

## STRATEGIES TO ADDRESS THE FINANCIAL CHALLENGES FACING UNIVERSITIES POST THE COVID-19 CRISIS: FACULTY MEMBERS' PERCEPTIONS

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### ABSTRACT

Disasters and crises are not entirely negative; they can also bring forth positive aspects. The main objective of the current study is to propose strategies for addressing the financial challenges that universities face after the Covid-19 crisis, from the perspective of faculty members, as they prepare for the post-Corona stage. The study involved 133 faculty members from two major Omani and Saudi universities during the academic year 2022. A descriptive quantitative approach was utilized, employing a questionnaire with two dimensions: direct strategies and sustainable strategies. The reliability of the questionnaire, as measured by Cronbach's Alpha, was 0.91. The study identified several strategies for financing education in Arab universities, with a particular emphasis on investing in technology-based training as a response to the crisis. Additionally, the study recommended enhancing the role of investment funds in universities and encouraging their investment and service activities by developing resources within the universities.

Keywords: Universities funding, Corona pandemic, Higher education

### 1. Introduction

Corona's impact continues around the world uneven. Economic effects of lost profits and losses in reading works that have degrees the relationship with transportation and entertainment was the most intense. The higher education sector was not a university. Universities around the world around the world Cancellation of all its activities, including study, academic and research activities, and forums; Including conferences scientific; Which significantly affected her academic performance and its financial resources. The actual reality confirms that prestigious, and superior universities or striving for excellence in our contemporary world does not depend for its financing on a single financing model state or for the private sector (Sav, 2013). Even if it is owned entirely for the but seeks to diversify and increase its sources of financing to meet spending on its educational and research activities and programs (Harvard University, 2015). Many educational institutions are facing unpredictable financial challenges because of the COVID-19 pandemic. Costs associated with implementing virtual learning technologies, lower tuition and revenue, and health costs on campus. Although many higher education institutions

offered online courses before the pandemic, few students considered it as the sole alternative to physical in-person learning. For example, in the United States, only 13% of first-cycle tertiary students were exclusively enrolled in distance education courses in 2017 (NCES, 2019). As the pandemic continues and universities reopen for the next academic year, travel is likely to remain restricted and the need to employ technology and agreement continues to increase. However, the current crisis may affect education budgets more as rapidly as public revenues fall sharply and substantially, governments forced to review the order of education priorities in national budgets (IIEPUNESCO, 2020).

The pandemic has put a spotlight on the importance of international research collaboration. Because of severe economic downturns, the pandemic has dramatically worsened inequalities within the higher education and research sector (Hans and Philip, 2021). Despite these efforts, several African universities faced prolonged closures due to inadequate government funding for a robust response to the pandemic.

Globally, sources of funding vary. In America, funding for higher and university education is based on three sources: the federal government, and its share is about 12% and is in the form of grants or competitive contracts, and state governments contribute about 27% of the cost of higher education, in addition to other sources such as fees. Educational and other sources of funding, in Britain the responsibility for financing higher education lies with the central government, which provides financial grants to British universities. In France, university education funded mainly by the national government, where the national government contributes 84% of its total budget to spending on university education, as it imposed in Japan tuition fees as a source of funding for university education between 10% - 30% of the proportion of spending on university education (Jongbloed, 2008). As for most Arab countries, university education financed by the central governments, in Jordan students bear the cost of university education in a large proportion through tuition fees (Kamal, 2009).

According to Thomas et al. (2020), the ongoing crisis has brought forth a combination of challenges and opportunities for higher education stakeholders, prompting a reevaluation of institutional strategies and processes. It is crucial for universities to delve into the possibilities offered by the green agenda and digital transformation, seeking to strike a harmonious balance between physical and virtual environments and processes. To support universities in capitalizing on these emerging opportunities, national policymakers must offer enabling frameworks and allocate sufficient financial resources. This support will empower universities to excel in producing exceptional graduates, advancing high-quality research output, and contributing significantly to social and economic recovery.

### **Financial challenges facing universities.**

The COVID-19 pandemic has brought about unforeseen financial challenges for numerous educational institutions. Expenses related to the implementation of virtual learning technologies, declining revenue from tuition and room and board, the need to retain staff on payroll, and the establishment of public health infrastructure on campus for testing and contact tracing have created a situation where some institutions have had to tap into their endowments to address these financial burdens and unexpected costs.

