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The Effect of Strategic Human Resource and Knowledge Management on Sustainable Competitive Advantages at Jordanian Universities: The Mediating Role of Organizational Innovation

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Abstract: The higher education sector faces considerable competition around the world. Accordingly, universities need to make more efforts to increase their competitive advantages. This study aimed to empirically investigate the effect of organizational innovation (OI), knowledge management (KM), and strategic human resource management (SHRM), with a dependent variable of sustainable competitive advantages (SCAs), at Jordanian Universities. For this aim, a specially designed questionnaire has been distributed to study a convenience sample of 400 academic and administrative staff at Jordanian private and public universities, to obtain the required quantitative data. The study's hypotheses were verified by Baron and Kenny's mediation regression approach using the software Statistical Package for the Social Sciences (SPSS). The results of the study demonstrate that there is a significant positive relationship between the following pairs of variables: KM and SCA; SHRM and SCA; SHRM and OI; KM and OI; and OI and SCA, whereas OI was found to have a partial and indirect significant mediation impact on the direct relationship between KM and SHRM and universities (organizations) gaining SCAs. Finally, it was concluded that more attention needs to be paid to the OI aspect in organizations and to integrate it with KM and SHRM in a way that promotes SCAs. In addition, we propose that similar studies should be conducted in industries other than education or the education sector in different countries in a way that obtains generalized and representative results.

Keywords: sustainable competitive advantages; strategic human resource management; knowledge management; organizational innovation; higher education and Jordanian universities

1. Introduction

The major recent transformations in the global economy have had a significant impact on the high volume of commercial transactions between different countries, which has required organizations in all fields, whether in the productive sector, marketing sector, financial sector, educational sector, etc., to make strategic adjustments [1]. These transformations have also led to an increase in the intensity of competition between organizations and countries, which makes it imperative for organizations to adapt to ensure their survival on their respective markets; otherwise, the risks of competition will threaten their existence [2]. One of the areas in which an organization can achieve a competitive advantage is its human resources, which are considered as one of the most important resources of organizations and the source of their success [3].

However, it is broadly perceived that in high-quality educational organizations, exploration and development are the impetus for national development and the enhancement of individuals' personal satisfaction [4]. Additionally, it is unquestionable that universities around the world, regardless of setting, are attempting to be cores of excellence where

information is gained as well as diffused to the individuals who need it, through excellent instructing and learning, exploration and development, and partnership [5]. Subsequently, universities, similar to other organizations, need to re-evaluate how they work and how to construct a sustainable competitive advantage (SCA) in light of the changing environmental dynamics and the rapid changes arising from globalization, the knowledge-based economy, and the technological revolution, so that they can handle the 21st century's rapid development [6].

From a global point of view, several higher education organizations and universities have moved from student assortment to highly competitive employee recruitment [7]. It was proposed by Păcuraru [8] and Harrison-Walker [9] that universities need to manage the simultaneous difficulties of extending the undergraduate body, manage the required number of offices, staff, courses, and lectures, improve the nature of instructing, offices, and educational programs, acquire practical subsidizing, improve the work market appeal of understudies, expand administrative and staff limits, and ensure innovation in both instructing and dealing with external organizations. All of these are challenges that human resource managers in Jordanian universities face to meet the increasing demands for a technically driven environment rich in teaching-qualified cadres, as demonstrated by a study of Al-Twal, Rowlands, and Cook [10].

Moreover, over the previous decades, knowledge management (KM) has substantiated itself not only as a stylish development in research, but as another discipline that has inspired a developing group of researchers around the world; it is now known as another and compelling approach in management science [11]. Moreover, KM is considered as another wellspring of sustainable competitive advantage that makes organizations everywhere reclassify their work and human resource management strategies [11].

The existing literature also indicates that knowledge management processes, including acquisition, creation, dissemination, and use, and its practices, including supervisory work, leadership, communication, knowledge protection, etc., in the presence of knowledge-based assets, such as human resources and structural and relational capital, affect the competitive advantage of organizations [12–15]. Furthermore, the literature shows that this effect is amplified and becomes more evident in the presence of organizational innovation (OI), which contributes to the development and adoption of the ideas, behaviors, or new processes in management to improve the relationships between the organization and external factors [16,17].

Jordanian universities are considered the engines of development in their society, and they have many cognitive and organizational characteristics that enable them to establish many transformative contexts in which creative ideas are transformed into values for work and production. Jordanian researchers also find the environment of Jordanian universities conducive to creativity and innovation, because they are organizations that create knowledge through scientific research; they publish the findings of this research and distribute it by teaching these new theories to their students, which requires them to provide a strong knowledge and organizational infrastructure, reflected in the presence of human and technical elements as well as information systems [18].

However, Jordanian universities are still actively working on embracing intellectual capital and investing in knowledge management and human elements in it, given the absence of strategic planning in them. Currently, they focus on tangible assets to strengthen their economy while neglecting intangible (intellectual- and knowledge-based) assets, which makes them unable to benefit from research and development and intellectual capital as an engine for growth and development, improving performance and university innovation in a way that gains a sustainable competitive advantage [19].

Furthermore, no empirical studies have been conducted that combine the three variables (KM, SHRM, and OI) and investigate their impact on SCA in an educational context, such as in Jordanian higher education organizations. To fill this gap in the current literature, this study is one of its kind, aiming to provide empirical evidence on how KM and SHRM

affect SCAs in Jordanian universities through an assessment of the mediating function of OI.

Based on the above, this study came to shed light on a very important topic for higher education organizations in Jordan, which is the subject of investment in knowledge capital, knowledge management and strategic planning in human resource management, because they are one of the most important resources needed to develop performance, creativity in organizations and gaining a sustainable competitive advantage, where recently, knowledge resources have been deemed to outweigh the importance of financial resources. This study is expected to contribute to the Jordanian universities move towards the so-called third mission of universities, according to Rubens et al. [20] and Pinheiro et al. [21], which requires universities to lead by finding new sources of income through various activities to secure their place in the knowledge-based economy. Accordingly, the university's functions will be expanded from its original function of teaching to the production of new knowledge and, more recently, to the exploitation of knowledge for innovation.

Hence, the relationship between the three variables (KM, SHRM and OI) and their impact on the SCA of Jordanian universities will be investigated through this research, where in the second part of this paper, the theoretical background of the study will be discussed and hypotheses developed accordingly. The third section will discuss the research methodology and data collection procedures and tools. In part four, the analysis of data techniques used in the research will be debated and the demographic belongings of the sample as well as the results of the structural model test are shown. The final part has a debate about findings, where the theoretical and managerial conclusions, study limitations, suggestions and a summary of the study are discussed.

2. The Theoretical Background and Development of Hypotheses

2.1. Strategic Human Resource Management (SHRM)

Human resource management focuses on addressing the issues of individuals working in organizations by concentrating on traditional actions, including hiring, rewards, performance appraisal, and training from a partial point of view [22]. Due to new trends, the area of human resource management has integrated strategic management processes to improve a new model stated as SHRM [23].

The SHRM model is a high-level human resource management concept that can help HR departments become active and powerful parts in the dynamic decision-making processes of the organizations [24]. The link between strategic planning and human resource management has been discovered to be an essential part of SHRM [25]. Human resource management practices can play a role in supporting strategy implementation in light of the fact that human resource departments can assist organizations in deciding whether the organizational strategy is reasonable given the current HR situation. Within the framework of human resource management (SHRM), HR practices that assume an essential part will generally be recognized by their focus on the contributions of HR practices to the settings of long-term organizational goals, and on linking HR practices to the overall directions of organizational plans and goals. HRM can be active in building two-way communication, as its impact on strategy formulation, strategic planning and objective setting will be recognized because every task that ends in an organization requires some type of asset (for example, employees (human resources) and money) [26–28]. Thus, as pointed out by Lim et al. [24], organizations should consider the HR department as vital for deciding its overall strategic objectives and needs. Likewise, one of the main points of SHRM is to enable HRM to develop dynamic strategic organizational objectives [29,30].

When discussing business strategy, Boxall and Purcell [31] argue that “it is possible to find strategy in every business because it is embedded in the important choices managers and staff of the organization make about what to do and how to do it” (p. 28). Strategy is always oriented towards preservation, the viability of the organization and/or the creation of a feasible benefit in the business sectors where the organization is found, through long-term planning [32].

Accordingly, SHRM implies a future-oriented process to create and execute HR programs that address and take care of business issues and contribute directly to the main long-term business objectives [33]. SHRM differs from the traditional HRM; the latter represents a largely regulatory capacity that concentrates on everyday responsibilities such as hiring and selecting employees and managing employee benefits. Traditional human resource management interacts with employees; when workers place orders or cause problems, the human resource department steps in and takes care of them. In contrast, SHRM involves planning. The SHRM department looks ahead and avoids problems. These HR professionals also look at the organization's requirements for the future and foster systems to meet them [34].

Therefore, it can be said that SHRM has a broader approach. A strategic HR manager focuses on making a long-term strategy. For example, when they look to hire an employee, they consider future growth expectations and organizational goals. In other words, traditional HR managers work reactively, and strategic HR managers work proactively. Expected strategic HR practices are packages of HR practices planned by strategic HRM experts, whereas real strategic HR practices are outcomes after the application of human resource management practices [35].

Essentially, five contrasts have been distinguished between conventional HRM and SHRM (see Table 1) [24]. In the first place, conventional HRM focuses more on singular qualities, for example, work execution, level of occupation fulfillment, and how a representative can be very effective inside an organization. SHRM focuses on the connection between HR rehearses and organizational strategic plans, and the effect of its connection with organizational performance. Secondly, conventional HRM centers on HRM practices from a miniature level perspective, whereas SHRM intends to advance more far-reaching optimization through the vertical and even arrangement of HR practices and depends on a large-scale perspective [36,37]. Thirdly, the time horizon is broadened. Conventional HRM is more focused on tackling current organizational issues, which require less of an ideal opportunity to address; conversely, SHRM includes dispatching authoritative strategies and vital policies to develop human capital from a long-term viewpoint [24]. Hence, cultivating the human resources of an organization will guarantee that it is efficient, and that the entirety of its tasks are coordinated. HRM works with individual departments to assist them with achieving their objectives, although additionally emphatically affecting hierarchical goals.

Table 1. A comparison of traditional HRM and SHRM (adapted from Lim et al. [24]).

