DIMENSIONS OF ORGANIZATIONAL JUSTICE AND ORGANIZATIONAL CITIZENSHIP BEHAVIOUR AND THEIR RELATIONSHIP: A COMPARISON OF PRIVATE HOSPITALS OF TWO CITIES OF TWO NATIONS

A THESIS

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DECLARATION

It is certified that the thesis is entirely my own. The ideas and references cited herein have been duly acknowledged.

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This is to certify that the thesis titled, "**DIMENSIONS OF ORGANIZATIONAL JUSTICE AND ORGANIZATIONAL CITIZENSHIP BEHAVIOUR: A COMPARATIVE STUDY OF TWO CITIES IN DIFFERENT NATIONS**" submitted by **Wajdee Mohammadkair Ebraheem Ajlouni** in the fulfillment of the requirement for the award of the degree of doctor of philosophy in the School of Humanities and Social Sciences, Thapar Institute of Engineering and Technology, Patiala, is a record of candidate own work carried out by him under our supervision and guidance.

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Dedicated To Those

Who Believe That The Feasibility Of The

Knowledge Is Behind its Holiness

and

My Parents

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Abstract

Background and significance: Organizational Citizenship Behavior (OCB) is a discretionary behavior; it is the employees' contributions to an increase in organizational performance. OCB enhances employee satisfaction, quality of care, and patient satisfaction. Organizational Justice (OJ) is an important factor of organizational success; it reflects employees' perceptions of fair treatment. The OJ promotes employee retention and work engagement towards high organizational performance. The OJ is perceived as one of the factors that encourage employees to demonstrate their involvement beyond their duties by making them more satisfied. Perceptions of justice in the workplace are connected to a positive view of OCB that enhances employees' satisfaction. Still, few studies investigated these relations at hospitals. So, it is recommended to investigate this association in health care organizations.

Purpose: This study aims to explore and compare employees' perception levels of OJ and OCB at the private hospitals in the Northern region of Jordan (Irbid province) and India (Punjab state). As well as this, it investigates the effect of OJ on OCB.

Significance of the study: The healthcare sector is the most important sector that is directly dealing with the health of people and their live. Hence the error in the treatment is not accepted and lead to lose their live. OCB and OJ have many advantages to enhance employees' performance that will enhance healthcare service quality. there are very few studies that investigated the relationship between OJ and OCB in Jordanian and Indian healthcare sector. The present study assumes a lot of importance as that the Jordanian hospitals is endeavouring to improve employees' effectiveness and satisfaction; human power is a key in health organization success. However, India has already shown a way to the world in medical tourism. Hence, up to the researchers' level of knowledge, this study is the first that explored the relationship between OJ and OCB and its dimensions in the

private hospitals in North Jordan and India, and compared the perceived levels between the two countries.

Methodology: A descriptive, cross-sectional, correlational, and comparative research design was applied by using convenient sampling methods. A survey instrument with a 1-5 Likert scale was re-designed in line with earlier studies. The Statistical Package for Social Sciences, (SPSS) has been used by applying various statistical tests such as Descriptive Statistics T-test, ANOVA, correlation, regression, Post Hoc Tests using the Scheffe method as well as discriminant analysis.

Results: The perception of employees of private hospitals in India and Jordan on OCB is high. OJ was high in Indian private hospitals only, while in Jordanian private hospitals, it was not; evolutional justice received the highest level in India whereas interactional justice received the highest level in Jordan. Distributive justice ranked last in both countries. Also, Jordanian private hospitals show a statistically significant positive correlation between OJ and OCB at level ($p \leq 0.01$). Regarding the employee's demographics effects, gender was seen to affect evolutional justice, and it affected OCB too in civic virtue in favor of females. The age had an observable impact on all dimensions of OJ except distributive justice and all items of OCB except altruism and sportsmanship. However, a designation affected all dimensions of OJ, while it affected only the conscientiousness of OCB dimensions.

Conclusion: This study aims to explore and compare employees' perceptions level of OJ and OCB at the private hospitals in the Northern region of Jordan (Irbid province) and India (Punjab state). Besides, it investigates the effect of OJ on OCB. The perception of employees of private hospitals in India and Jordan on OCB is high. OJ was high in Indian private hospitals only. Also, Indian and Jordanian private hospitals show a statistically significant positive correlation between OJ and OCB at level ($p \leq 0.01$).

Keywords: organizational justice (OJ), organizational citizenship behavior (OCB), healthcare, Jordan, India

List of Publications

1. **Ajlouni, W. M. E.,** Kaur, G., & Alomari, S. A. (2020). The Impact of Employees' Gender and Age on Organizational Citizenship Behavior Using a Fuzzy Approach. Social Science Computer Review, 0894439320971234. **(Impact factor : 2.696).**
2. **Ajlouni, W. M. E.,** Kaur, G., & Alomari, S. A. (2021). Effective Organizational Justice and Organizational Citizenship Behavior using Fuzzy Logic to Obtain the Optimal Relationship. Quality Management in Health Care. 30 (1), 13-20. **(Impact factor: 0.852).**
3. **Ajlouni, W. M. E.,** Kaur, G., & Al-Gharaibeh, S. (2018). Organizational Justice and Its Relationship with Organizational Citizenship Behavior of Non-Academic Staff Members at Government Universities in North of Jordan. Academy of Strategic Management Journal, 17(6), 1-11.

Thesis Organization

Chapter 1: This chapter includes the Introduction and background, significance, problem statement, and the purpose of the study. Conceptual and operational definitions of the study variables are also included. In addition, an overview of the healthcare systems in India and Jordan has been addressed.

Chapter 2: A comprehensive literature review was conducted using the Medline, Cinahl, Ebscohost, Google Scholar, and Science direct databases using the following keywords: *Organizational Citizenship Behavior (*OCB), *Organizational Justice (OJ), Jordanian Health System, and Indian Health System (IHS).* Furthermore, all keywords were linked with healthcare workers and management. The official websites of the targeted hospitals/healthcare systems were reviewed to obtain related statistical information. So, this chapter includes a review of the main study variables and the related concepts. In addition, issues related to work climates are included to give indications about possible differences between different settings. This chapter consists of main three parts: The first part focuses on what OCB's are, their antecedents, consequences, and OCB in the healthcare industry. The second part focuses on what OJ's are, their antecedents, consequences, and OJ in the healthcare industry. The final part is an overview of the literature that explored the relations between OJ and OCB.

Chapter 3: Includes the research methodology and development of hypotheses. A well-structured and pre-tested questionnaire was used for data collection. To achieve the study aims, a survey instrument with a 1-5 Likert scale (1 = strongly disagree; 5 = strongly agree) was re-designed or re-developed in line with earlier studies. The data collection method is explained in this chapter too.

Chapter 4: Describes the tests that are applied to measure the degree of employees' perceptions of OJ and OCB and the relationships between them such as using descriptive

statistics, t-tests, ANOVA, Post Hoc Tests using the Scheffe method, correlation, and regression techniques.

Chapter 5: This chapter focuses on using a fuzzy approach for hypotheses testing. The definitions used, models developed and the equations used have been provided.

Chapter 6: This chapter focuses on reviewing and discussing the current results with the presenting body of knowledge.

Chapter 7: This chapter have been included implications, recommendations, and finally suggestions for future research.

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List of Abbreviations

Abbreviation	**Full Name**
Organizational Citizenship Behavior	OCB
Organizational Justice	OJ
Statistical Package for Social Sciences	SPSS
Analysis of Variance	ANOVA
And Others	*et al*
Alpha	α
Organizational Citizenship Behavior Questionnaire	OCBQ
Organizational Justice Questionnaire	OJQ
Medium Sample Effect Size	ESs
Discriminant Analysis	DA
Sample	N
Percent	%

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Chapter 1

1. Introduction

The healthcare sector is the most important sector that is directly dealing with the health of people and their lives. Any error in the treatment can lead to loss of precious lives. Feelings of OCB and OJ have proved to contribute positively to quality and work effectiveness in many contexts as well as healthcare. many advantages to enhance employees' performance that will enhance healthcare service quality. The current study aimed to explore and compare the employees' perception levels of organizational justice (OJ) and Organizational Citizenship Behaviour (OCB) at the private hospitals in the North Jordan (Irbid) and India (Punjab). In addition, the effect of OJ on OCB was investigated. Finally, a comparison between Jordan and India regarding the target variables was done. While many studies have addressed the constructs, most of these have investigated the antecedents and outcomes of OJ and OCB.

Moreover, there are very few studies that have investigated the relationship between OJ and OCB in Jordanian and Indian healthcare sector. The present study assumes a lot of importance in that the Jordanian hospitals are endeavouring to improve employees' effectiveness and satisfaction. India has already shown a way to the world in medical tourism. Up to the researchers' level of knowledge, this study is the first that has explored the relationship between OJ and OCB and its dimensions in the private hospitals in North Jordan and India, and compared the perceived levels between the two countries, with the research objectives as follows:

1. To study employees‟ perceptions regarding OCB in private hospitals in India and Jordan.
2. To determine employees‟ perceptions regarding OJ in private hospitals in India and Jordan.
3. To analyze the relationship between OCB and OJ in private hospitals of India and Jordan.

4. To explore the effects of gender, age, designation, years of services, and country on perceptions of both OCB and OJ.

The following hypotheses are proposed based on the above research objectives:

H1: The perception of employees of private hospitals in India and Jordan on OCB is high.

H2: The perception of employees of private hospitals in India and Jordan on OJ is high.

H3(a): There is a significant relationship between OCB and OJ in private hospitals in India.

H3(b): There is a significant relationship between OCB and OJ in private hospitals in Jordan.

H4(a). Gender has a significant effect on both OCB and OJ.

H4(b). Designation affects both OCB and OJ significantly.

H4(c). Age affects both OCB and OJ significantly.

H4(d). Educational level affects both OCB and OJ significantly.

H4(e). Years of service affects both OCB and OJ significantly.

H4(f). Country affects both OCB and OJ significantly.

Many studies have tried to clarify why workers practice voluntary behaviors, even when these behaviors are not officially demanded by the organizational job instructions and are unrewarded (Podsakoff et al., 2000). In 1988, Organ coined the definition of organizational citizenship behavior (OCB) as discretionary individual behavior, not specifically recognized by the formal incentive system and that can facilitate efficient functioning of the organizations when considered as a single unit. By discretion, it means the action, which is not highly ordered by job instructions (Podsakoff et al., 2000). Organ continued his research on OCB, and he clarified the OCB as a multidimensional concept that consists mainly of five dimensions dimensions. The five dimensions are; ‘altruism’ that refers to helping behaviors; ‘courtesy’ refers to collaborating and commitment behaviors; ‘sportsmanship’ denotes forgiveness behaviors; ‘civic virtue’ denotes

shared governance behaviors and ‘conscientiousness’ refers to compliance and attending behaviors (Yaghoubi et al., 2012; Organ et al., 2005).

On the other hand, organizational justice (OJ) is described as an emotional inquiry that emphasizes employees' perception of equity in the organization (Byrne & Cropanzano, 2001). Also, it makes the employees judge whether they are equally or unequally treated (Folger & Cropanzano, 1998). In other words, OJ demonstrates what the organizations can do for their staff to make them feel they are being treated justly. The OJ is categorized into three main dimensions; ‘distributive justice’ which denotes the intention of offering equitable outcomes including promotions and rewarding system; ‘procedural justice’ which is concerned with fair policies and procedure; and ‘interactional justice’ which depicts is the fairness in dealing with employees with respect and justification (Ahmad, 2010; Colquitt et al., 2001; Leung et al., 2001). Distributive justice, according to some researchers, has been the strongest predictor of employee retention (Matarid et al., 2018) whereas procedural justice is mostly affected by work engagement in hospitals (Özer et al., 2017). However, feeling of fairness at the place of work has a significant impact on the organization; it affects the beliefs, feelings, and attitudes of employees. Justice can lead to high employee commitment (Yaghoubiet al., 2011).

Previous research indicates that employee’s perception of justice in the organization is significantly connected to the perception of OCB, which enhances employee’s satisfaction. An employee’s perception of justice is established through a rise or decline in levels of involuntary behaviors. Therefore, a decline of OCB levels can be connected to a lack of organizational perception of justice (Yardan et al., 2014; Moorman et al., 1998). Employee perceptions of OJ have been described to be a major factor that influences OCB (Tayeh, 2012). In addition, it has also been found that hospitals with the lowest employee satisfaction have the least patient

satisfaction (Rosati et al., 2009). Therefore, the decrease in OCB perceptions can be contributed to a lack of OJ awareness (Yardan et al., 2014).

Previous efforts have proved that perception of workplace justice has positively affected OCB at different industrial companies. However, it was found that OCB in public organizations in India was higher than private organizations (Sharma et al., 2011). In addition, in Jordanian public hospitals, the OCB was at a moderately acceptable level (Ajlouni, 2010). Still, few studies have explored OJ and OCB levels or investigated the relations between these two variables in private hospitals.

Therefore, the aim of this study is to explore the significant association between OJ and OCB in hospitals with the objective of helping managers in making strategies that accelerate the adoption of OCB in hospitals. More specifically, the present study aims to explore the employees' perception levels of OJ and OCB at the private hospitals in the northern state of India (Punjab) and north Jordan (Irbid). Besides, it also aims to investigate the effect of OJ and its dimensions on OCB and its dimensions. Finally, a comparison between the two nations is derived. Given this, the results of this study will provide baseline data for more studies.

Another important contribution of the study lies in using the "Fuzzy Approach" to analyze primary data collected for this study. This approach is one of its kind because social science research usually follows the traditional analysis based on SPSS, etc. The results section further will discuss this in detail.

1.1 Operational Definitions and Conceptual of the Studied Variables

1.1.1 Organizational Citizenship Behavior

The meaning of OCB is built primarily on Organ's description (1988) as "discretionary individual behavior, not directly or explicitly recognized by the formal reward system and that in

the aggregate promotes the effective functioning of the organization" (Organ et al., 2005). "Discretionary" means that the specific behavior in a specific context is not an absolute requirement of job directions (Organ et al., 2005). Organ's description of OCB has created a lot of criticism; the concepts' nature makes it difficult to be operationally described (Anita, 2013). OCB is also identified as extra-role activities that may be useful to an organization or employees within the organization, but these behaviors aren't required in the formal job description (Borman & Motowidlo, 1997). Also, OCB refers to voluntary behaviors that go above and beyond the calls of duty and it may contribute to organizational effectiveness (Borman, 2004). Volunteering is defined as "helping without obligation" and they are not required to do this, because of personal relationships (Borman & Motowidlo, 1997).

Organ (1988) defined five dimensions of OCB as 1) Altruism; the supporting behaviors of employees who have work-related issues and to help new employees. 2) Courtesy; communicating according to the protocol, respectfully, and time commitments behaviors 3) Sportsmanship; refers to forgiving behaviors. 4) Civic Virtue; refers to behaviors of shared governance within the organization. 5) Conscientiousness; refers to behaviors other than the occupational needs and the better use of organizational resources, e.g., attendance and compliance (Boerner et al., 2008; Organ et al., 2005). Operationally, for this study, OCB was measured by OCB 1-5 Likert scale; it consists of twenty items, five-pointed Likert scale issues linked to OCB and its variables (altruism, courtesy, sportsmanship, civic virtue, and conscientiousness); ranging from one to five (strongly disagree to strongly agree).

1.1.2 Organizational Justice

Philosophers and social scientists agree that a "just" act is one that one perceives to be good or righteous and that act can be good without being fair or unfair. OJ is linked to the

concept of fairness. OJ is concerned about the employees' feelings of fairness at the organization (Greenberg, 1990). Evolutional, interpersonal, distributive, and procedural are the four components of OJ (Diab, 2015). Distributive refers to outcomes of fairness like pay, rewards, and promotion (Colquitt et al., 2006). Procedural justice is demarcated as the observed equity of the methods of how products are decided (Cohen-Charash & Spector, 2001). Interpersonal justice explains the equity handling that the employee got (Colquitt et al., 2001). Evolutional justice includes unique procedures, methods, and structures that ensure equal consideration of the truths and performance of employees (Diab, 2015).

Based on the equity theory, employees balance between what they give and what they receive from both the organizations and colleagues (Rainey, 2009). A sense of injustice could serve as a signal that demands critical examination (Sen, 2009). The roots of justice can be found in our tendency to affiliate with other people (Folger & Cropanzano, 1998). Byrne and Cropanzano (2001) defined OJ as a psychological inquiry that is directing to the equity perception at the workplace. However, the economic and social analysis identified the realization of justice with what is taken to be the right institutional structure (Sen, 2009). Organizational justice: procedural, interactional, and outcome refers to the levels of employees' perception in the workplace to be fair, people are concerned about justice when they are recipients of behavior and how they act with others (Beugre, 2007).

In the workplace, the workers always tend to compare the benefits and incentives that they receive with their peers for the same amount or kind of work (Judge & Colquitt, 2004; Leventhal, 1976; Adams, 1965). Organizational justice in the job environment allows people to determine whether they are being handled equally or unequally. The importance of justice can be

understood in context of fairness in workplace, by understanding how resources are allocated and how these allocations take place (Folger & Cropanzano, 1998).

Operationally, for this study, OJ was measured using 1-5 Likert scale; it consists of thirty-one items, five-pointed Likert scale issues described OJ and its dimensions (interactional, evolutional, distributive, and procedural); rating from one to five (strongly disagree to strongly agree). A higher mean score of 3 and above indicated that the employee expressed high positive perceptions of OJ.

1.2 Adam's Equity Theory and the Concept of Organizational Justice

Adams (1963) introduced the theory of equity that emerged from theories of exchange, dissonance, and social comparison in an attempt to forecast and understand how individuals interact with each other. Four suggestions illustrate the objectives of this theory:

1. Employees assess their associations with others by evaluating the proportion of received products to their efforts or inputs and then comparing it with other employees at the same job.
2. If employees' outcome to input ratios, versus others is supposed to be unequal, so inequity occurs.
3. The employees get a more stressful feeling when the larger inequality is realized by the person in the shape of excessive or deficient.
4. The more stress a person feels, the more difficult he or she will be to restore equity by reducing distress. Equity recovery techniques involve varying or changing contributions or products, understanding, altering the contrast with others, or ending a relationship.

Equity model focuses on disharmony too. So, in general; an individual may practice various methods to reduce injustice in the case of cognitive disharmony (Adams, 1963) by:

1. Maximizing inputs if they have a lees relationship concerning results (outcomes) and appropriate referent inputs.
2. Minimizing input when they have a great relationship concerning results (outcomes) and appropriate referent inputs.
3. Maximizing outcomes when they have less relationship concerning inputs and appropriate reference outcomes.
4. Minimizing outcomes when they have great relationships to inputs and the referent's outcomes.
5. Take off the exchange unit.
6. Deform input or psychological outcomes.
7. Deform input and reference output.
8. Alteration of the reference.

1.3 Context of Study: Healthcare in India and Jordan

The healthcare sector is the most important sector that is directly dealing with the health of peoples and their live. Hice the error in the tretmant is not acceptable and effected in people live.

1.3.1 Healthcare in India

India has made a significant name for itself in the healthcare sector, particularly in the domain of medical tourism. We observe an increase in foreign patients from countries like Africa, Pakistan, Bangladesh, and the Middle East, to India. These patients seek medical services for complex pediatric cardiac surgeries or for liver transplants. Compared to developed states like North America, United Kingdom, and Europe, they seek these medical services at less price in other countries. For example, in the UK a shoulder surgery could cost £10 000 ($17 460; €14

560), whereas in India it may not exceed £1700 and can be performed within 10 days (Sengupta & Nundy, 2005). Furthermore, public-private partnerships in India have distinct advantages and help to achieve desired health outcomes. Sheth (2012) reported that India has a good quality of private health care even in rural areas due to the availability of good physicians and high perceived quality of care by patients.

In India, public and private sectors are sharing in providing health care, ranking from single doctors to specialist and multispecialty hospitals. The government health care system provide three levels of health care: primary, intermediate, and rehabilitation therapy. In rural parts, the main health services are provided delivered by sub-centers, primary health care centers, and community health care centers. These sub-centers are the first step of care that connects the primary health care system with the community; they provide maternal and child health, healthcare counseling, and disease control for 3,000 to 5,000 inhabitants. The health centers provide medical and preventive health care to 20,000 to 30,000 people with a capacity of four to six beds. While community health centers are having an advanced medical team of four medical professionals and 21 paramedics and other staff, with a capacity of 30 beds; each center contains a laboratory, X-ray, and other facilities. It provides health care for 80,000 to 120,000 inhabitants (Mossialos et al., 2016).

The Indian private health sector is growing rapidly. During the period from 2002 to 2010, the private sector induced more than 70% of the total hospitals' new beds, forming 63% of the overall hospital beds. Additionally, the private hospitals covered about 60 % of inpatient care and about 80% of outpatient care (Gudwani et al., 2012).

1.3.2 Healthcare in Jordan

Jordan is a small, stable, and safe country in the Middle East and it is classified as possessing one of the most advanced medical sectors in the area. However, healthcare workers find themselves in more and more stressful working conditions, due to the alteration of diseases from communicable to non-communicable illness (The National Strategy for Health Sector in Jordan, 2015-2019). In Jordan, the health services are

Chapter 2

Literature Review

2. General Introduction

Organizational citizenship behavior has positive outcomes for employees and organizations. Normally, any organization needs employees who will go beyond their formal job directions, who offer their time and energy for their organization's benefit. So, OCB is not required formally by organizations, but it is employees' contributions to a smoother organizational performance, which in turn will promote its success. The benefits of OCB to the organization, the employee, and customers have been recognized in the literature. Organizations have been looking for organization justice-related factors to adopt these factors towards more fairness and more voluntary behaviors in organizations.

This chapter consists of three main parts: The first part throws light on what OCB is, its antecedents, consequences, and OCB in the healthcare industry. The second part focuses on what organization justice (OJ) is, its antecedents, consequences, and prevalence of OJ in the healthcare industry. Thereafter, a section is included that highlights the relevant studies that have the relationship between OCB and OJ. Finally, the gap in these studies is defined that helped in developing the objectives of the study.

2.1 Organization Citizenship Behaviour (OCB)

2.1.1 Studies Related to Organization Citizenship Behaviour Concepts and Its Dimensions

Historically, the attention towards OCB began when **Organ et al. (2005)** explored the OCB as an employee's readiness to collaborate. In 1983, Bateman and Organ gave the first formal definition of OCB as "Individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate may promote the effective

functioning of the organization" **(Organ et al., 2005; Podsakoff et al., 2000)**. These voluntary behaviors included helping other employees with work-related problems, helping new employees, performing the duties of absent employees due to disease, enhancing an organization's image, and going beyond job performance expectations (**Altuntaş & Baykal, 2014; Organ et al., 2005; Podsakoff et al., 2000)**.

Organ (1988) categorized OCB into five dimensions, which mostly affected the variance in personality and these dimensions are known as the big five dimensions; 1) *Altruism;* the assistant behavior for bolstering the employees who have work troubles and assisting new employees. 2) *Courtesy*; communicating according to a protocol, respectfully, and time commitment behaviors, courtesy is a vital feature of professionalism and customer service strategy of any organization that makes the employee more committed (Asif, Munir, Muneer, & Naeem, 2013). 3) *Sportsmanship*; refers to forgiving behaviors. 4) *Civic Virtue*; refers to behaviors of shared governance within the organization. 5) *Conscientiousness;* refers to behaviors other than the occupational needs and the better use of organizational resources, e.g., attendance and compliance (**Yaghoubi et al., 2012; Boerner et al., 2008; Organ et al., 2005).**

Later on, **Podsakoff et al. (2000)** carefully examined the existing literature related to OCB and other relevant structures. More specifically, the study explored the likenesses and variances in concepts of different sorts of "citizenship behavior" that were defined in the literature. They found that OCB was classified into seven forms (sportsmanship, civic virtue, organizational compliance, organizational loyalty, helping behavior, individual initiative, and self-development).

To examine the relationship between formal and informal volunteer activity with paid job state, **Mutchler et al. (2003),** taken from the Americans' Changing Lives (ACL), who obtained

information from people aged 25 and older in 1986 of 3,617 respondents. The result showed that there was no proof of a relationship between paid work status and informal volunteering. Voluntary behavior was often reflected in two forms, formal and informal. Formal work is unpaid, but it benefits other organizations or individuals, and these are taken upon freely. Informal volunteering included the independent actions out of paid work such as assisting neighbors, friends, and family members.

Furthermore, **Organ et al. (2005)** mentioned that OCB reflected such voluntary behaviors as assisting other employees if they had work-related problems, supporting new employees, carrying out the duties of absent employees due to disease, advancing the organization's image, and going beyond job expected duties performance.

Newland (2012) assessed the type of OCB performed concerning OCB motivators. The researcher expressed that OCB is employees perform out of their work description but it benefits others, so OCB is classified into two types, which are organizational citizenship behavior-individual (OCBI); this directly useful particular individuals and indirectly affected the institute like employees assisting others in absence. Second, OCB-organization (OCBO) is the behavior that has observable useful to the organization such as employees informing previously if they would be unable to come to work. Furthermore, the main motivators of OCB were impression management, prosaic values, and organizational concern. However, workers are more probable to perform OCB rather than OCBI under these OCB motivators.

