

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter aims to demonstrate the methods used in answering all the research questions. It also explains the researcher's essential steps to respond to the questions that were asked in the first chapter of this study. These steps are considerably helpful to achieve the main aims drawn earlier. In this chapter, the study's methodology helps reveal the effect of Islamic work ethics (IWE) on employee performance (EP) through the mediator variable, employee commitment (EC), in the public health sector in the kingdom of Bahrain. Besides, this chapter consists of a more detailed description of the research design and methodology used in this study and the study model. Following that, the study variables, measurements and hypotheses will be presented. Moreover, the chapter discusses statistical methods used in the analysis of this study, the definition of the population and the sample of the study and the data collection tool, data collection methods and exploratory study with its results validity and reliability of the study scale. This chapter also explains the pilot study conducted prior to the study.

#### 3.2 Research Design

The research design aims to identify what data to be gathered in the study, its participants, how and when to collect the data and how to analyse the data that has been obtained. According to Johannesson & Perjons, (2021) the term of research designed

was defined as a master plan to coordinate research in order to ensure the efficient use of resources and conduct research should be according to scientific methods, or it could be a plan to respond according to the goals or objectives of the research, its structure and framework to solve a specific problem.

Then, Sekaran and Bougie (2010) noted that two types of research designs that can be used to solve the research problem: the quantitative approach and the qualitative approach. Zikmund, Babin and Griffin (2013) defined a qualitative method as unstructured and exploratory in nature where a researcher can only use a limited number of respondents.

A qualitative research method allows respondents to express their feelings, thoughts and views and those response are recorded as data. Therefore, this data is based on the respondents' own words. Consequently, researchers would not be able to generalize the results to the whole population due to the sample size limitation (Zikmund, Babin and Griffin, 2013). A qualitative approach is totally different from a quantitative approach because it is designed for the purpose of exploring while a quantitative approach is intended for the use of calculating rather than exploration (Jeevan et al., 2019).

Researcher of this study used the structural equation model (SEM) method to determine the significant influence between the dependent variable, independent variable and mediator variable with data related to healthcare practitioners in the Kingdom of Bahrain. The quantitative method was used to generalize better prediction and explanation for the understanding of the relationship between research variables (Babbie, 2015).

The study aims to predict and explain a better understanding of the relationship between independent, dependent and mediator variables. Quantitative approach enables

the researcher to provide answers for research questions involving predictable implementation in the problem statement, hence using alternative research hypotheses enables researchers to collect data from a larger sample size. Furthermore, researchers can generalise the result to the whole population and examine the significance of the research variables (Synopsis, 2017; Zikmund et al., 2013).

In addition, quantitative approach is more systematic and formal, where its measurement is using specific statistics for example, in selecting an appropriate approach, depending on the types of questions that require answering. In other words, quantitative methods are the appropriate method for various and rational reasons. Figure 17 below illustrates the flow of this research:

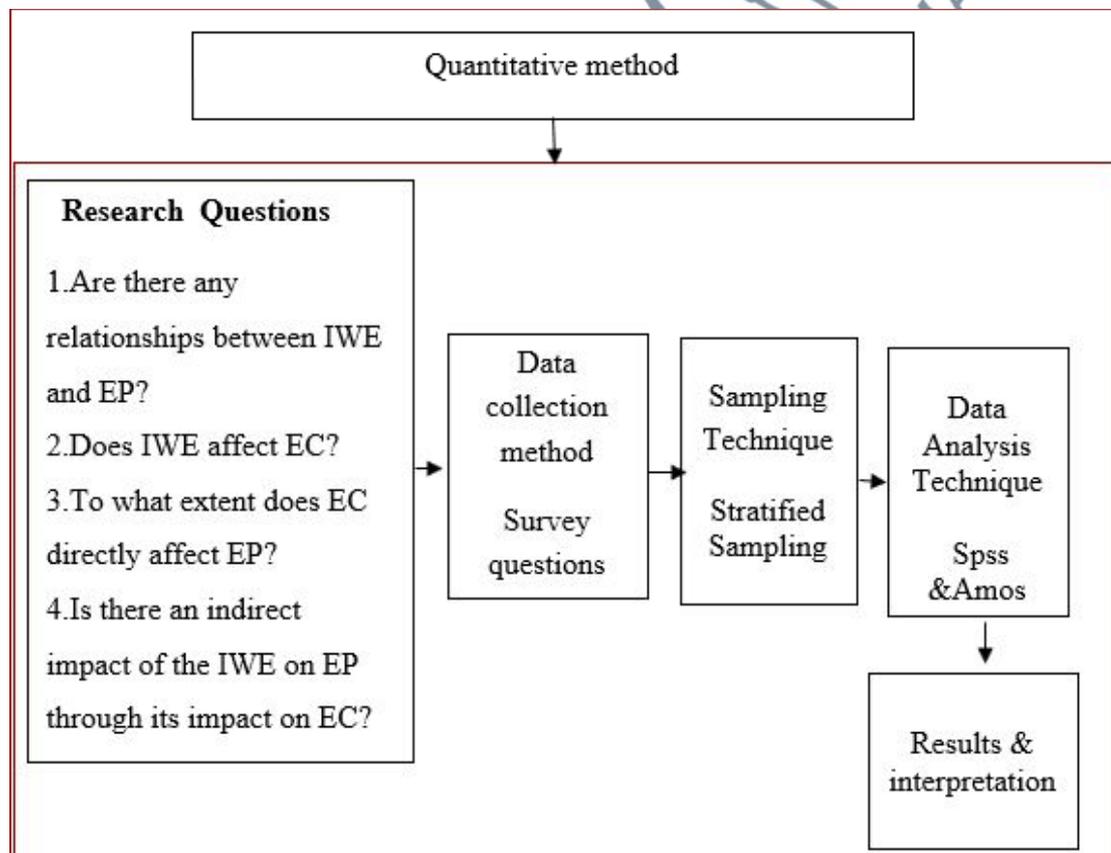


Figure 17: Research design for this study

### **3.3 Population, Sample Size and Sampling**

#### **3.3.1 Population**

The population of the study refers to the sum of individuals, groups and objects being analysed or evaluated. It is a collection of elements or items that the researcher is interested in the field of research (Reed, M. S., Ferre, M., Martin-Ortega, J., Blanche, R., Lawford-Rolfe, R., Dallimer, M., & Holden, 2021; Sekaran, U. & Bougie, 2010). It is often defined in terms of population demography, geography, occupation, time requirements, diagnosis, or some combination of the above.

The study of population represents all the study units whereby data are obtained in proportion to the problem of the study and its questions and objectives. The target population of this study includes medical staff such as doctors, nurses, and pharmacists who are working in public hospitals, health centres, a public clinic in Bahrain, three main hospitals in public and 22 health centres. The three professionals (doctors, nurses and pharmacists) are the health professionals who have the most contact with patients. They are also considered as the frontline medical staff.

As such, the current study population consists of 9,816 medical staff working in public hospitals, health centres, a public clinic in Bahrain, three main hospitals in public and 22 health centres. This population consists of medical professionals such as doctors, nurses and pharmacists who are the employees with permanent status in government hospitals and health centres in the Kingdom of Bahrain. This population comprises of both genders. Their age ranges are between 25 years old and 65 years old.

#### **3.3.2 Sample size**

Lakens, (2021) has pointed out that the sample size has been widely addressed in the literature, but still, there is no specific evidence on how large is the size that is

considered enough for the purpose of statistical analysis. Hair et al. (2010) stated that the minimum sample size requirements are 200, whereas Foroudi, Palazzo & Stone, (2021) mentioned that the sample size should be more than 300 respondents to get a rigorous and best result in the statistical analysis data.

As mentioned earlier, there are approximately 9816 employers in medical staff (doctor, nurses and pharmacists) who are dealing with the patient directly in public health in the Kingdom of Bahrain (MoH, 2012). Therefore, for this study, the total number of questionnaires that was distributed to the public health workers' employees were around 370 questionnaires, which was a recommended sample. The sample consisted of 370 employees from medical related employees in public hospitals in Bahrain i.e., doctors, nurses and pharmacists. A number of 370 samples seemed appropriate and suitable for the population of 10,000 elements (Krejcie and Morgan, 1970). According to their study, the sample size of 10,000 employees in Bahrain's public health was equivalent to its population for this study. The sample size used Krejcie and Morgan, table to determining sample (1970). See the appendix.