Dimensions	Conventional HRM	SHRM
Focus	People's emotional or motivational requirements	Creating linkages between organizational strategies and HRM rehearses, and affecting hierarchical performance
Scope	Fragmented and micro view (pursuing local optimization of individual HRM practices)	Comprehensive and macro view (pursuing global optimization through the vertical and horizontal integration of HRM practices)
Time Span	Short-term	Long-term
Roles and Functions	Not associated with hierarchical objectives and systems	Motivators for strengthening and self-governance
HR practices' Relationship with Non-HR practices	Peripheral, supportive	Core, collaborative

In addition, conventional HRM capacities are expected to have no association with accomplishing organizational targets and are expected to have a restricted part in generally organizational goals. SHRM includes HR experts and top directors in the turn of events

and the execution of authoritative arrangements and methodologies, looks to consistently improve and help the essential capacity of HR, and empowers organizational members as opposed to exclusively monitoring them [24]. In this way, HR practices need to assume a more essential part in working with coordinated efforts with non-HR practices. The objective is to create and execute HRM practices line up with authoritative objectives, in this manner, extending HRM beyond its conventional regulatory part as a peripheral supporting capacity inside an organization. The previously mentioned essential contrasts between conventional HR and SHRM unmistakably demonstrate that SHRM can guarantee that all HR practices align with organizational missions, objectives and goals, with which it can assist in accomplishing its objectives and targets. HR experts can assume a basic part in deciding authoritative procedures and objectives, and should be measured at more significant levels, (for example, departmental or hierarchical) [23]. However, it would not be feasible for SHRM to help the organization arrive at its objectives except if the HR office adequately teams up with different divisions that are part of the organization.

Given the important and basic theories of SHRM, the Michigan model was proposed by Fombrun et al. [38]. Beer et al. focused on how logical elements influence HRM training, with the so-called Harvard model [39]. This explicitly considers the effects of interactions between stakeholder interests and situational factors on setting HRM priorities in organizations. Specifically, under the SHRM model, the HR department does not work alone but interacts and collaborates more with other departments within the organization, as well as with stakeholders outside the organization to achieve their goals and develop strategies related to those goals and the objectives of the organization [24,40].

Researchers approve that organizations should respect the joint effort among HR, different departments, and stakeholders outside the organization, as well as facilitating HRM to improve efficiency [41,42]. Moreover, HR supervisors are sometimes engaged with creating plans and approaches of SHRM along with top administration authorities for carrying out of the arrangements [43]. In some countries, HR supervisors cannot be decision-makers about HR practices independently, and in other countries, HR managers do not participate in HRM practices [44]. For human resource management to participate in the process of the setting organizational goals, it is advised to shift from human resource management to strategic human resource management, and consider how these changes contribute to the roles and tasks of human resource management in setting goals and participating in the process of decision-making within the organization.

Moreover, in light of stakeholder theory [45,46], the meaning of SHRM has recently been extended to consolidate the idea of sustainability to stress the method of achieving the viability of organizations, not just with viewpoints from internal members within the organization (such as directors and representatives), but additionally from external stakeholders' (such as residents, recipients of public service, donors and external financial supporters) necessities, desires, and expectations [47–51] (for ongoing observational examinations on the sustainability of HRM, refer to an existing *Sustainability* Special Issue [52,53]). Consequently, approaches of SHRM center on the interaction among different internal and external partners containing and impacting the organization's HRM elements and long-term sustainability of the organization. In any case, notwithstanding the approach of an era of collaborative multi-organizational settings [54,55], the jobs and connections of key interior and outer partners, which directly or indirect influence or are affected by HRM frameworks, have not been empirically inspected [40].

The development of SHRM since the mid-1980s has not been linear, and several theories of strategic management that have explained the importance of embedding strategy in the field of HRM. Lengnick-Hall and Lengnick-Hall [56] suggest that for HR to influence strategy, there must be alignment between the organization's business strategy and its HR strategy (another contingency perspective). However, while emphasizing the importance of fit, they note that fit is not always desirable, especially in times of transition. They suggested that convenience should be considered the opposite end of the continuum of flexibility, and that organizations should explicitly choose a position along the continuum to agree

with their assessment of upcoming competitive conditions. In addition, they suggested interrelationships between strategy and human resources, whereby human resources should be considered in both strategy formulation as well as strategy implementation.

Baird and Meshoulam [57] developed the concept of fit to include both external and internal components. External alignment is the alignment of the organization's HR practices with its strategy, whereas internal alignment serves to align the organization's HR practices with each other (i.e., mutually reinforcing). Moreover, they suggested that the alignment between HR practices and strategy will change as the organization progresses through the phases of its life cycle. Jackson, Schuler, and Rivero [58] demonstrated an empirical relationship between characteristics of the organizational context (industry sector, innovation strategy, manufacturing technology, organizational structure, organizational size, and unionization) and human resource practices. They found both inter-organizational differences in HR practices and intra-organizational (administrative/hourly) differences.

In the mid-1990s, Milliman, von Gelneau, and Nathan [59] expanded on the appropriate concept and applied it to the context of strategic international human resource management (SIHRM). Fit and flexibility were later the focus of an influential follow-up article by Wright and Snell [60].

Delery [61] criticized the literature on "fitting" in SHRM, with a primary focus on horizontal fitting. At the time this article was published, it was noted that there was almost no support for vertical or horizontal compatibility—two major constructs that have appeared in the SHRM literature previously. Weaknesses in previous studies were identified (creation of validity issues related to levels of analysis, inappropriate use of cluster analysis, limited dependent variables—failure to think about more than bottom-line performance) as well as directions for future research suggested (studying negative synergistic effects, better overall theory development to deal with construction validity issues, design studies with larger sample sizes). Unfortunately, many of the issues Delery identified are still a problem today. In a development on Delery years later, Kepes and Delery [62] offered four types of internal fit based on a multi-level conception of HR systems: (1) the vertical fit of the HRM system within the HRM system; (2) the fit of the area of activity of inter-HRM; (3) the fit of the area of activity within HRM (intra-HRM); and (4) the fit between HRM systems. The vertical fit of an HRM system is the degree of fit between different HRM activities at different levels of concept (for example, the fit between compensation policies, practices, and processes). The HRM activity area fits between different HRM activities areas (for example, between selection and compensation). The field of HRM activity within HRM is the alignment of specific HRM activities within a given set of HRM activities (e.g., HRM practices within the selection area).

Unrelated to the theories discussed earlier, human resource management researchers have complained that there is no theoretical basis for describing the function of human resource management in organizations. However, although this criticism may have been true a few years ago, recently, SHRM scholars have relied on various theories from the organization literature as a basis for developing a more detailed theory of human resource management. We claim that those different theories of the organization may provide the necessary theoretical basis that has been lacking in SHRM research [63].

As the 1990s progressed, researchers built on earlier work and expanded their reach deeper into the strategy literature. The most recent entry in the theoretical discussion of SHRM, a resource-based view of the organization, by Boxall [64], made similar arguments to Barney and Wright [65] to explain how a resource-based view of the organization can be applied to SHRM. Boxall defined the construction of the HR advantage as containing two components: the human capital advantage and the organizational processes advantage. Human capital advantages result from having better employees than rivals, whereas organizational process advantages result from having better ways of working than rivals. Boxall also emphasized that the experiments of HR advantages change across different stages of the industrial lifecycle.

According to the resource-based view of the organization, competitive advantages can only occur in situations of organization resource heterogeneity and organization resource immobility, and it is these assumptions that serve to differentiate the resource-based model from the traditional strategic management model. In order for an organization's resource to provide sustainable competitive advantages, four criteria must be attributed to the resource: (a) the resource must add positive value to the organization; (b) the resource must be unique or rare among existing and potential competitors; (c) the resource must be incompletely imitable; and (d) the resource cannot be substituted for another resource by a competing organization. Therefore, due to heterogeneity of resources, the immobility of resources and fulfillment of value requirements, scarcity, imperfect imitation, and non-substitution, organizational resources can be a source of sustainable competitive advantage [66]. Barney [67] explained that the resource-based view makes it clear that organizations cannot expect to gain sustainable competitive advantages, in that those advantages, if any, can only be found in the unusual, imitable, and non-fungible resources already present in the organization, i.e., the human resources of organizations can work as a competitive advantage.

Resource-based theory is currently receiving a significant amount of attention in the strategic management literature. The theory's focus on an internal analysis of the organization provides an extremely important avenue for SHRM research to examine the ways in which organizations attempt to develop human resources as a competitive advantage. Thus, similar to utility analyses of employee value, the resource-based view of the organization's distinctive competence constitutes the skills of the members of the organization; this theory provides a framework for viewing human resources as a pool of skills that can provide a resource to serve as a sustained competitive advantage [63].

Resource-based SHRM can produce what Buller and McEvoy [68] refer to as a 'human resource advantage'. The goal is to develop strategic capability. This means the strategic alignment of resources and opportunities, also gaining added value from the effective placement of resources.

Additionally, the need to incorporate HR practices into the organization's strategy formulation stages appears to be very important to the ongoing study of SHRM. The resource-based approach provides a framework for examining the group of human resources that may or may not be able to implement a particular strategy during the formulation stage of strategic management; thus, the resource-based view may illustrate the fact that strategies are not universally feasible, but depend on having the requisite workers to implement it [66].

Differences in human resource management theory highlight different aspects of organizational relationship management, which reflect diverse national or industry environments. As an illustration, historically in the field of strategic management, the competitive advantage was considered as being 'determined' by the competitive forces in an industry, and organizations would need to make choices to adapt (cost leadership, differentiation). More recently, in a world of hyper-competition and co-competition, theories in strategic management sustain that competitive advantage should be constructed (e.g., Schweiger et al. [69]; Lajili et al. [70]).

However, the central principle from all those previous theoretical strategic models is, of course, the effective use of workers in order to achieve organizational goals. Thus, the full 'resource' of the worker should be employed (i.e., physical, creative, emotional, productive and interpersonal components) in order to achieve this goal. These subjects are integral to the management of the modern 'knowledge worker' and will keep shaping the theory and practice of human resource management, always moving forward [68].

2.2. Strategic Human Resource Management (SHRM) and Sustainable Competitive Advantage (SCA)

International competition has forced public and private organizations to focus on achieving competitive advantage, rethink their strategies in providing their products or services, how they invest their various resources in order to achieve their goals with

quality, distinction, and low cost, and to evaluate their position among competitors, in order to achieve continuous excellence in their competitive position over other countries or organizations [3]. In this lies the importance of SHRM in modern organizations from being the real source for the formation and strengthening of competitiveness, and as many experts and practitioners in the field of management indicate, including Gurbuz and Mert [71] and Waiganjo et al. [72], achieving excellence in the performance of twenty-first century organizations will not be based on the simple ownership of natural, financial or technological resources, but rather in the first place, it is due to its ability to provide special types of human resources that have the ability to maximize the use of these resources.

Bamberger and Meshoulam [73] define SHRM as “the process by which organizations seek to link the human, social, and intellectual capital of their members to the strategic needs of the business” (p. 9). The impression in their description of SHRM is the capability of the organization for making strategic decisions about workers in the organization and at all organizational levels—in light of the general strategy of the organization—with the aim of engendering an environment with a competitive advantage for the organization and its preservation, i.e., that SHRM is conducted in a general direction instead of a single strategic level [74].