Shaaban (2018) studied the association between employee motivation and OCB and the role of employee engagement as a mediator. The sample consisted of 300 employees working in the Ministry of Civil Aviation (MOCA). The study included both qualitative and quantitative methods for research. SPSS was used and regression, correlation tests were used to investigate

the relationships. The study discovered that OCB can be developed by applying more external motivation than intrinsic motivation among MOCA workers. The role of mediation for employees' engagement was supported.

2.1.2 Studies Related to Antecedents of Organization Citizenship Behavior

Ehigie and Otukoya (2005) study observed the association between perceived organizational support (POS) and fair interpersonal treatment (PFIT). The study found a positive association between them by applying a correlational research design. The sample included about two hundred lower management employees of a Nigerian government firm. Data have analyzed using Pearson correlation. The result displayed that there was a positive impact of both POS and PFIT on OCB. Finally, management needs to create policies for employees, besides programmers, for promoting both POS and PFIT among Nigerian employees toward more OCB.

Two years later, **Bommer, Dierdorff, and Rubin (2007)** have explored multilevel associations among group-level OCB, individual-level OCB, and work performance. By using a survey approach for data collection of 100 working groups of a manufacturing firm. Data analysis indicated a positive relationship of group-level OCB with individual-level OCB and job performance. The study applied hierarchical regression linear analysis and expressed that great individual-level OCB made more important effects on job performance when compared to group-level OCB.

Continuing the previous work **Shen et al. (2010)** conducted a correlational study with a larger sample of 1000 workers from 10 companies in China. The investigation aimed to explore the impact of diversity management of human resource diversity management on OCB. Data were collected by a questionnaire of three parts. The first part was demographics information, the second part included data for the independent variables (HR diversity management), and the

third section contains the dependent variable OCB. The main result indicated that Chinese employees in an industrial area revealed an additional important antecedent for OCB, which was a human resources management practice by applying compensation diversity.

In Jordan, **Abazeed (2010)** conducted a descriptive and analytic study to identify the psychological empowerment level and its influence on OCB. The study included a randomized sample of 328 employees of Social Security Corporation. Findings showed that psychological empowerment and OCB had high levels. Moreover, psychological empowerment had visible impacts on OCB. Likewise: no statistical differences were recognized in relation to employees' demographics either with psychological empowerment or OCB. In conclusion, the study recommended the encouragement of psychological empowerment and practicing OCB within the social security corporations in Jordan.

Furthermore, an exploratory and correlational study was conducted by **Purnam (2013)** to explore the influences of job satisfaction, organizational commitment, OCB, and organizational culture on organizational performance in the industrial area. A stratified cluster sample of 174 participants of small and medium companies in East Java Province including supervisors and managers was used. The selection of his sample was from this area because they had the potential for being an industrial hub. The results informed that were high influences of organizational culture, organizational commitment, and job satisfaction on OCB and organizational performance.

Huang et al. (2015) in their study under the title "How old I feel matters: Examining age-related differences in motives and organizational citizenship behavior". They explored the effect of public park employee's ages "chronological age and subjective age; the actual feelings of personal aging experiences" and OCB motivators (prosaically and impression management

motives). Researchers evidenced those older employees were involved in OCB due to pro-social motives. Yet, younger employees engaged more in OCB due to impression management.

Alshurideh et al. (2015) investigated the effect of internal marketing elements including employees' motivation, communication, empowerment, and training on OCB on three hundred full-time Jordanian university employees. The findings presented that OCB was positively related to these internal marketing elements. Motivation followed by communication was the most significant marketing element that produced impacts on OCB.

A study was conducted by **Al-Shawabkeh (2017)** which aimed to explore job track development impact on OCB in the municipality in Jordan. The sample size was 82. Hypotheses testing discovered a significant influence of job track development on OCB; about 66 % of OCB variations were linked to dimensions of job track development.

A comparative study was conducted by **El-Badawy et al. (2017)** to assess and compare the effects of employee demographics on OCB in two countries: Egypt and Mexico. Two samples were taken, one from Egypt (127 participants), and one from Mexico (116 participants). The results of the study provided evidence that the OCB level was comparatively higher in Mexico than in Egypt. Additionally, it reported that there was no significant impact of gender, age, years of experience, and educational levels on OCB among both Egyptian and Mexican employees.

2.1.3 Studies Related to Consequences of Organization Citizenship Behavior

Early, in the year **(2000) Podsakoff et al.** did a comprehensive literature review where they studied the previous work on OCB and other related constructs. They found that practicing OCB improved employees' performance and job performance.

Al-Zu'bi (2011) tried to observe the effect of OCB dimensions on knowledge sharing in the Jordanian business environment. Relevant data gathered by a questionnaire that was distributed to workers in the selected organization with a 92 % of response rate. The results revealed that all OCB had a significant association with knowledge-sharing behavior. Moreover, there was a high impact of sportsmanship, conscientiousness, and altruism on knowledge sharing among employees.

Sutharjana et al. (2013) carried out a survey to examine the role of OCB in enhancing patient satisfaction and service quality. The survey targeted women patients who had delivered in the Maternity Hospitals in Denpasar for the second time at least and whose age was above 20 years. The total sample size was 160. Patients reported that OCB improved their satisfaction and the quality of service. So, for a better quality of service, the hospital should focus on developing OCB.

Kılınç and Ulusoy (2014) carry out a study to explore the relationships of OCB, organizational silence, and employee performance among 300 physicians and nurses working in Cumhuriyet University in Turkey. Descriptive; correlational and multiple regression statistical tests were used in this study. The results indicated a significant association between organizational silence, OCB, and employee performance.

In the same year, **Kolade et al. (2014)** surveyed the correlations between OCB, hospital corporate image, and performance. The study sample was 298 patients, nurses, doctors, and

pharmacists; a majority of them were female (66%), who were randomly selected from three moderately sized private hospitals in Nigeria. The study results displayed that regardless of the individual's positive contribution of performance, an inverse covariance between OCB and hospital corporate image was found. In conclusion, the study evidenced that hospitals could advance their performance by applying OCB in addition to a positive corporate image.

One more, correlational study was carried out by **Pourgaz et al. (2015)** to assess how OCB is interrelated with justice awareness and organizational commitment in minor school managers in Zahedan. A questionnaire established by Podsakoff et al. (2000) has been applied to collect relevant data. Based on analyzed data, it was evidenced that was a positive relationship between organizational commitment and equity perception with OCB. Moreover, regarding OCB dimensions, conscientiousness predicted equity perception while complimenting predicted organizational commitment. Finally, potential similar studies on different statistical populations are recommended.

In the same year, **Pivi and Hassan (2015)** targeted to observe how OCB dimensions predicted some organizational issues including job loyalty, job satisfaction, and intentions of job turnover. To achieve the study objectives, one hundred employees were selected conveniently from a private Malaysian firm. A questionnaire was applied to gather relevant data. The analyzed data revealed that OCB significantly predicted job loyalty, job satisfaction, and intentions of job turnover. Besides organizational support, adapting some managerial steps toward accelerating OCB was recommended.

Lastly, based on the cognitive-affective processing system framework and conservation of resources theory, **Koopman et al. (2016)** developed an integrative model, which analyzed the benefits and costs of daily practicing OCB for performers through surveying 82 employees for

ten days. Despite OCB daily practicing positive outcomes, it hindered work-goal progress perceptions. Also, work-goals are progressing mediating the effects of OCB on daily well-being.

2.1.4 Studies Related to Organization Citizenship Behavior in the Healthcare Industry

Farzianpour et al. (2011) conducted descriptive and cross-sectional research that included 117 administrators working in general and special teaching hospitals in Iran where most of them were males (66.7%). Researchers wanted to assess the relations between dimensions of OCB and the demographic of hospital administrators, which could help offer an inclusive program of training and developing the administrators. Results reported statistically significant relations between managers' gender, education, specialization, and OCB. Moreover, this study showed statistically significant differences related to managers' generous behavior; this behavior was somewhat further prevalent among administrators working in general hospitals more than single-specialty hospitals.

One year later, **Intaraprasong et al. (2012)** planned to examine the correlations between OCB and the job satisfaction of healthcare employees. A descriptive study design was applied. The study sample included 296 employees working at a university hospital in Thailand. The OCB level was high; the conscientiousness dimension ranked the highest mean score while sportsmanship was lowest. In a summary, the results of their study discovered that employees were satisfied with their job, thus, in turn, enhanced their practicing of OCB.

Mahnaz et al. (2014) investigated the impact of employees' demographic variables including gender, social state, educational level, and type of job, age, income, society, type of hire, sector/agency, and function position on OCB. 333 employees at teaching hospitals in Tehran were selected based on a multistage sampling method. The analysis of the data collected by the self-reported survey showed that OCB was affected by all demographics except society.

Altuntas and Baykal (2014) carried out comparative research to define OCB stages amongst nurses in Turkey. So, 865 nurses hired in 11 general hospitals located in Istanbul participated in this study. For data collection, an individual information form along with the OCB level scale was used. This survey indicated that nurses expressed high levels of OCB. However, nurses practicing OCB were related to certain personal variables including age, experience in work, change, employed kind, job satisfaction, and turnover. In end, this study proved that OCB had a vital role in enhancing the quality of nursing facilities; nurses who practice OCB should be supported to keep their performances.

In addition to the above, **Chang (2014)** studied the OJ as a moderator between organizational support and OCB among nurses at a large and powerful hospital in Taiwan. The sample included 386 nurses with a high response rate of 96.50%. The main results were a significant effect of organizational support on nursing practices OCB in Taiwan hospitals. The OJ was a desirable moderator in this relation. Based on the study results, more potential attention toward OJ in hospitals is imperative.

Gupta et al. (2016) conducted a study to seek the factors mediating and moderating the relations between achieved organizational support and job outcomes (job engagement and OCB). A self-reported survey instrument was applied to gather data randomly from nurses at nine major Indian hospitals. The final sample included 475 nurses with a response ratio of 63%. The results showed that an effective commitment was mediating the positive relationships between achieved organizational support and job outcomes (job engagement and OCB).

Ürek and Uğurluoğlu (2019) in their study intended to display if perceptions of healthcare providers regarding dimensions of leader-member exchange have any impact on PCB and its dimensions. The sample included healthcare providers (nurses, doctors, administrative

staff, and medical officials) employed in both hospitals (public and private) in Ankara, Turkey. The data was obtained from 423 health professionals and was analyzed by "multiple linear regression tests". The findings showed that healthcare employees had a high level of OCB and an acceptable level of leader-member exchange.

2.2 Organizational Justice (OJ)

2.2.1 Studies Related to the Concept of Organizational Justice

Greenberg (1990), highlighting previous work, which focused mainly on the distributive justice as equity theory, argued that still there were many issues related to OJ that needed more potential effort e.g., empirically distinguishing between distributive justice and procedural justice, testing of the interpersonal elements on procedural justice, and testing of equity theory by new strategies.

By overviewing the empirical research on the theory of organizational justice, **Poole (2007)** proved that teachers, like other employees, perceived OJ based on a wide range of factors. They usually gave attention to the quality of decisions, quality of received treatment, and their long-term relationships within the organization. So, teachers could accept negative outcomes if they perceived procedural fairness, justification of decisions, and were treated fairly with respect. Finally, this study recommended that encouraging teachers and their unions in the decision-making procedure might lead to positive perceptions of procedural justice.

In the context of academic achievement, **Kovačević et al. (2013)** empirically validated the applicability of the OJ concept that developed by Greenberg to investigate it in the field of educational outcomes 253 students in the facility of organizational sciences. To achieve this purpose, the school justice scale established on the organizational justice scale was used (Kovacevic & Zunic, 2011; Colquitt et al., 2001). Researchers hypothesized positive

relationships between OJ dimensions and school success and observed a significant relation between OJ and university marks. Results proved that school achievement was significantly and positively related to OJ dimensions, while university grades correlated only for distributive justice of OJ dimensions. In conclusion, the concept of OJ is applicable in education and valid to evaluate the impacts of justice on educational outcomes.

Most efforts on OJ have explored how the employees psychologically perceived justice or injustice and how they react based on these perceptions, **Cropanzano and Molina (2015)** discussed the previous work-related OJ and concentrated on the various sorts of OJ and the relationships among them. They defined OJ as "an area of study that investigates how and why people come to form judgments of fairness regarding their work settings". Finally, they emphasized the previous evidence that justice is a vital demand of job life.

Since scientists give more attention to exploring employees' perception of justice, few are concerned about what justice is, **Yadav and Yadav (2016)** analyzed the approaches, dimensions, and outcomes of OJ based on previous works. They built a framework that explained the main approaches of OJ which are; instrumental approach (Economic benefits), relational approach (Feeling of self-worth), and ethical approach (Human Dignity). The main three dimensions of OJ that were recognized included; distributive justice (Outcome justices), interactional justice (Behavior justices), procedural justice (Process justices), and how they were positively affected in some managerial issues as turnover intentions, strategic goals trust, detrimental behavior, job performance, OCB, human resource and organizational commitment. Finally, this study emphasized the significance of justice for long-term organizational sustainability.

A study by **Rupp et al. (2017)** provides a historical review of the conceptualization and measurement of organizational justice and they demonstrate how, over time, a dominant norm for conceptualizing and measuring justice has emerged. The authors posit that although consistent conceptualization and measurement across justice studies can enable the accumulation of knowledge, if the dominant approach is incomplete, this can impede the accumulation of knowledge and risk construct reification. They suggest that these risks are high given that (1) contemporary approaches to measuring fairness perceptions fail to capture the full domain of organizational justice as it was initially conceptualized by early scholars; (2) despite a foundation of "classic" theories, their field has yet to systematically map the justice domain; and (3) the normative operationalization of organizational justice are based on observations that predate the 21st century workplace.

2.2.2 Studies Related to Antecedents of Organizational Justice

Dogan (2008) in his study tried to explore the association of procedural justice 'perceptions with employees' intent to remain job in the organization in a Motorcycle Company in Turkey. Moreover, it attempted to assess the impact of procedural justice and employees' characteristics variables on their intents to stay in a job. The questionnaire was applied for the purposes of this study. The final sample included 106 employees, most of them were male (85.8%). The result indicated that procedural justice strongly impacted and predicted an employee's intentions to stay in a job. Also, positive associations between procedural justice and employees' characteristics variables presented with the expectation of vocational experience and educational degrees were found.

Employees' characteristics, **Cole et al. (2010)** investigated the associations between OJ and drawing results with emotional exhaustion as a mediator between them. Findings showed

that employees' psychological health influenced their perceptions of OJ; emotional exhaustion was discovering to completely facilitate the association among interpersonal justice and both organizational loyalty and turnover intentions among military personnel.

Choi (2011) reported that OJ was related to employees' job satisfaction, administrators, administration, and turnover intent included 24 federal agencies. The results expressed that employee gender was found to moderate the association between OJ and employee trust in their managers. Women were more trusted in their managerial role than men, whereas men were trusted more in their managerial role.

Another descriptive study by **Gim and Desa (2014)** looks into the correlation between procedural justice, distributive justice with the intent to leave the work via affective commitment among working adults studying in the School of Distance Education of University Sains Malaysia. The overall participants were 226 employees. Their finding showed distributive and procedural justice had a positive relationship with affective commitment. Still, the affective commitment had a negative significant effect on intent to leave the work; the type of organization had not to moderate this relationship. Also, an affective commitment was mediating the association between distributive and procedural justice with intent to leave the work.

Wu and Xiao (2014) in their study proved that OCB was positively correlated with human resource practice while OJ mediated this relationship.

Another study concerned with the effect of procedural and distributive justice was carried out by **Haynie et al. (2016)**, who built a simple model that explored the mediating effects of job engagement between OJ dimensions and job behaviors and approaches including work outcomes of job attitude, satisfaction, and OCB. The results indicated that job engagement mediated the

relationship between distributive justice with work behaviors and attitudes. Otherwise, a significant and indirect effect of procedural justice on work outcomes it found.

Castillo and Fernandez (2016) attempted to recognize the effects of OJ dimensions on nonstudents' satisfaction. Researchers built a questionnaire based on previous work for Walker (1975) and Greenberg (1990) to test the proposed hypothesis. The result indicated a positive impact of personal justice, distributive and informational justice on students' satisfaction.

A study by **Matarid et al. (2018)** discovered the relationship between OJ and employee's demographic characteristics and its impact on employee retention in five private universities in the Kingdom of Bahrain. A stratified sample of 207 faculty members who were working in five selected universities was used. The main results explored the positive impacts of OJ and its dimensions on faculty retention; at the same time, distributive justice was the strongest predictor of faculty retention. Furthermore, a significant relationship between personal demographics included age, educational level, and experience, and total OJ and its dimensions, but insignificance between educational level and interpersonal justice was explored.

2.2.3 Studies Related to Consequences of Organizational Justice

Moliner et al. (2008) examining a model of extra-role customer service (ERCS) among 317 employees. A study suggested that OJ promotes well-being at the job through low burnout and high commitment. The main results reported that OJ and its dimensions considerably affected employee well-being at job, and encourages extra-role customer service.

Kumar et al. (2009) worked to assess the effects of OJ in worker satisfaction and commitment hoping to help managers attract optimistic attitude and behavior of employees through applying OJ. The sample consisted of 128 employees working in medical school. Both procedural and distributive justice predicted organizational loyalty. Finally, their findings

showed that workers who perceived justice in the workplace were less likely to leave work because they were satisfied and committed to their organizations.

Choi (2011) detected how perceived OJ relates to works job-related behaviors including job satisfaction, trusting managers and administration, and turnover intentions, and assessed the differences in these relationships according to gender. The study revealed that OJ positively affected employees' job satisfaction, confidence in administrators and administration, and negatively affected turnover intentions. More deeply, distributive justice was the most significant OJ dimension that was strongly connected with job satisfaction, trust in management, and intent to leave the work. Finally, gender differences indicated that women had higher levels of confidence in administration than men as they perceived procedural justice, where men had higher levels of confidence in the administration, they perceived high levels of interactional and distributive justice.

In Jordan, **Almansour and Minai (2012)** checked the impact of OJ on innovative behaviors. They found that only interpersonal justice had a significant positive correlation. The feeling of being treated with respect creates an employee to be more pioneering in his organization.

Iqbal (2013) showed the associations of OJ dimensions with job satisfaction and work performance. Data was gathered through a self-reported questionnaire distributed among employees of educational institutes. The result showed that job satisfaction was related to procedural and interpersonal justice, whereas distributive justice had no significant influence on job satisfaction.

A study by **Afshar et al. (2013)** to discovered the association between OJ and organizational loyalty among the librarians working in Iran. The study result proved that being

more committed to the job will lead to more organizational advancements. However, managers and librarian employees in Iran expressed more commitment when they had more OJ with a more significant effect of interactional justice.

Another correlational study was by **Moazzezi et al. (2014)** assess the impact of OJ on job performance. A classified random method for selecting a sample was used; a hierarchical regressions trial was used to understand the relationships between the studied dimensions. The results labeled positive associations between the three OJ dimensions and employees' job performance and confidence in their leaders. Moreover, women showed maximum levels of confidence in management compared to men in their perception of procedural justice.

Sert et al. (2014) surveyed the relationships between OJ, ethical climate, and perceived labor-related stress. The study was conducted in 44 different Turkish companies with a total sample of 915 employees. The findings showed labor-related stress significantly but negatively correlated distributive justice and procedural justice. An ethical climate was associated negatively with labor-related stress too. Finally, promoting an ethical climate and OJ could be useful in reducing perceived labor-related stress among employees.

Akram et al. (2016) discovering the effect of OJ on pioneering work behavior. Their findings showed that perceived OJ positively encouraged the pioneering behavior of Chinese employees.

Indirect effects of OJ on employees' affective organizational loyalty as mediating via job satisfaction were studied by **Suifan (2019)**. The findings proved that OJ positively and significantly affected effective organizational loyalty, while job satisfaction mediated this association. Adapting this model could be useful because it focused on the indirect relationship

of OJ and affective organizational loyalty in contrast to the former studies that look for a direct effect relationship.

2.2.4 Studies Related to Organizational Justice in Healthcare Industry

Posthuma et al. (2007) found that the procedural justice dimension got a strong predictor of turnover behavior. More specifically, the effects of advance notice and consistency variables of procedural justice on turnover in the job were significant.

Another study that targeted nurses was conducted by **Rezaiean et al. (2010)** in an attempt to recognize the most important organizational factors that have impacts on employee' behaviors, attitudes, and interactions hoping to enhance their OCB. A random sampling of 129 nurses working in one of Tehran hospitals. As a result, OJ had a positive and beneficial impact on OCB that was mediated by the commitment and job satisfaction.

Two years later, **Yaghoubi et al. (2012)** study the relationships between OJ and OCB among nurses. This study found that nurses' perceptions of OCB and OJ were average. Besides, OJ had no significant impacts on OCB in civic virtue and sportsmanship dimensions. While OJ had a positive effect on OCB in courtesy and conscientiousness.

More specifically, **Sarvestani et al. (2016)** conducted a descriptive and correlation study to evaluate the effects of OJ on OCB of workers in four academic and public hospitals of Shiraz in Iran and were Namazi, Shahid Faghihi, Shahid Dast Gheib, and Ali Asghar. This study included all employees working in various groups of nursing (Para-clinical, official, and support) and their total number was 4055. A random sampling of 260 was used for the study. Researchers found associations between OJ and deontology in Faghihi and Namazi hospitals, and altruism, citizenship perfection, and politeness with organizational justice only in Namazi hospital.

Another descriptive correlational study was conducted by **Demirkiran et al. (2016).** They analyzed the relationships between OJ dimensions and OCB dimensions in public hospitals in Turkey. Questionnaires of OJ and OCB were applied to gather related data. The study indicated that the OJ was high, whereas their perceptions of OCB were moderate. The association between OJ dimensions and OCB dimensions was significant and positive. Finally, only procedural justice and interactional justice dimensions of OJ significantly affected OCB.

Özer et al. (2017) performed a study to test the influence of OJ on work commitment among healthcare workers working in a governmental hospital in Turkey. Data was gathered by a self-reported questionnaire by 414 healthcare employees. The result showed that work engagement levels improved related to employees' feelings of OJ. Procedural justice was a more positive impact on procedural justice than distributive and interactional justice.

2.3 Relationship between Organizational Justice and Organization Citizenship Behavior

The strong relationship between Organizationa JJustice and Organizational Citizenship Behaviour was approved by a study by **Karriker and Williams (2009)** under the title of "Organizational justice and organizational citizenship behavior: A mediated multifocal model". This study proved the positive effects of OJ on OCB, particularly when mediating the desirable relations between supervisors and their subordinates.

In Jordan, **Ajlouni (2010)** assessed the impact of OJ on OCB. Also, it explored the levels of OJ and OCB and their relation to demographic characteristics among healthcare employees working in Jordanian public hospitals. The results showed that OJ and OCB were acceptable and within a moderate level. In addition, there was a positive significant relationship between OJ and OCB.

Two years later, **Golparvar and Javadian (2012)** used a descriptive research to examine the association between OJ and OCB with equity sensitivity as a moderator. The results showed that there was a positive association between OJ and OCB moderated by equity sensitivity. Helping behavior, sportsmanship and civic virtue were positively correlated to interpersonal justice. Additionally, civic virtue and sportsmanship were associated with distributive justice; sportsmanship was also associated with procedural justice.

In India, a correlational study by **Mathur and Padmakumari (2013)** evaluated workers' perception of OJ and its relations with OCB. A significant effect of OJ on OCB was found. Also, interactional justice was the predictor of OCB. Finally, gender was reported to have a positive impact on interactional justice.

Yardan et al. (2014) this study explored the impact of employees' perception of OJ on OCB in hospitals. The sample included 162 workers (58.27%) including nurses, laboratory technicians, midwives, and medical secretaries. The result indicated that conscientiousness and courtesy related positively to distributive justice, whereas interpersonal justice had more impact on conscientious and civic virtue. Generally, researchers found that OJ perception explained 3.1% of the OCB in Turkish public hospitals which meant that improving employees' perceptions of OJ could positively enhance OCB in hospitals.

An analytical and descriptive research approach was applied by **Abosmaan (2015)** to analyze the connection between OJ and OCB as police officers' perception in the Gaza strip. A questionnaire was randomly distributed to a sample size of about four hundred police officers. The level of OJ was acceptable, whereas interpersonal justice ranked highest and distributive justice ranked the lowest. On the other side, the OCB level was high.

Ismail (2015) observed the mediating role of organizational confidence among the relation between OJ and OCB. The study showed that mediating effect of confidence between OJ and OCB.

One year later, **Demirkiran et al. (2016)** conducted a study in Turkey to study OJ and OCB and their relationship in public hospitals. The researchers showed that employees' perceptions of OJ were high, while their perceptions of OCB were moderate. Concerning the association between OJ and OCB, the study revealed a significant association between the dimensions of OJ and OCB.

Bostan and Kiliç (2017) tried to explore the influence of OJ on OCB through healthcare employees' perception, hoping to help managers in taking decisions toward more OCB in hospitals. This study included 346 health employees working at three hospitals in Turkey. The study showed that there was a positive correlation between OCB and OJ. Also, interactional justice positively affected OCB in consciousness and courtesy dimensions while distribution justice had a negative effect on OCB.

In India, recently **Majeed et al. (2018)** carried out a descriptive and correlational study, which targeted the teaching staff of the University of Kashmir. For achieving the study purposes data was collected by OJ and OCB questionnaires respectively from a random sample of 90 employees. The results proved that OCB positively correlated to OJ. Procedural justice emerged as the best predictor of OCB.