Due to the financial challenges posed by the COVID-19 pandemic, many universities, including Stanford University [Tessier-Lavigne, 2020], have resorted to workforce reductions

and other cost-saving measures. Even wealthy universities have implemented program reductions, while numerous smaller schools and colleges, even in the U.S. with government support [McLaughlin, 2020], have permanently closed. Some see the pandemic as a long-awaited chance to address universities' and students' financial troubles by adopting a more flexible and cost-efficient model in the long run [Rosensweig, LeBlanc, 2020]. Some of the university's international activities, such as hosting paid events, may be one of the strategies to bring in revenue. Our analysis focuses on two levels: micro and macro. The strategies required to address the impact of the pandemic on international education in Canada are at the micro level. Universities can support students through their own internal resources such as professional support groups from the Departments of Health Sciences, Psychology and Social Work (Firang & Mensah, 2021). In Australia new quality assessment systems, massive expansions in local training, a new demand-driven recruitment system, and questions about the long-term sustainability of government funding have dramatically changed education during this period; University administration in re-engineering funding can be affected by various factors, including changes in legislation related to university administrative bodies and university funding sources and governance (Parker, et al., 2023). It can also be said that educational technology is the focus of increasing future financial investment, which aims to transform educational services and resources into digital assets with a future value that can be calculated for educational technology investors, as one of the strategies for financing education in universities (Williamson and Janja, 2022). Financial investment in educational technology (edtech) has significantly impacted on higher education. Venture capital investments in edtech grew from \$500 million in 2010 to \$7 billion in 2019, with a notable surge during the Covid-19 pandemic as universities embraced online teaching (HolonIQ, 2020).

The COVID-19 pandemic has posed financial challenges for educational institutions. Universities responded with flexible and cost-effective models, utilizing internal resources and investing in educational technology. They also revised legislation, partnered with communities, and prioritized program quality and approval to attract students and offer support while minimizing unnecessary labor.

### **Higher Education in Oman**

In Oman, the Ministry of Higher Education is responsible for supervising universities, as it supervises public and private universities and colleges. These colleges contain various disciplines for the diploma, bachelor's, master's, and doctoral levels. According to the statistics of the academic year 2112/2113 AD, there is only one Government University in the Sultanate of Oman, which is Sultan Qaboos University. In addition to (6) governmental colleges of applied sciences, and the Oman University of Science and Technology project is currently being implemented, in addition to (7) private universities, and (21) private colleges as well (National Report of Education for All - Sultanate of Oman, 2014). Financing higher education in the Sultanate of Oman has received great attention, as it represents one of the priorities of the Omani government, and one of the national strategies for education called the 2040 strategy. Thus, the Omani government represents the main element in financing education for the various institutions of higher education in the Sultanate of Oman, as the study of Saadeh and Al-Hadrami showed that The role of private entities in financing education in higher education institutions is very weak, not exceeding 10% only, and government spending on

education continues to increase annually, and it represents one-fifth of the budget that the government allocates to all other sectors of the state (Sa'ada and Al-Hadrami, 2021).

The higher education sector has also achieved excellent performance in terms of international indicators. Perhaps the most prominent achievement of this year, which reflects the ministry's keenness to improve the quality and sustainability of private higher education, is the entry of five private universities in the Sultanate of Oman into the global ranking (QS) of Arab universities, according to what was published by the (Quacquarellu Symonds) Foundation on its university ranking website for the year 2023. In addition, 15 private educational institutions were able to obtain institutional accreditation from the Omani Authority for Academic Accreditation and Education Quality Assurance in exchange for their commitment to institutional accreditation standards. (Ministry of Higher Education, Scientific Research and Innovation, 2021).

In the field of higher education, and in response to the increasing demand for it, successive five-year development plans in the Sultanate directed to achieve several strategic objectives for this sector. The most important of which are: increasing the capacity of higher education in line with the requirements of economic and social development, and developing systems of higher education institutions, their curricula, and academic programs, including Consistent with the requirements and needs of the labor market and improving the internal efficiency of the higher education system. The percentage of spending on higher education from the gross domestic product (1.31%) and from government spending (3.42%) in 2011 AD (National Report for Education for All - Sultanate of Oman, 2014).

