

Which effective correlation between management by objectives and leadership style practiced inside Jordanian universities?

Ahmad Jizza Mohammed Al Awad¹, Dr. Amina Omrane²

¹*Ph.D. Candidate, Department of Management, Faculty of Economics and Management of Sfax (FSEGS), MODILS Research Unit, University of Sfax, Tunisia.*

E-mail: Ahmad.Alawad@yahoo.com

²*Associate professor (HDR) in management science and entrepreneurship; Researcher at ECSTRA research center, IHEC Carthage, Tunisia*

E-mail: amina.omrane@yahoo.fr

Abstract

The present study aims to identify the degree of practice of management by objectives (participation, goal setting, support for senior management, self-control and review, evaluation and accountability for achievement) and its possible relationship with leadership style (democratic style, authoritarian, or permissive style). A quantitative research method was undertaken and a questionnaire was purposely prepared and tested before being administrated to a targeted sample including (552) administrative leaders from Jordan Universities. For data collection purposes, the process lasted four months during the last quarter of 2022. In order to test the research hypotheses of the study and achieve its goals, a factorial analysis and statistical regression techniques were applied to analyze the data via the SPSS software (Version 26). The results revealed that the management by objectives is highly applied in Jordanian universities. Findings supported also that the democratic style was the most common leadership style adopted by the department directors of Jordanian universities. The study concluded also that there is a significant association between the practice of management by objectives and the leadership style chosen by those administrative directors/managers. Ultimately, it was recommended that an independent administrative unit dedicated to the application of the principles of management by objectives should be established within the organizational structure of universities. Such unit should draw a specific attention to human resources and all the university stakeholders. It is also appealed to provide them the best work conditions, the appropriate material and organizational resources, so that they could strengthen their human capabilities adequately; while determining the strategic goals of their institutions.

Keywords: management by objectives, leadership style, University departments, Department directors, Jordanian universities.

I. Introduction

The administrative process management is one of the topics that has become of utmost importance for debates in various institutions that require coordination and sound communication to achieve their corporate goals. From another perspective, with the advent of scientific research and technological progress that has witnessed this digital age, many changes and transformations

have occurred and revolutionized not only the various areas of citizens' life, but also the strategic, managerial, and operational systems of organizations. Moreover, due to the development of trade, industry and education worldwide, competition among individuals and their quest for more diversity and innovation has widely increased leading to more complex human relationships inside organizations. Accordingly, directors, decision makers, and leading managers

of corporations are becoming more aware about the essential contribution of the administrative processes to directing individuals' and groups' efforts towards achieving their own goals on the one hand and those of their firms on the other hand. Indeed, a successful managerial guidance enables managers to foster their workforce skills, to tap into their useful resources, and then to improve the competitiveness and development of their organizations. It is in this same line of thoughts that Jamali et al (2020) contended that leadership styles and practices constitute one of the managerial tools that could be used by directors and decisionmakers to cultivate an atmosphere of harmony and cooperation between them and their employees, and to satisfy the psychological, economic, and social needs of all the parties inside and outside organizations.

More specifically, academic and higher education institutions are to be considered at the forefront of organizations that are affected by the contemporary changes and recent digital developments, so that they are experiencing a permanent quest to keep abreast of these transformations to accomplish their goals and tasks effectively (Paudel, 2021). Indeed, like other institutions, universities should be successfully managed in order to face the various technological, scientific and intellectual challenges they are encountering by the society and to deal with the global social, cultural and economic shifts they are witnessing. That is why, Higher Education ministries, wherever they are, are permanently seeking to improve the quality of education via hard/ diligent work and effective managerial tools and methods (Alayoubi et al, 2020). They also tend to put the emphasis, not only on the progress of the administrative and educational processes inside the different institutions' departments, but also on the improvement of workers' capacities and behaviors and their guidance towards the best organizational performance and competitiveness. For this purpose, university departments are henceforth looking for adopting the strategies and management methods that best enable employees to become key partners for their directors. In compliance with the principles of the management by objectives (Elee, 2021; Idoko et al, 2022), such workers would be capable of setting public and

private goals and participating in decision-making processes. They will, in turn, play a significant role in improving the overall performance of their institutions and strengthen their organizational commitment, which make them more predisposed to achieve their own goals as well as those of their organizations.

In conjunction with pursuing and applying the management by the goals, each university administration is also appealed to opt seriously for a convenient leadership style because of its great importance for guiding the behaviors of employees and encouraging them to attain the desired objectives. To do so, managers/directors are called upon to adopt an appropriate leadership style that is consistent with the principles of management with objectives. By doing so, they might switch their verbalized slogans into concrete and fruitful actions via dedicated work that enable them to reach their expected goals (Castro and Tumibay, 2021).

However, as the prior literature has been silent on the fruitful association between the principles of the management by objectives from one side and leadership from the other side, the current study aims at identifying the most common leadership style that is adopted by university departments of Jordanian universities. It also intends to assess the degree of practice of management by the goals inside these institutions, as well as to examine its possible influence on leadership. In other words, this research seeks to address the following research questions:

1. What is the degree of practice of university departments of goal Management in Jordanian universities?
2. What is the most common leadership style among university departments of Jordanian universities?
3. Is there a statistically significant relationship between the practice of university departments of management by objectives and their leadership style?

For the remainder of the present study, the theoretical development will be outlined in the second section. The third section will justify the research method adopted; while the fourth section will present the results of this research. Finally, the

last section will conclude and state the main implications, limits and recommendations.