Ozsahin and Yurur (2019) reported a quantitative study to answer the question: "Does organizational justice increase or decrease organizational dissent?". The results revealed that there was a positive impact significant of procedural and distributive justice on upward organizational dissent. While interactional justice appears to have a non-significant relationship

with upward organizational dissent. Finally, there were no positive correlations of procedural, distributive, and interactional justice with latent organizational dissent.

Dinpanah and Naeimian (2019) conducted research between OCB and empowerment among extension experts in Iran. The results revealed that OCB in altruism, conscientiousness, civic virtue and courtesy, have a positive significant relationship with empowerment. Courtesy and conscientiousness clarified 41.2% of the deviations in the experts' empowerment.

Salam (2020) evaluated the impact of organizational justice on organizational citizenship behaviors among nurses. The results found that distributive and interactional justice of OJ affected OCB, while procedural justice did not affect OCB among nurses.

2.4 Gaps of the Study

Although there have been many studies about OJ and OCB, most of them are descriptive that investigate the antecedents and outcomes of OJ and OCB. There are very few studies related to the association between OJ and OCB in the healthcare sector.

To the level of knowledge of the researcher, only one study was found in Jordan that examined the relationship between the Government Ministry center in Jordan, OJ, and OCB. However, no study has focused on private hospitals in Jordan. Additionally, even very extensive research failed to yield any study that investigated and compared these concepts in the two countries of India and Jordan.

Hence, this study is the first study that explores OCB and OJ in private hospitals in the North parts of India and Jordan. In addition, it examines the effect of OJ and OCB and their dimensions. Finally, the results of this study would be helpful in developing protocols and establishing educational and training programs for managers to enhance OJ and OCB in Indian and Jordanian private hospitals.

Finally, the study aimed to explore the perceptions regarding OJ and OCB in health care providers working in Indian and Jordanian private hospitals. Moreover, it also studied the presence of a relationship between OJ and OCB. The effect of certain demographic variables was also studied. A natural outcome was a comparison of these constructs and demographic variables between the two countries. Specifically, the study addressed these research objectives:

1. To study employees' perceptions regarding OCB in private hospitals in India and Jordan.
2. To determine employees' perceptions regarding OJ in private hospitals in India and Jordan.
3. To analyze the relationship between OCB and organizational justice in Private hospitals of India and Jordan.
4. To discover the effects of gender, age, designation, educational level and years of service on perceptions of both OJ and OCB.

The next chapter deals with the research design and methodology used in the research. Hypotheses development based on the objectives is also described in the chapter.

Chapter 3

Methodology of Research

3.1 Preview

This research aimed to explore the employees' perception levels of OCB and OJ at the private hospitals in Jordan (Irbid city) and India (Punjab). It investigated the relationship between OCB and OJ in both countries. In addition, it studied the impact of demographics variables including; age, gender, educational level, designation, years of service, and country on employees' perception of OCB and OJ. This chapter explains the methodological approach that was followed to test the research objectives including, research design, research setting, sample selection, instruments used, pilot study, and data collection procedure.

The research objectives as stated earlier are as follows:

1. To study employees' perceptions regarding OCB in private hospitals in India and Jordan.
2. To determine employees' perceptions regarding OJ in private hospitals in India and Jordan.
3. To analyze the relationship between OCB and OJ in private hospitals of India and Jordan.
4. To explore the effects of gender, age, designation, years of services, and country on perceptions of both OCB and OJ.

The following hypotheses are proposed based on the above research objectives:

H1: The perception of employees of private hospitals in India and Jordan on OCB is high.

H2: The perception of employees of private hospitals in India and Jordan on OJ is high.

H3(a): There is a significant relationship between OCB and OJ in private hospitals in India.

H3(b): There is a significant relationship between OCB and OJ in private hospitals in Jordan.

H4(a). Gender has a significant effect on both OCB and OJ.

H4(b). Designation affects both OCB and OJ significantly.

H4(c). Age affects both OCB and OJ significantly.

H4(d). Educational level affects both OCB and OJ significantly.

H4(e). Years of service affects both OCB and OJ significantly.

H4(f). Country affects both OCB and OJ significantly.

3.2 Design and Analysis of Research

Cross-sectional, correlational, and comparative research methods were used to collect data for the present study. This design is suitable to examine the association between the studied variables and helps in establishing comparative and baseline data about the concepts of interest. The Statistical Package for Social Sciences (SPSS) was used. Descriptive and inferential statistics were performed to answer the study questions. This chapter also contains the description of the participants' demographics, T-test, ANOVA, multiple regression, and Pearson correlation.

3.3 Research Setting

The private health care sector in India and Jordan was the context in the current study. The selected Indian hospitals provide comprehensive medical care as well as tourist care for about 3.02 crore (Punjab Population, 2011-2018). Indian private hospitals are growing rapidly. From 2002 to 2010, the private sector induces more than 70% of the total hospitals' new beds, forming 63% of the overall hospital beds (Gudwani et al., 2012). At this time, the private hospitals covered about 60% of inpatient care and about 80% of outpatient care (Ministry of Health and Family Welfare, 2016). The private and the public are the two main sectors in the Jordanian healthcare system. These sectors contain primary healthcare clinics, hospitals,

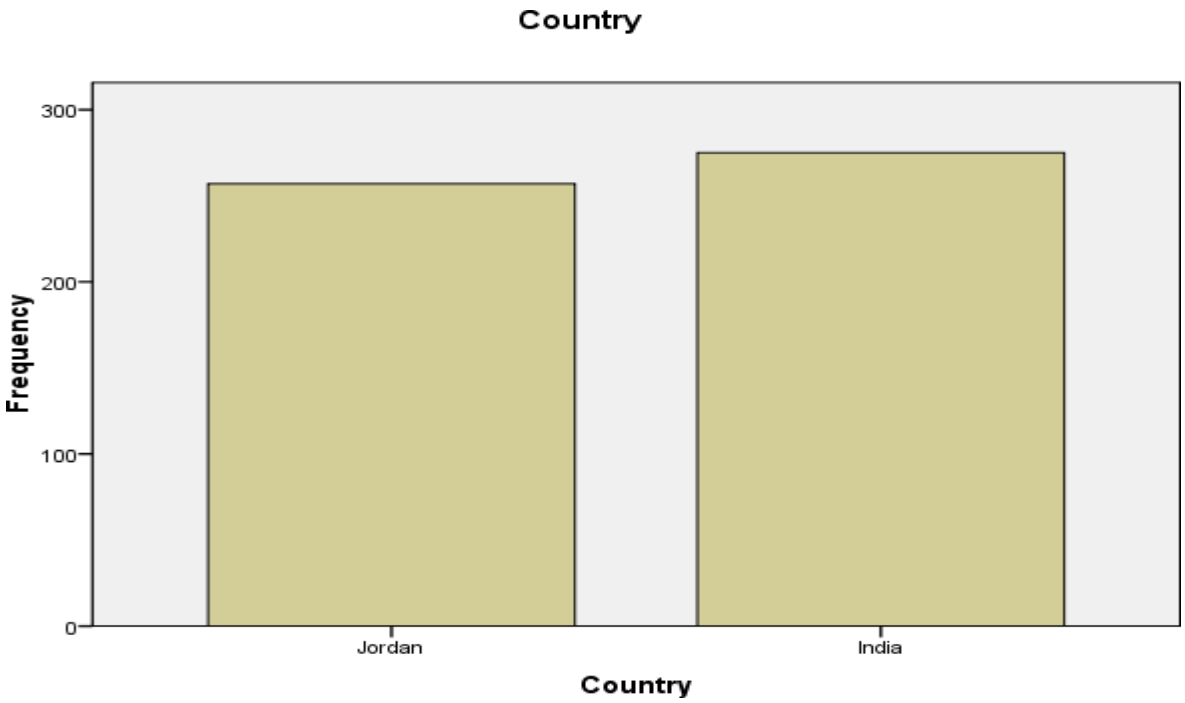
pharmacies, and other supplementary health services. The private sector induces 35% of the total hospitals' beds (Nazer & Tuffaha, 2017). The biggest one of these private hospitals has about 250 health workers and it provides care for Jordanian people and Syrian refugees in co-operation with Medicines Sans Frontiers.

3.4 Sample and Demographics

The target population was all healthcare workers in Indian private hospitals in Punjab and Jordanian private hospitals in Irbid. The sample size was calculated based on Cohens' statistical power analysis (medium effect size, Power analysis of 80%, and significant criterion alpha 0.05) for ANOVA test, which used for three groups or categories resulted in a sample size of at least 156 (3×52) (Cohen, 1992). However, after an initial screening, 532 questionnaires (257 from Jordan and 275 from India) were filled by the respondents for the current sample for further analysis and understanding. A brief outline of the sampling is as follows:

Figure 1:

Distribution of Respondents Based on the Country

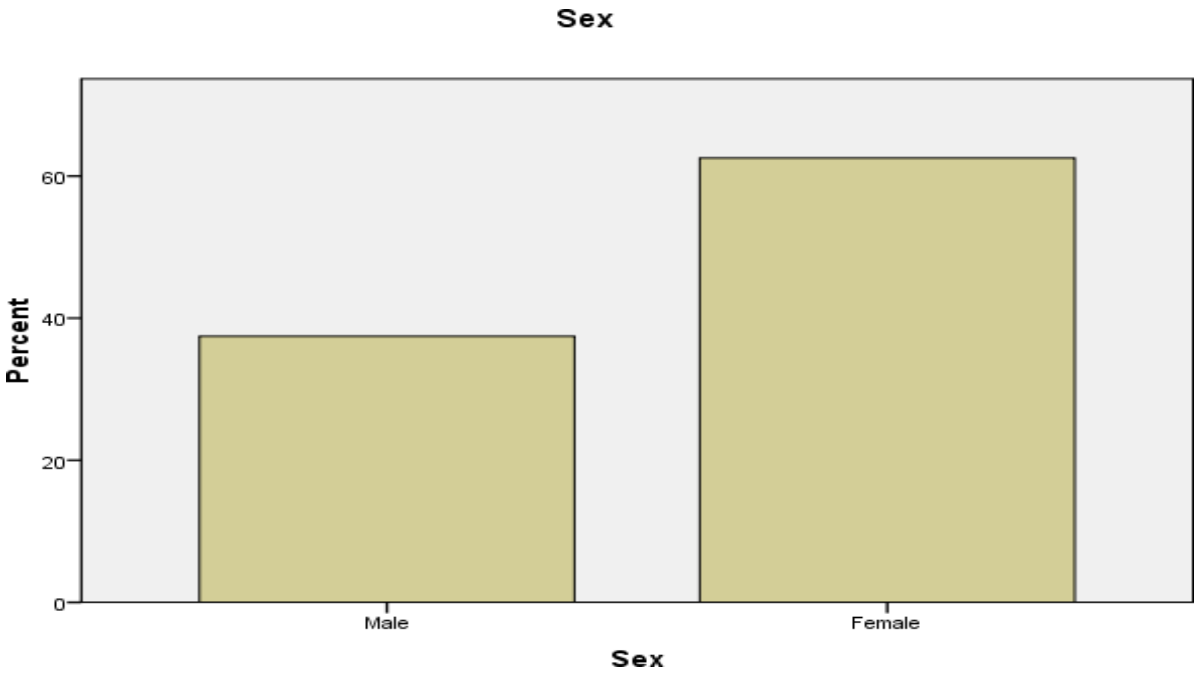


3.4.1 Indian Sample

The majority of respondents (62.5%) were females, and 37.5 % were males. The sample outline on the base of gender is revealed in Figure 2.

Figure 2:

Gender of Indian Sample



The sample profile based on the designation is shown in Figure 3. The respondents in the nurse category were more than the doctors and others were 50.2, 25.5, and 24.4 respectively.

Figure 3:

Designation of Indian Sample

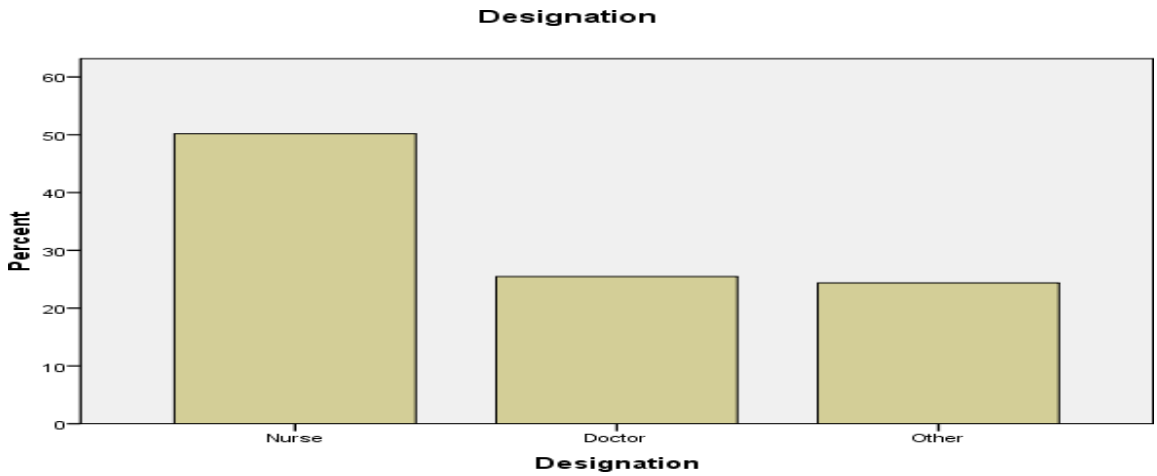
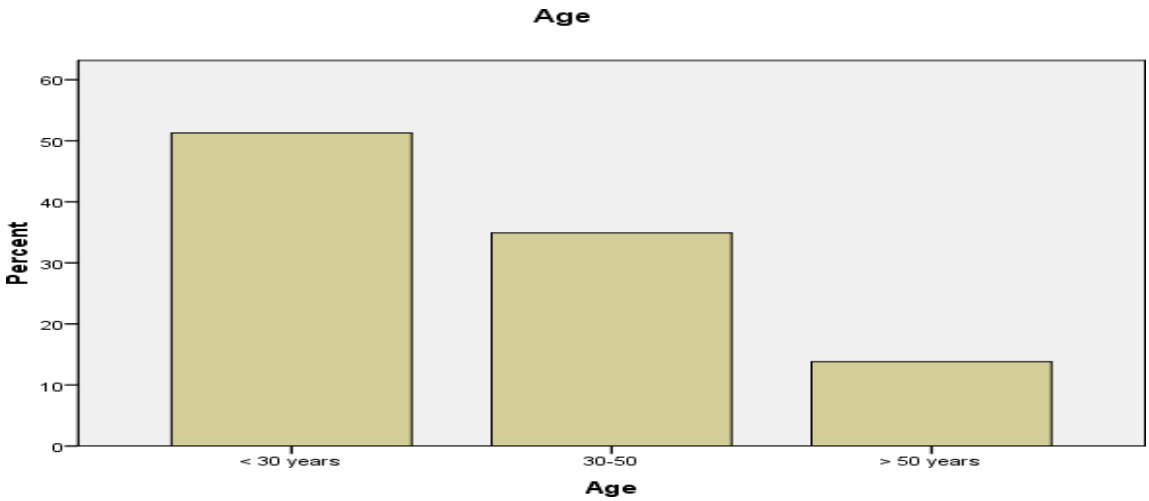


Figure 4 provides the sample outline based on age. The majority of the respondents (51.3%) aged less than 30 years, followed by 34.9 % aged between those in the age categories of 31 to 50 years, and 13.8% over 50 years of age.

Figure 4:

Age of Indian Sample



The sample profile based on education is shown in Figure 5. Workers holding bachelor's degrees represented 40.7% of the respondents, while 35.3% were holding a diploma degree, and 24.0% were post-graduates.

Figure 5:

Education of Indian Sample

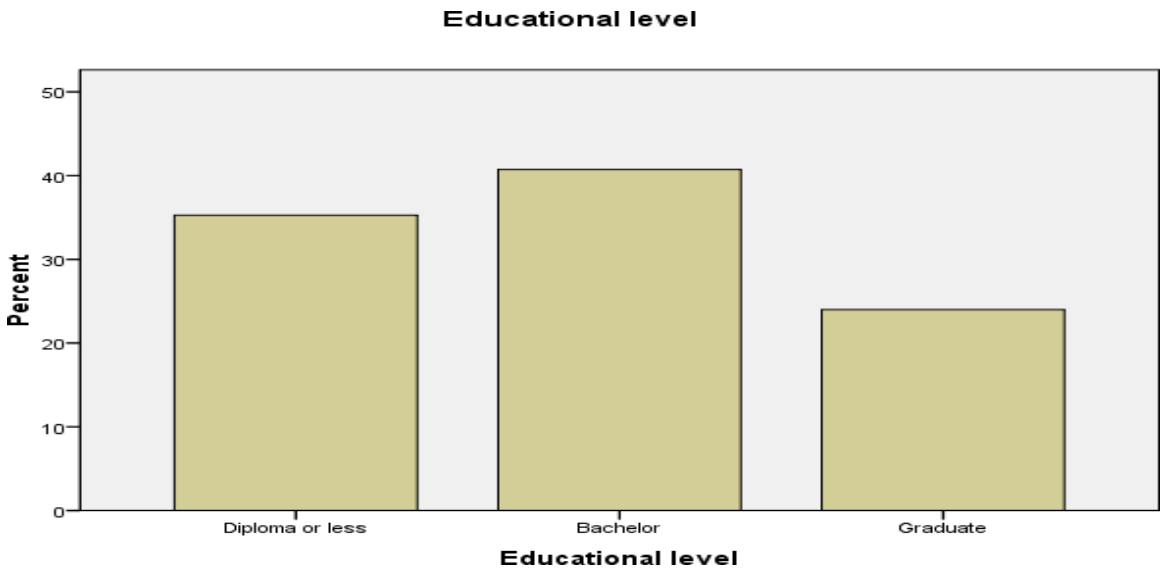
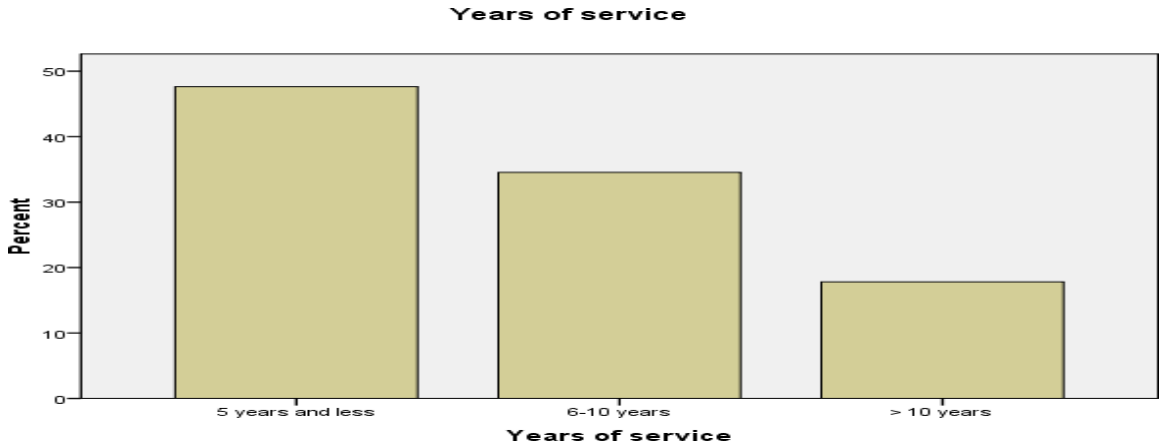


Figure 6 represents respondents' distribution based on years of service. The majority of the respondents, i.e., 47.6% had years of service of 5 years and less, while the remaining 34.5% represented the years of service category of fewer than 10 years, and 17.8% represented more than 10 years of service.

Figure 6:

Years of Service of Indian Sample

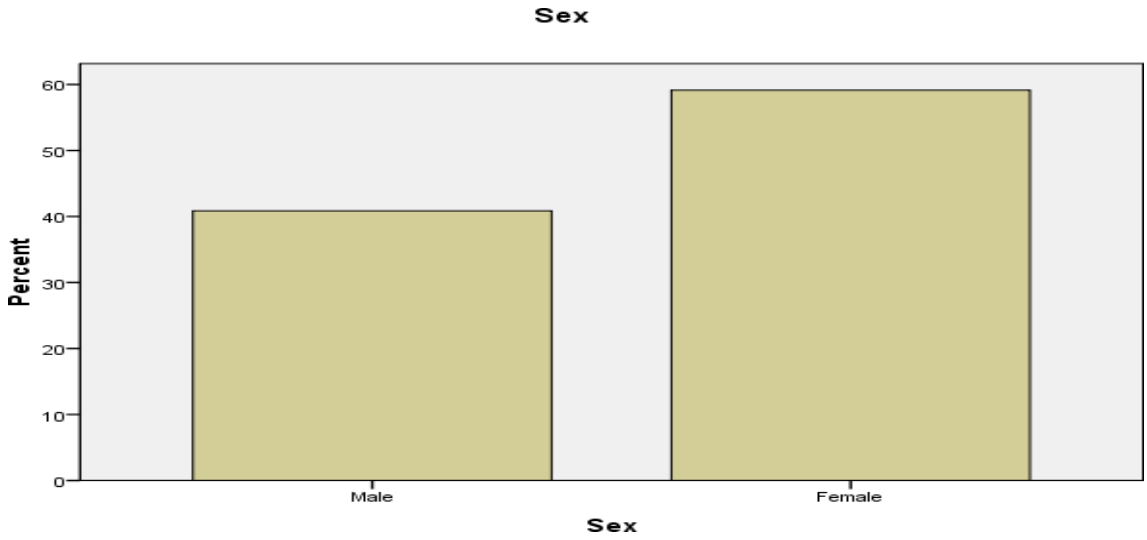


3.4.2 Jordanian Sample

Of the total 257 participants, 40.9% were male; and the remaining 59.1% were female. The sample profile based on sex is shown in Figure 7.

Figure 7:

Sex of Jordanian Sample



The sample outline basis on the designation is revealed in Figure 8. The nurses presented 31.5%, and doctors presented 9.4% of the respondents. While other health care workers presented 59.1% of the respondents.

Figure 8:

Designation of Jordanian Sample

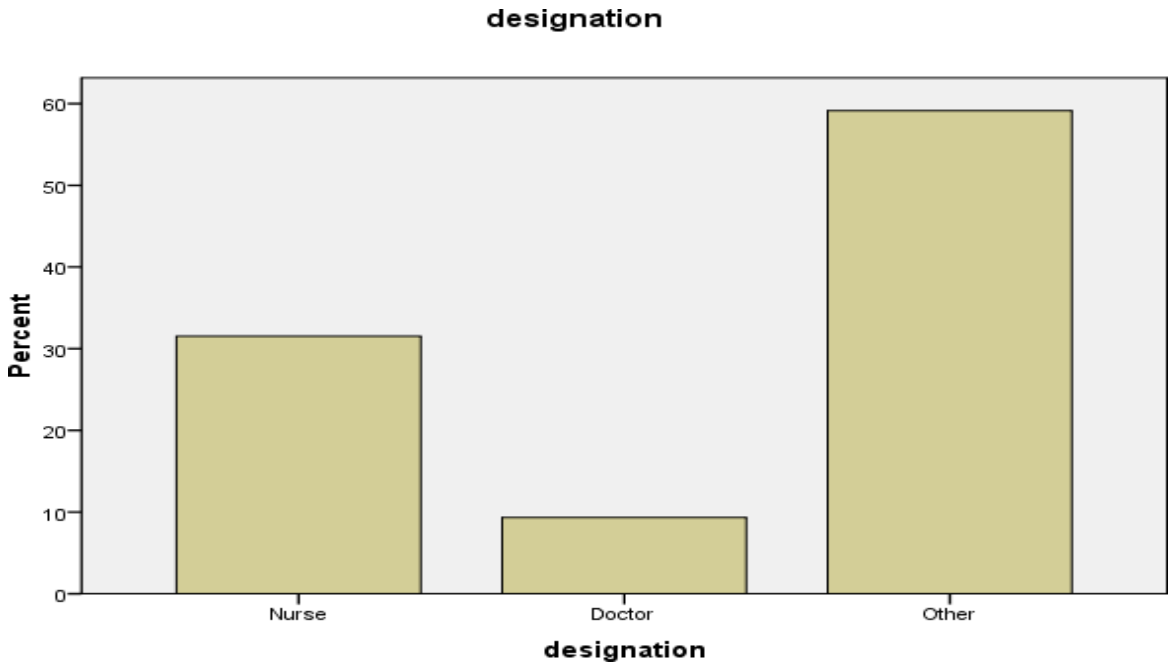


Figure 9 represents the respondents' distribution basis of age. The higher percentage (43.2%) of the respondents aged between 31 and 50 years, followed by 42.8% of respondents aged 30 years or less, while 14% of the respondents were older than 50 years old.