### **3.3.3 Sample technique**

The final stage in the study is the sampling strategies. The goal of any sampling procedure is to ensure that the sample represents the population and avoid any bias or negative impact on results. In this respect, Nigam et al., (2017) have pointed out that random sampling has significant benefits; one of these benefits is that when each employee is selected randomly, bias could be avoided as each employee would have an equal chance of being chosen at any process of sampling.

Fundamentally, identifying population sample is one of the sampling processes that can be determined by the researcher, together with all elements and characteristics

that could involve; the analysis unit can be in individual, groups, organisation or any entity that a researcher wishes to investigate (Bhattacharjee, 2012). The targeted population of this study are from all main hospitals and health centres under the Ministry of Health in the Kingdom of Bahrain. Firstly, the main hospitals and health centres under the Ministry of Health in Bahrain are based on these three main hospitals, i.e., Salmaniya Hospital, King Hamad Hospital and Heart Centre Hospital. In addition, there are twenty-two health centres, apart from the other three main hospitals all around Bahrain that provide services to the community

In this study, the researcher used the sampling procedure for several purposes, such as:

- 1) To determine the respondents from the total population.
- 2) It is more accurate than SRM (simple random sample) of the same size.
- 3) Save time, effort and cost because it requires only a small size.
- 4) The researcher divided the population into separate groups known as strata
- 5) To ensure optimal representation of subgroups and ensure impartiality.

In this study, the stratified sampling technique was used to categorize the respondents based on their strata, such as N1, N2 and N3. The researcher decided to consider those respondents from medical staff categories such as doctors, nurses, and pharmacists as the strata where respondents were selected. The table below shows the practical calculation of the sampling procedures used in this study, whereby the sampling procedure is calculated using the following formula.

$$\frac{N_s \times n}{N} = n$$

*Note: N<sub>s</sub> = number of population size in each stratum*

$n = \text{number of Sample size}$

$N = \text{Number of total populations}$

The following table 6 describes the total sample size stratified from three categories of medical staff, such as doctors, nurses and pharmacists. Finally, the total number of 370 participants was identified from three main hospitals and 22 health centres in public health sector in the Kingdom of Bahrain. Every medical staff, such as doctors, nurses, and pharmacists, had been given one of the survey questionnaires.

The researcher has selected the respondents accordingly from the hospitals and health centres. As a result, 78 participants were selected among the doctors, while 286 participants from nurses and 6 pharmacists. For Sampling Frame and Stratification Process, see appendix D.

Table 6: The stratified sample chosen from the total population

Health professional	population	Sample selection	Percentage %
Doctors	2057	78	21.2%
nurses	7589	286	77.2%
Pharmacists	170	6	1.6
Total population	9816	370	100%

Source: Nhra 2017

### 3.4 Instrumentation

All questionnaire items were carefully perused and modified according to the context of IWE and employee performance in the medical staff in the public health sector in Bahrain: with employee commitment as a mediating variable. The items were then translated from English to Arabic, only after the academic experts have confirmed the questionnaire content validity

The questionnaire consisted of four sections. The first section included the respondent's personal information or known as demographic details such as gender,

age, level of education and job title. While the other three sections are based on the exogenous and endogenous variables of the current study. The research aimed to investigate the relationship between IWE as an independent variable and employee performance as a dependent variable and employee commitment as a mediating variable among employees of public health sector in the Kingdom of Bahrain.

According to the guidelines given by Dima, (2018) stated that before computing the scales, all items were checked and, items were reversed to be in the same direction as the other items where relevant. This research contains 60 items, excluding the questions relating to personal information. The variables measured are presented in Table 7 below.

Table 7: Research variables and measurement number

	Variables	Number of items
1	Employee Performance (EP)	19
2	Islamic Work Ethics (IWE)	23
3	Employee commitment (EC)	18
	Total	= 60

In table 8, demographic section represented the personal information and was developed by the researcher with the purpose to gather personal information of the respondents; in which this section contains questions to collect information about gender, age, level of education and title of job among the healthcare professional in the public health sector in the Kingdom of Bahrain.