Changing labor market conditions and new business thinking require managing human resources strategically, which includes recruiting and retaining the right people, as well as providing moral and cultural leadership [75]. Thus, it can be said that the distinctive definition of SHRM and what distinguishes it from others is that SHRM focuses on how organizations develop and harmonize human resource management practices in a way that supports the organization’s strategy, and is thinking about the distant future rather than the near future, which is the definition on which this study relies.

As global competition becomes increasingly aggressive, how to maintain a competitive advantage or achieve an SCA has garnered more attention. Michael Porter identified two ways in which an organization can gain an advantage over its competitors: cost advantage and differentiation advantage. Cost advantages are when an organization provides the same products and services as its competitors, albeit at a lower cost. Differentiation advantages are when a business provides better products and services than its competitors. In Porter’s view, strategic management should be concerned with building and sustaining competitive advantages [76].

According to Porter, competitive advantage seeks to address some of the criticisms of differentiation advantage. Competitive advantage is based on the idea that cheap labor is global and that natural resources are not essential to a good economy. The other theory, differentiation advantage, can lead countries to specialize in the export of primary commodities and raw materials, which trap countries in low-wage economies due to terms of trade. Competitive advantage attempts to correct this problem by emphasizing the maximization of economies of scale in goods and services that command premium prices [77].

The two basic types of competitive advantage are cost leadership, differentiation focus. In cost leadership, an organization becomes the low-cost producer or service provider in its industry. The sources of cost advantage are varied and depend on the industry structure. It may include the search of economies of scale, patented technology, special access to raw materials and other factors. The product or service must find low cost and achieve all sources of cost advantage. If an organization can achieve and maintain total cost leadership, it will perform above average in its industry, provided it can charge prices at or close to the industry average [76].

In differentiation strategy, the organization strives to be unique in its industry along certain dimensions that are widely valued by clients. It chooses one or more aspects that many clients in an industry see as important and uniquely positions itself to meet those needs. Its exclusivity is rewarded at an excellent price. The general strategy of focus is based on the selection of a narrow competitive scope within the industry. Focus strategy selects a segment or group of segments in an industry and designs their strategy to serve

them while excluding others. Focus strategy has two variants: (a) with a cost focus, the organization seeks cost advantages in its target segment; whereas (b) with a differentiation focus, the organization seeks differentiation in its target segment. Both variants of the focus strategy depend on the differences between the target focus segment and other segments in the industry. The target segments must have clients with different special needs or the provided service and delivery system that best serve the target segment must differ from that of other industrial segments. Cost focus exploits differences in cost behavior in certain segments, whereas differentiation focus exploits the specific needs of clients in certain segments [77].

Sołoducho-Pelc and Sulich [78] distinguish competitive advantage into two categories, based on short-term and long-term orientations. According to them, a short-term temporary competitive advantage is when the organization's results naturally lead to high market returns, but these increased returns attract competition, which is usually limited to a short period of time, and most of the organization's competitive advantage falls in these categories. In contrast, SCA is when an organization possesses a unique value that is rarely copied or imitated, where the organization will be able to maintain a competitive advantage for a long period of time.

Therefore, an SCA can be defined in this research as the organization's assets, features, or capabilities that are difficult to replicate or overcome, and it provides a long-term superior or suitable position over the competitors. The very important feature, which sets an organization on the path to SCA, is if it implements strategies, which are unlike another organization in the same segment of the market. Moreover, the important advantage is sustainable if current or potential competitors in the market find it very difficult to imitate or obtain it [2].

The competitive advantage of organizations is usually controlled by resources, but an SCA within the organization is determined by internal resources and its competitive position within the concerned industry [74]. Accordingly, Boxall and Purcell [31] argued that SHRM practices, if applied in organizations, would help these organizations to gain a unique competitive advantage. Strategic HRM practices are very important internal factors affecting the organization's performance beside external resources. In this regard, human resources are seen as an important resource, which are considered with other important resources to improve the organization's performance.

Moreover, literature on the SCA is sufficient, particularly on maintainability determinants. Academic authors have specified some factors affecting SCA, including an organization's dynamic abilities [79,80], intellectual capabilities, human capital [81], and innovation [82]. Several authors, such as Srivastava, Franklin and Martinette [83], contend that for organizations to attain lengthy competitive advantages, there is a requirement for the organization to build up its HR in a foundational way, which will empower the organization to utilize their implied information so as to have gain edge over its rivals. Thus, the sort of representative administration framework executed is noteworthy to accomplish a practical competitive advantage [84]. Growths in strategic ideas and management give space for the organization's interest on how it can place the organization strategically to be able to contend adequately in its market. Therefore, these organizations start developing enthusiasm regarding how they could equip their HR departments with capable and quality administration, which contributes to gaining a competitive advantage [85].

Hamadamin and Atan [74] added that by collectively communicating strategic HRM practices that affect the individual and ultimately influence organizational outcomes, a "black box" has been opened which demonstrates that a set of strategic HRM practices have enhanced the SCA of organizations. Studies of SHRM practices support the belief that SHRM of an organization is positively related to SCA by influencing human capital development and employee commitment [86]. Social exchange theory contends that SHRM practices support worker welfare, thus enhancing the employee's sense of obligation [87]. In addition, experts of the resource-based view have emphasized implementing SHRM practices in which individuals are accepted as viewed as organizational resources, essential

to creating successful outcomes, by focusing more on employee commitment instead of short-term financial gains [31].

Improvements in the theories and practices of strategic HRM have facilitated the change in the HRM from an active role, focusing on the management function of the organization, to a strategic approach, focusing on adaptation and integration. Accordingly, a strategic approach means that the human resource management function is adapted and integrated into the organization's strategy to enhance SCA. The rationale for changing the old system to gain an SCA is that it can easily be replaced or copied. In today's business world, employees appear to have great success in fostering an SCA [86].

The development of SHRM in universities and colleges has been a relatively new phenomenon. Higher education organizations have totally different sets of structural forms than classical, pyramid-shaped top-down-managed organizations [86,88]. Other researchers contend that because colleges and universities are naturally public organizations, it is difficult to initiate SHRM practices and more complex approaches to secure the impact on end results, performance, and SCA [89]. Significantly, no research in Jordan or about this context has uncovered the impact of SHRM practices on university and college outcomes.

Accordingly, regarding to the abovementioned literature, the first hypothesis is formulated as:

Hypothesis 1 (H1). *Strategic human resource management has a positive and significant effect on the sustainable competitive advantages of Jordanian universities.*

2.3. Knowledge Management (KM) and Sustainable Competitive Advantage (SCA)

Knowledge is the basic tool through which it is possible to create a competitive advantage in many areas of work in organizations [90]. Through KM, information is transformed into useful and usable knowledge. KM is defined as planning, organizing, controlling, coordinating and synthesizing knowledge and assets associated with intellectual capital, operations, personal and organizational capabilities and information, to achieve the greatest possible positive impact on the competitive advantage that the organization seeks [91].

KM is further defined by Frost [92] as an integrated system approach to managing and activating participation in all the organization's information assets, including databases, documents, policies and procedures, in addition to previous experiences that working individuals carry, and it also includes carrying out a set of knowledge management processes including storage, assessment, sharing, refining and creation, with the aim of creating value and meeting the tactical and strategic requirements of the organization.

The previous definition adopted by the current study indicates that KM mainly includes research, organization, classification, storage, sharing and preservation of two types of knowledge, which are implicit and explicit knowledge, illustrated by Nonaka, one of the most prominent thinkers in KM, and his model of knowledge creation has become a new model for the dynamics of organizational knowledge. The current research is based on the Nonaka model of KM, which is based on four main ideas: (A) creating knowledge at the individual level is a direct result of the ongoing dialectical unity between implicit and explicit knowledge; (B) the main techniques of knowledge management and knowledge transfer are socialization, externalization, combination and internalization; (C) the creation of knowledge at the organizational level depends on these four transformation processes; and (D) there is a common space for creating knowledge [93,94].

Nonaka and Takeuchi made the largest contribution to KM, where first and foremost they suggested dividing knowledge into formal (explicit) static which is held in the form of documents, reports, books, and data on electronic carriers, as well as informal (implicit) intuitive knowledge that does not remain on paper but in people's minds: their experiences, trades, skills, impressions, expectations and opinions. This knowledge constitutes a wealth for organizations and is an important resource that enables them to achieve competitive advantages over others [95]. Therefore, researchers including Oluikpe et al. [96] and de

Nadae et al. [97] assured the importance of activating implicit and explicit knowledge transfer mechanisms in organizations through the Nonaka SECI model.

Hence, in project and organizational management, KM refers to managing “tacit” and “explicit” knowledge through two goals: the creation and implementation of new knowledge. Within this frame, these two objectives can be achieved by extensive and deep knowledge integration [98]. Accordingly, it can be said that KM is a deliberate strategy to deliver the right knowledge to the right people at the right time, and help them to implement it for successful end results [97].

KM “can be thought of as the intentional design of processes, tools, and structures with the goal of increasing, renewing, sharing, or improving the use of knowledge represented in any of the three (structural, human and social) elements of intellectual capital” [99]. Individuals communicate their knowledge by creating environments and systems to capture, organize, and share knowledge throughout the organization [100]. KM has two main goals: (1) to make the organization work as intelligently as possible in order to ensure its viability and overall success; and (2) to bring the best value to its knowledge assets. Thus, the purpose of KM is to make use of the intellectual assets of the organization in maintaining a competitive advantage [98]. Furthermore, dynamic knowledge teamed with high levels of knowledge worker exchanges benefits the rapid transfer of acquired tacit knowledge [101].

Universities, with their different administration methods, are among the best contexts and need to apply the approach of KM, considering their knowledge infrastructure represented by the elite human elements of scholars and researchers in various disciplines and their ability to share knowledge, generate it and benefit from it. In light of the KM approach, universities have a responsibility to pay attention to developing the intellectual capital and intellectual capabilities of its members as producers of knowledge, so that they can produce new ideas and develop existing concepts in a way that ensures the university achieves its goals and raises its performance levels; this reflects the value and importance of universities embracing their intellectual capital [102].

Researchers [103–105] have shown that the KM process is important in its overlap and linkage with the utilization of intellectual capital, as KM seeks to develop the intellectual and knowledge resources that the organization possess, which contributes to increasing its ability to develop itself and face external challenges. KM contributes to upgrading the skills of workers in organizations to use knowledge, motivate those with knowledge of them to release their latent knowledge, and continuously develop their knowledge and rearrange their accumulated experiences, which contributes to increasing the organization’s ability to produce new knowledge, thus improving performance, simplifying operations, reducing costs, and achieving creativity in a way that ensures sustainable competitiveness for universities.