Figure 9:

Age of Jordanian Sample

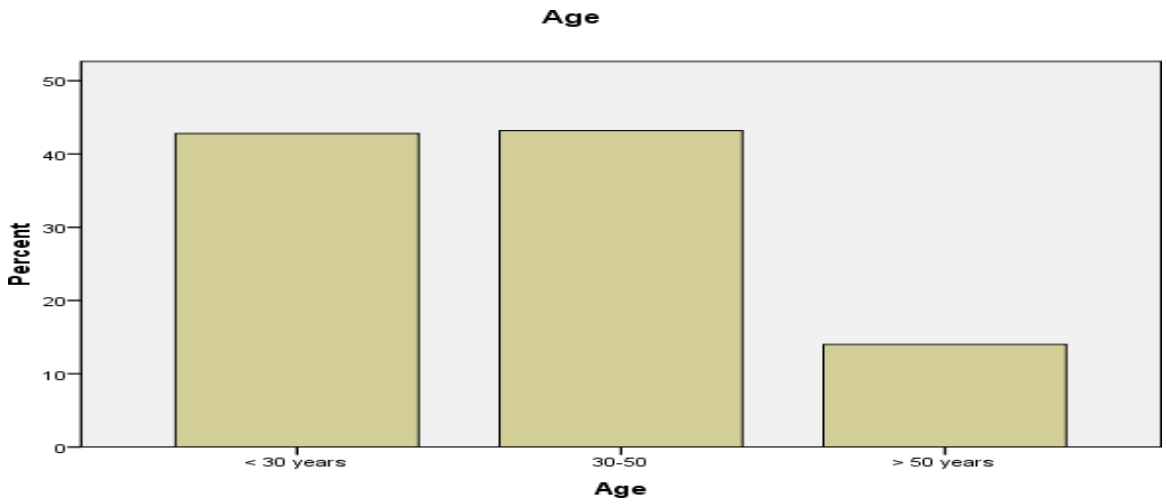


Figure 10 provides the sample outline on the basis of education, 48.6 % of respondents had a diploma and 45.5 % had bachelor's degrees, and 5.8 % were post-graduate.

Figure 10:

Education of Jordanian Sample

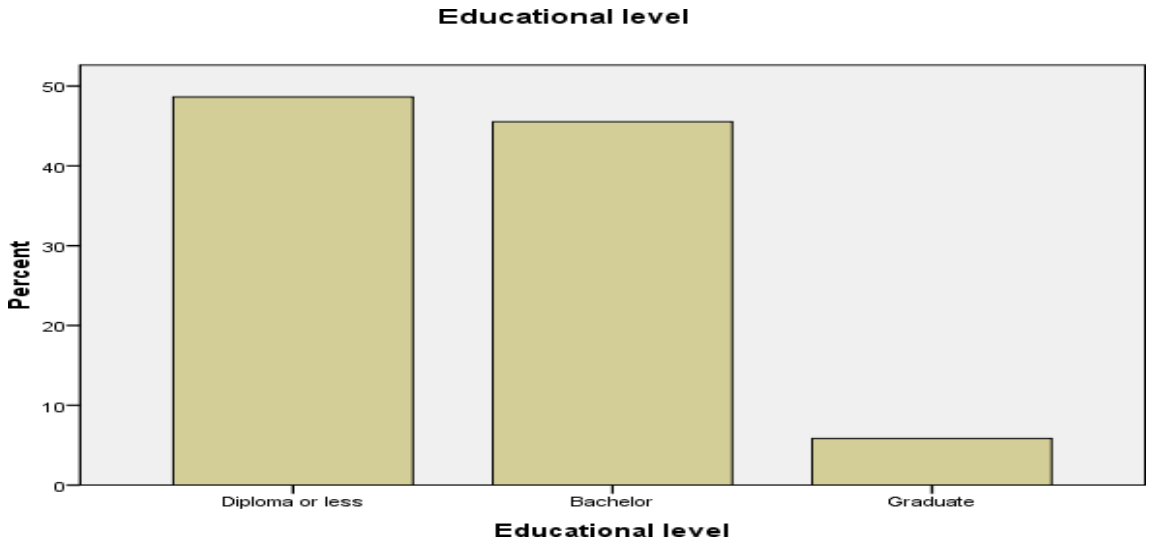
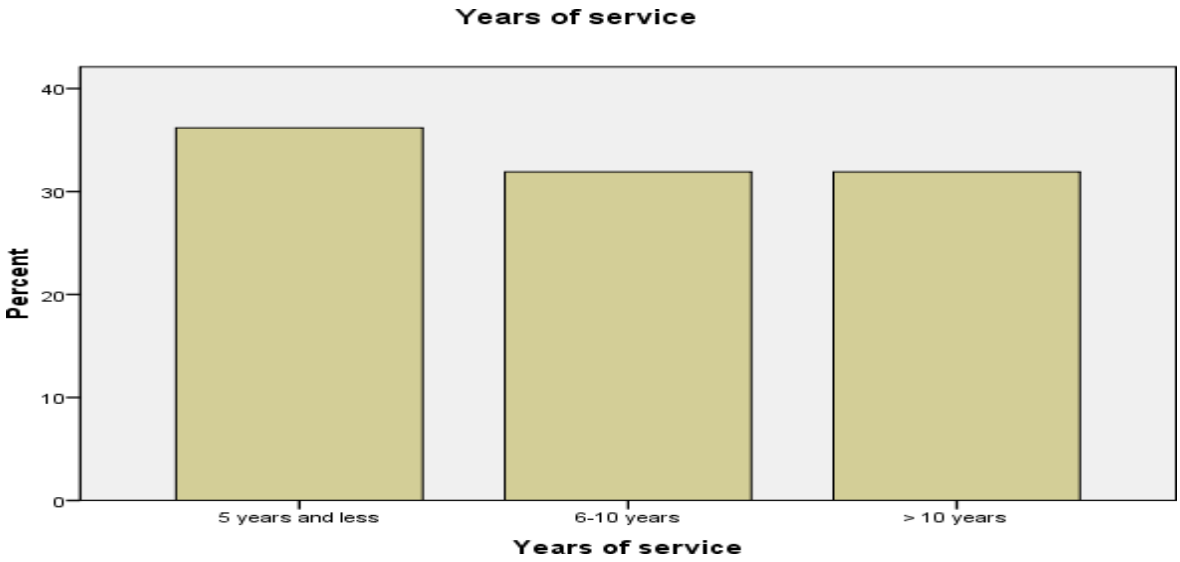


Figure 11 illustrates the sample outline on the basis of years of service. The higher percentage majority of respondents (36.2%) had 5 years or less in service, while 31.9 % had less than 10 years, and the same percentage (31.9%) had more than 10 years of service.

Figure 11:

Years of Service of Jordanian Sample



3.5 Measures Used for Data Collection

A well-structured questionnaire was applied for data collection. To achieve the aim of the study, a survey instrument that had a 1-5 Likert scale (1 = strongly disagree; 5 = strongly agree) was re-designed in line with earlier studies to achieve the current study purposes. It consists of three parts; the first part is a cover letter and demographic data that included the name of the hospital, age, gender, educational level, designation, and years of service. The second part is 31 items related to OJ, and 20 items reflecting OCB. The two scales and subscales applied in the current study are defined in the following parts.

Organizational Justice (OJ) The researcher used a redesigned questionnaire based on previous studies (Ajlouni et al., 2018; Usmani & Jamal, 2013; Niehoff & Moorman, 1993). The scale includes 3 subscales as follows:

- *Procedural justice* included six items (Niehoff & Moorman, 1993) and we add three items that directly assessed the fairness of decision-making standards, (e.g., "My manager takes job-related decisions objectively and fairly" and "Administrative decisions are applied on all employees without exceptions" and "My manager collects the required information before making any job decision").
- *Distributive justice* had eight items, (e.g., "My working hours fit with my personal circumstances" and "Salaries and bonuses that I get are fit with my effort in work").
- *Interactional or Interpersonal justice* used seven items, (e.g., "My manager deals with me in interest and I am socially respected" and "My manager discusses frankly with me about the decisions related to my job").
- *Evolutional justice* also consisted of seven items, (e.g., "The performance appraisals of employees are done through clear standards and understandable way for all" and "Employees have an idea about the performance appraisal standards in the hospital").

  Organizational citizenship behavior (OCB) "is measured consisting of a 20-issues scale developed by Podsakoff et al. (1997) and Moorman and Blakely (1995). Five-variables, viz. courtesy, altruism, sportsmanship, conscientiousness, and civic virtue have covered the purpose of this study.
- *Courtesy* (e.g., "I respect the rights and the privacy of my colleagues").
- *Altruism* (e.g., "I help my colleagues when they have heavy workloads").

- *Sportsmanship* (e.g., “I don’t spend the time in grumbling and complaining of work or the others”).
- *Civic virtue* (e.g., “I am surely attended the informal meetings and seminars held by the organization, which strengthens its position”).
- *Conscientiousness* (e.g., “I'm ready to work extra hours without pay”).

3.6 Framework of the study

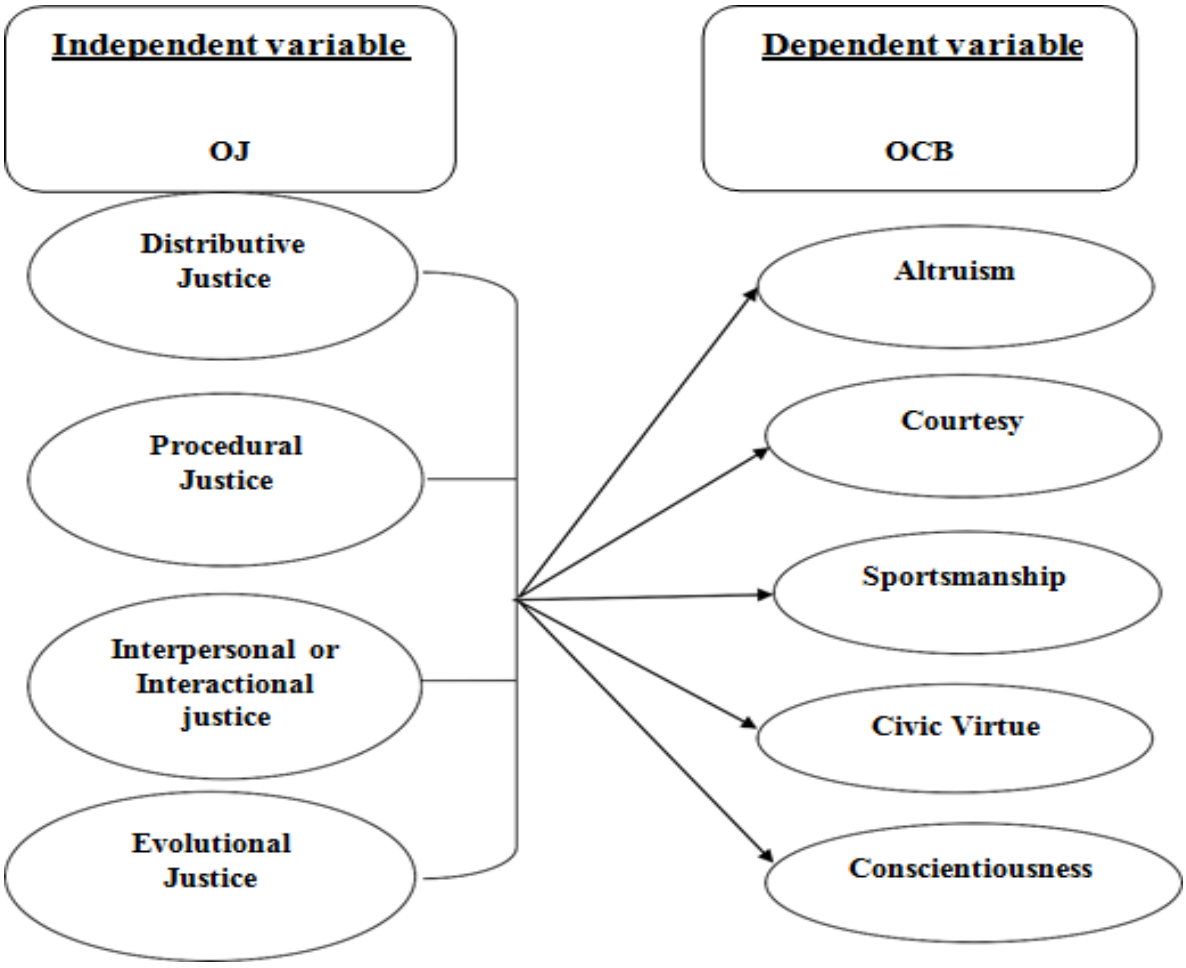
Figure 12. displays the overall relationship of both OCB and OJ that is mentioned in the H(3) as follow:

H3(a): There is a significant relationship between OCB and OJ in private hospitals in India.

H3(b): There is a significant relationship between OCB and OJ in private hospitals in Jordan.

Figure 12:

Relationship of OJ and OCB



In the above model displayed causal arrows, OJ is taken as independent (*distributive justice, procedural justice interactional or interpersonal justice and evolutional justice*) while OCB (*Altruism,Courtesy,Sportsmanship,Civic virtue and Conscientiousness*) is a dependent variable, Figure 12.

3.7 Instrument Translation

Since the study used same instrument in different two cultures; it was essential to have two versions of it, one in Arabic and other in English one was essential. However, there is no standard technique for instrument translation; many techniques are available for cultural diversity research (Maneesriwongul & Dixon, 2004). The back-translation technique was used to translate the instrument for the current study as it permits the researcher to compare the original source with the version back translation in the new language, and allows some words' modifications to ensure that the two versions of different languages meet semantic equivalence (Chen & Boore, 2010). First, the English version of OJ and OCB instruments was translated to the Arabic language by a researcher who is fluent in both English and Arabic languages. Then the instrument in Arabic language was converted to the English language by alternative bilingual university faculty. Lastly, the two English versions (the source and back-translated) were compared to ensure compatibility; areas of incompatibility were reformed and validated again. The two versions were tested using pilot study for clarity and the reliability was checked too.

3.8 Pilot Study and Reliability for the Measures

A pilot study consisting of 15 workers working in the targeted hospitals were approached for initial responses. The appropriate sample for pilot study was taken using Medium Sample Effect Size (ESs) at significance criterion Alpha of 0.05 that satisfies selection of 15 participants (Whitehead et al., 2016). The aim of conducting this pilot study were to evaluate the feasibility of the study (readability, reliability, validity, applicability, and the exact amount of time required to complete the questionnaire), and to discover any obstacles that could impede the process of collecting data to make necessary modifications before beginning the process of collecting data. The Pilot study revealed that all instruments' items were clear, readable, and simply

understandable, the time needed to complete the questionnaire was between 10-15 minutes for each person, which was considered quite sufficient because of the limited size of information so he/she filled therein.

The instruments' reliability was assessed by computing the Cronbach's Alpha which was 0.91 for the entire questionnaire in both countries; this indicated that the instruments' internal consistency is acceptable (Polit & Beck, 2009). The organizational justice questionnaire (OJQ) produced a coefficient value of 0.91, and the coefficient alpha was 0.72 for the organizational citizenship behavior questionnaire (OCBQ). More specifically, in Jordan, the organizational justice questionnaire (OJQ) coefficient value was 0.90, and the organizational citizenship behavior questionnaire (OCBQ) was 0.73. While in India, the organizational justice questionnaire (OJQ) produced a coefficient value of 0.86, and the organizational citizenship behavior questionnaire (OCBQ) was 0.72. The content validity was also confirmed which was based on the validation of ten experts' including physicians and faculties. They confirmed that both OCB, OJ and their dimensions were measureable by the instrument items.

3.9 Data Collection

As stated above, after ensuring the reliability and validity of the questionnaires, the responses were collected face to face from the participants, conveniently; all employees who were on duty in the selected hospitals at the time of collection of data were asked to fill the questionnaire after a brief explanation about the study was given. The participants were told that their data will be treated confidentially, and it will be managed in aggregates for research purposes. Participants informed that answering and returning back the questionnaire will be considered as implied consent for participation in the study. The collection of data procedure took around four months; from Jun 2018 to August 2018 in Jordanian targeted hospitals, and

from September 2018 to November 2018 in Indian targeted hospitals. Of 700 distributed questionnaires, about 170 questionnaires were not returned; some of the employees expressed their inability to fill out the questionnaire due to work overload. Therefore, only 532 employees (257 from Jordan and 275 from India) participated in the current study presenting a response rate of 76%.

3.10 Statistical Techniques Used

To get significant results and perfect conclusions, suitable tools were used for statistical implications and Statistical Package for Social Sciences (SPSS) version 24 for Windows has been applied.

- Descriptive statistics were used for measuring the level of perception regarding the OJ and OCB.
- T-test was applied to test significant differences between the participants' mean scores regarding OJ and OCB.
- ANOVA test was used to compare the means within three groups such as designation and age.
- Post Hoc Tests using the Scheffe method are considered for conditions in which the scholars have already got a significant omnibus F-test after applying ANOVA.
- Correlation analysis was used to reach the relationship between OJ and OCB. Pearson r, also named linear correlation, has been used.
- Regression analysis was used to determine the impact of different dimensions on the structures under study.
- Another novel technique applied to test the effects of two demographic variables viz age and gender was Fuzzy analysis. This was an experimental approach as social science

research has demonstrated very limited use of this technique.

- Discriminant analysis (DA) is a technique for analyzing data when the criterion or variable is categorically dependent and the predictor or the independent variables are an interval in nature. DA performs the same task as multiple linear regressions by predicting a result. Among many uses of DA in research, it also serves the following purposes:

  1. Are some groups different than the others?
  2. If they are different, then what are the variables which make them different?

In the context of the present study, DA presented differences in perception of the variables that define both OJ and OCB constructs. This analysis is related, though indirectly, to research objectives 1,2 and 3.

4.11 Proposed Works of Fuzzy Set

This section provides a brief review of fuzzy set theory, fuzzy hypothesis testing, fuzzy t test, and fuzzy one-way analysis of variance (ANOVA). Then, the proposed approach and fuzzy hypothesis testing were given in detail. The data were collected from employees or a group of participants through a questionnaire for testing the hypothesis (Guajardo et al., 2015; Devore, 2008; Wong et al., 2007). Their responses were obtained on a Likert-type scale range from strongly agree to strongly disagree with the numerical values in the range of 4–1 since Likert-type scale is psychometric scale (it proposes as four fuzzy values to express the individual response from agree to strongly disagree). However, Zadeh (1965) pointed that these numerical values do not handle the impreciseness/vagueness in these linguistic variables. Moreover, Zadeh (1965) introduced the concept of fuzzy set theory to handle such type of situations. Another way followed by several researchers like Buckley (2005), Manton et al. (1994), and Wu (2009) to handle

impreciseness/vagueness in these linguistic variables was to use fuzzy numbers instead of positive integers for representing the linguistic terms, see appendix (A).

The next chapter-4 will discuss the results of the study based on individual hypotheses.

Chapter 4
Results

4.1 Preview

This chapter deals with the analysis and the results related to research hypotheses.

4.2 Research Hypothesis 1: Studying the Perception of Employees of Private Hospitals in India and Jordan on OCB Is High

"In order to test the first hypothesis of the study, "means, Standard Deviations (S.D) and single sample t-test" of a level of employee's perceptions of private hospitals in India and Jordan on organizational citizenship behaviors were computed.

4.2.1 India

Table 1. shows that courtesy and sportsmanship received the highest mean score of 4.52 followed by altruism with the mean score of 4.46. While conscientiousness has received least mean score of 3.76. Moreover, the table shows the total mean score of OCB as 4.22.

Table 1:

Means, Standard Deviations and Single Sample T-test of Employees' Perceptions Level about Organizational Citizenship Behaviors in Indian Private Hospitals, Ranked in a Descending Order

Rank	N	Item	Mean	Std. Deviation	t-test	Sig.
1	2	Courtesy	4.52	0.477	52.743	0.000
1	3	Sportsmanship	4.52	0.526	48.068	0.000
3	1	Altruism	4.46	0.571	42.365	0.000
4	4	Civic Virtue	3.99	0.992	16.616	0.000
5	5	Conscientiousness	3.76	0.836	14.996	0.000
Total		OCB	4.22	0.520	39.040	0.000

4.2.2 Jordan

Table 2. shows that courtesy received the highest mean score of 4.25 followed by sportsmanship with the mean score of 4.15. While conscientiousness has least mean score of 3.72. This table also shows the overall total mean score of OCB is 4.05.

Table 2:

Means, Standard Deviations and Single Sample T-test of Employees' Perceptions Level about Organizational Citizenship Behaviors in Jordanian Private Hospitals, Ranked in descending order

Rank	N	Item	Mean	Std. Deviation	t-test	Sig.
1	2	Courtesy	4.25	0.701	28.697	0.000
2	3	Sportsmanship	4.15	0.824	22.276	0.000
3	1	Altruism	4.13	0.760	23.790	0.000
4	4	Civic Virtue	4.05	0.663	25.364	0.000
5	5	Conscientiousness	3.72	0.924	12.449	0.000
Total		OCB	4.05	0.531	31.817	0.000

4.3 Research Hypothesis 2: Studying the Perception of Employees of Private Hospitals in India and Jordan on OJ is high

To test the second hypothesis of means and standard deviations of employees' perceptions level of private hospitals in India and Jordan on organizational justice were computed.

4.3.1 India

Table 3. shows that evolutional justice receives the highest mean score of 4.21 followed by procedural justice with the mean score of 4.10. While distributive justice scored the least

mean score of 3.83. Moreover, the table shows the total mean score of OCB is 4.04.

Table 3:

Means, Standard Deviations and Single Sample T-test of Employees' Perceptions Level of Private Hospitals in India on Organizational Justice Ranked in a Descending Order

Rank	N	Item	Mean	Std. Deviation	t-test	Sig.
1	3	Evolutional justice	4.21	0.508	39.498	0.000
2	2	Procedural justice	4.10	0.506	36.140	0.000
3	4	Interactional justice	4.05	0.804	21.609	0.000
4	1	Distributive justice	3.83	0.733	18.750	0.000
Total		OJ	4.04	0.542	31.928	0.000

4.3.2 Jordan

Table 4. shows that interactional justice received the highest mean score of 3.50 followed by procedural justice with the mean score of 2.97. While distributive justice scored least mean score of 2.85. The overall total mean score of OCB is 3.06.

Table 4:

Means, Standard Deviations and Single Sample T-test of Employees' Perceptions Level of Private Hospitals in Jordan on Organizational Justice Ranked in a Descending Order

Rank	N	Item	Mean	Std. Deviation	t-test	Sig.
1	4	Interactional justice	3.50	0.957	8.433	0.000
2	2	Procedural justice	2.97	0.997	-.556	0.579
3	3	Evolutional justice	2.96	0.953	-.645	0.520
4	1	Distributive justice	2.85	0.907	-2.571	0.011
Total		OJ	3.06	0.841	1.096	0.274

4.4 Research Hypothesis 3(a): Studying the Relationship between OCB and OJ in Private Hospitals in India

To test the third hypothesis (a) of the study, Pearson correlation is used to find the relationship between OCB and OJ in private hospitals in India (Table 5).

Table 5. displays that there is a statistically significant positive correlation between OCB and OJ at level ($p \leq 0.01$) in private hospitals in India in all variables except between procedural justice and courtesy, procedural justice and sportsmanship, and evolutional justice and altruism .

Table 5:

Pearson correlation between organizational citizenship behavior and organizational justice in private hospitals in India

	Distributive Justice	Procedural Justice	Evolutional Justice	Interactional Justice	OJ
Altruism	0.414(**) 0.000	0.358(**) 0.000	0.063 0.297	0.328(**) 0.000	0.365(**) 0.000
Courtesy	0.172(**) 0.004	0.098 0.105	0.124(*) 0.040	0.194(**) 0.001	0.178(**) 0.003
Sportsmans-hip	0.161(**) 0.008	0.105 0.082	0.150(*) 0.013	0.189(**) 0.002	0.180(**) 0.003
Civic Virtue	0.752(**) 0.000	0.625(**) 0.000	0.255(**) 0.000	0.656(**) 0.000	0.706(**) 0.000
Conscientio-usness	0.701(**) 0.000	0.584(**) 0.000	0.255(**) 0.000	0.598(**) 0.000	0.657(**) 0.000
OCB	0.732(**) 0.000	0.599(**) 0.000	0.263(**) 0.000	0.642(**) 0.000	0.688(**) 0.000

** Correlation is significant at the 0.01 level (2-tailed);
* Correlation is significant at the 0.05 level (2-tailed);
N= 275

4.5 Research Hypothesis 3(b): Studying the Relationship between OCB and OJ in Private Hospitals in Jordan

To check the third hypothesis (b) of the study, Pearson correlation has been used to find the relationship between OCB and OJ in private hospitals in Jordan (Table 6).

Table 6. shows that there is a statistical significant positive correlation between OCB and OJ at level ($p \leq 0.01$) in private hospitals in Jordan in all variables except for the relationship between distributive justice with courtesy and sportsmanship, procedural justice with sportsmanship and conscientiousness, evolutional justice with altruism, sportsmanship, civic virtue and conscientiousness, interactional justice with conscientiousness, and OJ with sportsmanship and conscientiousness.

Table 6:

Pearson Correlation between OCB and OJ in Private Hospitals in Jordan

	Distributive justice	Procedural justice	Evolutional justice	Interactional justice	OJ
Altruism	0.124(*) 0.047	0.170(**) 0.006	0.098 0.117	0.331(**) 0.000	0.203(**) 0.001
Courtesy	0.116 0.063	0.248(**) 0.000	0.195(**) 0.002	0.259(**) 0.000	0.234(**) 0.000
Sportsmanship	0.107 0.086	0.082 0.190	0.037 0.550	0.152(*) 0.015	0.107 0.087
Civic Virtue	0.256(**) 0.000	0.225(**) 0.000	0.106 0.090	0.287(**) 0.000	0.250(**) 0.000
Conscientious-ness	0.332(**) 0.000	0.034 0.584	0.005 0.931	0.025 0.692	0.112 0.073
OCB	0.287(**)	0.215(**)	0.123(*)	0.297(**)	0.262(**)

	0.000	0.001	0.049	0.000	0.000

** Correlation is significant at the 0.01 level (2-tailed);
* Correlation is significant at the 0.05 level (2-tailed);
N= 257

4.6 Results of the Regression Analysis

Simple and multiple linear regressions are used to find the impact of the OJ on OCB as presented in Table (7, 8).