### **Higher Education in Saudi Arabia**

In the Kingdom, Saudi universities, especially governmental ones, and somewhat private ones as well, depended on government support, through the annual budgets allocated to them for each university separately, and the use of other sources of funding represented by funding from individuals (tuition fees), and some donations and grants Wills and Endowments (Al-Shanifi, 2018). Like other international universities, Saudi universities affected in the short term and will be affected in the long term, which requires thinking about ways and strategies to provide financial sustainability to secure their academic and research activities and activities within an institutional framework. Local studies have recommended the need to reconsider these policies of financing Saudi universities (Al-Majed, 2017) and to adopt the idea of a productive university. Al-Shaya, (2020) study showed that one of the most important justifications for diversifying the sources of Saudi higher education is to increase the social demand for it in light of the high cost of education and expenses during the pandemic.

The plan for higher education in the Kingdom of Saudi Arabia (Afaaq) 2029 based on three main dimensions: Expansion of higher education through the geographical spread of higher education institutions in the Kingdom's regions and the absorption of qualified people, with a link to high quality and differentiation between institutions (Slash, 2016). The number of Saudi public universities has reached 29, all of which depend directly on government support for their financing. The budget for higher education is estimated at the equivalent of (9%) of the state budget, and its data shows a slight decline with the advent of the Corona pandemic, as in the education sector. In general, acquired an estimated budget of (186 billion riyals), equivalent to (49.53 billion US dollars) for the fiscal year 2021, for the 2020 fiscal year about 193 billion

riyals, and for the 2019 fiscal year about (202 billion riyals) (GOV.SA, 2021). This decline comes considering the Corona pandemic, despite the increased demand for public and higher education. With the ambition of Saudi universities in the light of the Saudi Vision 2030, which depends on the foundations of a prosperous economy and an ambitious homeland, and achieving the vision requires Saudi universities with outstanding performance, and it also aims for at least five Saudi universities to become among the best (200) international universities by 2030. This requires conscious spending and developmental plans for the financial sustainability of these universities within purposeful and innovative strategies for university funding.

In other words, there are two main methods of financing for higher education: Public financing, which is that the state bears the financing of education and pays the entire costs of the educational process through specific budgets that are allocated so that educational opportunities are available free of charge to all members of society who wish to learn. Private financing, which is a form of financing, consists of individuals or their families bearing the costs of their education by paying the students fees for the services they obtain from educational institutions. Al-Shanifi's study (2018) concluded that the most important sources of financing for higher education in the Kingdom of Saudi Arabia are the government, followed by other sources of financing such as individual financing and loans, and then private and local sources. In addition to external sources, the study also found suggested alternatives for financing higher education, including working on human resources development, financial and educational resources, paying attention to technological business incubators, increasing research chairs, and privatizing higher education.

Diversifying the sources of education funding in universities is crucial to avoid economic crises and challenges. By exploring partnerships with the private sector and international institutions and achieving self-sufficiency in research and training, universities can enhance their autonomy and adapt to future transformations. This allows them to achieve leadership and excellence in the field of education and research (Masaii, 2015). The study of (Ekpoh & Okpa, 2017) identified various sources of diversified funding, such as consultancy services, commercialization of physical facilities, and part-time degree programs. However, it also highlighted some challenges, including fund mismanagement, a negative staff attitude, issues arising from a growing student population affecting staff-student ratios, and the absence of an entrepreneurial culture. Hence the importance of financial sustainability during crises, it also shows the need for financing methods that guarantee these universities continuity, productivity and creativity, and this method reduces the risks of relying on government funding. Government should provide adequate funding for higher institutions, employment of more lecturers, provision of adequate infrastructural facilities, ensure stable academic calendar (Ogunode, et al., 2020). Financial stability is an essential and important aspect of the academic institution's excellence and distinction.