It is evident from the previous definition that KM represents one of the most important modern management strategies and methods, including a set of processes aimed at bringing about change and development and achieving competitive advantage and advancement in the performance of organizations [106,107]. It has proven its usefulness in the world of industry, health and production. Management scholars in the developed world, including Nzongi [108], Mao et al. [109] and Meihami and Meihami [106], have confirmed that renewable and innovative knowledge is one of the most important means of management success, which is the leadership wing towards strategic success in various situations, provided that it takes into account the organization’s trends and aspirations.

There is agreement between various studies that the relationship between KM and sustainable competitive advantage is very positive and clear [110]. For example, many studies agree that the knowledge management process leads to improved competitive advantages, which lead to improved organizational performance, representing a great opportunity for organizations to reduce costs and raise their internal assets to generate new revenues [111].

Andreu et al. [112] emphasized the link between KM and SCA, indicating that obtaining a competitive advantage is mainly through knowledge and the process of knowledge

transfer. Lu et al. [113] shows that KM and intellectual capital are highly and positively related to the efficiency of the organization's operation, indicating that knowledge management can contribute to improving the organization's performance and economic progress. The authors also indicate that in a very dynamic business world, such as life insurance organizations, managers are requested to invest and make full use of KM to gain an SCA. This may also be as important for financial management, information management, business planning and corporate governance as in the study of Torres et al. [114]. Yitmen [115] studied the relationship between intellectual capital, which represents a process of KM, and innovation and competitiveness in a specific sector in Turkey, and found a causal path where the management of intellectual capital is positively related to the engines of competitiveness and innovation, and is an important element in achieving SCA for organizations.

Thus, based on the above literature, the second hypothesis is formulated as:

Hypothesis 2 (H2). *Knowledge management has a positive and significant effect on the sustainable competitive advantage of Jordanian universities.*

2.4. Strategic Human Resource Management (SHRM) and Organizational Innovation (OI)

SHRM as described previously includes the design and implementation of a set of practices and policies related to internal and external human resources, which support human capital in the form of expertise, skills and knowledge, in a way that supports creativity and innovation [116].

The SHRM is currently concerned with working to ensure integration and harmony between human, structural and relational capital in a way that enhances the management of intellectual capital, which has become the main engine of sustainable competitiveness in organizations [105]. It has been shown by Perez et al. [117] that the enhancement of intellectual capital in higher education organizations depends on a triad of capital resources: human capital, structural capital, and relational capital. In the context of higher education, human capital is all of the explicit and implicit knowledge possessed by the human resources present in a university (trainers, career advisors, teaching staff, research and development, administration, and administrative personnel in the service departments, etc.), which they have received through formal and non-formal education and training activities [118,119]. In reference to a study by Brusca et al. [120], human capital plays a very important role in sustainable development activities, by mediating between different stakeholders and regional actors, by demonstrating suitable knowledge such as developing managerial activities, strategic planning, and how to minimize wasted efforts as well as providing incentives to recognize and reward employees for their participation in groups that drive sustainable development in the academic and regional community.

In addition, in the context of higher education, structural capital contains the explicit knowledge associated with all internal processes of promotion, communication and management of scientific and the technical knowledge in an organization that span all organizational values (the operating environments derived from interactions between the research management and the organization of operations, organization's routine, and culture) [104] of the organization and its internal procedures, in the context of the systems of quality and information, and others), and aspects of technology (the technological resources available at the university, such as the bibliographic and documentary resources, the archives and technical developments, the patents and licenses, software and databases, and others) [118]. In Tonial et al. [121], structural capital was linked to sustainable development practices in order to improve some organizational operations and procedures, such as improvements in structure positioning new technologies (the kinds of databases and the intellectual property).

Relational capital, in the context of higher education, is the most prominent component of intellectual capital, because it represents the strategic relationships that bind the organization to its employees, suppliers and its competitors, or any party that can contribute to developing ideas and translating them into distinctive services and prod-

ucts [104,105]. The importance of relational capital for sustainable development has been revealed, as it stimulates participatory capacity as well as the mutual respect, civility and participation between employers and workers, which contributes to the spread of knowledge and thought in human capital [122].

Accordingly, SHRM in the twenty-first century seeks to focus on intellectual capital, because of its importance in educational organizations in the ability to create a new knowledge balance as a result of the interaction between latent and explicit knowledge, which is evident through experiences and capabilities, as well as the dissemination of knowledge and production of the continuous innovation of knowledge, leading to achieving a competitive advantage of educational organizations [104]. Its importance lies in the fact that educational organizations represent one of the foundations for the production of knowledge wealth through the application of ideas, information, concepts and methods, which contribute to the continuous improvement of organizational performance, and contribute to the innovation of new processes, products and services that were not known before, which is defined as organizational innovation [123].

In line with Kising'u et al. [123], the current research defines OI as an organizational method in business practices, regulations of work environment and external relationships that are new to the organization, and which tend to improve organizational performance. However, there is no universally agreed definition of OI. However, OI has been defined as the application of new ideas to the organization, to create added value either directly for the organization or indirectly for its clients, whether novelty and added value are included in products, processes, services, or in systems of work organization, management or marketing [124]. This definition indicates that OI is the development or adoption of an idea or behavior in business processes that are new to the entire organization.

Many studies, including Hamadamin and Atan [74] as well as Jackson et al. [125], have shown that the HRM strategy plays a major role in making the decision to build a strong system, which will enhance and direct the improvement of efficiency, innovation and creativity to its workers, to discover satisfactory behavior, and develop the competence of its workers in order to match them with the strategy. Among the studies that have linked the strategy of human resource management and organizational innovation, a study by Özbağ et al. [126] showed that human resource management plays a major role in achieving the organization's vision of reducing costs, raising productivity and contributing to the development and creativity of provided products and services. It showed that there is a moral and direct relationship between human resource management strategies and OI.

In a study by Zehir et al. [127], entitled "Strategic Human Resources Management and organization Performance: The Mediating Role of Entrepreneurial Orientation, for organizations Operating in Various Industries in Istanbul", the results of the analysis showed that entrepreneurial orientation is a mediator in the relationship between strategic human resource management and performance (financial and employee performance) of the organization. This was also affirmed through the study of Fundıklı et al. [128], who indicated that only specific activities in strategic human resources have the ability to predict organizational innovation, and that there is a similar pattern between SHRM activities and the organization's ability to manage knowledge and innovate.

Recently, universities in many developed countries have undergone an analytical process of internal regulation in order to enhance their intellectual capital that contributes to enhancing their organizational innovation. However, there is a clear failure in this regard in the universities of developing countries, which makes this requirement more urgent. The university economy in developing countries mostly depends on tangible assets and neglects intangible assets (intellectual and creative), which makes them unable to benefit from research and development and intellectual capital as engines of growth, development, performance improvement and university innovation (Cricelli, Livio, Marco Greco, 2018). This issue, in addition to what was indicated by Easa and El Orra [129], that the relationship between SHRM practices and OI has been described as a black box, also remains to be investigated, and led to the formulation of the third hypothesis as:

Hypothesis 3 (H3). *Strategic human resource management has a positive and significant effect on the organizational innovation of Jordanian universities.*

2.5. Knowledge Management (KM) and Organizational Innovation (OI)

Every type of information and knowledge which is attained, created and distributed, is needed to be sustained by approval and the information stored; in any case, a business is continuously at risk when not remembering to secure information [130]. Martín-de Castro et al. [131] stressed that an organization invests a great deal of effort into keeping it inventive, guaranteeing innovativeness and accomplishing economical competitive advantages in the event that it does not store basic information and knowledge in an appropriate way and place. Likewise, frameworks are also needed to acknowledge improved results of KM for different sorts of practical innovation.

Literature relevant to KM indicated that managing knowledge and implementing policies and strategies for it influence organizations' performance by means of their capacities to sustain and innovate [132]. For example, the authors, in their systematic exploration of New Zealand organizations, inferred that organizations utilizing KM techniques were generally innovative and had superior manageable money-related execution. This investigation found that, with respect to achieving market knowledge, for instance, empowering oddities suits client needs very well. López-Nicolás and Meroño-Cerdán [133], in their investigation performed in organizations in Spain, presumed that adopting a KM approach affects an economical organizations' performance by improving its innovative capacities and abilities.

Similar to other productive organizations, the role of intellectual capital and knowledge-based assets in universities is essential, because universities are the focus of intangible activities: professors are repositories of knowledge and transfer it to students [119]. Universities themselves are 'sites' of knowledge, because any types of activity within them are closely related to the development and transfer of knowledge [122]. However, in this competitive era, the role of universities should not be limited to spreading knowledge, but also to appreciating it [117,118,134].

In addition, achieving organizational innovation for universities requires them to move towards what is called the third task, which necessitates universities to act as pioneers by finding new sources of income through their activities to secure their place in the knowledge-based economy. Accordingly, the university's functions have been expanded from its original function of teaching to the production of new knowledge, and, more recently, to the exploitation of knowledge for innovation. Therefore, universities are now the main generators of social and technological innovation. This, in turn, affects the way in which universities manage their human and technical resources strategically in search of competitive advantages, as shown in the studies of Rubens et al. [20], Cricelli et al. [122] and Pedro et al. [104].

Accordingly, based on the above literature, the fourth hypothesis was formulated as:

Hypothesis 4 (H4). *Knowledge management has a positive and significant effect on the organizational innovation of Jordanian universities.*

2.6. The Mediating Role of OI on the Nexus among KM, SHRM and SCA

One of the most important justifications that has required looking at practices related to human resource management functions on a strategic basis is the emergence of the concept of the systemic integration of human resource management functions, because this concept is based on the consideration that human resource management functions are interconnected and interacting elements that affect and are affected by the surrounding contexts [116]. In light of this concept, many relationships and mutual influences emerge between it, knowledge management processes, and achieving competitive advantages in the organization [126].

Previous studies have indicated that there are many interconnected relationships between SHRM, and between KM and OI and its ability to achieve competitive advantages. Afioni [135] showed that the SHRM needs to be integrated with KM, to allow the organization to develop its human capital, which is valuable, and leads to creating value for the organization, and thus can be considered a source of competitive advantage.

On the other hand, Chen and Huang [136] believe that there is a direct relationship between SHRM and KM, and at the same time, there exist statistically significant relationships between KM and OI and performance, in addition to an indirect relationship between human resource strategies and organizational creativity through knowledge management.

Har et al. [137] showed that the SHRM supports the processes of knowledge creation, sharing and use, by selecting the right worker in the right job with the appropriate skills and knowledge required, and motivating employees to innovate and create in their positions, and share knowledge among them in a way that helps to achieve competitive advantages, high performance and effectiveness of the organization.