4.6.1 India

As appeared in Tables 7 and 8, that an overall OJ has a significant impact at ($\alpha = 0.05$) on OCB with distributive justice being at the top of these dimensions, followed by interactional justice. While procedural justice and evolutional justice have no impact on OCB.

Table 7:

Simple Regression of OJ Impacts on OCB in India (N=275)

Independent	R	Beta	t	F value (df)	Sig.
OJ	0.474	0.688	15.679	245.835	0.000

*significant at p< 0. 01

Table 8:

Multiple Regression of OJ Impacts on OCB in India (N=275)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	2.294	0.212		10.824	0.000
Distributive justice	0.418	0.052	0.589	8.053	0.000
Procedural justice	0.068	0.072	0.066	0.942	0.347
Evolutional justice	-0.088-	0.048	-0.086-	-1.838-	0.067
Interactional justice	0.104	0.048	0.161	2.170	0.031

* significant at p< 0. 01

4.6.2 Jordan

It is evident from Tables 9 and 10, that an overall OJ has a significant impact at (α = 0.05) on OCB with distributive justice being at the top of these dimensions, followed by interactional justice and evolutional justice. While procedural justice has no impact on OCB.

Table 9:

Simple Regression OJ Impacts on OCB in Jordan (N=275)

Independent	R	Beta	t	F value (df)	Sig.
OJ	0.069	0.262	4.332	18.766	0.000

* significant at p< 0. 01

Table 10:

Multiple Regression of OJ Impacts on OCB in Jordan (N=257)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	3.455	0.125		27.641	0.000
Distributive justice	0.155	0.051	0.265	3.067	0.002
Procedural justice	0.034	0.061	0.064	0.562	0.574
Evolutional justice	-0.152-	0.058	-0.274-	-2.644-	0.009
Interactional justice	0.144	0.049	0.260	2.962	0.003

* significant at p< 0. 01

4.7 Research Hypothesis 4: Investigating the Effect of Gender, Designation, Age, Education, Years of Service and Country on OCB and OJ

T-test and ANOVA are used to study the effects of the demographic variables.

H4(a). Gender Has a Significant Effect on both OCB and OJ

To check hypothesis "4(a) of the study, means, standard deviations and t-test" of the level of employees' perceptions of effects on both OCB and OJ at private hospitals in India and Jordan

due to gender variable are computed.

4.7.1.1 India

Table 11. displayed statistically significant difference existed at (α=0.05) of both OCB and OJ. Statistically significant differences existed of OCB in all items except sportsmanship with a significance of 0.243 due to gender dimension in favor of females. While OJ has a statistically significant difference in all items except evolutional justice.

Table 11:

Means, Standard Deviations and t-test Results of Sample Responses on both OCB and OJ at Private Hospitals in India Related to Gender

	Male		Female		t-value	Sig
	Mean	Std. Deviation	Mean	Std. Deviation		
Altruism	4.31	0.608	4.55	0.528	-3.495	0.001
Courtesy	4.41	0.509	4.58	0.446	-2.852	0.005
Sportsmanship	4.48	0.551	4.55	0.509	-1.170	0.243
Civic Virtue	3.66	1.085	4.20	0.876	-4.494	0.000
Conscientiousness	3.53	0.923	3.89	0.749	-3.600	0.000
Total OCB	4.03	0.554	4.34	0.464	-4.842	0.000
Distributive justice	3.62	0.816	3.95	0.651	-3.668	0.000
Procedural justice	3.94	0.565	4.20	0.442	-4.192	0.000
Evolutional justice	4.22	0.452	4.20	0.539	.190	0.849
Interactional justice	3.84	0.976	4.17	0.655	-3.307	0.001
Total OJ	3.90	0.600	4.13	0.486	-3.471	0.001

4.7.1.2 Jordan

Table 12. shows a statistically significant difference existed at (α=0.05), of OCB in civic virtue of 0.004, OJ in evolutional justice of 0.003, and total OCB of 0.039, due to gender variable in favor of males.

Table 12:

Means, Standard Deviations and t-test Results of Sample Responses on both OCB and OJ at Private Hospitals in Jordan Related to Gender

	Male		Female			
	Mean	Std. Deviation	Mean	Std. Deviation	t-value	Sig
Altruism	4.10	0.874	4.15	0.672	-0.480	0.631
Courtesy	4.19	0.768	4.30	0.650	-1.225	0.222
Sportsmanship	4.26	0.707	4.07	0.890	1.817	0.070
Civic Virtue	3.91	0.643	4.15	0.661	-2.902	0.004
Conscientiousness	3.72	0.850	3.72	0.975	-0.018	0.986
Total OCB	4.02	0.532	4.08	0.531	-0.939	0.039
Distributive justice	2.72	0.889	2.94	0.911	-1.931	0.055
Procedural justice	2.88	0.891	3.02	1.063	-1.108	0.269
Evolutional justice	2.75	0.925	3.11	0.948	-3.029	0.003
Interactional justice	3.54	0.974	3.48	0.948	0.451	0.653
Total OJ	2.96	0.816	3.13	0.854	-1.568	0.118

4.7.2 H4(b). Designation Affects both OCB and OJ Significantly

To check "H4 (b) of the study, means, standard deviations and One-way ANOVA" of the level of employees' perceptions of OCB and OJ at private hospitals in India and Jordan due to designation variable are computed.

4.7.2.1 India

Table 13. showed a statistically significant difference existed at (α=0.05) of OCB in all items except altruism and conscientiousness. OJ also is a statistically significant difference at

(α=0.05) in distributive justice of 0.000, procedural justice of 0.028, interactional justice of 0.000, and total OJ 0.000. While evolutional justice is not statistically significant difference at (α=0.05), with a significant score of 0.082, due to designation variable, Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 14.

Table 13:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on both OCB and OJ at Private Hospitals in India Related to Designation Variable

	Nurse		Doctor		Other		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.49	0.620	4.49	0.436	4.37	0.586	1.166	0.313
Courtesy	4.62	0.437	4.50	0.412	4.32	0.555	9.801	0.000
Sportsmanship	4.63	0.449	4.49	0.460	4.33	0.667	7.886	0.000
Civic Virtue	4.26	0.734	3.88	0.884	3.57	1.348	12.159	0.000
Conscientiousness	3.83	0.692	3.72	0.867	3.63	1.047	1.323	0.268
Total OCB	4.35	.431	4.19	0.424	4.01	0.683	10.597	0.000
Distributive justice	3.98	0.519	3.85	0.513	3.49	1.111	10.644	0.000
Procedural justice	4.15	0.448	4.16	0.445	3.96	0.643	3.624	0.028
Evolutional justice	4.26	0.461	4.22	0.473	4.09	0.613	2.528	0.082
Interactional justice	4.20	0.554	4.18	0.460	3.59	1.241	16.245	0.000
Total OJ	4.14	0.395	4.10	0.365	3.79	0.816	10.972	0.000

Table 14. shows that:

- There is a statistically significant difference at (α=0.05), between nurse and other in favor of nurse in courtesy, sportsmanship, and a total of OCB.
- There is a statistically significant difference at (α=0.05), between nurse and doctor in favor of nurse, and there is a statistically significant difference at (α=0.05), between nurse and other in favor of nurse in civic virtue**.**

- There is a statistically significant difference at (α=0.05), between the nurse and other in favor of the nurse, and there is a statistically significant difference at (α=0.05) between doctor and other in favor of doctor in distributive justice, interactional justice, and total of OJ.
- There is a statistically significant difference at (α=0.05) between nurse and other in favor of nurse in procedural justice.

Table 14:

Pairwise Multiple Comparisons Post Hoc Test Using the Scheffe Method Due to Designation Variable

Dependent Variable	(I) Job	(J) Job	Mean Difference (I-J)	Std. Error	Sig.
Courtesy	Nurse	Doctor	0.12	0.068	0.223
		Other	0.30(*)	0.069	0.000
	Doctor	Nurse	-0.12	0.068	0.223
		Other	0.19	0.079	0.064
	Other	Nurse	-0.30(*)	0.069	0.000
		Doctor	-0.19	0.079	0.064
Sportsmanship	Nurse	Doctor	0.14	0.075	0.169
		Other	0.30(*)	0.076	0.001
	Doctor	Nurse	-0.14	0.075	0.169
		Other	0.16	0.088	0.202
	Other	Nurse	-0.30(*)	0.076	0.001
		Doctor	-0.16	0.088	0.202
Civic virtue	Nurse	Doctor	0.37(*)	0.140	0.031
		Other	0.68(*)	0.142	0.000
	Doctor	Nurse	-0.37(*)	0.140	0.031
		Other	0.31	0.163	0.167
	Other	Nurse	-0.68(*)	0.142	0.000
		Doctor	-0.31	0.163	0.167
Total OCB	Nurse	Doctor	0.16	0.074	0.097
		Other	0.34(*)	0.075	0.000
	Doctor	Nurse	-0.16	0.074	0.097
		Other	0.18	0.086	0.112
	Other	Nurse	-0.34(*)	0.075	0.000
		Doctor	-0.18	0.086	0.112
Distributive justice	Nurse	Doctor	0.13	0.104	0.458

		Other	0.49(*)	0.105	0.000
	Doctor	Nurse	-0.13	0.104	0.458
		Other	0.36(*)	0.121	0.014
	Other	Nurse	-0.49(*)	0.105	0.000
		Doctor	-0.36(*)	0.121	0.014
Procedural justice	Nurse	Doctor	-0.01	0.074	0.988
		Other	0.19(*)	0.075	0.047
	Doctor	Nurse	0.01	0.074	0.988
		Other	0.20	0.086	0.073
	Other	Nurse	-0.19(*)	0.075	0.047
		Doctor	-0.20	0.086	0.073
Interactional justice	Nurse	Doctor	0.02	0.112	0.984
		Other	0.62(*)	0.114	0.000
	Doctor	Nurse	-0.02	0.112	0.984
		Other	0.60(*)	0.130	0.000
	Other	Nurse	-0.62(*)	0.114	0.000
		Doctor	-0.60(*)	0.130	0.000
Total OJ	Nurse	Doctor	0.04	0.077	0.850
		Other	0.36(*)	0.078	0.000
	Doctor	Nurse	-0.04	0.077	0.850
		Other	0.31(*)	0.089	0.003
	Other	Nurse	-0.36(*)	0.078	0.000
		Doctor	-0.31(*)	0.089	0.003

* The mean difference is significant at the 0.05 level

4.7.2.2 **Jordan**

Table 15. shows a statistically significant difference existed at (α=0.05) in the conscientiousness of OCB, and all items of OJ due to designation variable, Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 16.

Table 15:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ in Private Hospitals in Jordan Related to Designation Variable

	Nurse		Doctor		Other		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.17	0.560	4.25	0.354	4.09	0.888	0.667	0.514
Courtesy	4.35	0.495	4.32	0.386	4.19	0.819	1.580	0.208
Sportsmanship	4.31	0.644	4.13	0.391	4.06	0.941	2.538	0.081
Civic Virtue	4.08	0.468	4.09	0.665	4.02	0.749	0.245	0.783
Conscientiousness	3.76	1.038	4.17	0.452	3.62	0.897	3.755	0.025
Total OCB	4.12	0.386	4.19	0.310	4.00	0.613	2.440	0.089
Distributive justice	3.30	0.908	3.07	1.313	2.58	0.714	19.537	0.000
Procedural justice	3.35	0.995	2.81	1.166	2.78	0.914	9.591	0.000
Evolutional justice	3.28	1.047	2.88	1.066	2.81	0.843	6.733	0.001
Interactional justice	3.62	1.021	2.95	1.107	3.53	0.871	4.742	0.010
Total OJ	3.38	0.879	2.92	1.107	2.91	0.721	9.341	0.000

Table 16. shows that:

- There is a statistically significant difference at (α=0.05) between doctor and other in favor of doctor in conscientiousness.
- There is a statistically significant difference at (α=0.05) between nurse and other in favor of nurse, and there is a statistically significant difference at (α=0.05) between doctor and other in favor of doctor in distributive justice.
- There is a statistically significant difference at (α=0.05) between nurse and other in favor of nurse in procedural justice, evolutional justice, and total of organizational justice.
- There is a statistically significant difference at (α=0.05) between nurse and doctor in favor of nurse, and there is a statistically significant difference at (α=0.05) between other and doctors in favor of other in interactional justice.

Table 16:

Pairwise Multiple Comparisons Post Hoc Test Using the Scheffe Method Due to Designation Variable

Dependent Variable	(I) Job	(J) Job	Mean Difference (I-J)	Std. Error	Sig.
Conscientiousness	Nurse	Doctor	-0.41	0.213	0.161
		Other	0.13	0.126	0.567
	Doctor	Nurse	0.41	0.213	0.161
		Other	0.54(*)	0.201	0.028
	Other	Nurse	-0.13	0.126	0.567
		Doctor	-0.54(*)	0.201	0.028
Distributive justice	Nurse	Doctor	0.23	0.197	0.506
		Other	0.71(*)	0.117	0.000
	Doctor	Nurse	-0.23	0.197	0.506
		Other	0.48(*)	0.186	0.036
	Other	Nurse	-0.71(*)	0.117	0.000
		Doctor	-0.48(*)	0.186	0.036
Procedural justice	Nurse	Doctor	0.54	0.224	0.055
		Other	0.57(*)	0.133	0.000
	Doctor	Nurse	-0.54	0.224	0.055
		Other	0.03	0.212	0.992
	Other	Nurse	-0.57(*)	0.133	0.000
		Doctor	-0.03	0.212	0.992
Evolutional justice	Nurse	Doctor	0.40	0.217	0.184
		Other	0.47(*)	0.128	0.002
	Doctor	Nurse	-0.40	0.217	0.184
		Other	0.07	0.205	0.948
	Other	Nurse	-0.47(*)	0.128	0.002
		Doctor	-0.07	0.205	0.948
Interactional justice	Nurse	Doctor	0.66(*)	0.219	0.011
		Other	0.09	0.130	0.798
	Doctor	Nurse	-0.66(*)	0.219	0.011
		Other	-0.58(*)	0.207	0.022
	Other	Nurse	-0.09	0.130	0.798
		Doctor	0.58(*)	0.207	0.022
Total OJ	Nurse	Doctor	0.46	0.189	0.056
		Other	0.47(*)	0.112	0.000
	Doctor	Nurse	-0.46	0.189	0.056
		Other	0.02	0.179	0.995
	Other	Nurse	-0.47(*)	0.112	0.000
		Doctor	-0.02	0.179	0.995
		Doctor	-0.07	0.146	0.901

* The mean difference is significant at the 0.05 level

4.7.3 H4 (c). Age Affects both OCB and OJ Significantly

To check "H4 (c) of the study, means, standard deviations, and One-way ANOVA" of the level of employees' perceptions of OCB and OJ at private hospitals in India and Jordan due to age variable are computed.

4.7.3.1 **India**

Table 17. shows a statistically significant difference existed at (α =0.05) in all items of OJ except evolutional justice of 0.932 and statistically significant differences at (α =0.05) in all items of OCB due to age variable. Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 18.

Table 17:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ in Private Hospitals in India Related to Age Variable

	< 30 years		30-50		> 50 years		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Distributive justice	3.98	0.606	3.81	0.705	3.31	0.967	14.159	0.000
Procedural justice	4.18	0.432	4.11	0.526	3.80	0.603	8.966	0.000
Evolutional justice	4.21	0.521	4.20	0.502	4.24	0.480	.070	0.932
Interactional justice	4.19	0.578	4.03	0.837	3.57	1.191	9.498	0.000
Total OJ	4.14	0.451	4.03	0.542	3.72	0.715	9.529	0.000
Altruism	4.56	0.527	4.41	0.551	4.19	0.681	7.007	0.001
Courtesy	4.62	0.419	4.42	0.479	4.36	0.583	7.925	0.000
Sportsmanship	4.61	0.433	4.44	0.615	4.40	0.554	4.071	0.018
Civic Virtue	4.24	0.870	3.91	0.965	3.28	1.125	16.083	0.000
Conscientiousness	3.93	0.685	3.72	0.847	3.20	1.064	12.319	0.000
Total OCB	4.37	0.453	4.16	0.496	3.83	0.581	20.030	0.000

* The mean difference is significant at the 0.05 level

Table 18. shows:

- There is a statistically significant difference at (α =0.05) between < 30 years and > 50 years in favor of < 30 years, and there is a statistically significant difference at (α =0.05) between 30-50 and > 50 years in favor of 30-50 in OCB in conscientiousness and loyalty.
- There is a statistically significant difference at (α =0.05) between < 30 years and > 50 years in favor of < 30 years in sportsmanship and altruism.
- There is a statistically significant difference at (α =0.05) between < 30 years and 30-50 in favor of < 30 years, there is a statistically significant difference at (α =0.05) between < 30 years and > 50 years and in favor of < 30 years in courtesy.
- There is a statistically significant difference at (α =0.05) between < 30 years and 30-50 in favor of < 30 years, and there was a statistically significant difference at (α =0.05) between > 50 years and < 30 years in favor of < 30 years, and there is a statistically significant difference at (α =0.05) between 30-50 and > 50 years in favor of 30-50 in civic virtue and total OCB.
- There is a statistically significant difference at (α =0.05) between < 30 years and > 50 years in favor of < 30 years, and there is a statistically significant difference at (α =0.05) between 30-50 and > 50 years in favor of 30-50 in total OJ and all its variable except evolutional justice.

Table 18:

Pairwise Multiple Comparisons Post Hoc Test Using the Scheffe Method Due to Age Variable

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Altruism	< 30 years	30-50	0.15	0.074	0.143
		> 50 years	0.37(*)	0.102	0.002
	30-50	< 30 years	-0.15	0.074	0.143
		> 50 years	0.22	0.107	0.116
	> 50 years	< 30 years	-0.37(*)	0.102	0.002
		30-50	-0.22	0.107	0.116
Courtesy	< 30 years	30-50	0.20(*)	0.062	0.006
		> 50 years	0.27(*)	0.085	0.007
	30-50	< 30 years	-0.20(*)	0.062	0.006
		> 50 years	0.07	0.089	0.740
	> 50 years	< 30 years	-0.27(*)	0.085	0.007
		30-50	-0.07	0.089	0.740
Sportsmanship	< 30 years	30-50	0.17	0.069	0.057
		> 50 years	0.21(*)	0.095	0.041
	30-50	< 30 years	-0.17	0.069	0.057
		> 50 years	0.04	0.100	0.919
	> 50 years	< 30 years	-0.21(*)	0.095	0.041
		30-50	-0.04	0.100	0.919
Civic Virtue	< 30 years	30-50	0.33(*)	0.125	0.030
		> 50 years	0.96(*)	0.172	0.000
	30-50	< 30 years	-0.33(*)	0.125	0.030
		> 50 years	0.63(*)	0.180	0.003
	> 50 years	< 30 years	-0.96(*)	0.172	0.000
		30-50	-0.63(*)	0.180	0.003
Conscientiousness	< 30 years	30-50	0.21	0.106	0.151
		> 50 years	0.73(*)	0.147	0.000
	30-50	< 30 years	-0.21	0.106	0.151
		> 50 years	0.52(*)	0.154	0.004
	> 50 years	< 30 years	-0.73(*)	0.147	0.000
		30-50	-0.52(*)	0.154	0.004
Total OCB	< 30 years	30-50	0.22(*)	0.064	0.004
		> 50 years	0.54(*)	0.089	0.000
	30-50	< 30 years	-0.22(*)	0.064	0.004
		> 50 years	0.32(*)	0.093	0.003
	> 50 years	< 30 years	-0.54(*)	0.089	0.000
		30-50	-0.32(*)	0.093	0.003
Distributive	< 30 years	30-50	0.18	0.093	0.157

justice		> 50 years	0.68(*)	0.128	0.000
	30-50	< 30 years	-0.18	0.093	0.157
		> 50 years	0.50(*)	0.134	0.001
	> 50 years	< 30 years	-0.68(*)	0.128	0.000
		30-50	-0.50(*)	0.134	0.001
Procedural justice	< 30 years	30-50	0.07	0.065	0.522
		> 50 years	0.38(*)	0.090	0.000
	30-50	< 30 years	-0.07	0.065	0.522
		> 50 years	0.31(*)	0.094	0.006
	> 50 years	< 30 years	-0.38(*)	0.090	0.000
		30-50	-0.31(*)	0.094	0.006
Interactional justice	< 30 years	30-50	0.16	0.103	0.282
		> 50 years	0.62(*)	0.143	0.000
	30-50	< 30 years	-0.16	0.103	0.282
		> 50 years	0.46(*)	0.150	0.011
	> 50 years	< 30 years	-0.62(*)	0.143	0.000
		30-50	-0.46(*)	0.150	0.011
Total OJ	< 30 years	30-50	0.11	0.070	0.313
		> 50 years	0.42(*)	0.096	0.000
	30-50	< 30 years	-0.11	0.070	0.313
		> 50 years	0.31(*)	0.101	0.009
	> 50 years	< 30 years	-0.42(*)	0.096	0.000
		30-50	-0.31(*)	0.101	0.009

* The mean difference is significant at the 0.05 level

4.7.3.2 **Jordan**

Table 19. shows a statistically significant difference existed at (α=0.05) in courtesy, civic virtue, and conscientiousness. While altruism and sportsmanship have no statistically significant differences, OJ has a statistically significant difference at (α=0.05), in all items of OJ except distributive justice. Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 20.

Table 19:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ in Private Hospitals in Jordan Related to Age Variable

	< 30 years		30-50		> 50 years		F	Sig.
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.14	0.770	4.10	0.658	4.16	1.006	0.104	0.902
Courtesy	4.42	0.509	4.06	0.742	4.35	0.919	8.016	0.000
Sportsmanship	4.13	0.787	4.08	0.826	4.42	0.896	2.407	0.092
Civic Virtue	4.06	0.626	3.95	0.710	4.31	0.561	3.965	0.020
Conscientiousness	3.54	0.934	3.80	0.939	4.00	0.749	4.254	0.015
Total OCB	4.05	0.416	3.99	0.621	4.24	0.515	3.032	0.050
Distributive justice	2.96	0.985	2.81	0.921	2.69	0.508	1.512	0.222
Procedural justice	3.21	1.026	2.76	0.910	2.84	1.026	6.260	0.002
Evolutional justice	3.19	0.928	2.80	0.923	2.79	1.008	5.498	0.005
Interactional justice	3.60	1.074	3.28	0.881	3.88	0.582	6.659	0.002
Total OJ	3.23	0.886	2.90	0.813	3.02	0.690	4.450	0.013

* The mean difference is significant at the 0.05 level

Table 20. shows that:

- There is a statistically significant difference at (α =0.05) between < 30 years and 30-50 in favor of < 30 years in courtesy.
- There is a statistically significant difference at (α=0.05) between 30-50 and > 50 years in favor of > 50 years in civic virtue and total OCB.
- There is a statistically significant difference at (α=0.05) between < 30 years and > 50 years in favor of > 50 years in conscientiousness and loyalty.
- There is a statistically significant difference at (α =0.05) between < 30 years and 30-50 in favor of < 30 years in procedural justice, evolutional justice, and total OJ.
- There is a statistically significant difference at (α=0.05) between < 30 years and 30-50 in favor of < 30 years, and there is a statistically significant difference at (α=0.05) between > 50 years and 30-50 in favor of > 50 years in interactional justice.