2. Literature review

In what follows will be presented the theoretical framework of the current study. For this purpose, management by objectives (MBO), its meaning, principles, and advantages will be exposed in the first part. Therefore, the emphasis will be put on leadership, and the different leadership styles; before exploring the nature of relationship between MBO and three leadership styles practiced within universities.

2.1. Management by objectives: Theoretical assumptions, principles, and advantages

2.1.1. Management by objectives: Definitions and historical roots

Management by objectives (MBO) represents one of the management approaches that is used and practiced within organizations to set general and specific goals, i.e. strategic, tactic, and operational objectives, in partnership with employees. MBO is rooted in different disciplines, such as behavioral and psychosociological sciences, as well as entrepreneurship. Its conception originates from the assumptions of the pioneer Peter Drucker (1954), derived from the theory of management by goals as outlined in his book entitled "*The practice of management*". Indeed, this scholar pointed out that each member of the organization should contribute by something different to his organization so that all of them achieve collectively a common objective. Their efforts should be oriented to the same direction and their contributions should be harmonized to produce a complete and coherent system where there are no frictions, gaps or unnecessary sustained efforts (Fettouh, 2022).

According to Idoko et al, (2022) and Elee (2021), MBO constitutes an auxiliary strategic management tool of planning and motivation for employees. It reflects the process by which both managers/directors and employees, of the middle and upper organizational levels, agree on their common performance goals and then develop a

plan to reach them. It relies on clearly identifying and defining goals for each worker, then comparing the goals of the whole organization with those of its members at the different organizational levels, and finally turning the attention of employees towards the targets that have been set collectively to ensure the best performance for everyone (Wockelberg and Ahlbäck Öberg, 2021). In this same orientation, Elee (2021) added that: giving an opinion on setting goals and action plans encourages engagement and commitment among employees, as well as alignment of goals across the organization. It implies therefore that managers and employees who are working together to achieve the same objectives should have clear common intentions, an open communication and common shared goals (Stolojanu, 2019).

When it comes to educational and higher education institutions, it appears that most of them pursue MBO as an effective approach that focuses on results and goals rather than on events and activities, enabling them to achieve the expected outcomes. Furthermore, many universities consider it as one of the modern management methods that should be implemented by each institution to upgrade its organizational performance and improve its ability to achieve its expected results. To do so, each educational institution is conveyed to put the emphasis on results and goals, rather than on events and activities.

Nevertheless, it is noteworthy that altering positively employees' behaviors remains essential for the achievement of the desired goals. It is also of utmost importance to build up a unique integrated and interactive learning/educational system by generating a full alignment between its inputs, its processes, and its results (Islami et al., 2018).

2.1.2. The principles of Management by Objectives

According to Bell and Erklosarjik (2022), the Management by Objectives (MBO) is a dynamic process and a practical approach that involves in its conception the following statements:

- all the applied procedures that contribute to reaching the goals of the institution.

- the goals and ways to achieve them within the scope of the philosophy of the organization.
- The goals should be SMART (Specific, Measurable, Ambitious, Achievable, Relevant, and Time-bound): Specific goals are derived from the general corporate objectives of the organization through the participation of managers and employees; provided that the goals are time-bound, measurable, satisfactory to all the parties, and can be achieved on time.
- the most important management principle that promotes self-control among superiors and employees with their corresponding goals.
- the organizational behavior including routines that promote participation and cooperation between managers/directors and their employees so that common objectives could be reached.
- the guidance tools that are related to the interrelation and integration of the goals and objectives at all the organizational levels, so that any error and its causes could be easily identified during the application and the process evaluation.

For Idoko et al (2022), the MBO is considered as a managerial method that seeks to increase the effectiveness of the performance of different organizations, by adhering to a set of principles that are outlined as follows:

1. the principle of participation: it is associated to the process of participation of employees in determining the different goals of the whole organization and the methods used to achieve them. Each member of the company is also supposed to participate in the decision-making process, where participation is considered as a legal recognition of the permanent and organized role of employees in setting the general policy of the institution and allowing them to express their suggestions, recommendations and opinions to reach the desired goals.
2. The principle of goal setting: this principle refers to setting the goals of the administrative institution in the form of results to be achieved. These goals should be quantifiable, consistent with the capabilities of the institution, clear for all the employees, and adjustable and flexible according to the needs of the institution.

3. The principle of self-control: it is necessary to establish a control system to ensure that the institution is following the prescribed path according to the specified goals and to verify that the implemented procedures and activities lead to the goals and results that have been already identified. It should be noted that the management of the goals focuses on strengthening the spirit of self-control among employees so that each worker fosters his skills in terms of self-mastery.
4. The principle of supporting senior management: senior managers are conveyed to continuously coordinate, develop work plans and programs, and provide the all-necessary incentives, material and moral support to encourage employees to sustain maximum efforts (Hayes, 2021).
5. The principle of performance-based auditing and accounting: what has been accomplished by employees is to be reviewed, assessed, and then compared with the required goals, to determine to main shortcomings and strengths (Islami et al, 2020).

2.1.3. The expected advantages of Management by Objectives (MBO) for organizations and higher education institutions

The management by the goals is carried out within a continuous and renewable cycle, and thus it achieves many positive things for the institution, namely: enhancing trust between managers and employees, encouraging the institution's individuals and developing their entrepreneurial spirit and creativity. In addition to increasing production capacity and upgrading the production level as a result of attention to quality and quality at the same time, which contributes to improving performance (Rahman et al, 2020). It also enables managers to identify potential and actual problems with goals, which increases the possibility of correcting them before they occur, because this management style depends on consultation, participation and coordination. The management also contributes to the elimination of administrative idleness and slackness, especially through continuous follow-up during the activities and the deletion of jobs that do not achieve any partial goals reflected on the goals of the organization, as well as contribute to increasing the effectiveness of performance evaluation and

evaluation and the exploitation of all available possibilities externally and internally (Ding et al, 2021).