### ***1.1 Study Problem***

Public universities in Saudi Arabia and Oman rely on government funding, recognizing the importance of investing in higher education as a significant return for societies. As a result, most programs offered by these universities are tuition-free. However, according to Al-Shanfari (2018), the changing circumstances faced by countries make it challenging to meet the universities' funding requirements. Studies by Al-Damakh et al. (2019) emphasize that

financing education is a crucial issue that necessitates alternative solutions, as also highlighted by Al-Dahash (2019). Consequently, universities are responsible for seeking strategic solutions to diversify and secure their funding sources. This responsibility becomes more critical during times of crises, as demonstrated by the COVID-19 pandemic's profound impact on global economies, affecting the financing of universities and other educational systems. Therefore, the current study aims to survey the opinions of faculty members regarding proposed strategies for university funding during and after the pandemic, addressing the following questions:

The COVID-19 pandemic has caused the most significant disruption to education systems in history, influencing over 1.6 billion learners in more than 190 countries across all continents. School closures and learning institutions' shutdowns have affected approximately 94 percent of students globally, with the rate reaching 99 percent in low-income and lower-middle-income countries (UNESCO, 2020a). Amid increasing financial pressures and reduced development assistance, the financing of education faces significant challenges, aggravating already-existing funding gaps in education prior to the pandemic (UNESCO, 2020b). Both global and local crises necessitate universities to diversify their funding sources and not solely rely on a single channel. This is vital for them to fulfill their crucial role, contribute to societal development and advancement, and meet future demands. To address this issue, the study aims to gather faculty members' opinions from universities in Oman and Saudi Arabia regarding alternative approaches to financing education, particularly in light of the COVID-19 pandemic. The study will address the following questions.

### ***1.2 Study questions:***

What are the proposed strategies to address the financial challenges facing universities after the end of the Covid-19 crisis from the viewpoint of faculty members in universities?

Are there statistically significant differences at the level of significance (0.05) in the proposed strategies to confront the financial challenges facing universities after the end of the Covid-19 crisis from the point of view of faculty members in universities according to the experience in university education?

What are the most prominent challenges facing university funding in the post-Corona pandemic phase from the viewpoint of faculty members in universities?

### ***1.3 Importance of studying:***

The study results help identify possible strategies and solutions to address these challenges and improve the financial situation of universities. By analyzing the perspectives of faculty members in universities, the study can lead to a better understanding of the financial needs and requirements of universities, thus directing efforts towards priority areas.

The financial sustainability of universities can be enhanced, making them more adaptable to changing circumstances and capable of providing high-quality education and research, thanks to the proposed strategies.

This study can contribute to strengthening and improving universities, ensuring their financial sustainability, and enhancing their vital role in advancing education and research, as well as contributing to community development.

### ***1.4 Objectives of the study:***

The current study seeks to achieve its primary objective of proposed strategies to address the financial challenges facing universities after the end of the Covid-19 crisis from the viewpoint of faculty members in universities considering the Corona pandemic and beyond" through:

- Determining proposed strategies to face the financial challenges facing universities in the Covid-19 crisis from the point of view of university faculty members during the pandemic and beyond.
- Disclosure of differences in the opinions of faculty members about the proposed strategies according to the variables of the study.
- Identifying the most prominent challenges facing university funding in the post-Corona pandemic phase.

### ***1.5 Study limitations:***

The study was limited to the current faculty members' perceptions of strategies for facing the financial challenges facing universities after the Covid-19 crisis, and it will be limited to Saudi and Omani universities, as each country represented by one main university.

The study applied during the first semester of the academic year 2022/2023, which is the first attendance semester for Saudi and Omani universities, with the start of recovery from the Corona pandemic, which may affect the course of results.

## **2. Methodology**

To achieve the objectives and answer the questions, this study used the descriptive quantitative survey approach, which is one of the forms of an organized scientific analysis and interpretation to describe a specific phenomenon or problem through the collection, classification and analysis of standardized data. It is the appropriate approach to describe the reality of the topic under discussion to determine the most appropriate strategies for financing universities during and after the Corona 19 pandemic, based on the opinions of faculty members.

### ***2.1 procedural definitions:***

Financing education: defined procedurally in this study as the administrative function that is concerned with the planning processes for obtaining funds to meet the needs of education in the university to address the financial conditions caused by the Corona pandemic to achieve the goals of these universities.

The concept is "Strategies for Facing Financial Challenges": in this study Refers to the various methods, plans, and procedures implemented by the employer to overcome or mitigate the financial difficulties and obstacles they face. It aims to find effective and sustainable solutions to manage financial challenges and improve the financial situation.

### ***2.2 procedures:***

The study carried out through the following steps:

Reviewing the relevant theoretical literature on university education funding in general and those related to the COVID-19 crisis to create an initial list of strategies.

An exploratory questionnaire was designed, in which questions are presented to (7) faculty members regarding appropriate strategies for the stage of the Covid-19 pandemic and beyond. Their views on the primary tool were taken and enriched.