Table 20:

Pairwise Multiple Comparisons Post Hoc Test Using the Scheffe Method Due to Age Variable

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Courtesy	< 30 years	30-50	0.36(*)	0.092	0.001
		> 50 years	0.06	0.131	0.888
	30-50	< 30 years	-0.36(*)	0.092	0.001
		> 50 years	-0.29	0.131	0.083
	> 50 years	< 30 years	-0.06	0.131	0.888
		30-50	0.29	0.131	0.083
Civic Virtue	< 30 years	30-50	0.11	0.088	0.469
		> 50 years	-0.24	0.126	0.155
	30-50	< 30 years	-0.11	0.088	0.469
		> 50 years	-0.35(*)	0.126	0.021
	> 50 years	< 30 years	0.24	0.126	0.155
		30-50	0.35(*)	0.126	0.021
Conscientiousness	< 30 years	30-50	-0.26	0.123	0.107
		> 50 years	-0.46(*)	0.175	0.034
	30-50	< 30 years	0.26	0.123	0.107
		> 50 years	-0.20	0.175	0.528
	> 50 years	< 30 years	0.46(*)	0.175	0.034
		30-50	0.20	0.175	0.528
Total OCB	< 30 years	30-50	0.06	0.071	0.685
		> 50 years	-0.19	0.101	0.183
	30-50	< 30 years	-0.06	0.071	0.685
		> 50 years	-0.25(*)	0.101	0.050
	> 50 years	< 30 years	0.19	0.101	0.183
		30-50	0.25(*)	0.101	0.050
Procedural justice	< 30 years	30-50	0.45(*)	0.131	0.003
		> 50 years	0.38	0.188	0.135
	30-50	< 30 years	-0.45(*)	0.131	0.003
		> 50 years	-0.07	0.187	0.924
	> 50 years	< 30 years	-0.38	0.188	0.135
		30-50	0.07	0.187	0.924
Evolutional justice	< 30 years	30-50	0.39(*)	0.126	0.009
		> 50 years	0.40	0.180	0.091
	30-50	< 30 years	-0.39(*)	0.126	0.009
		> 50 years	0.01	0.180	1.000
	> 50 years	< 30 years	-0.40	0.180	0.091
		30-50	-0.01	0.180	1.000
Interactional justice	< 30 years	30-50	0.32(*)	0.126	0.040

		> 50 years	-0.28	0.180	0.307
	30-50	< 30 years	-0.32(*)	0.126	0.040
		> 50 years	-0.60(*)	0.180	0.004
	> 50 years	< 30 years	0.28	0.180	0.307
		30-50	0.60(*)	0.180	0.004
Total OJ	< 30 years	30-50	0.33(*)	0.112	0.013
		> 50 years	0.21	0.159	0.433
	30-50	< 30 years	-0.33(*)	0.112	0.013
		> 50 years	-0.13	0.159	0.734
	> 50 years	< 30 years	-0.21	0.159	0.433
		30-50	0.13	0.159	0.734

* The mean difference is significant at the 0.05 level

4.7.4 H4(d). Educational Level Affects both OCB and OJ Significantly

To check "H4(b) of the study, means, standard deviations and One-way ANOVA" of the level of employees' perception of OCB and OJ at private hospitals in India and Jordan due to educational level variable are computed.

4.7.4.1 India

Table 21. shows a statistically significant difference existed at (α =0.05) in civic virtue and total OCB, while altruism, courtesy, sportsmanship, and conscientiousness have no statistically significant differences at (α =0.05). OJ has statistically significant differences at (α=0.05) in all items except evolutional justice was 0.222, due to educational level variable, Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 22.

Table 21:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ at Private Hospitals in India Related to Educational Level Variable

	Diploma or less		Bachelor		Postgraduate		F	Sig.
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.46	0.615	4.42	0.555	4.53	0.531	0.812	0.445
Courtesy	4.50	0.560	4.51	0.437	4.55	0.410	0.214	0.807
Sportsmanship	4.52	0.561	4.48	0.540	4.61	0.436	1.378	0.254
Civic Virtue	3.88	1.128	3.93	0.975	4.27	0.736	3.559	0.030
Conscientiousness	3.63	0.947	3.77	0.783	3.91	0.729	2.228	0.110
Total OCB	4.17	0.617	4.19	0.477	4.36	0.404	3.049	0.049
Distributive justice	3.69	0.901	3.85	0.672	3.99	0.487	3.456	0.033
Procedural justice	4.01	0.537	4.08	0.530	4.27	0.365	5.436	0.005
Evolutional justice	4.14	0.581	4.25	0.462	4.24	0.459	1.514	0.222
Interactional justice	3.86	0.953	4.10	0.768	4.24	0.530	5.088	0.007
Total OJ	3.92	0.642	4.07	0.516	4.19	0.364	4.933	0.008

* The mean difference is significant at the 0.05 level

Table 22 shows:

- There is a statistically significant difference at (α =0.05) between diploma or less and postgraduate in favor of postgraduate in OCB in civic virtue and total OCB.
- There is a statistically significant difference at (α =0.05) between diploma or less and postgraduate in favor of postgraduate in total OJ and all its variables except evolutional justice.

Table 22:

Pairwise Multiple Comparisons Post Hoc test using the Scheffe Method Due to Educational Level Variable

Dependent Variable	(I) Educational level	(J) Educational level	Mean Difference (I-J)	Std. Error	Sig.
Civic Virtue	Diploma or less	Bachelor	-0.05	0.136	0.930
		Postgraduate	-0.39(*)	0.157	0.044
	Bachelor	Diploma or less	0.05	0.136	0.930
		Graduate	-0.34	0.153	0.082
	Postgraduate	Diploma or less	0.39(*)	0.157	0.044
		Bachelor	0.34	0.153	0.082
Total OCB	Diploma or less	Bachelor	-0.03	0.072	0.923
		Postgraduate	-0.19(*)	0.082	0.066
	Bachelor	Diploma or less	0.03	0.072	0.923
		Postgraduate	-0.16	0.080	0.124
	Postgraduate	Diploma or less	0.19(*)	0.082	0.066
		Bachelor	0.16	0.080	0.124
Distributive justice	Diploma or less	Bachelor	-0.17	0.101	0.261
		Postgraduate	-0.30(*)	0.116	0.037
	Bachelor	Diploma or less	0.17	0.101	0.261
		Postgraduate	-0.13	0.113	0.496
	Postgraduate	Diploma or less	0.30(*)	0.116	0.037
		Bachelor	0.13	0.113	0.496
Procedural justice	Diploma or less	Bachelor	-0.07	0.069	0.593
		Postgraduate	-0.26(*)	0.080	0.006
	Bachelor	Diploma or less	0.07	0.069	0.593
		Postgraduate	-0.19	0.077	0.054
	Postgraduate	Diploma or less	0.26(*)	0.080	0.006
		Bachelor	0.19	0.077	0.054
Interactional justice	Diploma or less	Bachelor	-0.25	0.110	0.085
		Postgraduate	-0.39(*)	0.126	0.010
	Bachelor	Diploma or less	0.25	0.110	0.085
		Postgraduate	-0.14	0.123	0.516
	Postgraduate	Diploma or less	0.39(*)	0.126	0.010
		Bachelor	0.14	0.123	0.516
Total OJ	Diploma or less	Bachelor	-0.14	0.074	0.152
		Postgraduate	-0.26(*)	0.085	0.009
	Bachelor	Diploma or less	0.14	0.074	0.152
		Graduate	-0.12	0.083	0.359
	Postgraduate	Diploma or less	0.26(*)	0.085	0.009
		Bachelor	0.12	0.083	0.359

* The mean difference is significant at the 0.05 level

4.7.4.2 Jordan

Table 23. shows a statistically significant difference existed at (α =0.05) of OCB in civic virtue of 0.017, the conscientiousness of 0.001 and total OCB of 0.040, and OJ in distributive justice of 0.004, procedural justice of 0.021, interactional justice of 0.002 and total OJ of 0.038 due to educational level variable, Pairwise Multiple Comparisons Post Hoc test using the Scheffe method is conducted as in Table 24.

Table 23:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ at Private Hospitals in Jordan Related to Educational Level Variable

	Diploma or less		Bachelor		Postgraduate		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.08	0.787	4.20	0.757	3.93	0.458	1.262	0.285
Courtesy	4.20	0.682	4.30	0.750	4.35	0.387	0.776	0.461
Sportsmanship	4.13	0.828	4.13	0.844	4.38	0.615	0.633	0.532
Civic Virtue	4.01	0.638	4.03	0.698	4.52	0.376	4.149	0.017
Conscientiousness	3.58	0.974	3.76	0.871	4.52	0.240	7.549	0.001
Total OCB	3.99	.526	4.08	0.550	4.35	0.280	3.265	0.040
Distributive justice	2.86	0.862	2.76	0.912	3.58	0.960	5.700	0.004
Procedural justice	2.92	1.009	2.92	0.971	3.66	0.888	3.947	0.021
Evolutional justice	2.92	0.923	2.99	1.010	3.09	0.771	0.286	0.751
Interactional justice	3.66	0.948	3.28	0.978	3.89	0.287	6.233	0.002
Total OJ	3.07	0.822	2.98	0.877	3.56	0.480	3.320	0.038

* The mean difference is significant at the 0.05 level

Table 24. shows that:

- There is a statistically significant difference at (α =0.05) between diploma or less and postgraduate in favor of postgraduate, and also, there is a statistically significant difference at (α =0.05) between bachelor and postgraduate in favor of postgraduate in civic virtue and

conscientiousness.

- There is a statistically significant difference at (α =0.05) between diploma or less and postgraduate in favor of postgraduate in total OCB.

Table 24:

Pairwise Multiple Comparisons Post Hoc Tests Using the Scheffe Method Due to Educational Level Variable

Dependent Variable	(I) Educational level	(J) Educational level	Mean Difference (I-J)	Std. Error	Sig.
Civic Virtue	Diploma or less	Bachelor	-0.02	0.084	0.969
		Postgraduate	-0.51(*)	0.179	0.018
	Bachelor	Diploma or less	0.02	0.084	0.969
		Postgraduate	-0.49(*)	0.180	0.026
	Postgraduate	Diploma or less	0.51(*)	0.179	0.018
		Bachelor	0.49(*)	0.180	0.026
Conscientiousness	Diploma or less	Bachelor	-0.19	0.116	0.275
		Postgraduate	-0.94(*)	0.246	0.001
	Bachelor	Diploma or less	0.19	0.116	0.275
		Postgraduate	-0.75(*)	0.247	0.011
	Postgraduate	Diploma or less	0.94(*)	0.246	0.001
		Bachelor	0.75(*)	0.247	0.011
Total OCB	Diploma or less	Bachelor	-0.09	0.068	0.448
		Postgraduate	-0.35(*)	0.144	0.050
	Bachelor	Diploma or less	0.09	0.068	0.448
		Postgraduate	-0.27	0.144	0.185
	Postgraduate	Diploma or less	0.35(*)	0.144	0.050
		Bachelor	0.27	0.144	0.185
Distributive justice	Diploma or less	Bachelor	0.10	0.115	0.692
		Postgraduate	-0.73(*)	0.243	0.013
	Bachelor	Diploma or less	-0.10	0.115	0.692
		Postgraduate	-0.82(*)	0.244	0.004
	Graduate	Diploma or less	0.73(*)	0.243	0.013
		Bachelor	0.82(*)	0.244	0.004
Procedural justice	Diploma or less	Bachelor	0.00	0.127	0.999
		Postgraduate	-0.73(*)	0.269	0.026
	Bachelor	Diploma or less	0.00	0.127	0.999
		Postgraduate	-0.74(*)	0.270	0.025
	Postgraduate	Diploma or less	0.73(*)	0.269	0.026
		Bachelor	0.74(*)	0.270	0.025
Interactional	Diploma or less	Bachelor	0.38(*)	0.121	0.008

justice		Postgraduate	-0.22	0.256	0.686
	Bachelor	Diploma or less	-0.38(*)	0.121	0.008
		Postgraduate	-0.60	0.257	0.067
	Graduate	Diploma or less	0.22	0.256	0.686
		Bachelor	0.60	0.257	0.067
Total OJ	Diploma or less	Bachelor	0.10	0.107	0.666
		Postgraduate	-0.49	0.228	0.102
	Bachelor	Diploma or less	-0.10	0.107	0.666
		Postgraduate	-0.59(*)	0.228	0.039
	Postgraduate	Diploma or less	0.49	0.228	0.102
		Bachelor	0.59(*)	0.228	0.039

* The mean difference is significant at the 0.05 level

4.7.5 H4(e). Years of Service Affects both OCB and OJ Significantly

To check "H4(e) of the study, means, standard deviations and One-way ANOVA" of the level of employees' perceptions of OCB and OJ at private hospitals in India and Jordan due to years of service variable are computed.

4.7.5.1 India

Table 25. shows statistically significant differences existed at (α =0.05) of OCB in altruism 0.002, courtesy of 0.001, civic virtue of 0.001, the conscientiousness of 0.002 and total OCB of 0.000, and OJ in distributive justice of 0.014, evolutional justice of 0.017, organizational justice of 0.047 due to years of service variable, Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method is conducted as in Table 26.

Table 25:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ at Private Hospitals in India Related to Years of Service at Job Variable

	5 years and less		6-10 years		> 10 years		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.57	0.561	4.40	0.519	4.26	0.531	6.400	0.002
Courtesy	4.63	0.433	4.45	0.425	4.36	0.410	7.655	0.001
Sportsmanship	4.58	0.549	4.49	0.456	4.45	0.436	1.305	0.273
Civic Virtue	4.19	0.876	3.94	1.033	3.57	0.736	7.553	0.001
Conscientiousness	3.88	0.711	3.78	0.831	3.39	0.729	6.231	0.002
Total OCB	4.35	.485	4.18	0.492	3.96	0.404	11.116	0.000
Distributive justice	3.95	0.618	3.77	0.790	3.61	0.487	4.326	0.014
Procedural justice	4.17	0.446	4.07	0.519	3.99	0.365	2.654	0.072
Evolutional justice	4.26	0.469	4.09	0.589	4.29	0.459	4.107	0.017
Interactional justice	4.13	0.641	4.02	0.874	3.87	0.530	1.911	0.150
Total OJ	4.13	0.461	3.99	0.588	3.93	0.364	3.086	0.047

* The mean difference is significant at the 0.05 level

Table 26. shows that:

- There is a statistically significant difference at (α =0.05) between 5 years and less and > 10 years in favor of 5 years and less in altruism and civic virtue.
- There is a statistically significant difference at (α =0.05) between 5 years and less and > 10 years in favor of 5 years and less and there is a statistically significant difference at (α =0.05) between 5 years and less and 6-10 years in favor of 5 years and less in courtesy.
- There is a statistically significant difference at (α =0.05) between 5 years and less and > 10 years in favor of 5 years and less and there is a statistically significant difference at (α =0.05) between 6-10 years and > 10 years in favor of 6-10 years in conscientiousness and total OCB.
- There is a statistically significant difference at (α =0.05) between 5 years and less and > 10 years in favor of 5 years and less in distributive justice and total OJ.

- There is a statistically significant difference at (α =0.05) between 5 years and less and 6-10 years in favor of 5 years and less in evolutional justice.

Table 26:

Pairwise Multiple Comparisons Post Hoc Test Uses the Scheffe Method Due to Years of Service Variable

Dependent Variable	(I) Years of service	(J) Years of service	Mean Difference (I-J)	Std. Error	Sig.
Altruism	5 years and less	6-10 years	0.17	0.075	0.071
		> 10 years	0.31(*)	0.094	0.004
	6-10 years	5 years and less	-0.17	0.075	0.071
		> 10 years	0.14	0.098	0.366
	> 10 years	5 years and less	-0.31(*)	0.094	0.004
		6-10 years	-0.14	0.098	0.366
Courtesy	5 years and less	6-10 years	0.18(*)	0.063	0.017
		> 10 years	0.27(*)	0.078	0.003
	6-10 years	5 years and less	-0.18(*)	0.063	0.017
		> 10 years	0.09	0.082	0.546
	> 10 years	5 years and less	-0.27(*)	0.078	0.003
		6-10 years	-0.09	0.082	0.546
Civic Virtue	5 years and less	6-10 years	0.25	0.131	0.154
		> 10 years	0.62(*)	0.162	0.001
	6-10 years	5 years and less	-0.25	0.131	0.154
		> 10 years	0.37	0.170	0.100
	> 10 years	5 years and less	-0.62(*)	0.162	0.001
		6-10 years	-0.37	0.170	0.100
Conscientiousness	5 years and less	6-10 years	0.10	0.111	0.681
		> 10 years	0.48(*)	0.137	0.002
	6-10 years	5 years and less	-0.10	0.111	0.681
		> 10 years	0.39(*)	0.144	0.029
	> 10 years	5 years and less	-0.48(*)	0.137	0.002
		6-10 years	-0.39(*)	0.144	0.029
Total OCB	5 years and less	6-10 years	0.17	0.068	0.050
		> 10 years	0.39(*)	0.084	0.000
	6-10 years	5 years and less	-0.17	0.068	0.050
		> 10 years	0.22(*)	0.088	0.044
	> 10 years	5 years and less	-0.39(*)	0.084	0.000
		6-10 years	-0.22(*)	0.088	0.044
Distributive Justice	5 years and less	6-10 years	0.18	0.098	0.191
		> 10 years	0.34(*)	0.121	0.022
	6-10 years	5 years and less	-0.18	0.098	0.191

		> 10 years	0.16	0.127	0.455
	> 10 years	5 years and less	-0.34(*)	0.121	0.022
		6-10 years	-0.16	0.127	0.455
Evolutional	5 years and less	6-10 years	0.17(*)	0.068	0.038
Justice		> 10 years	-0.03	0.084	0.947
	6-10 years	5 years and less	-0.17(*)	0.068	0.038
		> 10 years	-0.20	0.088	0.076
	> 10 years	5 years and less	0.03	0.084	0.947
		6-10 years	0.20	0.088	0.076
Total OJ	5 years and less	6-10 years	0.14	0.073	0.157
		> 10 years	0.19(*)	0.090	0.041
	6-10 years	5 years and less	-0.14	0.073	0.157
		> 10 years	0.05	0.095	0.862
	> 10 years	5 years and less	-0.19(*)	0.090	0.041
		6-10 years	-0.05	0.095	0.862

* The mean difference is significant at the 0.05 level

4.7.5.2 **Jordan**

Table 27. show statistically significant differences existed at (α =0.05) of OCB in courtesy of 0.042, the sportsmanship of 0.034 and conscientiousness of 0.002, and OJ in distributive justice of 0.000, interactional justice of 0.000, and a total of organizational justice due to the years of service variable, Pairwise Multiple Comparisons Post Hoc Test using the Scheffe method are conducted as in Table 28.

Table 27:

Means, Standard Deviations and One-way ANOVA Results of Sample Responses on Both OCB and OJ at Private Hospitals in Jordan Related to Years of Service Variable

	5 years and less		6-10 years		> 10 years		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
Altruism	4.24	0.843	4.15	0.610	3.98	0.780	2.647	0.073
Courtesy	4.39	0.519	4.24	0.784	4.12	0.771	3.207	0.042
Sportsmanship	4.25	0.866	4.21	0.680	3.96	0.883	3.189	0.043
Civic Virtue	4.00	0.664	4.06	0.771	4.09	0.539	0.390	0.677
Conscientiousness	3.45	0.890	3.89	0.817	3.85	1.002	6.471	0.002
Total OCB	4.05	0.480	4.10	0.574	4.01	0.544	0.673	0.511
Distributive Justice	2.54	0.717	3.02	1.111	3.04	0.779	9.165	0.000
Procedural Justice	2.87	0.924	3.02	1.057	3.02	1.018	0.704	0.496
Evolutional Justice	2.85	0.851	2.95	1.041	3.10	0.966	1.486	0.228
Interactional Justice	3.45	0.970	3.19	1.115	3.88	0.579	11.933	0.000
Total OJ	2.91	0.732	3.04	1.019	3.24	0.727	3.369	0.036

* The mean difference is significant at the 0.05 level

Table 28. shows that:

- There is a statistically significant difference at (α =0.05) between 5 years and less and 6-10 years in favor of 6-10 years and there is a statistically significant difference at (α=0.05) between 5 years and less and > 10 years in favor of > 10 years in conscientiousness.
- There is a statistically significant difference at (α=0.05) between 5 years and less and > 10 years in favor of > 10 years in courtesy and sportsmanship.
- There is a statistically significant difference at (α=0.05) between 5 years and less and 6-10 years in favor of 6-10 years and there is a statistically significant difference at (α=0.05) between 5 years and less and > 10 years in favor of > 10 years in distributive justice.
- There is a statistically significant difference at (α =0.05) between 5 years and less and > 10 years in favor of > 10 years and there is a statistically significant difference at (α=0.05) between 6-10 years and > 10 years in favor of > 10 years in interactional justice.

- There is a statistically significant difference at (α=0.05) between 5 years and less and > 10 years in favor of > 10 years in organizational justice.

Table 28:

Pairwise Multiple Comparisons Post Hoc Tests Using the Scheffe Method Due to Years of Service Variable

Dependent Variable	(I) Years of service	(J) Years of service	Mean Difference (I-J)	Std. Error	Sig.
Courtesy	5 years and less	6-10 years	0.15	0.105	0.367
		> 10 years	0.27(*)	0.105	0.044
	6-10 years	5 years and less	-0.15	0.105	0.367
		> 10 years	0.12	0.109	0.566
	> 10 years	5 years and less	-0.27(*)	0.105	0.044
		6-10 years	-0.12	0.109	0.566
Sportsmanship	5 years and less	6-10 years	0.05	0.124	0.930
		> 10 years	0.30(*)	0.124	0.060
	6-10 years	5 years and less	-0.05	0.124	0.930
		> 10 years	0.25	0.128	0.154
	> 10 years	5 years and less	-0.30(*)	0.124	0.060
		6-10 years	-0.25	0.128	0.154
Conscientiousness	5 years and less	6-10 years	-0.44(*)	0.137	0.006
		> 10 years	-0.40(*)	0.137	0.015
	6-10 years	5 years and less	0.44(*)	0.137	0.006
		> 10 years	0.04	0.141	0.961
	> 10 years	5 years and less	0.40(*)	0.137	0.015
		6-10 years	-0.04	0.141	0.961
Distributive Justice	5 years and less	6-10 years	-0.48(*)	0.133	0.002
		> 10 years	-0.50(*)	0.133	0.001
	6-10 years	5 years and less	0.48(*)	0.133	0.002
		> 10 years	-0.03	0.137	0.982
	> 10 years	5 years and less	0.50(*)	0.133	0.001
		6-10 years	0.03	0.137	0.982

Interactional Justice	5 years and less	6-10 years	0.26	0.139	0.176
		> 10 years	-0.43(*)	0.139	0.009
	6-10 years	5 years and less	-0.26	0.139	0.176
		> 10 years	-0.69(*)	0.144	0.000
	> 10 years	5 years and less	0.43(*)	0.139	0.009
		6-10 years	0.69(*)	0.144	0.000
Total OJ	5 years and less	6-10 years	-0.13	0.126	0.575
		> 10 years	-0.33(*)	0.126	0.037
	6-10 years	5 years and less	0.13	0.126	0.575
		> 10 years	-0.19	0.130	0.331
	> 10 years	5 years and less	0.33(*)	0.126	0.037
		6-10 years	0.19	0.130	0.331

The mean difference is significant at the 0.05 level

4.7.6 H4(f). Country Affects both OCB and OJ Significantly

To check hypothesis "H4 (f) of the study, means, standard deviations, and t-test" of the level of employees' perceptions of effects on both OCB and OJ at private hospitals in India and Jordan due to country variables are computed as in Table 29.

Table 29. shows statistically significant differences existed at (α =0.05) of OCB in altruism, courtesy, sportsmanship and total OCB, and OJ and its all dimensions to country variable in favor of India.

Table 29:

Means, Standard Deviations, and t-test Results of Sample Responses on both OCB and OJ at Private Hospitals in India and Jordan Related to Country

	India		Jordan			
	Mean	Std. Deviation	Mean	Std. Deviation	t-value	Sig
Altruism	4.46	0.571	4.13	0.760	-5.700	0.000
Courtesy	4.52	0.477	4.25	0.701	-5.076	0.000
Sportsmanship	4.52	0.526	4.15	0.824	-6.355	0.000
Civic Virtue	3.99	0.992	4.05	0.663	0.744	0.457
Conscientiousness	3.76	0.836	3.72	0.924	-0.504	0.615
Total OCB	4.22	0.520	4.05	0.531	-3.717	0.000
Distributive Justice	3.83	0.733	2.85	0.907	-13.665	0.000
Procedural Justice	4.10	0.506	2.97	0.997	-16.758	0.000
Evolutional Justice	4.21	0.508	2.96	0.953	-19.003	0.000
Interactional Justice	4.05	0.804	3.50	0.957	-7.121	0.000
Total OJ	4.04	0.542	3.06	0.841	-16.187	0.000

* The mean difference is significant at the 0.05 level

4.8 Results of the Discriminant Analysis

In the context of the present study, DA presented differences in perception of the variables that define both OJ and OCB constructs. This analysis is related, though indirectly, to research objectives 1, 2 and 3. The analysis can throw up a lot of suggestions for further research regarding the reasons of differences in perceptions of variables like courtesy , sportsmanship etc. Moreover, This survey intended to discover the employees' perception levels of OCB and OJ at the private hospitals in the Northern part of India (Punjab) and Jordan (Irbid). In addition, it investigated the effect of demographics variables of gender, designation, age, educational level, years of service, and country on employees' perception of both OCB and OJ**.** To achieve these objectives many statistical tests were used and the results were as follows:

4.8.1 OCB Variables

A direct discriminant purpose examination was implemented included five predictor variables of OCB in the Indian and Jordanian healthcare sector. Predictors are altruism, sportsmanship, courtesy, conscientiousness, and civic virtue.

Table 31. shows that the best predictors for distinguishing between employees in India and Jordan are altruism, sportsmanship, and civic virtue. Single discriminant function was calculated, with $\chi 2(5) = 20.435$, $P < 0.001$.

4.8.2 Results for OCB Variables

Table 31. shows that the interpretive results of the discriminant analysis. Wilks‟ lambda is significant at less than 1%. All Wilks" lambda values of independent variables are smaller than 1% expects the Wilks value of conscientiousness. Also, altruism courtesy and sportsmanship predictors are more significant, these predictors discriminate between the two sets as well as the mean is interested in India and Jordan hospitals as in Table (30).

Table 30:

Mean Comparison of Country India/Jordan

Variable	Country India	Jordan	F-value
Altruism	4.46	4.13	32.495**
Courtesy	4.52	4.25	25.767**
Sportsmanship	4.52	4.15	40.382**
Civic Virtue	3.99	4.05	0.554
Conscientiousness	3.76	3.72	0.254

The structure matrix below gives coefficients of correlation between independent variables and discriminant function. Usually, any predictor with a loading of 0.30 or more is considered to be important in defining the discriminant dimension. It is evident from

discriminant loadings that altruism, courtesy, and sportsmanship are more correlated with the function (Table 31).