Table 8: Demographic Information

*Please indicate your answer by <input checked="" type="checkbox"/> to each question.					
1.Gender	<input type="checkbox"/> Male				
	<input type="checkbox"/> Female				
2.Age	<input type="checkbox"/> 20-30	<input type="checkbox"/> 31-40	<input type="checkbox"/> 41-45	<input type="checkbox"/> 45-50	<input type="checkbox"/> Above 45
3.Experience	<input type="checkbox"/> Less than 5 years	<input type="checkbox"/> 5-10	<input type="checkbox"/> 11-15	<input type="checkbox"/> Above than 20	
4.Education	<input type="checkbox"/> Diploma	<input type="checkbox"/> B. S	<input type="checkbox"/> Master	<input type="checkbox"/> PhD	
5.Professional	<input type="checkbox"/> Doctor	<input type="checkbox"/> Nurse	<input type="checkbox"/> Pharmacist		

### 3.4.1 Employee Performance

The EP construct was measured as the dependent variable and it was generated from the instrument designed by Farhand Organ (1990). This variable was measured using an instrument as adopted by (Chandrakumara, 2007). Mainly there were two dimensions (Task and contextual performance ) contains 19 questions and the scoring was designed ,on five-points scale; 1 = strongly disagree, 2 = disagree, 3 = Neutral. , 4 = agree, 5 = strongly agree. This construct has shown an adequate internal reliability for the scale of (Cronbach's alpha) of 0.96 for task performance and 0.74 for contextual performance. The table below presents the items measuring employee performance: -

Table 9: Employee Performance

No	Items	Source
<b>Task performance</b>		Source: Chandrakumara (2007)
ETP1	I effectively fulfil my given task.	
ETP 2	I fulfil responsibilities specifies job description.	
ETP 3	I deal with my patients with almost care .	
ETP 4	I fulfil formal performance obligation of my job.	
ETP 5	I participate in activities which directly influence my performance assessment.	
ETP 6	I ignore parts of my job that essential to perform.	
ETP 7	I fail to carry out important duties.	
ETP 8	I give notice of my absenteeism in advance.	
ETP 9	I take undeserved work break.	
ETP 10	I conserve and protect hospital property	
<b>Contextual performance</b>		
ECP1	I waste time on personal phone conversations at work	
ECP 2	I do criticize the irrelevant things at work.	
ECP 3	I obey informal rules developed to maintain order.	
ECP 4	I pass along information to co-workers	
ECP 5	I help other who have been absent.	
ECP 6	I takes time to listen to co-workers problems and warriers.	
ECP7	I help other who have heavily workload.	
ECP 8	I maintain the norm at work	
ECP9	I assist supervisor with his/her work(when not ask)	

### 3.4.2 Islamic Work Ethics

The IWE was measured as the independent variable. This variable is measured by an instrument adapted from Ali (1988) as adopted by Khadijah et al. (2015), which contained 23 items, for example, I constantly strive at work to achieve better results and I will not call sick deliberately. I constantly work hard to meet responsibilities.

All the scoring was represented by using five-point scale 1 = strongly disagree, 2 = disagree, 3 = Neutral., 4 = agree, 5 = strongly agree. The internal consistency of IWE construct the high value of Cronbach's Alpha = 0.809(AI-Mansoori, 2012; Ali, 1992;

Kumar and Raduan, 2010; Yousef, 2000). Table 10 presents the items measuring the IWE: -