In addition, according to Findikli et al. [128], there are overlapping and significant relationships between SHRM and KM, and there is an indirect relationship between human resource management and the ability to innovate in organizations through KM.

Thus, there is a gap in the knowledge of the mediating role of OI in the relationship between SHRM and KM on SCA; thus, the fifth and sixth hypotheses are formulated as:

Hypothesis 5 (H5). *Organizational innovation has a positive and significant effect on the sustainable competitive advantage of Jordanian universities.*

Hypothesis 6 (H6). *Organizational innovation has significant mediating effects on the relationships between knowledge management, strategic human resource management and sustainable competitive advantages at Jordanian universities.*

3. Methodology

This section describes the research methods used to execute the study, enabling the researchers to accomplish the study objective, which was to discover how KM and SHRM affect SCA in Jordanian universities through assessments for the mediating function of OI. It also describes measures and variables of the study as well as the procedures for collecting and analyzing data, which is what research design implies, as stated by Kothari [138].

The authors chose to use a descriptive quantitative approach in achieving the study goals and answering its questions. The quantitative method can uncover patterns in research, which could formulate facts using measurable data; therefore, primary data were collected with the mean of a questionnaire. This approach is helpful and very common in managerial studies, because it helps the researchers to obtain quantitative insights about the policies and practices that are applied and adopted by organizations, without the need to change interventions on these policies and practices [139].

Based on the hypotheses and research questions, the basic research model was developed. Relying on a quantitative approach, questionnaires extracted from previous studies with robust validity and reliability scores were employed to collect data and then conduct statistical analyses. The study's research model, displayed in Figure 1, shows the correlations among these variables of this study. The relationship between the SHRM and KM applied by universities to attain SCAs effectively through the mediation effect of organizational innovation is proposed in the model. It was assumed that the strategy implemented by a university for its human resource management, as well as its method of managing knowledge, determines how the university can obtain an SCA in the market by hypothesizing that OI will partially mediate this relationship, i.e., SHRM, KM and OI will have a linear and indirect relationship with SCA.

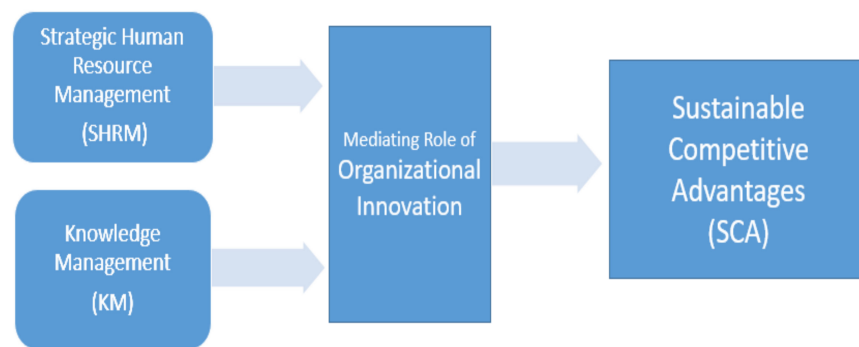


Figure 1. Research model.

3.1. Measures

Each of the study's four variables (KM, SHRM, OI and SCA) has different dimensions to assess. According to Ngoc-Tan and Gregar [103], KM has the following dimensions: knowledge acquisition, knowledge dissemination, and knowledge utilization. OI consists of two main components, namely, management innovation and technical innovation. According to Kasule and Bisaso [33], SHRM consists of both HR strategy and organization, strategic recruitment and employee selection, strategic training and development, strategic performance management, strategic rewards, and employee retention. SCA has the following dimensions: organizational excellence, organizational effectiveness, and organizational response, according to Kising'u et al. [123]. For a summary of the survey's constructs measurement and sources, see Appendix A, Table A1.

Hence, based on these studies and these dimensions, the questionnaire was developed, and was answered on a five-point Likert scale. It consisted of five diverse parts, including items with closed ended questions in order to collect data about the different study variables. Part one in the questionnaire consisted of questions about socio-demographic information of the study's sample, including the participant's gender, experience, age, educational level, etc. The second part incorporated 24 items asking about the application of SHRM in Jordanian universities adopted from Kasule and Bisaso [33]. Moreover, the third part consisted of 22 items to assess KM, and the fourth section incorporated 10 items to assess organizational innovation, both adopted from Ngoc-Tan and Gregar [103]. However, the last section of the questionnaire, the fifth section, consisted of 21 items to assess SCA in Jordanian universities, adopted from Kising'u et al. [123].

3.2. Data Collection Sources and Analysis

The target population in this study were academic and administrative employees in public and private universities throughout the Hashemite Kingdom of Jordan. By referring to the latest annual statistical reports published by the Ministry of Higher Education and Scientific Research [140], it was determined that the number of people working in the academic system (as members of a teaching staff) and the administrative apparatus was 36,880 employees. Accordingly, the "Raosoft" calculator for sample size was deployed to give the right sample size of the study, taking into account a margin error of 5%, 95% confidence levels, and a 50% response distribution. The sample size was calculated as about 381 participants. A non-probability sample based on a convenience random sampling technique was used. This method is not dependent upon the rationale of probability theory, and seeks a specific, predefined group of a sample. Convenience sampling is a type of non-probability sampling in which people are sampled simply because they are "appropriate" sources of data for researchers. It is the most commonly used by researchers because it is incredibly fast, uncomplicated, and economical. In many cases, it is easy to recruit participants to be part of the sample [141].

This type of sample is characterized by the ability to obtain the required and appropriate data quickly and at a low cost, which is why the researchers followed it, especially

due to the crisis of closures and embargoes as a result of the coronavirus (COVID-19) pandemic that the country was experiencing at the time of the study, which made access to a random sample from the community impossible to obtain. Hence, the surveys were carried out from October to November 2020, where the last responses were collected on 15 November 2020. The questionnaire was answered by 400 employees who occupied academic and administrative positions in Jordanian universities via online forms (Google Form). Out of the 400 questionnaires answered and retrieved from university employees, 400 (100%) were valid for analysis.

From the descriptive analysis of the sample's socio-demographic characteristics, 313 (78.3%) of the respondents were male, and the rest (21.8%) were female. Regarding the ages of the respondents, the largest percentage (70.8%) of the respondents were over 40 years old, whereas the rest of the age groups consisted of 36–40 years (13%), 31–35 years (11.5%), 25–30 years (4%), and younger than 25 years old (0.8%). Descriptive analysis of educational qualification consisted of only completing secondary school or less (4.5%), achieving a bachelor's degree (21.8%), master's degree (17.3%), and PhD (56.5%). The respondents' years of experience indicated that the majority (74.5%) of the respondents had more than 10 years of experience, 15.8% had 5–10 years of experience, 4.3% had 3–5 years of experience, and 5.5% had less than 3 years of experience. Finally, descriptive analysis of the university type showed that 39% of the respondents were from public universities, and 61% were from private universities.

4. Results

In this study, we used regression analysis models and bootstrapping tests in SPSS to analyze the data and test the proposed hypotheses, i.e., to demonstrate the mediating role of organizational innovation in the relationship between the independent variables and the dependent variable. Barron and Kenny's strategy was primarily used to test the mediation. In this mediation method, there are two tracks to the dependent variable. One is through the independent variable–dependent variable link, and the other one is through a mediator. Therefore, the mediation was tested with three regression links: first, assessing the direct link from the independent to dependent variable; secondly, from the independent variable to the mediator; and third, from the mediator to the dependent variable. To create the mediation, the following conditions should be met: (1) the independent variable must influence the mediator in the first regression equation; (2) the independent variable should influence the dependent variable in the second equation; and (3) the mediator should influence the dependent variable in the third equation. If all these conditions are unbroken in the expected direction, then the effect of the independent variable on the dependent variable should be less in the third equation than in the second one. An ideal mediation holds up if the independent variable has no effect when the mediator is controlled [142].

The research model shown in Figure 1 was validated by evaluation of the non-standard coefficients of the regression analysis models and their significance level, and then validating the indirect relationship using the hypotheses tests and bootstrapping tests [142,143].

4.1. Measurement Findings

For assessing hypotheses, it is required to prove the reliability and correctness of the measurement model. For this analysis, the reliability for the scales was tested using the Cronbach's alpha and the composite reliability (CR), which are standard factors to determine the reliability of measurements [144]. Therefore, both the Cronbach's alpha and compound reliability of each variable should be 0.7 or higher to demonstrate sufficient reliability [145,146]. Thus, according to Table 2, Cronbach's alpha ranged from 0.853 (by organizational innovation) to 0.876 (by sustainable competitive advantage). In addition, the composite reliability ranged from 0.940 (by organizational innovation) to 0.972 (by sustainable competitive advantage). These records show a practical degree of reliability because they are all above the rate of 0.7.

Table 2. Reliability and convergent validity analysis.

Variable Name	Cronbach's Alpha	CR	AVE	Indicator	Loadings
SHRM	0.869	0.968	0.563	SHRM1	0.859 **
				SHRM2	0.878 **
				SHRM3	0.828 **
				SHRM4	0.892 **
				SHRM5	0.829 **
				SHRM6	0.876 **
				SHRM7	0.689 **
KM	0.871	0.969	0.584	KM1	0.929 **
				KM2	0.907 **
				KM3	0.889 **
OI	0.853	0.940	0.611	OI1	0.883 **
				OI2	0.890 **
SCA	0.876	0.972	0.622	SCA1	0.947 **
				SCA2	0.873 **
				SCA3	0.862 **

Note: CR, composite reliability; AVE, average variances; SHRM, strategic human resource management; KM, knowledge management; OI, organizational innovation; SCA, sustainable competitive advantage; and ** denotes a 1% significance level (2-tailed).

For validity, indicator loadings and their significance levels were investigated. Their average variances (AVE) were observed to reveal the convergence validity [147]. For this, each indicator of the variables was scanned to assess whether they had sufficient weight within the significance intervals (loading ≥ 0.3 ; $p \leq 0.01$), and if the corresponding AVE was equal to or above 0.5 [148]. In Table 2, items weights within the range from 0.689 to 0.947 are shown, being robust and credible at a significance level of 0.01. Moreover, the range of the AVE values lay between 0.563 and 0.622, safely above the threshold level of 0.5. Accordingly, it could be deduced that the model satisfies the convergence validity requirements. Furthermore, to test the validity of the discriminant, the chi-squared (χ^2) test was used. This test investigates the covariance between a pair of variables in a single model [149], to assess whether there are significant differences between the controlled and uncontrolled models. Therefore, in our model, all of the fifteen pairwise combinations of the four constructs were checked using chi-squared through SPSS. As displayed in Table 3 below, the χ^2 difference tests for all pairs of constructs were significant at the 0.001 level, suggesting that each construct in the model is different significantly from the other constructs in the model.