Table 31:

Summary of Interpretive Measures for Discriminant Analysis

Variable		Wilks lambda	Unstandardized	Standardi-zed	Discr. loading	F ratio
Altruism		0.942	0.450	0.301	0.376(3)	32.495**
Courtesy		0.954	-0.219-	-0.130-	0.644(1)	25.767**
Sportsmanship		0.929	0.420	0.288	0.525(2)	40.382**
Civic Virtue		0.999	-0.453-	-0.385-	0.222	0.554
Conscientiousness		1.000	-0.067-	-0.059-	-0.231	0.254
Gp. Centroid 1	-0.379-					
Gp. Centroid 2	0.354					
Wilks‟ lambda	0.881**					
Canonical Correlation (Can. Corr.)	0.344					

**p<.0.01

On the foundation of the classification results, the point of the India and Jordan can be predicted as shown in Table 32. In the case of India, 70.9% (195) of the workers are properly predicted in the India class while 111 are classified into the Jordan category. On the other hand, 56.8% i.e., 146 respondents related to Jordan, while 29.1% i.e., 80 emerges into the India category. This shows that 64.1% of the cases are properly categorized.

Table 32:

Classification Results

		Predicted Group Membership		
	Country	Jordan	India	Total
	Jordan	146	111	257
	India	80	195	275
%	Jordan	56.8	43.2	100.0
	India	29.1	70.9	100.0

64.1% properly categorized of original grouped cases

4.8.3 OJ Variables

The discriminant task incomes the following method $L_i = b_o + b_1$ x distributive justice + b_2 x procedural justice + b_3 x evolutional justice + b_4 x interactional justice I=1 i.e., it has 2 clusters, four independent dimensions, and I discriminant task for each discriminant analysis applied of OJ.

A direct discriminant function analysis was achieved by four dimensions as predictors of association in two sets of countries. Predictors are distributive justice, procedural justice, evolutional justice, and interactional justice of organizational justice. The diagnostic groups are workers in India and Jordan hospital. Table 33. shows that all dimensions of OJ are significant, as well as the mean is interested. Individual discriminant task was considered, with $\chi 2$ (4) = 312.63, $p < .001$. Table (34) indicated that the best predictors for an individual between workers who are in both India and Jordan hospitals are procedural justice, evolutional justice, and interactional justice.

Equivalent numbers of individuals displayed in each set of the analysis cluster dimension. Total, 85.0% of the sample was properly categorized into their analysis set, overhead the value for an arrangement based on chance (50%). At the individual set level, 78.2% of individuals in

Jordan are correctly classified, 91.3% of individuals in India are correctly classified in Table 35.

4.8.4 Results for OJ Variables

Table 33:

Mean Comparison of Country India /Jordan

	Country		
Variable	India	Jordan	F-value
Distributive justice	3.83	2.85	186.741**
Procedural justice	4.10	2.97	280.832**
Evolutional justice	4.21	2.96	361.115**
Interactional justice	4.05	3.50	50.705**

**p<.0.01

Table 34. shows that the interpretive results of the discriminant analysis. Wilks‟ lambda is significant at less than 1%. All Wilks‟ lambda values of independent variables are smaller than 1%. The P value of all variables is less than 0.5; these predictors are significant and these predictors discriminate between the two sets.

From Table 34, it is obvious that distributive justice, procedural justice, and evolutional justice are contributing more than interactional justice.

The structure matrix below gives coefficients of correlation between independent variables and discriminant function. Normally, any predictor with a loading of 0.30 or more is considered to be important in defining the discriminant dimension. It is evident from discriminant loadings that distributive justice and procedural justice are more correlated with the function than others.

Table 34:

Summary of Interpretive Measures for Discriminant Analysis

Variable		Wilks lambda	Unstandardized	Standard-ized	Discr. loading	F ratio
Distributive justice		0.739	0.563	0.463	0.421(1)	186.741**
Procedural justice		0.654	0.635	0.497	0.411(2)	280.832**
Evolutional justice		0.595	0.719	0.544	0.222	361.115**
Interactional justice		0.913	-0.681-	-0.600-	0.112	50.705**
Gp. Centroid 1	-0.965-					
Gp. Centroid 2	0.901					
Wilks‟ lambda	0.534**					
Canonical Correlation (Can. Corr.)	0.683					

**p<.0.01

In the case of India, 91.3% (251) of the India employees are properly predicted in the India class while 56 are classified into the Jordan. On the other hand, 78.2% i.e., 201 respondents belong to Jordan, while 8.7% i.e., 24 emerges into the India category. This displays that 85.0% of the cases are properly categorized (Table 35).

Table 35:

Classification Results

		Predicted Group Membership		
	Country	India	Jordan	Total
	India	251	24	275
	Jordan	56	201	257
%	India	91.3	8.7	100.0
	Jordan	21.8	78.2	100.0

85.0% of original grouped cases correctly classified

The next chapter-5 focuses on using a fuzzy approach for hypotheses testing. The definitions used, models developed and the equations used have been provided.”

Chapter 5
Fuzzy Approach

5.1 Using Fuzzy Approach for Hypotheses Testing

Fuzzy logic provides extremely valuable flexibility in thinking by making it possible to take into account inaccuracies and uncertainties (K´oczy et al., 2020). Fuzzy logic has rules developed in natural language to study human thinking (K´oczy et al., 2020; Dernoncourt, 2013). Fuzzy numbers or fuzzy sets can appropriately represent inaccurate parameters and can be processed through various operations (Kahraman, Gülbay, & Kabak, 2006). Various fields apply fuzzy logic when handling partial truth (Lowen, 1990). Fuzzy set theory is used for problems in medical, business, engineering health sciences, and natural sciences (K´oczy et al., 2020; Kahraman et al., 2006).

In humanities and social sciences, the evaluation of data obtained from responses given to questionnaires is a complex task, and dealing with the inherent subjectivity and vagueness in such data is also essential (K´oczy et al., 2020). A method based on fuzzy signatures suitable for analysing questionnaires with hierarchically connected (partially) vague responses was proposed, and its applicability was demonstrated by a real-life problem by K´oczy et al. (2020). Li, Wu, Zhang, and Ling (2020) used the fuzzy-set qualitative comparative analysis approach to examine the contextual embeddedness of women"s entrepreneurship through a focus on gendered institutions.

This study confirms the complex interactions occurring among institutional components and highlighted the key role that gender equality in entrepreneurial cognitions plays in achieving high female entrepreneurship. According to Arefi and Taheri (2011) and Bodjanova (2005),

fuzzy hypothesis testing was a statistical technique that empowered them to test the hypothesis. Due to the quality and flexibility of the technique, it has a wide range of applications especially in social science research and other areas (Wu, 2009; Buckley, 2005; Manton et al., 1994).

5.2 Impact of Employees' Gender and Age on OCB Using a Fuzzy Approach

The definitions used, models developed and the equations used have been provided in Appendix (A) and the results of the fuzzy approach have been provided below.

The experimental analysis and results pertaining to the proposed work identify the impact of employees' gender and age on OCB as per employees‟ perception in Jordanian governmental hospitals.

5.2.1 Does Employees' Gender Significantly Affect Their Perception about OCB at Jordanian Hospitals?

Table 36. shows the final transformed results of means and Standard Deviation. Total means score of 3.07 due to the gender variable stands in favor of males. While females lag in all dimensions with a mean score of 2.86. There were statistically significant differences at (α=0.05) in the altruism of 0.006, civic virtue of 0.012, and courtesy of 0.045 respectively. While sportsmanship and conscientiousness had no statistically significant differences at (α=0.05). The total statistically significant difference is 0.011, as reported in Table 37.

Table 36:

Means, Standard Deviations Sample Responses Related to Participants' Gender

	Male			Female		
	Crisp Mean	Fuzzy Mean	Crisp S.D.	Crisp Mean	Fuzzy Mean	Crisp S.D.
Altruism	3.34	[1.00,4.68]	0.476	3.06	[2.03,4.09]	0.588
Courtesy	3.29	[2.09,4.49]	0.414	3.12	[1.60,5.18]	0.465
Sportsmanship	3.30	[1.33,5.27]	0.467	3.11	[3.00,3.22]	0.539
Civic Virtue	2.93	[1.86, 4.00]	0.697	2.62	[1.2,4.04]	0.619
Conscientiousness	2.57	[1.5,3.64]	0.748	2.49	[1.49,3.49]	0.748
Total Score	3.07	[2.05,4.09]	0.414	2.86	[1.72,4]	0.457

Table 37:

T-Test Results of Sample Responses Related to Participants' Gender

	t-value	Fuzzy t-value	Sig.
Altruism	2.801	[1.500,4.102]	0.006
Courtesy	2.030	[1.015,3.045]	0.045
Sportsmanship	1.945	[1.940,1.950]	0.054
Civic Virtue	2.551	[1.051,4.051]	0.012
Conscientiousness	0.586	[0,1.172]	0.559
Total Score	2.583	[1.050,4.116]	0.011

5.2.2 Does Employees' Age Significantly Affect Their Perception about OCB at Jordanian Hospitals?

Table 38. displays the final transformed results of means and standard deviation. Respondents of age 41 and above have the highest mean score in the altruism of 3.22, courtesy of 3.29, the sportsmanship of 3.31, and conscientiousness of 2.61. The total mean score is 3.03.

Table 38:

Means and Standard Deviation Result of Sample Responses Related to Age Variable

	Less than 30			31-40			41 and above		
	Crisp Mean	Fuzzy Mean	SD	Crisp Mean	Fuzzy Mean	SD	Crisp Mean	Fuzzy Mean	SD
Altruism	3.17	[1.97,4.37]	0.674	3.05	[1.85,4.25]	0.503	3.22	[2.02,4.42]	0.548
Courtesy	3.01	1.81,4.21]	0.502	3.10	[1.90,4.30]	0.453	3.29	[2.09,4.49]	0.406
Sportsmanship	3.05	[1.85,4.25]	0.579	3.04	[1.84,4.24]	0.573	3.31	[2.11,451]	0.435
Civic Virtue	2.90	[1.70,4.10]	0.698	2.44	[1.244,3.644]	0.622	2.82	1.62,4.02]	0.630
Conscientious-ness	2.52	[1.32,3.72]	0.800	2.37	[1.17,3.57]	0.762	2.61	[1.41,381]	0.714
Total Score	2.92		0.504	2.77		0.421	3.03		0.426

Table 39. shows statistically significant differences at (=0.05) in relation to the courtesy of 0.012, the sportsmanship of 0.016, and civic virtue of 0.008. While there are no statistically significant differences at (=0.05) in the altruism of 0.387 and conscientiousness of 0.387 due to age. The total significant score is 0.027.

Table 39:

One-Way ANOVA Result of Sample Responses Related of Their Age Variable

	t-value	Fuzzy t-value	Sig.
Altruism	0.958	[0.838,1.078]	0.387
Courtesy	4.602	[3.402,5.802]	0.012
Sportsmanship	4.268	[3.068,5.468]	0.016
Civic Virtue	5.050	[3.85,6.25]	0.008
Conscientiousness	1.150	[0.13,2.17]	0.320
Total Score	3.732		0.027

As can be observed from both analyses–SPSS based and fuzzy based-the results are similar in both cases. This can be interpreted as a basis for using the fuzzy approach to analyze data related to social sciences research. As argued by Zadeh (1965) and others after him, the nature of responses to questionnaires cannot be broken down into simple numbers.

Of course, this study made a very small attempt towards this direction. It will need attempts by more researchers who may have to carry out analyses related to various contexts and populations before it can be used with certainty. However, the researcher, by no means, advocates replacing traditional analysis with fuzzy. It may be used to complement or reinforce the results obtained through traditional statistics-based analyses.

The next chapter-6 focuses on reviewing and discussing the current results with the presenting body of knowledge.

Chapter 6
Discussion

The current study was exploratory in nature, with an aim to analyze the relationship between OCB and OJ as well as compare it between two samples recruited from the Indian and Jordanian private hospitals. In an attempt to prove the present research hypotheses, the first hypothesis "H1: The perception of employees of private hospitals in India and Jordan on OCB is high", revealed that OCB levels in both Indian and Jordanian private hospitals were high, which means that these results are in line with H1. These high levels of OCB could be associated with the satisfactory maximum levels of OJ in both countries and it could be related to the competitive strategies at these hospitals, where employees engaged in these practices of OCB due to personal motivation as they wanted to stay on in work.

In more details, *courtesy* and *sportsmanship* received the highest levels of employees' perception of OCB in private hospitals of Indian, while *courtesy* recorded maximum level in private Jordanian hospitals; *courtesy* is a vital feature of professionalism and customer service strategy of any organization that makes the employee more committed (Asif et al., 2013). These results are similar to the previous finding by Ajlouni et al. (2018) where a high level of OCB in which *courtesy* recorded the highest mean too among Jordanian non-academic staff members at governmental universities. Also, OCB was high among the employees working at Jordanian industrial companies (Abazee, 2010), but it was at a moderate level in Jordanian governmental hospitals as Ajlouni (2010). Moreover, Intaraprasong et al. (2012) studied OCB at one university hospital in Thailand and found it was high. Similarly, nurses practiced high levels of OCB in Turkish hospitals that increased their quality of services (Altuntas & Baykal, 2014). Finally, In India in public organizations, the OCB level was greater than in private organizations (Sharma et al., 2011).

The second hypothesis- "H2: perception of employees working at private hospitals in India and Jordan regarding OJ is high"- was partially approved; The employees' perception level of OJ was high in Indian private hospitals only, while in Jordanian private hospitals, it was not; *evolutional justice* received the highest mean score in India whereas *interactional justice* received the highest mean score in Jordan. *Distributive justice* ranked the last in both countries. However, the differences of OJ between these two countries could be related to organizational cultural diversity; OCB and organizational performance were greatly affected by organizational culture (Purnam 2013).

In the same realm, Hatam, Fardid, and Kavosi (2013) reported that nurses had a higher level of OJ in Iranian hospitals, in which *interactional justice* was the highest level (Moazzezi et al., 2014). Finally, Abosmaan (2015) found similar results regarding OJ and OCB at Jordanian private hospitals; the OCB level is higher than OJ. Inconsistently, Demirkiran et al. (2016) found that the employees recognize a maximum level of OJ and a medium OCB level. This discrepancy could be related to the variances of the studied sample at different organizational types that call for more potential investigations.

A significant positive impact of OJ on OCB is revealed by former studies (Rezaiean et al, 2010; Köse, & Köse, 2014; Abosmaan, 2015; Sarvestani et al., 2016; Demirkiran et al., 2016; Khalifa & Awad, 2018). Indian private hospitals showed a positive correlation between OCB and OJ which similar to the hypothesis- H3(a), which is partially acceptable because OJ dimensions are not completely affecting OCB on all dimensions. Additionally, the current investigation showed that the best predictor in Indian private hospitals was the *distributive justice* of OCB. This could be referred to as the collectivistic nature of the

Indian organization. By way of *distributive justice* negatively affecting OCB, according to Bostan and Kiliç (2017), reported that OJ positively affected OCB among health employees and *procedural justice* had the biggest influence which was consistent with Majeed et al. (2018) in their evaluation of the relations between OJ and OCB among teaching staff at Kashmir University. They proved that OCB is positively related to OJ. While *interactional justice* was the most important accepted extra-role behaviors in India (Mathur & Umari, 2013). There was a statistically significant positive correlation between OCB and OJ, which was true for most variables. Additionally, *procedural justice* is the best predictor of OCB among the employees working at Jordanian private hospitals. This could be due to the social and economic conditions in Jordan in which the employees are looking for the equity of policies related to resources distribution to improve their living standards.

Based on these results, H3(b) hypothesis is partially acceptable. Previously Jordanian non-academic staff recorded positive and a significant relation between OJ and OCB excluding OJ with *courtesy*, and OJ with *conscientiousness* (Ajlouni, 2018). Also, Yaghoubi et al. (2012) reported that in Isfahan hospital, OJ had no significant relationship with OCB in *civic virtue* and *sportsmanship*. Additionally, Ajlouni (2010) proved this relationship too in employees in Jordanian hospitals. Finally, Bostan and Kiliç (2017) in three hospitals of 346 workers reported that OCB is positively related to OJ with the biggest influence induced by *procedural justice* on OCB, while *distributive justice* had a negative relationship with OCB.

Still, there are discrepancies about the effect of employee demographics on their perceptions of OCB and OJ. In general, Mahnaz et al. (2014) found that OCB was affected by demographics with the exception of ethnicity. Abazeed (2010) reported no statistical differences

in OCB related to employees' demographics in Jordan. Consistently, El-Badawy et al. (2017) evaluated the effects of employee characters on OCB in Egypt and Mexico and reported no significant impact regarding demographical factors including: age, gender, years of experience, educational levels and OCB among both countries. However, this investigation indicated that gender had an effect on OJ and OCB among employees working at Indian and Jordanian private hospitals. These findings support the acceptance of the study hypothesis "H4(a). Gender affects both OCB and OJ".

More specifically, gender had effect on OJ and OCB at Indian private hospitals in favor of females, but it did not affect *evolutional justice* and *sportsmanship* items of OCB. Whereas in Jordanian private hospitals, the gender affected OJ significantly; specifically, *evolutional justice* and it also affected OCB, specifically *civic virtue* in favor of females too. The favor of females may be due to the higher percentage of females contributing to the current report since most of the nurses were females. Previously, Farzianpour et al. (2011) assumed a significant relation between managers' gender and OCB. Choi (2011) considered employees' gender as a moderator between OJ and employee trust with their boss. Women held a greater level of trust with their boss compared with men when they perceived *procedural justice.*

Employees' age had an impact on their perception of justice in their organizations (Altuntas & Baykal, 2014). The present study revealed that age had effects on all items of OJ except *evolutional justice* in Indian private hospitals; except *distributive justice* in Jordanian private hospitals and in all items of OCB in Indian private hospitals, while it did not affect *altruism* and *sportsmanship* items of OCB in Jordanian private hospitals. So, the hypothesis "H4(a). Gender affects both OCB and OJ"-is accepted in Indian private hospitals only. Younger employees

expressed higher levels of OCB related to impression management motivators in comparison to older employees who engaged in OCB due to pro-social motives (Huang et al., 2015). Moreover, a study by El-Badawy et al. (2017) showed that age had no significant effects on OCB among both Egyptian and Mexican employees.

According to this study, the designation of employees working at Indian private hospitals, have significantly affected OJ items except for *evolutional justice*; in favor of nurses than doctors and doctors more than others. Also, designation affected *altruism* and *conscientiousness* items of OCB. However, the designation affected all dimensions of OJ; statistical differences between nurses and others in favor of nurses could be related to differences in duties. Designation affected only the *conscientiousness* of OCB dimensions in Jordanian private hospitals. So, the hypothesis -"H4 (b) that designation affects both OCB and OJ"- is not completely acceptable. Farzianpour et al. (2011) proved a significant relationship between employees' field of study and OCB. Additionally, they discovered that designation is one of the demographics that induced an impact on OCB (Farzianpour et al., 2011) ;this is consistent with the current study. In Indian private hospitals, the educational level had an impact on all items of OJ except *evolutional justice,* while its effect appeared only on the *civic virtue* dimension of OCB.

In the case of Jordanian private hospitals, the educational level had an impact on OJ except for *evolutional justice,* and on OCB on *civic virtue, conscientiousness,* and total OCB. This effect was significant for postgraduates on total OCB than diploma holders. This could be because postgraduates possess different vital positions within the organization, so they could practice voluntary behaviors more than others. As a conclusion- "H4 (d) educational level affects both OCB and OJ"- is partially acceptable. Although, El-Badawyet al., (2017) in their

comparative study between Egypt and Mexico reported no significant impact of educational levels on OCB.

Years of service produced an effect on *distributive justice, evolutional justice*, and total OJ. Also, it affected OCB dimensions as *altruism, courtesy, civic virtue, conscientiousness*, and total OCB. This implies that -"H4(e) years of service affect both OCB and OJ" -is partially acceptable. That is inconsistent with El-Badawy et al. (2017). Matarid et al. (2018) also reported significant relationships between age, educational level, experience and total OJ and its dimensions, but insignificant between educational level and *interpersonal justice*.

Finally, there was a significant difference at (α =0.05) between *distributive justice, interactional justice, evolutional justice, procedural justice,* and a total of OJ with OCB ;*altruism, courtesy, sportsmanship* and OCB related to the type of country variable in favor of India. The result supports the final hypothesis- H4(g), the country affects both OCB and OJ- and calls for more studies to explore the effect of cultural diversity on OJ and OCB.

The next chapter-7 focuses on implications, recommendations, and suggestions for future research.

Chapter 7
Implications and Recommendations

7. Implications and Recommendations

The current study indicated that the results have contributions for healthcare practice, healthcare educations, healthcare management, and potential studies. The current study showed that OCB and OJ levels in the private hospital are high. So, as practical considerations, health organizations should try to maintain these desirable levels of OCB and OJ by applying some strategies focusing on the reward process. In addition, encouraging OCB by promoting employees' autonomy over their practice, as well as effective communication, self-confidence, and leadership training programs are required (Allesandro et al, 2019). Though the Jordanian health sector ranks as one of advanced medical providers in the Middle-East, it still calls for more efforts to put it in the way for world-class health care as in Indian health sector. An organizational climate that encourages employee to perform their duties and put their extra efforts is needed in Jordanian health care mission.

Also, the present study indicated the significance of OCB in health education through teaching students the main principles of OCB and OJ for organizational success, and through building their proactive personality.(Priyadarshi & Raina 2014). Finally, the collaboration between health educators and hospital managers could be vital for adopting OCB in all Indian and Jordanian hospitals.

For administrative benefits, managers can use the current results, to design policies that stimulate the implementation of OCB in hospitals and facilitate fair treatment of

employees. (Malhotra, 2009). Furthermore, managers need to assess OCB daily practices to overcome actual and potential barriers (Ammouri, et al 2014).

For research issues, because there were no previous published studies about OJ and its relations to OCB in Jordanian private hospitals, additional studies are required to provide further information about studied variables, within a wider range of different hospitals in Jordan. More comprehensive studies including all hospitals in India and Jordan are needed to assess the effectiveness of applying OCB in daily practices. In the end, the finding of this study can be used as baseline data for further investigations of such issues related to implementing OCB and OJ in the health sector in Jordan and different cultures.

Finally, the current study revealed a small difference in levels of OJ between India and Jordan; it was slightly higher in India. This calls for more investigations to detect the effect of culture on the OJ level. However, OCB is self-motivated and self-initiated personal behavior and unfortunately few studies have investigated these motivations. So, more potential work using focus group samples is needed to clarify the OCB motivational process.

The novel contribution of this study was to make a comparison of OJ and OCB more effective by using *fuzzy logic*, ultimately to obtain optimal relationships between OJ and OCB at hospital workplaces. Presently, only a few studies have examined HR variables or OJ and OCB variables in healthcare using fuzzy correlation. Data mining or using such methods for analysis in social sciences is a novel approach (Ranjan & Goyal,2008).This study showed an important correlation between OJ and OCB at

Jordanian hospitals. Based on this study managers of the hospitals can spread strategies to foster adoption of OCB in clinical settings, such as organizing training programs tailored to specific target groups among their employees.

7.1 Employees' Adoption of OCB

OJ is all about employees' feeling of fairness at the organization. In fact, many studies have proved that promoting OJ in an organization positively affected employee's practicing of OCB (Tayeh, 2012; Moliner et al., 2008; Colquitt et al., 2000). This in turn positively enhances the organization's success and productivity (Omotayo, 2014; Nooh, 2013; Purnama, 2013)**.**

Adopting OCB at hospitals has many advantages included providing a high quality of patient care, which in turn achieves more patient satisfaction (Sutharjana et al., 2013). Additionally, the present investigation showed that the OCB level was high in private hospitals. This can help managers to apply some strategies or initiatives for adapting OCB in hospitals. First, managers should assess the work area that encourages or discourages an employee from practicing OCB. Then, assess the employee to detect the ratio of proactive employees who engage in OCB to encourage them to maintain these behaviors. At the same time, training programs for less proactive employees could be helpful. However, including OCB in formal job performance appraisal may encourage the employee to consider OCB as one of their duties.(Mukhi,et al,2004)

The results of this investigation are consistent with the previous work, which found that an employee's feeling of fairness at the workplace strongly decreases their level of work-related stress (Cropanzano & Molina, 2015). This in turn encourages practicing

OCB. So, managers should be fair in their interactions with the employee, especially with rewards distributions. Finally, this study raises the question of the effect of manager-employee relations with OCB and OJ.

7.2 Limitations, Suggestions, and Future Direction

The main limitation was the sample limited to private hospitals from one city from India and Jordan. So, the study results could not be representative of all the private hospitals in both countries. So, more comprehensive studies including wider/other health care sector areas could be more helpful. Also, the current study focused on the private hospitals and because of the differences in policies in a different type of hospitals including the university-affiliated and government-affiliated hospitals, more replications of this study at these hospitals is recommended.

Convenience sampling is another important limitation that compromises the generalizability of the findings; a randomized sampling is recommended in future research. Another limitation is the self-reporting bias caused by the method of data collection in which participants had to fill the questionnaires in which subjectivity can't be excluded is recommended. Creating an OCB environment is affected by OJ as this study showed, this relation does not mean causality, while potential literature could focus more on understanding the causal relationship.