In university settings, it is expected that MBO contributes to the improvement of the university administrative performance and helps it in exercising its leadership role. In this perspective, it has been proved that MBO enables directors and managers to develop their skills in well handling and managing the administrative process, including their capacities of setting goals, planning programs and activities, monitoring, supervising and assessing, developing human relations, in addition to coordinating efforts and arousing the potential energies of the administrative and educational stakeholders (Shrestha, 2022). It implies that management by objectives, as a dynamic system, seeks to reach the best consistency and coherence between the expectations of employees and the necessary development of their abilities and energies.

MBO is also viewed as one of the reform approaches through which organizations could attain the expected outcomes, by cultivating a healthy work atmosphere, upgrading trust between directors/managers and other employees, and conciliating between the strategic corporate goals of Top managers and those of their middle managers and the other upper-level employees. On the other hand, numerous researchers like Jamali et al (2022) asserted that adopting a convenient leadership style could reinforce efforts of teamwork between managers and workers, boost the sense of self-discipline for each one of them, and propel all the administrative staff to increase its productivity and efficiency. Nevertheless, the prior literature emphasized that, despite the diversity of leadership styles, there is not a unique and best-one leadership style that can be adapted to all kinds of organizations. Managers are additionally conveyed to choose the leadership style through which employees can resolve the problems and challenges they might face appropriately (Ichsan et al., 2020).

Accordingly, it appears that MBO represents one of the effective strategic management tools that could be adopted by higher education institutions that aspire to enhance their competitiveness (Elee, 2021).

2.2. Leadership styles: Definitions, scope, and types

2.2.1. Leadership meanings and scope

Leadership is one of the most management concepts that has been debated within prior and existing researches because of its important contribution to the organizational performance and competitiveness (Akbari, Omrane, Nikookar-Gohari, and Ranji, 2022). It is defined as the process of influence exerted by an individual on others to direct their activities, coordinate between them and sharpen their concerns to achieve common goals (Huertas-Valdivia et al, 2019). Procedurally, it refers to the behavior of an individual and his attempt to influence others and direct their efforts towards achieving the performance required of them. In fact, leaders harbor an active and important role in improving the success of their enterprises, and therefore the achievement of their goals (Akbari et al, 2022; Saputra and Mahaputra, 2022).

There are different views regarding the concept of leadership style. Some academics define it as the actual behavioral trends that the leader chooses and adopts within the organization; and that determines in turn his relationships with employees (Jamali et al., 2022). For some other scholars, leadership style could be assimilated to the behavioral traits of managers who are in charge of making decisions (Nguyen et al., 2022). According to Megawaty et al (2022), it refers to the behaviors that a leader adopts to guide his employees while dealing with them to appropriately perform his role and responsibilities.

In the same line of thoughts, Elkhwesky et al. (2022) asserted that the leadership style practiced by managers affects social relations, job satisfaction and the morale of employees. It also plays a big role in upgrading their satisfaction (Huertas-Valdivia et al, 2019; Banerjee, 2021; Cited in Omrane and Bag, 2021).

2.2.2. Leadership benefits for higher education institutions

As a result of the international major developments in the higher education sector which have led to a clear change in the roles assigned to the university, the need for leadership has become extremely necessary for those who are in charge

of managing educational institutions. For educational and higher education institutions, leadership is an important and an influential factor that contributes to the performance of employees and to the manner by which educational programs are well implemented and employed (Elkhwesky et al., 2022). Indeed, the more leadership is positively practiced with high-level abilities, competences and skills, the more the organizational performance is upgraded, resulting in more possibilities of achieving their goals (Warman et al., 2022). Nevertheless, it should be noticed the achievement of the University's objectives depends largely on the university administration and the climate provided by the leader through his practices, which are both negatively or positively influencing the behaviors of employees within the University (Hall et al., 2022). Indeed, the role of the administration in educational institutions and universities has not been only limited to maintaining order in the institutions. It also comprises providing opportunities and conditions that enable the worker to perform his tasks from one side, and the student to develop his spiritual, mental, social and physical growth from the other side. Leadership outcomes will hence be reflected in improving the educational process and accomplishing a qualitative leap of the whole educational quality system (Warman et al., 2022).

More specifically, in Jordanian universities, leadership is assimilated to the method followed by university departments to assist their corresponding managers in dealing with their employees and directing them towards attaining the expected outcomes.

From another perspective, many scholars, such as Specchia et al. (2021), reported that the leadership style differs from one leader to another, considering their different cultures, experiences, orientations, and the social environment in which they live. In other words, and as outlined by those same authors, the leadership style depends, not only on the political, economic and social situations, but also on the cultural and social backgrounds of the leaders, in addition to other organizational factors represented by incentives, communication, administrative level, interaction and the size of the organization/or university.