The questionnaire was designed and then discussed by the study team during a group discussion session on Zoom, and the initial tool was obtained.

The questionnaire was sent for peer review to (9) experts from King Faisal University and Sultan Qaboos University to assess the validity of its content. The experts' comments were answered with a consensus rate of 85%.

After obtaining approval from the Deanship of Scientific Research at King Faisal University and the College of Education at Sultan Qaboos University, the tool was distributed to the study sample using Google Forms, with the assistance of colleagues from both universities representing different faculties.

The target sample, which suited the study's purpose, was selected voluntarily from individuals across various universities relevant to the study topic.

The questionnaire was distributed to approximately 280 faculty members, with only 131 members responding.

After obtaining the results, they were analyzed using the SPSS software to draw conclusions.

### 2.3 Population and Sample

The study population consisted of all faculty members in two of the major Saudi and Omani universities, namely: Sultan Qaboos University and King Faisal University during the academic year 2022/2023, and the study sample consisted of (133) faculty members from these universities. The two universities were chosen, as they are two major public universities in each country, with the possibility of applying the tools in them as the workplace of the researchers participating in the study. The study sample was also selected according to the cluster sample to ensure the representation of diverse characteristics, table (1), and the approval of the Scientific Research Ethics Committee at the two universities was obtained before application. After agreeing to participate, the study sample responded to the study tool that was distributed through the Google form.

Table (1): Study sample members according to years of experience in education

Item		Sultan Qaboos University	King Faisal University	Sub-total	Total
<b>Faculty members</b>		63	68		131
<b>Sex</b>	Male	34	32	66	
	female	29	36	65	
<b>Colleges</b>	Scientific colleges	31	28	59	
	Humanities colleges	32	40	72	
<b>Experience</b>	Less than 10 years	22	42	64	
	10 years and more	41	26	67	

Table 1 shows that there is diversity and variance in the sample in terms of gender,

experience, and type of college, which makes the results of the study credible in light of its limitations.

#### **2.4 Instruments**

An instrument developed after reviewing previous studies, defining the goal, and determining the dimensions of the scale, the items of the scale. It consists of two dimensions: direct strategies (11 items) sustainable strategies (11 items). The study tool was developed based on reviewing a number of previous studies, including Al-Shaya, 2020) (Al-Shanifi, 2018) (Sav, 2013) (Ogunode, et al., 2020). Where the study tool consisted of two main dimensions, which are direct strategies used to temporarily address the crisis, and it consisted of (11 elements) or a proposed strategy, and sustainable strategies that can used in the long term to address the effects of the crisis. (11 elements) or a proposed strategy were also formed.

#### **Validity and reliability**

To verify the validity and reliability of the instrument, nine experts from the Omani University (out of study sample) examined the instrument items. Based on their opinions, the researchers modified and reformulated some of the items. The result of Cronbach's Alpha reliability measurement is high at (0.91) which indicates that the tool has a high degree of reliability. In addition, internal consistency validation was performed on the questionnaire data in its final form. It was found that there is a strong and positive correlation between the degree of each statement and the total score of the questionnaire; the correlation coefficients ranged between (0.51 – 0.79) which are statistically significant values at the level of significance (0.05). The previous values indicate the validity of the questionnaire for use.

#### **2.5 Analysis procedure:**

To answer the study questions, means; standard deviation to determine the rank and the degree to which faculty members proposed strategies to address the financial challenges facing universities after the end of the Covid-19 crisis; and a t-test and one-way analysis of variance to determine differences, in addition to using Tukey's test as a post hoc test.

### **3. Findings**

To achieve the objectives of the study, the questions answered according to the following:

1) What the proposed strategies are to address the financial challenges facing universities after the end of the Covid-19 crisis from the viewpoint of faculty members in universities.

Means and standard deviations were calculated for each paragraph of the study tool related to the proposed strategies for the post-Corona phase. Analysis of the results showed that the most prominent strategies for the post-Corona crisis phase are (direct strategies): Investing in technology-based training in response to the crisis (4.1053), University should assemble a broad group of stakeholders—including the administration (4.0376), Reduce unnecessary operating expenses (4.0376) forecast of revenues and expenses, building in various scenarios (3.8947), Borrowing from banks for necessary existing projects (3.8346) .see table (2).