Table 3. Chi-squared (χ^2) difference between the unconstrained and constrained models.

Construct Scale Pairs	Chi-squared (χ^2) Difference	p-Value	
SHRM	SHRM1	1268.054	0.000
	SHRM2	3039.639	0.000
	SHRM3	1870.721	0.000
	SHRM4	2549.857	0.000
	SHRM5	2242.904	0.000
	SHRM6	2506.345	0.000
	SHRM7	1286.404	0.000

Table 3. *Cont.*

Construct Scale Pairs		Chi-squared (χ^2) Difference	<i>p</i> -Value
KM	KM1	3683.541	0.000
	KM2	6458.194	0.000
	KM3	3200.086	0.000
OI	OI1	2840.470	0.000
	OI2	2864.301	0.000
SCA	SCA1	3186.638	0.000
	SCA2	2950.449	0.000
	SCA3	2905.660	0.000

4.2. Descriptive Statistic Results

In order to descriptively identify the presence and degree of availability for KM, SHRM, OI and SCA in Jordanian universities, the descriptive statistics (means and standard deviations) of responses and their rank obtained using a five-point Likert scale calculated via SPSS software were used, where means ranging from 1 to 1.80 were reflected as very low; those from 1.81 to 2.60 were reflected as low; means from 2.61 to 3.40 were reflected as moderate; scores from 3.41 to 4.20 were reflected as high; and those from 4.21 to 5.00 were reflected as extremely high. Table 4 below shows the items' average scores of the different variables as well as their levels. For all of the survey's items, see Appendix B, Table A2.

Table 4. Descriptive mean values for items measuring the study's variables (SHRM, KM, OI and SCA).

Variables and Items		Mean	Level
SHRM	Human Resource Strategy and Organization	3.1050	Moderate
	Strategic Recruitment and Selection of Staff	3.0515	Moderate
	Strategic Training and Development	2.9250	Moderate
	Strategic Performance Management	3.0712	Moderate
	Strategic Rewards	2.6537	Moderate
	Staff Participation in Management	2.8062	Moderate
	Staff Retention/Keeping	2.9975	Moderate
KM	Knowledge Acquisition (KA)	3.0383	Moderate
	Knowledge Dissemination (KD)	3.3430	Moderate
	Knowledge Utilization/Usage (KU)	3.2060	Moderate
OI	Administrative Innovation	3.2455	Moderate
	Technical Innovation	3.2545	Moderate
SCA	Organizational Excellence	3.1518	Moderate
	Organizational Effectiveness	3.1679	Moderate
	Organizational Responsiveness	3.2939	Moderate

Moreover, the means and standard deviations for the variables and correlations between them are shown in Table 5 below.

Table 5. Descriptive statistics and the correlation matrix.

Variable	Mean	S.D	Skewness	Kurtosis	1	2	3	4
SHRM (1)	3.2288	0.85726 **	−0.266	−0.266	1	0.886 **	0.813 **	0.854 **
KM (2)	3.2500	0.93509 **	−0.471	−0.266	0.886 **	1	0.891 **	0.878 **
OI (3)	3.2045	0.92872 **	−0.500	−0.507	0.813 **	0.891 **	1	0.896 **
SCA (4)	2.9318	0.88007 **	−0.462	−0.733	0.854 **	0.878 **	0.896 **	1

Note: S.D, standard deviation; SHRM, strategic human resource management; KM, knowledge management; OI, organizational innovation; SCA, sustainable competitive advantage; and ** denotes a 1% significance level (2-tailed).

It is obvious from the descriptive statistics shown in Tables 4 and 5 that the level of application of KM and SHRM in Jordanian universities from the point of view of the study sample came with a medium degree, with values of 3.25 and 3.2288, respectively, which may justify the intermediate degree of the availability of OI (3.2045) and SCA (2.9318) at the universities. Moreover, Table 4 indicates that the variables' data distribution are fairly symmetrical, because their skewness values ranged between -0.5 and -0.266 . In addition, none of the variables' data had extreme outliers or tails, where their kurtosis values ranged between -0.266 and -0.733 . Hence, the data followed a normal distribution, which indicates the validity of conducting further regression and inferential tests on data and the reliability of the obtained results.

However, by referring to Table 5, it is clear that there is a large correlation between the study variables, and in spite of that, the effect of these correlations did not appear significantly in the linear regression, especially because the researchers adopted Baron and Kenny's mediation regression approach, where each of the independent variables was tested alone with the dependent variable, although it may have contributed little to influence the mediation relationship between the variables. The apparent correlation between these variables supports the assumption that these processes represented by both KM, SHRM and OI are associated with each other, and the application of any of them will contribute to improving the other, which shows the importance of interest by universities and dealing with them as an integrated unit.

4.3. Structural Model Testing

For analysis of the study's hypotheses, assessment of the structural model was conducted by using Baron and Kenny's mediation regression approach with the software SPSS. Table 6 shows the outcomes of these regressions.

Table 6. Regression analyses for testing mediation.

Model No.	Dependent Variable	Independent Variables	Regression Unstandardized (β) Coefficient	t	Model R-squared	F	Sig.
1.	SCA	SHRM	0.902	32.786 *	0.730	1074.946 *	0.000
2.	SCA	KM	0.951	36.539 *	0.770	1335.096 *	0.000
3.	OI	SHRM	0.864	27.841 *	0.661	775.109 *	0.000
4.	OI	KM	0.971	39.050 *	0.793	1524.927 *	0.000
5.	SCA	OI	0.889	40.151 *	0.802	1612.110 *	0.000
6.	SCA	SHRM	0.393	11.123 *	0.849	1116.443 *	0.000
		OI	0.589	17.709 *			
7.	SCA	KM	0.420	8.597 *	0.833	990.660 *	0.000
		OI	0.547	12.214 *			

* denote significant level at 0.05.

Tracing the first connection, that the independent variable (SHRM) was antecedent of the dependent variable (SCA) by regression analysis as displayed in Table 6, demonstrated statistically significant overall fitness among Jordanian universities, where the coefficient of determination, R^2 , was valued as 0.730 at $\alpha \leq 0.05$. Furthermore, the β coefficient for the SHRM on the SCA was calculated as a highly potent value of 0.902. The significance of

this effect was verified by the calculated F value (1074.946), confirming the validity of the acceptance of the first hypothesis H1.

Likewise, tracing the second connection of independent variable (KM) as antecedent of the same dependent variable (SCA) by regression analysis is also displayed in Table 6, indicating statistically significant overall fitness among Jordanian universities, where the coefficient of determination, R^2 , was valued as 0.770 at $\alpha \leq 0.05$, and the degree of influence (β) for KM on SCA was 0.951. The significance of this effect was verified by the calculated F value (1335.096), confirming the validity of the acceptance of the second hypothesis, H2.

Thirdly, the mediating variable (OI) was regressed on the independent variable (SHRM), as well as on the independent variable (KM). The resulting regression models are displayed in Table 4, where the summary of models and overall fit statistics indicate the existence of a statistically significant positive effect of SHRM and KM on OI in Jordanian universities, where the coefficient of determination values, R^2 , were 0.661 and 0.793, respectively. This means that 0.661 and 0.793 of positive changes in OI in Jordanian universities are due to SHRM and KM, respectively. To show the effect of these two variables on OI, the effect score (β) was obtained for both models (Models 3 and 4). The values of 0.864 and 0.971 were for SHRM and KM on OI, respectively. This means that a one-step increase in the level of interest in SHRM or KM improves OI in Jordanian universities by 0.864 or 0.971, respectively. The significance of this effect is indicated by the calculated F values, which were obtained as 775.109 and 1524.927, and were significant at the level of $\alpha < 0.05$ (sig. = 0.000). Thus, this confirms the validity of accepting the third (H3) and fourth (H4) hypotheses.

Additionally, for testing the fifth hypothesis, the dependent variable (SCA) was regressed on the mediating variable (OI), with the assumption that it is an independent variable. The model summary and the overall fit statistics displayed in Table 6 show the existence of a positive statistically significant effect of OI on SCA in Jordanian universities, where the coefficient of determination of R^2 was 0.802 at $\alpha \leq 0.05$, which means that 0.802 of positive changes in the SCA of Jordanian universities are due to OI. In addition, the degree of influence (β) of OI on SCA was 0.889. This means that an increase in the level of interest in KM leads to an improvement in SCA in Jordanian universities by 0.889. The significance of this effect is the calculated F value (1612.110), which was significant at $\alpha < 0.05$ (sig. = 0.000). Thus, this confirms the validity of accepting the fifth hypothesis (H5).

Through the previous steps, it has been proven that there are statistically significant relationships between the independent variables (KM and SHRM) and the dependent variable (SCA), and between the mediator (OI) and the independent variables (KM and SHRM) as well as (OI and SCA); hence, the first conditions for Baron and Kenny's mediation method have been fulfilled. Furthermore, after these conditions were fulfilled, the researchers could test the mediation hypothesis (H6) by investigating the effect of both SHRM and OI and KM and OI on the dependent variable (SCA), as in the sixth and seventh models in Table 6. It turned out that the models were still significant at the level of $\alpha < 0.05$ (sig. = 0.000), which supports partial, although not complete mediation, especially because the effect of the independent variable (SHRM) on the dependent variable (SCA) was reduced to a value of 0.393 compared to its effect of 0.902 in the first regression model, and the effect of the independent variable (KM) on the dependent variable (SCA) was reduced to a value of 0.420 compared to its effect of 0.951 in the second regression model, thus providing evidence for partial mediation. This is in accordance with Baron and Kenny's mediation approach, which indicated that partial mediation occurs when the independent variable's influence on the dependent variable is reduced after the mediator is controlled.

In addition, and to further confirm the sixth hypothesis, there are two main approaches: the Sobel test and bootstrapping. Bootstrapping has strongly been recommended in recent years (although the Sobel test was widely used before), especially since the latest research, including Caron [150], showed that the Sobel test was considered to be very conservative for small sample sizes, and therefore had a very low explanatory power. The bootstrap method is more powerful and more conceptually appropriate. Accordingly, bootstrapping

tests were performed with 5000 bootstrap resamples to determine whether the indirect effects of SHRM and KM on the SCA of Jordanian universities through the mediator (OI) differed significantly from zero. According to Table 7, the results confirmed that the indirect effect of OI in the relationship between SHRM and SC (Coef. = 0.396, CI = 0.2155–0.5291) was significant as long as the zero value did not lie within the confidence interval range. The same applies for the indirect effect of OI in the relationship between KM and SCA (Coef. = 0.327, CI = 0.1342–0.4231). This supports the sixth and final hypothesis (H6), that there is a significant mediator effect for organizational innovation in the relationship between KM and SHRM and SCA at Jordanian universities.