2.2.3. Main Leadership styles

Despite the variety of leadership styles adopted by managers/CEOs, there is not a unique one that can be adapted and generalized to all kind of organizations (Alayoubi et al, 2020). In fact, leaders have to opt for the leadership style that enables them to deal with their employees and tackle with the problems they may encounter appropriately (Jamali et al, 2022; Akbari et al, 2022). Many studies have also proven that the practiced leadership style has an impact on the effectiveness of employees, as it could assist to spread an atmosphere of trust and a sense of security among them, as well as to reduce their feelings of frustration and anxiety (Hall et al., 2022). A review of the most important leadership styles that are adopted in various institutions, including educational institutions of developing countries, is presented as follows:

1. The democratic style: the leader who is adopting this style depends on his employees. He tends to consider all the opinions and suggestions they want to share for any decision-making processes (Alsalmi and Omrane, 2023). However, he remains the person responsible for making the ultimate decisions, following the participation of all the parties via an open communication mode. Indeed, the democratic approach relies on a collective contribution of all the concerned stakeholders in planning, organization, and decision-making. It ultimately leads employees to their desire to take responsibility and develop their creative abilities and skills. By doing so, workers would be able to wrap around their corresponding managers who represent them (Devi and Subiyantoro, 2021).
2. The authoritarian style: the leader in this style tries to concentrate all the power and authority in his hands (Alsalmi and Omrane, 2023). He can keep it to himself by doing all the work matters and issuing all his orders to employees who should obey. This leader also practices authoritarianism and intolerance with his employees, forces them to carry out orders; and even punishes them if the orders are not well executed. In other words, such a leader does not allow workers to share and discuss their opinions or suggestions with them. He is mostly isolated from the work group and

does not have any close human relationship with them (Andrej et al, 2022).

3. **The permissive style:** this style is based on the principle of releasing freedom for employees and making them do what they want and see convenient (Alsalmi and Omrane, 2023). The permissive leader is a cheerful and a modest personality. His relationship with employees is based on respect, esteem, and active interaction based on sharing information with them. The permissive leader mostly provides assistance only to those who request it; and he does not interfere in workers' professional and private affairs. Conversely, he tends to rely on training employees for working on their self-concentration, so that he communicates them the information required and leaves them free to act. Nevertheless, it is worth noting that this leadership style is a terrifying path that should be avoided as it could lead to negative results and effects on employees' performance (Alsalmi and Omrane, 2023; Caillier, 2020).

2.3. Towards an effective fit between managing by objectives and adopting a leadership style

Many previous researches sought to explore the relationship between managing by objectives and choosing a leadership style. After examining the studies which focused mainly on the relationships between the management by objectives and the leadership style adoption, our emphasis was put on the relevant ones that are stated below.

The investigation of Alkharabsheht (2022) which sought to test the role of Human Resources Management in improving the employees' performance, in accordance with the management by objectives was so insightful for the leaders of Zain Telecom Jordanian Group, where it was conducted. The findings of the collected data on a sample of 88 employees working in this group indicated also that the application of MBO has many benefits for the company. Indeed, applying the MBO enabled it to achieve an outstanding continuous improvement of the performance of employees, which was at an average level. By the way, it helped the directors to upgrade in turn the whole performance of the Human Resources department of the group.

As far as Warman et al (2022)' investigations are concerned, they aimed to examine the effects of the managers' style of supervision on enhancing the performance of teachers in several public secondary schools located in Kutai Kartanegara Regency, in East Kalimantan province. The chosen sample consists of all the teachers working in many public secondary schools. The researchers designed a questionnaire and distributed it a sample consisting of (200) teachers of those schools. The findings of such a study concluded that the leadership style of school principals in improving teacher performance is a democratic and authoritarian leadership style. The authoritarian method is also used by monitoring the timing of teachers' attendance at schools and the time of teaching in the classroom. The democratic method is implemented by providing opportunities for teachers to attend training in accordance with the needs of the school and the needs of teachers. The director of the teaching supervision program is also oriented towards directing the tasks of teachers, such as the preparation of courses' programs and the preparation of learning instruments. The disadvantages of supervising revolve around the low efficiency of most managers, the multiple activities undertaken outside the supervision schedule, and the difficulty of changing the old awful habits.

For Elee (2021), it is of utmost importance to evaluate the degree application of management by objectives by principals and teachers in public secondary schools in Anambra state. A questionnaire was designed and purposely administrated to the members of the study sample consisting of (857) managers and teachers. The obtained results concluded that it is recommended to apply the MBO within secondary schools to upgrade their success.

Alshehria and Al Shammarib (2021) sought to determine the degree of application of MBO among school leaders. from the point of view of teachers through four principles: the principle of setting goals, the principle of participation, the principle of determining the necessary means and methods and the principle of performance evaluation and feedback). In addition to identifying obstacles that prevent the

implementation of management by goals among school leaders from the point of view of teachers. The study community consists of all teachers in private schools in Khobar governorate. A questionnaire was prepared and distributed to the individuals of the study sample consisting of (232) teachers. The study concluded that: (1) the application of MBO among the leaders of private schools in Khobar governorate from the point of view of teachers is high; (2) the principle of goal-setting came to the forefront of the principles achieved while practicing the goal-based management; (3) finally, the principle of subordinate participation was applied within those schools. The overall results revealed also the existence of significant differences between the average responses of teachers about the degree of application of MBO among the leaders of private schools in Khobar governorate. Such disparities are mostly due to the difference in academic qualifications, the number of years of experience. More particularly, the differences were in favor of teachers with a bachelor degree and those with less than five years of experience.

3. Research Method

3.1. Population, Sample, and data collection procedures

The present study used the quantitative research method and the descriptive analytical approach to achieve the objectives of the study, answer its questions and test its hypotheses. As this approach is based on testing the relationships between variables and studying the factors affecting a particular phenomenon and reaching reliable results in developing appropriate recommendations to improve the problem to be studied.