Table (2): Means and Standard Deviations for Direct Strategies

While the analysis of the results showed that the most prominent strategies for the post-

N	Direct Strategies	N	Mean	Std. Deviation
1.	Investing in technology-based training in response to the crisis	133	4.1053	.75139
2.	University should assemble a broad group of stakeholders—including the administration	133	4.0376	.83852
3.	Reduce unnecessary operating	133	4.0376	.89955
4.	forecast of revenues and expenses, building in various scenarios	133	3.8947	1.03179
5.	A6 Borrowing from banks for necessary existing projects	133	3.8346	.93889
6.	Benefit from government support allocated to the crisis	133	3.8195	.76707
7.	leaders should create a cash flow tool that defines the inflows and outflows	133	3.7218	1.09651
8.	Investing in university products that are popular during the crisis	133	3.6316	1.20902
9.	Postpone planned capital projects	133	3.5714	.80043
10.	leadership will need to prepare for numerous possible scenarios, seek creative solutions	133	3.5263	1.13203
11.	Investing university endowments to finance projects and operational plans	133	3.3008	.81636
			3.7710	

Corona crisis phase are (sustainable strategies): Developing and framing university funding through donations and grants B6(4.2932), Adopting investment funds to increase financial self-reliance B3(4.2556), Provides highly specialized professors, and they had a long history in Field work, scientific and applied experiences (4.1729), Adopting a productive university formula by increasing productive research centers and entrepreneurship centers B2(4.1654) , Developing university funding through research in cooperation with development companies in various fields B5 (4.1278). See table (3).

Table (3): Means and Standard Deviations for sustainable strategies

NO	Sustainable Strategies	N	Mean	Std. Deviation
1.	Paying attention to the university’s ability in line with international standards and labor market requirements			
2.	Developing and framing university funding through donations and grants	133	4.2556	0.70339
3.	Adopting investment funds to increase financial self-reliance	133	4.1729	0.76387

4.	Provides highly specialized professors, and they had a long history in Field work, scientific and applied experiences	133	4.1654	0.70904
5.	Adopting a productive university formula by increasing productive research centers and entrepreneurship centers	133	4.1278	0.7629
6.	Developing university funding through research in cooperation with development companies in various fields	133	4	0.65134
7.	Paying attention to the university's ability in line with international standards and labor market requirements	133	3.9323	0.77063
8.	Adopting long-term fiscal policies, far from government support	133	3.9323	0.97075
9.	Institutions should explore opportunities offered by the green agenda and digital transformation to rethink the balance between physical and virtual	133	3.8571	0.77989
10.	Establishing a Finance Deanship to increase the productivity of the entities and ensure financial sustainability	133	3.782	0.90736
11.	Adopting a permanent policy for marketing programs and productive activities	133	3.6842	0.76246
			4.0185	

2) Are there statistically significant differences at the level of significance (0.05) in the proposed strategies to confront the financial challenges facing universities after the end of the Covid-19 crisis from the point of view of faculty members in universities according to the experience in university education? Table (4) table 4 shows the data.

Table (4): Means and Standard deviation for Study sample members according to years of experience in education.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Less than five years	67	3.8372	.32645	.03988	3.7575	3.9168	3.27	4.27

Five years and more	66	3.7039	.28181	.03469	3.6346	3.7731	3.09	4.18
Total	133	3.7710	.31124	.02699	3.7176	3.8244	3.09	4.27
Less than five years	67	4.0136	.28009	.03422	3.9452	4.0819	3.73	4.64
Five years and more	66	4.0234	.25530	.03143	3.9607	4.0862	3.36	4.36
Total	133	4.0185	.26710	.02316	3.9726	4.0643	3.36	4.64

Table (5): T-test results for differences according to the variable years of experience in education

	Levene's Test for Equality of Variances	T-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Less than five years	Equal variances assumed	3.22	0.075	2.519	131	0.013	0.13332	0.05292	0.02864	0.238
Less than five years	Equal variances not assumed			2.522	128.79	0.013	0.13332	0.05286	0.02874	0.2379

Five years and more	Equal variances assumed	1.29	0.258	-0.212	131	0.833	-0.00985	0.04649	-0.10182	0.08212
	Equal variances not assumed			-0.212	130.21	0.832	-0.00985	0.04646	-0.10176	0.08206

67 faculty members with experience of less than five years in university education responded to the study tool, and (66) with experience of five years or more, see Table (4). Table (5) also shows that there are no statistically significant differences in the proposals of faculty members according to the experience variable.