Further study is needed to focus on investigating the antecedents which promote factors for practicing OJ and OCB. However, future studies have been started to illuminate OJ and OCB at multi diversity cultures. Finally, more studies about OJ and OCB that include a diversity of hospitals are needed to understand these phenomena and

to create better hospital workplaces. Further study should focus on understanding the causal nature of this relationship.

7.3 Summing Up

The current study explored and compared the employees' perception level of OCB and OJ at the private hospitals in North parts of India (Punjab) and Jordan (Irbid). In addition, it evaluated the effect of OJ on OCB in both countries. The main results found that the employees' perception level of OCB is high at Jordanian private hospitals as well as in Indian private hospitals, while OJ is higher in Indian private hospitals than in Jordanian ones. In addition, this investigation showed a positive correlation between OCB and OJ. Moreover, employee demographics prompted OCB and OJ in both countries. This study has many implications for practice, education, administration, and research. Hospital managers should apply some strategies to maintain the high levels of OCB in clinical settings. Finally, more studies about OCB and OJ including the diversity of hospitals are needed.

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Appendix A

Fuzzy Hypothesis Testing

Preliminaries

The definitions of a fuzzy set are given as hereunder:

Definition 1: Let U be a universal set and a set $\tilde{A} = \{\langle x, \mu_{\tilde{A}}(x)\rangle | x \in U\}$is called a fuzzy set, where $\mu_{\tilde{A}}: U \rightarrow [0,1]$indicates the degree of membership of x in$\tilde{A}$.

Definition 2: Let $\tilde{A}$ be a fuzzy set in U and $\alpha \in [0,1]$. Then, the crisp set $A_\alpha = \{x \in X : \mu_{\tilde{A}}(x) \geq \alpha\}$ as shown in Figure 13.

Figure 13:

α-cut of A Triangular Fuzzy Number

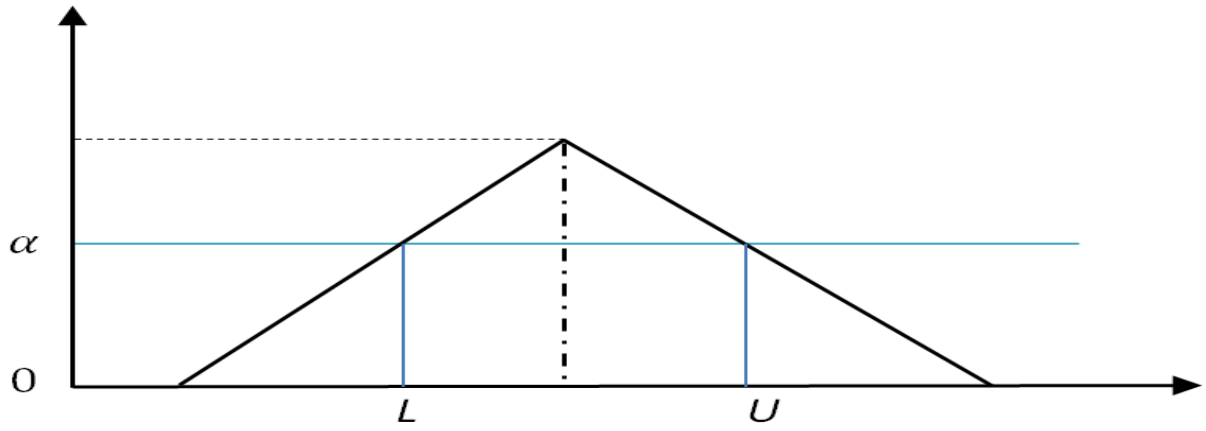
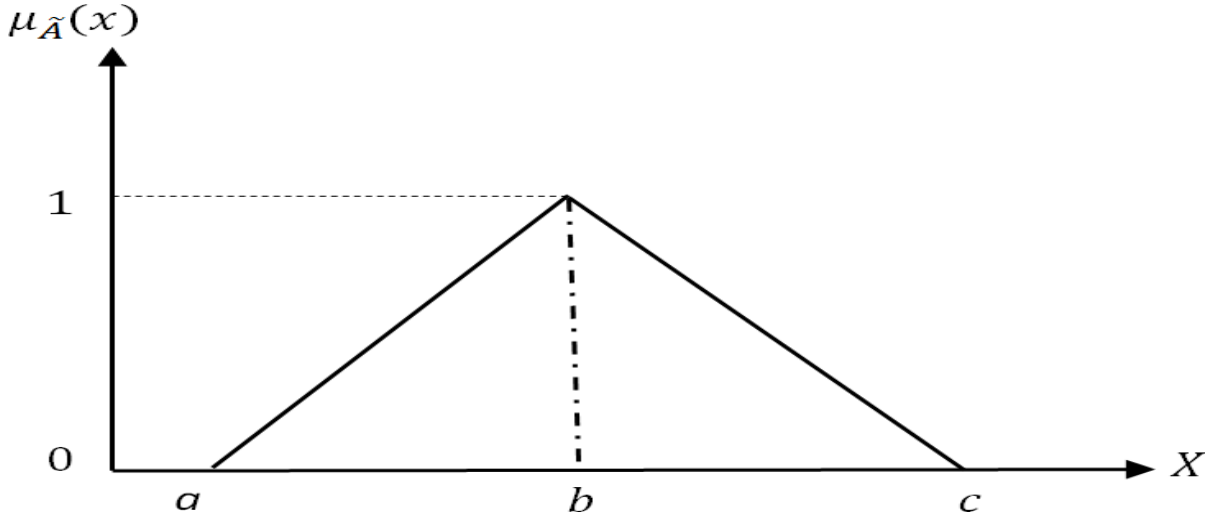


Figure 14:

Triangular Fuzzy Numbers



Definition 3: Let $\tilde{A}$ be a fuzzy set in U. Then, the crisp set $(\tilde{A}) = \{ \in X : \mu_{\tilde{A}}(x) > 0\}$ is called the support of the fuzzy set$\tilde{A}$.

Definition 4: Let $\tilde{A}$ be a fuzzy set in U. Then, $h(\tilde{A}) = \underset{x \in X}{Sup}\{\mu_{\tilde{A}}(x)\}$ is called height of the fuzzy set$\tilde{A}$. If $h(\tilde{A}) = 1$, then the fuzzy set $\tilde{A}$ is called a normal fuzzy set.

Definition 5: A fuzzy set$\tilde{A}$, defined on the universal set U, is said to be convex, if $\mu_{\tilde{A}}(\lambda x_1 + (1-\lambda)x_2) \geq minimum\ (\mu_{\tilde{A}}(x_1), \mu_{\tilde{A}}(x_2))$, for all $x_1, x_2 \in X$ and $\lambda \in [0,1]$.

Definition 6: A fuzzy set $\tilde{A}$, defined on the universal set of real numbers, is called a fuzzy number if it satisfies the following conditions:

(i) $\tilde{A}$ is a normal fuzzy set,

(ii) A_α is a closed interval for every $\alpha \in [0,1]$,

(iii) $(\tilde{A})$ is a bounded set.

Definition 7: A fuzzy set $\tilde{A}$ is said to be a triangular fuzzy number if its membership function $\mu_{\tilde{A}}(x)$ is defined as:

$$\mu_{\tilde{A}}(x) = \begin{cases} \dfrac{x-a}{b-a}, & a < x \leq b \\ \dfrac{c-x}{c-b}, & b \leq x < c \\ 0, \text{otherwise.} \end{cases}$$

Table 40:

The Fuzzy Triangular Scale of Fuzzy ANOVA

Linguistic Variable	Code	Triangular Fuzzy Number (TFN)
Strongly disagree	SDA	$\tilde{1} = (0, 1, 2)$
Disagree	DA	$\tilde{2} = (1, 2, 3)$
Agree	A	$\tilde{3} = (2, 3, 4)$
Strongly agree	SA	$\tilde{4} = (3, 4, 5)$

A triangular fuzzy number $\tilde{A}$ is generally denoted by $\tilde{A} = (a, b, c)$ and represented as shown in Figure 14.

Arithmetic Operations on Interval Fuzzy Numbers

Let $\tilde{A} = [L_1, U_1]$ and $\tilde{B} = [L_2, U_2]$ be two interval fuzzy numbers. Then,

(i) $\tilde{A} + \tilde{B} = [L_1 + L_2, U_1 + U_2]$,

(ii) $\tilde{A} \times \tilde{B} = [L, U]$ where, $L = minimum\{L_1L_2, L_1U_2, U_1L_2, U_1U_2\}$ and $U = maxim\{L_1L_2, L_1U_2, U_1L_2, U_1U_2\}$

(iii) $\tilde{A} - \tilde{B} = [L_1 - U_2, U_1 - L_2]$.

(iv) $\tilde{A}^{-1} = [\frac{1}{U}, \frac{1}{L}]$.

Fuzzy ANOVA Method

In this section, the proposed method is illustrated as follows:

1. Collected the data from employees or a group of participants through a questionnaire in terms of linguistic variables like were strongly agree, agree, disagree, strongly disagree, etc. Transformed the linguistic data into triangular fuzzy numbers, using the fuzzy triangular scale as shown in Table 40.

The triangular fuzzy number $\tilde{A} = (a, b, c)$, and represents the information of employees or a group of participants as shown in Figure 15.

Let $\tilde{A}$ be a fuzzy random variable, using the relation $[a + (b - a)\alpha,\ c - (c - b)\alpha]$,

$\alpha \in [0, 1]$ to replace the triangular fuzzy number $\tilde{A} = (a, b, c)$ with the interval fuzzy number $[A_{\alpha}^{L},\ A_{\alpha}^{U}]$.

2. Assumed the following fuzzy testing hypothesis:

$$\tilde{H}_0: \tilde{\mu}_1 = \tilde{\mu}_2 = \cdots = \tilde{\mu}_n$$

$$\tilde{H}_1: \tilde{\mu}_1 \neq \tilde{\mu}_2 \neq \cdots \neq \tilde{\mu}_n$$

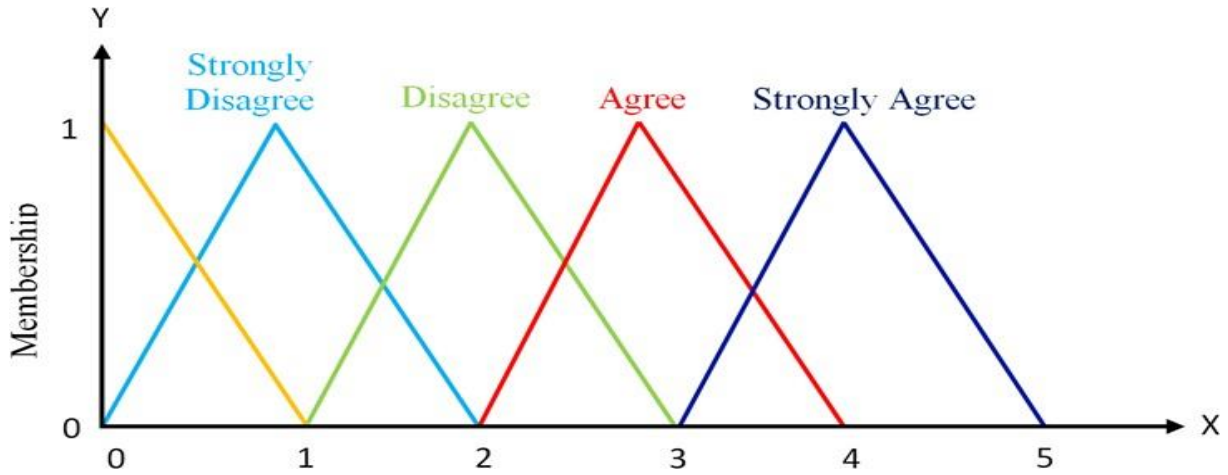
Where $\tilde{H}_0$ is the null hypothesis, and $\tilde{H}_1$ is the alternative hypothesis. Let

$$\tilde{X} = \tilde{\mu} \oplus \tilde{1}_{\{\varepsilon_{ij}\}} \qquad (1)$$

Where, $\tilde{1}_{\{\varepsilon_{ij}\}}$ is the crisp random variable; and (N, σ^2) is the normal distribution. Then, using the relation $[a + (b - a)\alpha\ ,\ c - (c - b)\alpha], \alpha \in [0,\ 1]$ and (1) to obtain the following two crisp.

Figure 15:

Response of Participants



ANOVA models $(\tilde{X}_{ij})_{\alpha}^{L} = (\tilde{\mu})_{i\ \alpha}^{L} \oplus \varepsilon_{ij}$ and $(\tilde{X}_{ij})_{\alpha}^{U} = (\tilde{\mu})_{i\ \alpha}^{U} \oplus \varepsilon_{ij}$

embrace the following notation:

$$\tilde{X}_{i} = \oplus_{j=1}^{ni}\ \tilde{X}_{ij} \text{ and } \tilde{X}_{\ldots} = \oplus_{i=1}^{r} \oplus_{j=1}^{ni}\ \tilde{X}_{ij}. \qquad (2)$$

3. Using (2) as mentioned above and subsection 3.1, to transform the fuzzy ANOVA model into two crisp ANOVA models, this can be written as follows:

$$(\tilde{X}_{i})_{\alpha}^{L} = \sum_{j=1}^{n_i} (\tilde{X}_{ij})_{\alpha} \text{ and } (\tilde{X}_{i})_{\alpha}^{U} = \sum_{j=1}^{n_i} (\tilde{X}_{ij})_{\alpha}^{U}$$

$$(X_{\ldots})_{\alpha}^{L} = \sum_{i=1}^{r}\sum_{j=1}^{n_i} (X_{ij})_{\alpha}^{L} \text{ and } (\tilde{X}_{\ldots})_{\alpha} = \sum_{i=1}^{r}\sum_{j=1}^{n_i} (\tilde{X}_{ij})_{\alpha}^{U}.$$

4. Applied crisp ANOVA method to obtain sums of squares based on the interval valued observations $(X_{ij})_{\alpha}^{L}$ and $(\tilde{X}_{ij})_{\alpha}^{U}$ as follows:

$$SSTO_{\alpha}^{L} = \sum_{i=1} \sum_{j=1}^{n_i} [(\tilde{X}_{ij})_{\alpha}]^2 - \frac{[(\tilde{X}_{\ldots})_{\alpha}^2]}{n_T}, SSTO_{\alpha}^{U} = \sum_{i=1}^{r} \sum_{j=1}^{n_i} [(\tilde{X}_{ij})_{\alpha}]^2 - \frac{[(\tilde{X}_{\ldots})_{\alpha}^2]}{n_T}$$

$SSTR_{\alpha}^{L} = \sum_{i=1} \frac{[(\tilde{X})_{i\alpha}]^2}{n_i} - \frac{[(\tilde{X})_{..\alpha}^{L}]^2}{n_T}$,$SSTR_{\alpha}^{U} = \sum_{i=1} \frac{[(\tilde{X})_{i\alpha}]^2}{n_i} - \frac{[(\tilde{X})_{..\alpha}^{U}]^2}{n_T}$

$SSE_{\alpha}^{L} = \sum_{i=1} \sum_{j=1}^{n_i} [(\tilde{X})_{ij}]_{\alpha}^{L}]^2 - \sum_{i=1} \frac{[(\tilde{X})_{i\alpha}]^2}{n_i}$, $SSE_{\alpha}^{U} = \sum_{i=1} \sum_{j=1}^{n_i} [(\tilde{X})_{ij}]_{\alpha}^{2} - \sum_{i=1} \frac{[(\tilde{X})_{i\alpha}]^2}{n_i}$ and also relations $SSTO_{\alpha}^{L} = SSTR_{\alpha}^{L} + SSE_{\alpha}^{L}$ and $SSTO_{\alpha}^{U} = SSTR_{\alpha}^{U} + SSE_{\alpha}^{U}$.

5. Computed the mean squares using Step 5 $MSTR_{\alpha}^{L} = \frac{SSTR_{\alpha}^{L}}{r-1}$ and $MSTR_{\alpha}^{U} = \frac{SSTR_{\alpha}^{U}}{r-1}$ $MSE_{\alpha}^{L} = \frac{SSE_{\alpha}^{L}}{n_T-1}$ and $MSE_{\alpha}^{U} = \frac{SSE_{\alpha}^{U}}{n_T-1}$ and also constructed the two crisp ANOVA in Table 41 and Table 42 respectively as follows:

Table 41:

Lower Crisp ANOVA

Source of Variation	**SS**	**d.f.**	**MS**
Between treatments	$SSTR_{\alpha}^{L}$	$r-1$	$MSTR_{\alpha}^{L}$
Error(within treatments)	SSE_{α}^{L}	$n_T - r$	MSE_{α}^{L}
Total	$SSTO_{\alpha}^{L}$	$n_T - 1$	

Table 42:

Upper Crisp ANOVA

Source of variation	**SS**	**d.f.**	**MS**
Between treatments	$SSTR_{\alpha}^{U}$	$r-1$	$MSTR_{\alpha}^{U}$
Error(within treatments)	SSE_{α}^{U}	$n_T - r$	MSE_{α}^{U}
Total	$SSTO_{\alpha}^{U}$	$n_T - 1$	

6. Finally, in order to test whether the hypothesis is accepted or not, the following test statistic was used:

$$F_{*} = [F_{\alpha}^{L}, \quad F_{\alpha}^{U}] = [\frac{MSTR_{\alpha}^{L}}{MSE_{\alpha}^{L}}, \frac{MSTR_{\alpha}^{U}}{MSE_{\alpha}^{U}}].$$

Using the defuzzification function $m_\alpha = \omega\left(\frac{1}{a_{ij}+(b_{ij}-a_{ij})\alpha}\right) + (1-\omega)\left(\frac{1}{c_{ij}-(c_{ij}-b_{ij})\alpha}\right)$, $\omega \in [0,\ 1]$ to obtain crisp$F^* = \frac{MSTR}{MSE}$, the following cases arose:

Case I: If$F^* \leq F_{1-\alpha;r-1,n_T-r}$, then we accept the null hypothesis $\tilde{H}_0$.

Case II: If$F^* > F_{1-\alpha;-1,n\ \bar{T}r}$, then we accept the alternative hypothesis $\tilde{H}_1$ (Wu, 2007).

Fuzzy t-test

Let $\tilde{X} = (a_i, b_i, c_i); i = 1, 2, \ldots, m$ be a random sample of triangular fuzzy numbers with size m and $\tilde{Y} = (a_j, b_j, c_j); j = 1, 2, \ldots, n$ be a random sample of triangular fuzzy numbers with size n. Using the relation $[a + (b-a),\ c - (c-b)],\ \alpha \in [0,\ 1]$ to replace the triangular fuzzy number $\tilde{A} = (a, b, c)$ with the interval fuzzy number $[A^L_\alpha, A^U_\alpha]$ and suppose that $[\eta^L_1, \mu^U_1]$ and $[\eta^L_2, \mu^U_2]$ be mean of normal population of $\tilde{X}$and $\tilde{Y}$respectively.

Now for the null hypothesis $\tilde{H}_0: [\eta^L_1, \mu^U_1] = [\eta^L_2, \mu^U_2]$ and alternative hypotheses are given. $\tilde{H}_1: [\eta^L_1, \mu^U_1] > [\eta^L_2, \mu^U_2]$ or $\tilde{H}_1: [\eta^L_1, \mu^U_1] < [\eta^L_2, \mu^U_2]$ or $\tilde{H}_1: [\eta^L_1, \mu^U_1] \neq [\eta^L_2, \mu^U_2]$. The sample means and standard deviations of$\tilde{X}$ and $\tilde{Y}$ have been collected as follows:

Case I: If the standard deviations of the population are assumed to be equal, then the null hypothesis$\tilde{H}_0: [\eta^L_1, \mu^U_1] = [\eta^L_2, \mu^U_2]$ is expressed as follows:

$$\tilde{t} = [t_l, t_u] = \frac{\bar{X}_L - \bar{Y}_L}{[s_L\sqrt{\frac{1}{m}+\frac{1}{n}}}, \frac{\bar{X}_U - \bar{Y}_U}{s_U\sqrt{\frac{1}{m}+\frac{1}{n}}]}$$

Where,

$$\tilde{S} = [s_L, s_L] = \left[\sqrt{\frac{(m-1)s^2_{X_L} + (n-1)s^2_{Y_L}}{m+n-2}}, \sqrt{\frac{(m-1)s^2_{X_U} + (n-1)s^2_{Y_U}}{m+n-2}}\right].$$

Case II: If the standard deviations of population are assumed to be unequal, then the null hypothesis $\tilde{H}_0: [\eta^L_1, \mu^U_1] = [\eta^L_2, \mu^U_2]$ is expressed as follows:

$$\tilde{t} = [t_l, t_u] = \left[\frac{\bar{X}_L - \bar{Y}_L}{\sqrt{\frac{s^2_{X_L}}{m} + \frac{s^2_{Y_L}}{n}}}, \frac{\bar{X}_U - \bar{Y}_U}{\sqrt{\frac{s^2_{X_U}}{m} + \frac{s^2_{Y_U}}{n}}}\right].$$

Finally, by using the defuzzification function, $m_\alpha = \omega\left(\frac{1}{a_{ij}+(b_{ij}-a_{ij})\alpha}\right) + (1-\omega)\left(\frac{1}{c_{ij}-(c_{ij}-b_{ij})\alpha}\right), \omega \in [0, 1]$ to transform the fuzzy $\tilde{t} = [t_l, t_u]$, value into the crisp t value and use the crisp t-test (Devore, 2008) to check that the null hypothesis $\tilde{H}_0: [\eta^L_1, \mu^U_1] = [\eta^L_2, \mu^U_2]$ whether stands accepted or rejected.

Appendix B

Questionnaire

Dear participant

"This study aims to recognize the significant relationships of OJ and OCB in the workplace of hospitals.

The study will not take more time to complete. Instructions are listed for each part of the questionnaire. Please carefully read and honestly answer each and every question. Be assured that all your responses will be anonymous. The study results will be reported only in the aggregate. You will never be individually identified. Participation in the survey is completely voluntary. Your response is important and greatly appreciated".

Part one

Demographic Information

Gender	☐ Male	☐ Female
Job Title	☐ Nurse ☐ Other	☐ Doctor
Age	☐ less than 30 years old ☐ More than 50 years old	☐ 31 to 50 years old
Educational level	☐ Diploma and less ☐ Bachelor	☐ Post-graduate
length of service	☐ 5 years and less ☐ 6-10 years	☐ More than 10 years

Part two

Factors		Strongly agree	Agree	Medium agree	Disagree	Strongly disagree
OJ						
Distributive justice						
1	I feel that my functional duties are fit with my abilities.					
2	My working hours are fit with my personal circumstances.					
3	My monthly salary is appropriate.					
4	Salaries and bonuses that I get are fit with my effort in work.					
5	Unpaid holidays are fair for all employees.					
6	The incentives are fairly Distributed among workers.					
7	Workload is distributed fairly among the hospital workers in a fair way.					
Procedural justice						
8	My manager takes job related decisions objectively and fairly.					
9	My manager keens that every employee can express his opinion before making job decisions.					
10	My manager collects the required information before making any job decision.					
11	My manager explains decisions and provides additional details for employee's inquiry about these decisions.					

12	Administrative decisions are applied on all employees without exceptions.					
13	Promotions process of top jobs done according to fair rules.					
14	The hospital administration adopts transparency in the nomination of the employees for training courses.					
Interactional justice						
15	My manager shows interest in me and social respect towards me.					
16	There is a mutual respect between me and my manager in relation to my job.					
17	My manager frankly discusses with me the decisions made relating to my job.					
18	Hospital administration deals with the employees related issues in a fair way and according to available regulations And instructions that followed.					
19	My manager encourages and enhances the relations among employees based on love and respect.					

Factors		Strongly agree	agree	Medium agree	Disagree	Strongly disagree
OCB						
Altruism						
1	I assist my co-workers to learn new skills and techniques when they need help.					
2	I help in the directing of new employees even if they did not ask me for that.					
3	I help my colleagues in learning new skills and techniques when they need that.					
4	Remain ready to devote a part of my time to help colleagues who face problems at their work.					
Courtesy						
5	I respect the rights and privacy of my colleagues at work.					
6	I consult with my colleagues who may feel affected by my decisions.					
7	I provide encouragement and moral support to my colleagues in difficult times.					
8	I provide appropriate information to my colleagues through my experience that helps them in performing their work more efficiently.					
Sportsmanship						
9	I don’t waste my time in complaining against others at work.					

10	My colleagues consider me wrong in any way, I apologize to them.					
11	I accept the comments and suggestions of my colleagues in case of any mistake while performing my duty at work.					
Civic Virtue						
12	Always attend the informal meetings and seminars held by the hospital authorities.					
13	I regularly read and follow the announcements and memorandums of the hospital administration that are meant for the employees.					
14	I adapt myself to all the developments which are necessary for my success at work in the hospital.					
15	I always try to share a positive image about the hospital where I work to others.					
16	I remain ready to do tasks that are not required of me, which ultimately helps in improving the image of the hospital.					
Conscientiousness						
17	I perform even those activities that are beyond the main task of my job.					
18	I'm ready to work for extra hours without pay.					
19	I have personal self-motivated to restrictive the instructions and rules of the hospitals' administration, and that by personal self-motivated.					
20	If my work is finished before the end given time, I try to find extra and perform tasks without expecting any reward.					