The current study community consists of all administrators of Jordanian universities (Jordan University, Hashemite University, Yarmouk University, University of Science and technology, Mutah University, Tafila Technical University, Jadara University, Middle East University, Aqaba University of technology), numbering (9273) according to the annual report issued by the Ministry of higher education for the academic year 2019-2020. The study tool was also electronically

designed via Google Forms and sent to the human resources departments of the concerned universities, to be later sent electronically to all university administrators. The number of recovered questionnaires reached (552) questionnaires; constituting (5.95%) of the study community.

3.2. Questionnaire development and administration

The study tool is the main means used by the study to collect data on the study variables, and in this study the researcher used the questionnaire as the main data collection tool, which was developed based on previous studies related to the study topic and in accordance with its variables as a study (Warman et al, 2022; Alshehria and Al Shammarib ,2021; Devi and Subiyantoro, 2021; Jamali et al, 2022). The questionnaire consisted of a number of (4) main sections involving 52 questions. The first one was dedicated to the biographical/demographic profiles of respondents and included 4 questions (i.e. gender, age, educational qualification, years of experience). The rest of the questionnaire was rather structured to assess the latent variables of the study, represented by MBO and leadership style, and the number of questions of the questionnaire reached (52) questions (related to 52 items).

More precisely, the second section of the questionnaire included 37 questions associated to management by goals, which comprises five main dimensions. The three first dimensions (i.e. Participation, Setting Goals, and Support senior management) were assessed each one of them by 8 items; whereas the fourth dimension related to self-control and audit was operationalized by 6 indicators. Finally, the last fifth subcategory, i.e. evaluation and accounting for achievement, was measured by 7 items.

The third section, which is dedicated to the assessment of leadership style, comprises 15 questions divided into (3) areas corresponding to the leadership styles: the democratic style, the authoritarian style, and the permissive. Each leadership style was thus assessed by 5 indicators.

3.3. Weighted average

The study instrument adopted the five-step Likert scale in the questionnaire to give the study sample members flexibility when choosing, as the scale values ranged between (1-5), namely: (1= strongly disagree), (2= disagree), (3= neutral), (4 = agree), and (5= strongly agree). To describe the trends of the indicators, dimensions and variables of the study, the pentatonic scale was corrected using the range equation to include three levels of relative importance, namely:

$$\text{Range} = (\text{higher limit} - \text{upper limit}) / 3$$

$$\text{Range} = (5-1) / 3 = 1.33$$

Accordingly, the pentatonic scale that was used in this study was classified as follows:

- Low level: for which arithmetic mean values are less than (2.34);
- Intermediate level: for which arithmetic mean values range between (2.34-less than 3.68);
- High level: for which the arithmetic mean values are equal to or greater than (3.68).

3.4. Reliability and consistency of measurement scales

To check the authenticity and stability of the study instrument, the following steps were carried out:

3.4.1. Apparent reliability

The questionnaire in its initial prepared form was firstly checked and reviewed with few experts/professors in the field of management from the Jordanian universities to improve its content and the quality of its writing. All the opinions, amendments, suggestions, and deletions recommended by those experienced persons were accordingly taken into consideration into the final version of the questionnaire.

3.4.2. Stability of the study instrument

The designed survey was administrated to a sample of (30) administrators of Jordanian universities from outside the current sample. Therefore, to check the stability of the instrument, the Cronbach's Alpha values were calculated for the latent variables and their corresponding dimensions, as shown in the following table 1.

Table 1. Cronbach's Alpha values for all the constructs and their relative dimensions

Variables and corresponding dimensions	Number of indicators	Cronbach Alpha (α)
Participation	8	0.786
Setting goals	8	0.855
Senior management support	8	0.912
Self-control and auditing	6	0.899
Evaluation and accounting for achievement	7	0.923
Management by objectives	37	0.943
Democratic style	5	0.910
Authoritarian style	5	0.878
Permissive style	5	0.844
Leadership style	15	0.914

From the above table, it can be deduced that the Cronbach Alpha values for the three sub-constructs of the independent variable "management by objectives" (MBO) ranged between (0.786-0.923); while it reached (0.943) for the independent variable. For the dependent

variable "leadership style", the cronbach Alpha values ranged between (0.844-0.910); while it was of (0.914) the leadership as a whole composite construct. Such findings indicated that that all values are greater than (0.70), which represents the minimal statistical threshold acceptable value

for checking the stability and consistency of the instrument of this research.

Therefore, the study tool in its final form is distributable, and the researcher has verified the authenticity of the study tool and its stability, which makes him fully confident in the validity of the questionnaire to analyze the results, achieve the objectives of the study, answer its questions and test its hypotheses.

3.5. Statistical methods

The statistical analysis program SPSS (in its Version 26) was employed to analyze the data collected. A number of statistical steps were undertaken, namely by extracting: (1) the Cronbach's Alpha values to check the stability of

the study instrument, (2) repetitions and percentages, (3) measures of centralization tendency such as arithmetic averages and standard deviations, as well as (4) Pearson correlation coefficients between the five dimensions of MBO and the three leadership styles that are adopted by Jordanian university departments.

4. Results' presentation and discussion

4.1. Descriptive statistics

As outlined in Table 2 depicted below, the descriptive analysis associated to the sociodemographic profiles of the respondents was performed, in addition to the results of repetitions and percentages of the distribution which were also presented.