3) What are the most prominent challenges facing university funding in the post-Corona pandemic phase from the viewpoint of faculty members in universities. This question answered through the response of the study sample to the open-ended question that was asked in the study tool. Only (21) faculty members from among the study sample responded to it. The respondents suggested (45) challenging challenges. Table (6) shows those results.

Table (6): Challenges facing funding universities in the post-corona.

no	Challenges	Repetition	%
1.	Making universities productive, advisory and investment centers.	11	24.4
2.	technological challenges	9	20
3.	Lack of benefit from the currently available investment units, and weak expansion of existing units	8	17
4.	Weak competitiveness of universities and the ability to increase their resources.	7	15
5.	global economic impact	6	13
6.	Legislative challenges related to funding universities	4	8.
		45	10

Table (6) shows that the challenges are concentrated about making universities productive and investment centers - as the highest percentage among the challenges - while the legislative challenges came as the least challenges from the point of view of faculty members.

#### 4. Results discussion:

Crises often have negative effects on all institutions, yet new creative ideas emerge from the neck of the crisis. The Corona pandemic had many negative effects on educational institutions and education in general. However, this pandemic was an opportunity for educational institutions in general and universities to rethink many aspects, including teaching, curricula, and many issues related to the university, including funding.

**Answer related to First question:**

The results showed that university faculty members proposed several strategies to finance universities and get out of their financial crisis related to the Corona pandemic, so that they would apply in a remedial manner at the end of the crisis. These proposals came from the neck of the crisis and in its context. It is noted that on top of it is the employment of technology that was actively used during the pandemic and investment in the technology that was developed during the crisis, which is something that most universities would not have sought to think of considering the usual circumstances.

Among them is the orientation to the local community and the endeavor to support the stakeholders. Although such an orientation existed previously, the pursuit of it had shortcomings. One of the strategies proposed by the faculty members is to reduce unnecessary expenses from their point of view and focus on the basic aspects that keep the universities standing. Among these expenses are some costly social activities, paper transactions, and reliance on electronic publishing in various magazines and publications, which provides a lot for the operating budgets of the departments.

Universities should also think and predict revenues and expenses based on different scenarios and seek to implement the outputs of these scenarios, which give alternative plans for the university in the continuity of its work, and there will be no need to borrow from banks except when necessary and in the event of the ability to pay considering the results and outputs of the proposed budgets.

On the long-term strategic level, some proposals from faculty members included interest in the university's ability to comply with international standards and labor market requirements, which is of paramount importance in enhancing the university's reputation and competitiveness and supporting the university's financial revenues by attracting more students. This necessarily requires developing and framing university funding through donations and grants, and strengthening strategic relations with donors in various sectors, especially the industrial sector. Partnership with the industrial sector serves both parties. The university seeks to develop industries through research projects, and industry supports university research and teaching. Among the important strategies referred to by the study sample is the adoption of investment funds to increase financial self-reliance, as many universities did not previously think about this matter due to their reliance on government funding, but with the impact of the pandemic and the decrease in government support for many universities, it has become an essential matter for self-reliance and the development of funds. Investments in a large way, so that these funds seek to employ financial returns and university constructions and invest them in a way that supports and enhances university resources (Jongbloed, 2008). In addition, investing human resources in the university is a major pillar in financial sustainability, as there are many specialized professors with a long history in fieldwork and scientific and applied experiences that must be invested and work to increase the income of individuals and the university.

Adopting a productive university formula by increasing productive and entrepreneurial research centers and developing university funding through research in cooperation with development companies in various fields remains imperative for any university aspiring to compete, continuity, and raise efficiency and productivity. Certainly, the impact of the global economy remains an important element in the impact of the education sector including universities. The weak ability of universities to control this variable, which antagonizes

international systems that support and limit this impact. International organizations can play a prominent role in this aspect. Adopting international standards for different jobs and focusing on these standards in university programs in a way that supports the university's budget. The more university graduates are required in the local and regional markets, the more students will be educated at this university and the university's income will increase. This is the responsibility of program developers and quality deanships in those universities.