Table 7. Bootstrapping indirect effect test.

Variables	Coef. Estimate	Std. Error	CI Lower (95%)	CI Upper (95%)	p-Value
SHRM and SCA (OI: mediator)	0.396	0.0481	0.2155	0.5291	0.000
KM and SCA (OI: mediator)	0.327	0.0396	0.1342	0.4231	0.000

5. Discussion and Conclusions

5.1. Discussion

It has become increasingly important to study the conception of SCA in terms of its definition and how to achieve it in organizations, in light of the emergence of globalization, technology and other factors that have affected the economy and management system, also calling for the need to adopt SHRM systems and KM in an innovative way. SHRM focuses on linking human resource management with the strategic objectives of the organization, with the aim of improving performance levels and developing organizational culture in a way that accelerates creativity and flexibility [151]. This creativity increases if the SHRM is accompanied by the KM process through a set of processes that help acquire and develop knowledge, and organize, implement and transfer important information and experiences in a way that contributes to decent decision-making, strategic planning and gaining competitive advantages [152]. Previous research conducted to study SHRM and KM focused mainly on the theoretical perception of these two types of management, as well as their practices, and the positive and important relationship between them and achieving SCA without examining the impact of OI on them. Hence, this study reflects an important contribution to the topic of SHRM and KM through the introduction of the OI variable as an intermediary between them and the SCA variable, especially because empirical research in this field is rare.

This research was conducted to investigate the impact of KM and SHRM on SCA in Jordanian universities over the assessment of the mediating role of OI upon this relationship. The test of the developed theoretical model was empirically applied by collecting the data of employees in public and private universities, in order to study the relationships between the independent variables and dependent variable and the effect of the mediator variable on them.

The study found that there is a positive and statistically significant impact of SHRM on achieving SCA for Jordanian universities. This result was in line with former similar studies, such as Hamadamin and Atan [74], and found that SCAs can be achieved in the education sector. The results of the study are also consistent with the study of Pedro et al. [58], who confirmed through the theory of social exchange that SHRM practices support the welfare of workers and thus enhance the employee's sense of obligation to respond in a supportive and beneficial way to the organization. From the study of Perez et al. [117], from a resource-based point of view, it was shown that when organizations implement SHRM practices in which individuals are seen as organizational resources, necessary to create superior goods and services, long-term investments are made in developing employees' knowledge and skills, and the capabilities of the organization will focus more on employee well-being. This stimulates revenues and financial gains.

The study of Pedro et al. [105] confirmed that universities represent one of the organizations that possess the most noticeable elements to help in managing strategic resources, by investing in cognitive training for employees, developing their cognitive skills, selecting researchers and academic pioneers, and investing in human capital to ensure improvements in academic and knowledge performance in the long term, and thus achieving sustainable competitive advantage.

Nevertheless, there is a key need for Jordanian universities to ensure that a strategic policy is in place to know in what way HR can be managed [86]. This result also supports similar former studies, albeit not in the educational sector, but these studies have resulted in an important impact of SHRM implementations on SCA, which can be explained by the concept that SHRM provides space for the organization's enthusiasm about in what way they can focus their organization strategically to compete in the market [153,154].

Moreover, the direct impact of KM on SCA was assessed as well, and the results showed that positive and statistically significant relationship existed between these variables. This result is consistent with the study of Meihami and Meihami [106], who showed that KM represents one of the most important modern management strategies and methods, which includes a set of processes aimed at bringing about change and development and achieving competitive advantages and advancement in the performance of organizations. Management scholars in the developed world, including Nzongi [108] and Mao et al. [109], also emphasize that renewable and innovative knowledge is one of the most important means of administrative success, which is the pioneering side towards strategic success in different situations, taking into account the orientations and aspirations of the organization.

This result also agrees with researchers [101–103,105] who have indicated that universities, with their different departments, are among the best contexts in which to apply a KM approach, taking into account their own knowledge infrastructure represented by elite human elements of scientists and researchers in various disciplines and their ability to exchange, generate, and utilize knowledge. In light of the knowledge management approach, a university bears the responsibility of caring for the development of the intellectual capital and intellectual capabilities of its members as producers of knowledge, so that they can produce new ideas and develop existing concepts in a way that guarantees the university's achievement of its goals and raises its performance levels; this reflects the value and importance of universities embracing their intellectual capital. The study of Tonial et al. [121] also showed that KM contributes to raising the level of skills of workers in organizations to use knowledge, motivate those who have knowledge to release their latent knowledge, continuously develop their knowledge and rearrange their accumulated experiences, which contributes to increasing the organization's ability to produce new knowledge, thus improving performance, simplifying operations, reducing costs, and achieving innovation in a way that ensures sustainable competitiveness for universities.

Furthermore, the direct impact of SHRM and KM on OI was also examined. The results revealed that the both SHRM and KM variables have a significant and positive effect on OI, confirming the findings of previous studies, which indicated that SHRM supports the processes of knowledge creation, sharing and use, by selecting the right worker in the right job with the appropriate skills and knowledge required, and motivating employees to innovate and create in their positions, and share knowledge in a way that helps to achieve competitive advantage and high performance [137]. This was also affirmed by Findikli et al. [128], who indicated that there are important overlapping relationships between SHRM and KM, and there is an indirect relationship between them and the ability to innovate in organizations, leading to SCA; it was also proven throughout the study that a significant and positive relationship existed between OI and SCA.

However, most important conclusions reached by the current study, which distinguish it from other studies are that a partial and indirect significant mediation relationship does exist for the mediating variable (OI) on the direct relationship between KM and SHRM and achieving the SCA of organizations. This result comes as a proof of previous research and studies' predictions of the impact of OI on the relationship of knowledge and

resource management on SCA without conducting empirical studies, such as Afiouni's [135] study, which showed that SHRM needs integration with KM and synergies with OI, to allow the organization to develop capital, which is rare and valuable, creates value for the organization, and thus can be considered a source of competitive advantage. This was confirmed by Wang and Chen [15] and Hamadamin and Atan [74], who indicated that KM and SHRM processes, in addition to structural and relational capital, affect the SCA of organizations, and that this effect is amplified and becomes more evident in the presence of OI that contributes to the development and adoption of a new idea, behavior, or processes in management that improve the relationship between the organization and its external factors.

5.2. Conclusions

In today's highly competitive world, managers make a major difference because they directly influence human resources and knowledge sources, striving to gain SCAs in the new economy. For the world of performance-driven organizations, it has become imperative to gain sustainable competitive advantages by focusing on human resources, pushing them to organizational innovation and leveraging knowledge management processes. Hence, these managerial variables (KM, SHRM, OI and SCA) are gaining increasing importance among practicing managers all over the world.

The aim of this research was to investigate the effect of KM and SHRM on SCA in Jordanian universities with an assessment of the mediating role of OI upon this relationship. The results of this study, which demonstrated the importance of the relationship of these variables within the Jordanian university system, provide an understanding of how SHRM implementations and KM combined with OI can significantly contribute to achieving an SCA within a university system, as well as an evaluation of ideas about academic constraints. Achieving an SCA needs the support of SHRM implementations over the development of human experience with the basic values of the organization. In the same way, different KM processes are important for an organization to achieve an SCA, because these knowledge activities are aimed at bringing about change and development and achieving competitive advantages and advancements in the performance of organizations.

The study's main finding revealed that there is a partial and indirect mediation relationship for the mediating variable (OI) on the direct relationship between KM and SHRM and the achievement of SCA of organizations, because SHRM needs integration with KM and synergy with OI, which contributes to the development and adoption of a new idea, behavior or processes in the management. This will improve the relationship between the organization and its external factors, allow the organization to develop its valuable capital, and create value for the organization; thus, it can be seen as a source of SCA.

In the end, because the main goal of various exploratory studies in the social and administrative sciences is to produce knowledge that can be generalized to society and beyond the particulars of time, place, and methodology, the researchers have verified the external validity of their findings which, as Mahdi and Almsafir [155] as well as Yin [156] indicated, is the extent to which stakeholders agree/disagree with the researchers' findings, to what extent the empirical measures accurately reflect theoretical constructs, whether the research preparation corresponds to the scope of the theory under test, how confident we are in replicating the results under similar conditions, and whether the results support the theories that are tested.

The researchers shared the results and a draft copy of the manuscript with a group of workers of public and private universities in the Kingdom of Jordan. The workers were asked to express their opinion on the reliability and realism of the research findings. All officials expressed their satisfaction with the research and its results, and stressed the importance of achieving sustainable competitive advantages in organizations by focusing on human resources and pushing them to innovate and benefit from knowledge management processes; therefore, there was no need for the researchers to conduct any

modification or central changes, and the researchers were given confidence that their results are generalizable to various Jordanian universities.

5.3. Theoretical and Practical Implications

This research contributes to the literature of strategic management and has some practical management implications. The model described in this paper is important because it provides an opportunity to fill the gap in understanding how organizations succeed in developing SCA and OI in the higher education environment. This research draws the attention of universities to the need to pay attention to intangible (intellectual) resources and the shift from investing in financial (tangible) resources to investing in knowledge resources and intellectual capital.

This research also practically contributes to providing universities with systems and models for applying KM and intellectual capital management, in a way that achieves SCAs, which has recently become one of the most important indicators of the success of organizations, because it helps them in developing long-term stability, respect for the organization and its environment, and thinking of employees as a principle resource of the organization, which can contribute to success in competitive struggles.

This research also gives practical implications for actors and stakeholders, because it urges Jordanian higher education organizations to develop some supportive infrastructure that enables managers to track, transfer and maximize knowledge needs that employees may have, so that organizations can develop KM and organizational strategies that lead to sustainable development with enhancing human resource satisfaction needs within the employer's organization, contributing to achieving innovation. For example, these needs may be related to how knowledge is shared and developed; hence, this can be addressed through activities that the organization develops and/or intends to develop, as well as through specific educational training, and can contribute to personal enrichment and greater efficiency in transferring knowledge to peers and/or students.

The significance of this research also appears in directing Jordanian universities towards the so-called third mission, which requires universities to take leadership by finding new sources of income through their activities to secure their place in the knowledge-based economy. Accordingly, the findings suggest that universities should expand their functions from their original function of teaching to the production of new knowledge, and more recently, to the exploitation of knowledge for innovation. Therefore, universities are now the main generators of social and technological innovation. This, in turn, affects the way universities manage their human and technical resources strategically in the search of competitive advantages.