Table 2. Demographic profiles of respondents

Variants	Categories	Iterations	Percentages
Gender	Male	249	45.1
	Female	303	54.9
	Total	552	%100
Academic qualifications	Diploma	42	7.6
	Bachelor	350	63.4
	Masters	134	24.3
	Ph.D.	26	4.7
	Total	552	%100
Age	Less than 30 years	87	15.8
	From 30 - less than 40 years old	267	48.4
	From 40 – less than 50 years old	167	30.3
	50years and older	31	5.6
	Total	552	%100
Years of experience	Less than 5 years	61	11.1
	From 5 years - less than 10 years	157	28.4
	From 10 years – less than 15 years	181	32.8
	15years and over	153	27.7
	Total	552	%100

From Table (2), it appears that :

- Gender: 45.1% of the total respondents were men and 54.9% of them were women
- Academic qualification: it was found that most of respondents (78.7%) were qualified, and got bachelor/master degrees; while 4.7% of them got a PhD diploma.

- Age group: it was found that most of respondents were in the (30 - less than 40 years) range age group, with a percentage of (48.4%); while those in the (50 years and older) were the least interviewed ones, with a percentage of (5.6%) .This implies that middle-aged persons appear keen to work at administrative departments

of Jordanian Universities. Hence, the selection of the university interviewed administrators in terms of age group is significant, denoting their quite maturity and capacity to collaborate effectively with their managers.

- Years of experience: it was found that most of respondents (32.8%) got a considerable experience which ranges from (10 years - less than 15 years); while those whose experience was less than 5 years were representing only 11.1% of the sample. It is thus meaningful that the selected interviewed administrators got a good professional experience that enable them to participate actively and effectively in the identification and setting of their university objectives.

4.2. Results related to the association between Management By Objectives and Leadership styles within Jordanian University departments

4.2.1. Results on Management By Objectives (MBO) practiced within university departments

To determine the degree of practice of the MBO within Jordanian university departments, the values of arithmetic averages, standard deviations and grades for the five dimensions of MBO, as well as the general arithmetic mean of the variable were estimated and presented in Table 3 below.

Table. 3. Arithmetic averages and standard deviations of management by objectives

Number	Dimensions	Arithmetic averages	Standard deviations	Ranks	Degree
1	Participation	3.79	0.635	5	High
2	Goals' setting	3.92	0.573	3	High
3	Senior management support	4.05	0.528	1	High
4	Self-control and auditing	3.94	0.551	2	High
5	Evaluation and accounting for achievement	3.87	0.570	4	High
Management by objectives (MBO)		3.92	0.482	-	High

As outlined in Table 3, results indicated that the overall arithmetic average of the department with goals reached (3.92), which is a high level. While the areas of this variable were at a high level, the sub-construct related to "senior management support" received the first place with an arithmetic mean (4.05) and a standard deviation (0.528) and a high score, and in second place came the area of "self-control and audit" with an arithmetic mean (3.94) and a standard deviation (0.551) and a high score. As for the third place, the dimension of "goal setting" with an arithmetic mean (3.92) and a standard deviation (0.573) and a high score, is followed by the dimension of "evaluation and accounting for achievement" at the fourth position with an arithmetic mean of (3.87) and a standard

deviation of (0.570). Finally, the dimension of "participation" got an arithmetic mean of (3.79) and a standard deviation of (0.635) and a high score. Such findings are attributed to the emphasis put by university administrative managers in on following modern methods of management, like the MBO, and draw a specific attention to attaining results and achieving goals jointly with employees; in addition to their keenness to transfer their administrative tasks/roles from a routine work to a dynamic production. These results result also from the desire of university departments' directors to foster their support for their subordinates. To do so, departments' managers tend to consider the material and human expectations of their workers, improve their

evaluation and accountability for achievement, involve them in assessing their work and setting goals; and thus, empower them by raising their, self-control, their level of responsibility and their decision-making participation. Ultimately, it appears that those findings are consistent with those of Alshehria and Al Shammarib (2021), who indicated that the MBO should be highly implemented inside companies whose directors are conscious of its importance for enhancing the organizational performance.

4.2.2. Results related to Leadership styles within university departments

To determine the trends of the researchers about the variables, dimensions and of the study, the results of descriptive statistics were extracted after calculating the values of arithmetic averages and standard deviations. As shown below, Table 4. presents the values of arithmetic averages, standard deviations and ranks for the different styles of leadership.

Table 4. Arithmetic averages and standard deviations of leadership style

Number	Dimensions	Arithmetic averages	Standard deviations	Ranks	Degree
1	Democratic style	4.05	0.597	1	High
2	Authoritarian style	3.26	0.843	2	Medium
3	Permissive style	3.26	0.852	3	Medium

As shown in Table 9 above, results indicated that the most common approach of leadership practiced among university administrations is the democratic method, which got an arithmetic mean of (4.05) and a standard deviation of (0.597). It is followed by the authoritarian method with an arithmetic mean of (3.26) and a standard deviation (0.843). Finally, the permissive method came with an arithmetic mean of (3.26) and a standard deviation of (0.852). Those findings attest that the university administrators are aware of the importance of delegating equally authority/responsibilities among employees, and empowering them by encouraging them to participate in the decision-making processes of their departments. In addition, universities are also conveyed to put the emphasis on consultation and interactive dialogue between the administration

leading managers and the other workers to take into account their points of view and proposals. Those results are also consistent with Warman et al (2022)'s assumptions stressing that the school administrators who tend to improve professors' performance are usually democratic leaders.

4.2.3. between Management By Relationship and Practiced Leadership (MBO) Objectives testing Style

To reveal a statistically significant association between the sub-constructs of MBO and the three leadership styles practiced in Jordanian universities, the Pearson correlation coefficients were extracted, and the following table dressed below shows the values of these coefficients.