**Answer related to second question:**

This is since all faculty members, regardless of their experience, have been exposed to a pandemic of this form and size for the first time in their professional experience, which brought their thinking closer to dealing with it regarding financing education in universities. Experience falls in front of the new comprehensive challenge. In addition, all of them, with different experiences, gained the same experience related to the pandemic and practiced the same educational activities during the pandemic, and they all have sufficient information about dealing with crises (David, et al., 2003). In addition, this result indicates a positive thinking of faculty members towards universities that enhance the status of the university by searching for financing solutions for universities and thinking about the sustainability of the university. This shows loyalty to the organization and supports sustainability (Ogunode, et al., 2020).

**Answer related to third question:**

The results showed that the most important challenges of financing education enable the universities themselves, as it is difficult for universities to turn into production and investment centers. In addition, the investment expansion aimed at serving education. It also attracts local and regional investments to the university and can operate them and achieve profits and returns that guarantee permanent income for the university. The technological challenge remains one of the most prominent challenges of financing education. The university's progress and keeping pace with technology is a very costly process. Without this cost, the university will not be able to keep up and compete with other universities, given that scientific progress is closely linked to technology, as well as technology is linked to trade and investment, where electronic commerce and marketing are linked. With technological developments, which makes the task of universities difficult, universities can invest in their technological departments to keep pace with it and reduce the gap (David, et al., 2003).

Despite the existence of investment units in most universities around the world, as well as in both Oman and Saudi Arabia, the proper exploitation and activation of these units is still at a minimum because the academic bodies are originally non-profit bodies, which makes investing, developing, and benefiting from them a real challenge. The units need to re-engineer their administrative operations so that they have a positive impact on the university and society. In addition, the presence of long-standing universities with distinguished academic reputations in various disciplines limits the competitiveness of many emerging and even old universities, which makes it difficult to increase resources for these universities and makes their competitiveness weak and sometimes returns them to the beginnings, and this in turn is a great challenge for universities (Browne, 2017). Moreover, this challenge presents an opportunity for universities to demonstrate their competitiveness, even to a limited extent, by engaging in partnerships and collaborations with prestigious institutions through joint programs or

cooperation agreements. By doing so, they can build trust among prospective students, thereby expanding their sources of income (Browne & Shen, 2017).

Among the greetings highlighted by the faculty members are the legislative challenges represented by the harmonization of regulations and legislation related to funding universities, where the legislative challenge often remains an obstacle to the inclusion of many sources of income, and matters become more difficult if the change in those regulations and legislation is difficult or slow, which reduces chances Providing universities with new sources of income. This can be dealt with by reviewing the regulations and legislations related to higher education in general and financing education and benefiting from the experiences of developed countries in this regard.

### **5. Closing Remark:**

The Saudi and Omani universities, the subject of the study, depend on the government sector in general for their funding. Therefore, some policies should be followed to increase government financial resources allocated to the university education sector and improve its efficiency, in addition to searching for other non-governmental alternatives. The new tracks for funding university education can be summed up as follows:

First: Adopt policies to increase government financial resources by increasing the share of education as a percentage of the gross domestic product and establish appropriate mechanisms for distributing available financial resources and using them efficiently according to priorities.

Second: By increasing the contribution of the private sector in financing university education by developing financial and administrative systems and procedures in the various education departments, as well as linking education programs to the needs of the private sector, forming joint committees between the private and government sectors, and urging businessmen to establish educational institutions and create an environment Competitiveness to provide distinguished educational service.

Third: By changing the thinking of the universities themselves to be productive investment universities, transforming their academic units into productive research units in the fields of work and various services, and providing technical advice and scientific expertise to all sectors of society, which provides them with additional resources. COVID-19 has highlighted the interconnectedness of the world. The path to universities' revival lies not in returning to the pre-COVID-19 norm, but in reimagining education and campus design, fostering collaborative research approaches, redefining their vision, and embracing the role of a lifelong adaptable learning partner (Liu, et al., 2020)

### **6. Recommendations:**

Based on the findings, the study recommends the following:

Activating the role of investment funds in universities and stimulating their investment and service activities by developing resources in universities.

Increasing the competitiveness of universities by increasing their financial support through cooperation with local and regional industrial and commercial institutions to ensure funding through a competitive national and regional capital.

Work to stimulate self-initiatives of universities to increase their funding and adapt regulations and legislation to serve that shift in spending on university education.

Emphasizing the development of a specific and clear funding strategy by the supervisory authorities of universities.

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