5.4. Limitation and Further Research

This study acknowledges that there are significant boundary limitations in its interpretation; hence, further studies are recommended. This study is comparable to some other social and managerial science studies with a cross-sectional design and, as such, is open to additional examinations of causation. It is supposed in the relevant literature that SHRM and KM implementations greatly influence SCA over a worker's skills, knowledge, capabilities, behaviors and attitudes concerning the organizations. Nevertheless, relationships between SHRM implementations, KM and SCA can be mediated by OI. Accordingly, this study delivers a new viewpoint on this relationship through empirical examination of the mediating role of OI in the relationship between SHRM implementations and SCA in the university system, especially in Jordan. Perhaps one of the most notable limitations of this study is that it chose to examine the relationship between KM, SHRM, OI and SCA in a very specific education context in Jordan. Hence, the result may not be generalized and representative. Secondly, although it is not a major problem in this study, all participants in this research were administrative staff and faculty academic members, and may only have relayed the positives of their organization; therefore, it is recommended to conduct a qualitative survey as well as a quantitative survey to avoid bias in future research. Thirdly,

conducting studies in industries other than education or the education sector in different countries may represent an interesting topic for future researchers. In the end, a comparative study could be performed about the relationship between these variables and the difference in their impact on public and private universities, in addition to investigating the ability to achieve SCA in the academic environment through other combinations, such as innovation, technology, job commitment, human and financial resource development.

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Appendix A

Table A1. Construct measurements and sources.

Constructs	Indicator	Source
Strategic Human Resource Management (SHRM)	Human Resource Strategy and Organization (SHRM1)	Kasule and Bisaso [33]
	Strategic Recruitment and Selection of Staff (SHRM2)	
	Strategic Training and Development (SHRM3)	
	Strategic Performance Management (SHRM4)	
	Strategic Rewards (SHRM5)	
	Staff Participation in Management (SHRM6)	
	Staff retention/keeping (SHRM7)	
Knowledge Management (KM)	Knowledge Acquisition (KM1)	Ngoc-Tan and Gregar [103]
	Knowledge Dissemination (KM2)	
	Knowledge Utilization/Usage (KM3)	
Organizational Innovation (OI)	Administrative Innovation (OI1)	Ngoc-Tan and Gregar [103]
	Technical Innovation (OI2)	
Sustainable Competitive Advantage (SCA)	Organizational Excellence (SCA1)	Kising'u et al. [123]
	Organizational Effectiveness (SCA2)	
	Organizational Responsiveness (SCA3)	

Appendix B

Table A2. Descriptive statistics of questionnaire's items.

No.	Variables and Items	Mean	SD
	Strategic Human Resource Management (SHRM)	2.93	0.88
	Human Resource Strategy and Organization	3.10	1.16
1	My university performs HR audits to ensure that it has the right quality and quantity of staff needed to achieve its strategic goals and objectives.	3.19	1.21
2	My university has and follows a Strategic Human Resource Plan to attract and retain the most qualified staff.	3.02	1.24
	Strategic Recruitment and Selection of Staff.	3.05	0.99
1	My university fills vacant posts in a timely manner to avoid staff shortages.	3.05	1.22
2	My university's recruitment and selection are competitive.	3.00	1.22
3	My university applies comprehensive tests to recruit employees.	3.08	1.14
4	My university executes selection procedures based on 'person job-fit'.	2.83	1.21
5	My university tests the applicant's scientific background before submitting a job offer to them.	3.30	1.12
	Strategic Training and Development	2.92	0.99
1	My university carries out Training Needs Assessment (TNA) programs to inform the training of staff.	2.88	1.10
2	My university organizes formal and informal training programs to develop the contemporary skills and knowledge of staff at school/department levels.	3.14	1.21
3	My university Training and Development policy gives priority to investing in younger staff.	2.75	1.11
	Strategic Performance Management	3.07	0.98
1	My university executes a transparent performance appraisal system with strategic congruent and quantifiable results.	2.95	1.12
2	My university ensures that staff set performance goals.	3.21	1.10
3	My university ensures that the continuous monitoring of employee performance is a strategic issue.	3.17	1.10
4	My university provides staff with feedback about their performance.	2.96	1.16
	Strategic Rewards	2.65	0.99
1	My university provides competitive pay (monetary) packages to its employees.	2.60	1.20
2	My university has a performance-based pay and promotion system.	2.45	1.13
3	My university has comprehensive incentive plans based on staff's contribution to the university's goals and objectives.	2.69	1.15
4	My university adequately provides competitive non-monetary rewards.	2.88	1.20
	Staff Participation in Management	2.80	0.99
1	My university adequately involves staff in decision-making to ensure strategic gain.	2.67	1.16
2	My university practices an open-door policy.	2.78	1.17
3	At my university, the principle of the autonomy of staff in respective functional areas is a key strategic issue.	2.84	1.10
4	My university employees have the right and freedom to suggest improvements in the way operations are performed.	2.94	1.14

Table A2. Cont.

No.	Variables and Items	Mean	SD
	Staff Retention/Keeping	2.99	0.89
1	My university has a relatively low staff turnover rate.	3.05	1.073
2	Minimizing and/or eliminating staff turnover is a strategic issue at my university.	2.94	1.01
	Knowledge Management (KM)	3.22	0.85
	Knowledge Acquisition (KA)	3.03	0.963
1	My university encourages and has processes for the exchange of ideas and knowledge between individuals and groups (faculties and administrative staff).	2.85	1.14
2	My university has a mechanism for creating and acquiring knowledge from different sources, such as students, workers, strategic partners and competitors.	3.06	1.12
3	My university responds to our ideas and documents them for further development.	2.86	1.13
4	My university sets up regulations to encourage staff to study further after a certain period of time working for the university.	2.88	1.22
5	My university recruits and assigns a faculty with higher qualifications to manage the high-quality knowledge and educational materials.	3.38	1.15
6	My university annually spends a certain amount of its budget on purchasing learning and research materials.	3.20	1.16
	Knowledge Dissemination (KD)	3.34	0.85
1	My university has libraries, resource centers and other forums to display and disseminate knowledge.	3.72	0.96
2	My university has knowledge in the form that is readily/easy accessible to us when needed.	3.53	1.04
3	My university has different publications to display the documented knowledge.	3.53	1.04
4	My university has regular symposiums, lectures, conferences and training sessions to share knowledge.	3.58	1.01
5	My university utilizes various written media such as newsletters and manuals to store knowledge which is acquired.	3.45	0.98
6	My university utilizes databases, repositories and information technology applications to store knowledge for easy access by staff.	3.54	1.01
7	My university runs an apprenticeship, mentoring or training program to develop knowledge for young employees.	3.15	1.11
8	My university provides spaces and occasions for employees to talk and listen to one another and interact informally to exchange knowledge.	2.93	1.15
9	My university often forms teams with members from different departments to be involved in a special project.	2.94	1.12
10	My university has a virtual space (i.e., website, forum, intranet, internal e-mail system) for us to exchange ideas among one another.	3.32	1.11
11	My university sends out timely knowledge reports with appropriate information to us and other relevant universities.	3.10	1.10
	Knowledge Utilization/Usage (KU)	3.20	0.93
1	My university has methods to analyze and critically evaluate knowledge to generate new patterns and knowledge for future use.	3.08	1.03
2	My university applies knowledge to critical competitive needs.	3.10	1.05

Table A2. Cont.

No.	Variables and Items	Mean	SD
3	My university has mechanisms to protect knowledge from inappropriate or illegal use inside and outside of the university.	3.43	1.04
4	My university has different methods to further develop the knowledge and apply them to new situations.	3.23	1.04
5	My university has mechanisms for filtering, cross-listing and integrating different sources and type of knowledge.	3.19	1.02
	Organizational Innovation (OI)	3.25	0.93
	Administrative Innovation	3.24	0.97
1	My university deploys advanced management methods (e.g., ISO program for work quality assurance).	3.19	1.02
2	My university nurtures/supports a culture towards innovation (which enhances creativity, creates awareness of the benefits resulting from the implementation of the innovation, stimulates openness to innovation and minimizes resistance to change).	3.26	1.131
3	The organizational structure of my university is highly flexible and with few administrative procedures.	3.12	1.13
4	IT infrastructure facilitates internal communication of the university.	2.95	1.19
5	IT infrastructure facilitates governance of the university.	3.50	1.07
	Technical Innovation	3.25	0.96
1	My university is constantly introducing new curricula, systems, and new learning styles required compared to other universities in this field.	3.29	1.06
2	My university continues to improve its current products, services and operations through lessons learned, acquired knowledge, and great experiences for its members, in a way that contributes to making them more innovative.	3.33	1.11
3	The curriculum is reviewed periodically at my university and its technical content is developed.	3.29	1.11
4	University learners can contribute to the curriculum building and evaluation process in a way that supports innovation.	3.21	1.11
5	My university has a mechanism for collecting and analyzing feedback (from learners, organizations, employers, etc.) on performance and impact in a way that promotes innovation.	3.16	1.10
6	IT infrastructure facilitates internal communication of the university.	3.29	1.06
7	IT infrastructure facilitates governance of the university.	3.33	1.11
	Sustainable Competitive Advantages	3.20	0.92
	Organizational Excellence	3.15	1.04
1	My university management are very capable of gaining sustainable competitive advantages.	3.14	1.18
2	My university management carry out excellent work through participation and employee interactions.	3.00	1.18
3	My university management excellently select new university employees subject to experience, competence, and qualification standards.	3.10	1.21
4	My university management excellently and highly value openness and accept change.	3.11	1.16
5	My university management and employees carry out their duties excellently, with high morale and enthusiasm.	3.15	1.20
6	My university management and employees are very aware of achieving a strong linkage among their vision, mission, and objectives.	3.33	1.07
7	My university management are very capable of providing development opportunities.	3.23	1.16

Table A2. Cont.

No.	Variables and Items	Mean	SD
	Organizational Effectiveness	3.16	0.94
1	We are more effective than our competitors in providing innovative learning to students.	3.32	1.12
2	The university's staff turnover is lower than that of its competitors.	3.34	0.981
3	The university's employee morale is higher than that of its competitors.	2.99	1.17
4	The university's effective attraction to professionals is higher than that of its competitors.	2.99	1.20
5	The university's image is better than that of its competitors.	3.17	1.17
6	The university's growth rate was higher than that of its competitors last year.	3.19	1.14
7	The university's employee productivity was higher than that of its competitors last year.	3.17	1.11
	Organizational Responsiveness	3.29	0.93
1	We are faster than our competitors in responding to student complaints.	3.36	1.13
2	We are faster than our competitors in responding to concerns raised by employees.	3.07	1.10
3	We are faster than our competitors in accessing future student needs and responding in time	3.30	1.07
4	We are faster than our competitors in responding to changes in technology.	3.36	1.07
5	We are faster than our competitors in responding to concerns raised by suppliers.	3.25	0.98
6	We are faster than our competitors in responding to concerns raised by the government.	3.36	1.05
7	If a major competitor launched an intensive campaign targeted at our students, we would implement a response immediately.	3.36	1.12

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