Table 5. Pearson correlation coefficients for testing the relationships between independent and dependent variables' dimensions

Leadership Style	Statistical Indicators	Participation	Goals' Setting	Senior management support	Self-censorship and auditing	Evaluation and accounting for achievement	Management By Objectives
Democratic style	Pearson's coefficient	0.343**	0.557**	0.647*	0.599**	0.607**	0.641**
	Statistical significance	0.000	0.000	0.000	0.000	0.000	0.000
Authoritarian style	Pearson's coefficient	0.144**	0.220**	.213**	0.157**	0.184**	0.219**
	Statistical significance	0.001	0.000	0.000	0.000	0.000	0.000
Permissive style	Pearson's coefficient	0.215**	0.223**	0.190*	0.200**	0.206**	0.247**
	Statistical significance	0.000	0.000	0.000	0.000	0.000	0.000

It can be seen from the above Table.5 that there is a positive relationship between MBO as a whole, all its sub-constructs (i.e. participation, goal setting, senior management support, self-control and audit, evaluation and accounting for achievement) from one side, and the democratic style from the other side. Indeed, all the Pearson correlation coefficients of those corresponding variables ranged between (0.343-0.647) which were statistically significant at the level of significance of ($\alpha \leq 0.05$). Moreover, the findings indicated that there is a positive relationship between the MBO as a whole construct, all its five dimensions, and the authoritarian style. In fact, the values of the Pearson correlation coefficients of their corresponding variables ranged between (0.144-0.220) and their level of significance is statistically significant at ($\alpha \leq 0.05$); Finally, there is also a positive association between the MBO as a whole construct, its five sub-categories and the permissive style of leadership; as the Pearson correlation coefficients ranged between (0.190-0.247) and all of them are statistically significant at the level of significance ($\alpha \leq 0.05$).

Accordingly, and by considering the above results, it appears that management by goals is compatible

with all the leadership styles, including the democratic, authoritarian and permissive ones. It implies that the MBO could be implemented and used in various organizations regardless of their leadership style. This result is attributed to the role of management with the goals of enhancing trust between management and employees, encouraging the organization's people and developing their entrepreneurial spirit and creativity. In addition to increasing production capacity and upgrading the production level as a result of attention to quality and quality at the same time, which contributes to improving performance. It also enables the management to identify potential and actual problems with goals, which increases the possibility of correcting them before they occur, because this management style depends on consultation, participation and coordination. The administration also contributes to the goals of eliminating administrative idleness and slackness.

5. Main implications, limitations, and future research avenues

The scope of this study stems from the importance of the topic it is dealing with, and the interesting results it attained. Such findings have insightful implications for academicians, decision-making parties, and leading managers wherever they are. hoped that the following parties will benefit from the results of the study:

5.1. Theoretical implications

In light of the changes and technological and social developments that universities are experiencing, universities' administration is called upon to deal properly with its employees so that the developmental role of higher education institutions could be easily performed. It is also expected that researchers in the field of management and leadership benefit from the meaningful recommendations of this research to conduct further related studies in the future.

5.2. Practical implications

Leading managers, university administrative directors, and other decision-makers, wherever they are, could learn from the present study how to set common objectives with their employees, and how to guide them towards the best appropriate behaviors they might practice to reach their organizational goals. More precisely, it is expected that directors of Jordanian universities support their university departments on implementing the best convenient policies and strategies, via the practice of modern administrative methods, e.g. the management by objectives (MBO). By doing so, the skills of the administrative leaders will be fostered and their performance will be in turn upgraded.

5.3. Research limitations and future prospective studies

Even if the present research has many insightful implications and meaningful recommendations for academics and practitioners as well, it is not

free of several human, spatial, and temporal limitations, that could be outlined as follows:

First of all, the present investigation was limited to university departments of Jordanian universities; those especially located in Jordan University, Hashemite University, Yarmouk University, University of Science and Technology, Mu'tah University, Tafila Technical University, Jadara University, Middle East University, as well as Aqaba University of technology. Future studies could then be extended to other Jordanian universities, or to higher education institutions located in other countries, so that their results could be widely generalized.

Second, the present study lasted few months, so that its duration was limited to the academic year 2022/2023. To overcome such a limitation, longitudinal futures investigations could be conducted to check whether the obtained findings remain the same for many years

5.4. Recommendations

In light of the results achieved in the current study, it is recommended that Jordanian universities improve their administrative and leadership performance, by following the guidelines proposed hereafter:

1. The establishment of an independent administrative unit concerned with the application of the principles of management by objectives within the organizational structure of attention to human resources.
2. Taking into account the material and human conditions and possibilities when determining the general and special goals of the enterprise and focusing on the goals to be a reference for the decisions taken.
3. Enhancing the communication process between the administration and the staff because of its great role in activating their role in improving the level of performance, in addition to providing them with adequate information about the goals and policies of the University.
4. Holding regular meetings and meetings with employees because of its great role in raising their morale and their sense of importance within the institution.

5. Directing the attention of university departments to the importance of modern methods in management by holding training programs and workshops specialized in modern management methods because of their positive effects on the performance of employees and upgrading them and their performance level.

6. Strengthening follow-up and periodic administrative control and comparing the achieved results with the expected ones according to the determinants and criteria of cost, quality and time.

