully sustaining effective IT governance entails the development and implementation of supportive data-sharing policies.

Our results further revealed a significant positive effect of ITG on ACP. In line with the comprehensive literature review of Tawafak et al. [6], in which they evaluated the impact of technology development with IT governance in enhancing academic performance, our findings suggest that IT governance plays an important role in determining and overcoming known weaknesses of IT applications, such as problems of missing information, issues with uploading information, and the lack of experience in technology to develop student's skills and knowledge, which, in turn, can improve their grades and academic performance. Furthermore, ITG revealed a significant positive effect on PE among university students in Saudi Arabia, underscoring the notion that the effective integration of IT governance into the curriculum enhances students' perceptions of themselves as highly employable.

Finally, ACP showed a significant positive effect on PE. In line with existing studies (e.g., [3,5,30–32]), this finding suggests that students' grade point average, as a measure of their results in all academic courses, enhances the probability of being employed. Earlier, Pan and Lee [5] found a link between academic performance and perceived employability among graduate students in Taiwan, thus concurring with the present findings. Moreover, Pinto and Ramalheira [30] collected data from Portuguese working adults and found that academic performance and extracurricular activities, when combined, improved business graduates' employability. In a more recent study based in India, Manjunath [3] similarly found that high academic performance led to employability.

The results of mediation tests confirmed that ITG significantly mediated the influence of KNV and KNP on ACP and PE. As hypothesised, ACP mediated the effect of ITG on PE. This finding extends the study of Li et al. [33], who used student data from China, thus highlighting the importance of academic grades for IT governance to influence perceived employability.

6. Conclusions and Policy Implications

Universities play an important role in the improvement of societies in terms of production, administration, and humanity [6]. HEIs deal with massive amounts of data that they need to analyse in order to generate the most relevant information on a regular basis [32]. At the same time, IT governance is perceived to impose profound financial, legal and social implications on firms, citizens, and society at large [10]. The present study revealed the importance of two key knowledge management enablers in HEIs: knowledge value and the knowledge-sharing process. The findings suggest that institutional strategies related to knowledge value and data sharing could facilitate the effective integration of IT governance in the curricula used in Saudi universities. In addition, this study extends the body of knowledge related to the determinants of perceived employability and IT governance in HEIs. The extensive and holistic approach is noteworthy for its novelty and comprehensiveness. Moreover, given its focus on the Saudi Arabian context, this study makes a unique contribution in terms of enriching the related literature on the Eastern perspective regarding IT governance, which is missing in previous studies.

As for policy implications, primarily in line with Saudi Vision 2030, the findings of this study provide support to the Saudi government in addressing high unemployment rates in the Kingdom by highlighting the importance of knowledge-based strategies and IT governance in HEIs. As for universities, the insights from this study could assist in for-

mulating relevant policies for sustaining effective IT governance, which could be achieved by adjusting HEIs' objectives in terms of enhancing data value, as well as developing and implementing complementary data-sharing policies. Such actions should lead to higher perceived employability among graduates.

For example, it could be worthwhile for universities to support knowledge management activities, such as acquiring updated hardware and software or providing employee training to improve their skills in using technology in teaching, learning, and research. HEIs could also encourage social interaction and group activities that facilitate the exchange of knowledge. Such attempts could improve responsibility, structure, reporting, and accountability related to data management and redefine how HEIs oversee and implement the procedures and policies to control or regulate data. This step is crucial in achieving superior academic performance, enhancing students' perceptions regarding their potential employability, and enabling them to improve their career chances.

As for limitations, the identified determinants of IT governance and perceived employability remain non-exhaustive. Hence, future researchers should add other constructs into the current framework to improve its power. Moreover, as this study could only recruit respondents from three universities, future researchers could extend the sampling frame and diversity of respondents to achieve a more holistic understanding of the subject matter. This strategy should also improve the generalisation of their findings through the extended representation of other HEIs.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved at the Council of the Deanship of Scientific Research No. 18, letter No. 4400028288 on 07/06/2023 at Hail University Code–RG-23-119.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data are available from the authors upon request.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

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