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Annexure

Annexure 1. Indicators associated to different subcategories of management by objectives

Number	Indicators	Arithmetic averages	Standard deviations	Ranks	Degree
Participation					
1	Employees contribute and participate to the definition and formulation of their managers' goals	3.84	0.917	4	High
2	Employees are free to give their suggestions and opinions while setting goals	3.88	0.847	3	High
3	The department holds meetings to search and consult on the set goals	4.02	0.785	1	High
4	Managers cooperate with their employees in the determination of the appropriate strategies that fit the goals	3.65	0.971	7	Medium
5	Managers help to solve their employees' problems that they are facing while setting goals	3.97	0.814	2	High
6	Employees are involved in arranging goals according to their priorities and scope	3.75	0.910	6	High
7	Workers are involved in determining the body responsible for the implementation and achievement of goals	3.48	0.986	8	Medium

8	Experience and knowledge are exchanged between managers and employees when participating in setting goals	3.76	0.795	5	High
Participation		3.79	---	---	High
Goals' Setting					
9	The sub-goals derive from the general and strategic goals of the university	4.06	0.838	1	High
10	The objectives are set in the light of the identification of the university needs' identification	3.89	0.775	5	High
11	The goals are set with a thoughtful and coherent gradation to be cascaded throughout the whole university.	4.01	0.760	3	High
12	The specific goals are related to each other, and fully integrated into the corporate/policy objectives and instruments of the university	4.01	0.738	2	High
13	The goals of the university are linked to its expected results	3.81	0.843	7	High
14	Goals serve as reference for making any decision	3.70	0.775	8	High
15	Managers take into account the human and material capabilities that are required for achieving their goals	3.88	0.769	6	High
16	The flexibility of goals is taken into account while setting them	4.00	0.777	4	High
Goals' Setting		3.92	---	---	High
Senior Management Support					
17	Managers provide the necessary material and human resources that are required for workers to achieve goals	3.97	0.758	6	High
18	Managers empower their employees in order to achieve goals	3.99	0.767	5	High
19	Managers seek to coordinate efforts between their employees to achieve goals	4.04	0.667	4	High
20	Managers are keen to put the right persons in the right places according to the required goals and capabilities	4.25	0.706	1	High
21	Managers seek to build human relations between employees and superiors and between the employees themselves	4.19	0.689	2	High

22	Managers encourage and reward outstanding people for their work according to the goals that are already set	3.97	0.808	7	High
23	Managers train employees to strengthen their skills	4.06	0.733	3	High
24	Managers pursue justice by avoiding bias while distributing and assigning tasks to workers	3.96	0.709	8	High
Senior management support		4.05	---	---	High
Self-control and auditing					
25	Managers exercise their supervisory role by following up the implementation of the tasks assigned to their employees	4.02	0.729	2	High
26	Managers exercise their supervisory role by measuring the percentage of achieved goals	4.01	0.728	3	High
27	Participating in goal setting and planning gives employees commitment at work	4.03	0.708	1	High
28	Managers promote self-control of their employees by identifying the goals and expected results from them	3.98	0.808	4	High
29	Managers pay attention to the problems and conditions of employees and instill internal control in them to encourage them to sustain more efforts	3.75	0.872	6	High
30	Managers give confidence to employees as a greater motivation for achievement and achieving outstanding performance	3.81	0.895	5	High
Self-control and auditing		3.94	---	---	High
Evaluation and accounting for achievement					
31	Managers recourse to feedbacks as a way to evaluate the performance of employees	3.73	0.837	6	High
32	Managers rely on the method of employees' assessment of themselves within the established methods	3.91	0.745	3	High
33	The progress of work and achievement of goals is periodically measured to adjust plans when needed	3.72	0.813	7	High
34	The information flow system is periodically reviewed to achieve the goals	3.77	0.736	5	High
35	Managers review the communication channels used to ensure the flow of information between the administrative levels	3.91	0.825	4	High

36	Managers inform employees about the results of their performance evaluation	4.06	0.756	1	High
37	Managers hold employees accountable according to the results of the evaluation	3.99	0.781	2	High
Evaluation and accounting for achievement		3.87	---	---	High

Annexure 2. Indicators associated to different subcategories of management by objectives

Number	Indicators of leadership style	Arithmetic averages	Standard deviations	Ranks	Degree
Democratic style					
1	Managers encourage employees to participate in the decision-making process	4.00	0.781	3	High
2	The team is formed according to its members' abilities, background, and qualifications in order to increase its productivity	3.98	0.728	4	High
3	Managers work to achieve justice among employees as much as possible	4.18	0.776	1	High
4	Managers use appropriate methods based on the dialogue for dealing with problems and solving them	4.15	0.865	2	High
5	Managers consider the specific circumstances of each worker	3.92	0.849	5	High
The democratic style		4.05	---	---	High
Authoritarian style					
6	Managers ignore employees while drawing up a work plan and distributing tasks to them	3.28	1.069	3	Medium
7	Managers make decisions individually without the participation of employees	3.17	1.013	5	Medium
8	Managers use the methods of punishment and threats while discussing with their employees	3.40	1.070	1	Medium
9	There is a lack of trust between managers and employees as a result of the short-sighted attitude towards them	3.29	1.038	2	Medium
10	The administration addresses the problems according to its one-stop approach	3.18	1.061	4	Medium

The Authoritarian style		3.26	---	---	Medium
Permissive style					
Number	Indicators	Arithmetic averages	Standard deviations	Ranks	Degree
11	Managers do not show a degree of responsibility when making decisions	3.29	1.057	2	Medium
12	The administration fails to follow up the implementation of most decisions	3.09	1.060	5	Medium
13	The administration loses control and control over employees	3.14	1.023	4	Medium
14	The administrative managers do not provide initiatives that raise the level of their employees' capabilities	3.17	1.057	3	Medium
15	The managers are not interested in establishing relationships with employees that contribute to raising their morale towards work	3.59	1.083	1	Medium
The permissive style		3.26	---	---	Medium