Table 10: Islamic Work Ethics Items and the Source

No	Items	Source
<b>Effort</b>		
EEF1	<b>I will always try to finish my work within office hours every day.</b>	<b>Khadijah (2015)</b>
EEF2	<b>I rarely take extra hours to finish the job given to me.</b>	
EEF3	<b>I took coffee break only if necessary.</b>	
EEF4	<b>Most often, I take my coffee while working.</b>	
EEF5	<b>I always complete my personal duties e.g. prayer within the specified lunch hour.</b>	
EEF6	<b>I constantly strive at work to achieve better results.</b>	
<b>Honesty</b>		
HON1	<b>I will not call sick deliberately</b>	
HON2	<b>I rarely take a leave during office hour to do my personal matter.</b>	
HON3	<b>I will not deliberately utilize office equipment for personal use.</b>	
HON4	<b>I always meet my deadlines.</b>	
HON5	<b>I always do my best at work.</b>	
HON6	<b>I always try to adhere to work values in order to guarantee success.</b>	
<b>Employees Teamwork Practice Items</b>		
TEAM1	<b>Employees in my division are divided into several working team.</b>	
TEAM2	<b>Each working team is assigned with a specific task.</b>	
TEAM3	<b>I always give my contribution in accomplishing the group task.</b>	
TEAM4	<b>I often consult my team members to overcome obstacle and to avoid mistake.</b>	
TEAM5	<b>I give my full cooperation to my team.</b>	
TEAM6	<b>I often awarded for my full commitment in my medical teamwork.</b>	
<b>Accountability</b>		
ACC1	<b>I constantly work hard to meet responsibilities</b>	
ACC2	<b>I always take responsibilities if I did something wrong.</b>	
ACC3	<b>I often work hard to get ahead for life.</b>	
ACC4	<b>I do my jobs as it is my responsibility, not because I am instructed to do.</b>	
ACC5	<b>I emphasize on quality and excellence at workplace.</b>	

### 3.4.3 Employee commitment

The EC was measured as the mediating variable between the IWE and EP which has evidently assessed the questionnaire developed by Meyer et al. (1997) contains 18 items on the three dimensions; the affective commitment illustrated in 7 questions while the continuance commitment followed by 5 questions and normative commitment with 6 questions. As mentioned earlier, all the scoring was referred to the five-points scale 1

= strongly disagree, 2 = disagree, 3 = Natural, 4 = agree, 5 = strongly agree. The scale was reliable with a Cronbach's Alpha = 0.882

Table 11: Employee commitment items and the source

No	Items	Source
<b>Affective Commitment Scale Items:</b>		Meyer and Allen's (1997)
ACS1	I am very happy being a member of this hospital	
ACS2	I enjoy discussing about my hospital with the people outside it	
ACS3	I really feel as if this hospital's problems are my own.	
ACS4	I am part of the family of this hospital	
ACS5	I am deeply attached to this hospital	
ACS6	I feel emotionally attached to this hospital	
ACS7	This hospital has a great deal of personal meaning for me.	
<b>Continuance Commitment Scale Items</b>		
CCS1	It would be very hard for me to leave my hospital right now, even if I wanted to.	
CCS2	Too much in my life would be disrupted if I decided to leave my hospital now.	
CCS3	It would be too costly for me to leave my hospital now	
CCS4	Right now, staying with my hospital is a matter of necessity as much as desire	
CCS5	I feel that I have very few options to consider leaving this hospital.	
<b>Normative Commitment Scale Items</b>		
NCS1	I do not believe that a person must always be loyal to his or her working place.	
NCS2	Jumping from job to another job does not seem at all unethical to me.	
NCS3	One of the major reasons I continue to work in this hospital I believe loyalty is important	
NCS4	I think that people these days rarely move from job to job too often	
NCS5	If I got another offer for a better job elsewhere, I would not feel it would be right to stay in this my hospital.	
NCS6	Things were better in the days when people stayed in one hospital for most of their careers.	

Essentially, the purpose of this quantitative research approach is to establish and to prove the relationship among IWE, EP and EC in public healthcare sector in the Kingdom of Bahrain. A survey was conducted as a research method for this study. A self-administered questionnaire consisting of 60 questionnaires was adopted and adapted through structural questionnaires, close-ended multiple questions were related

to three constructs of this study and five questions were related to the demographic variables.

Measurement of the variables has been taken from previous studies and written in the English language. Questionnaires were translated into the Arabic language and proofread by an expert. This was done for the fact that Arabic is the official language in the Kingdom of Bahrain. Furthermore, respondents would find it easier to understand if using the Arabic language.

A translated survey is an important method in data gathering that helps facilitate the respondents to easily understand the questions clearly. (AbuShanab, Pearson & Setterstrom, 2010; Purnell et al., 2020). Most Bahraini citizens speak in dual languages, which are Arabic and English. Nevertheless, the Arabic language is considered an official language in Bahrain, while the English language is mainly used in the corporate or business sector in Bahrain. Although original instruments were developed in the English language, Arabic translation is seen as necessary thus required for this study especially in helping respondents to understand the items in the instrument better.

Then, several procedures were taken to translate the questionnaire. Firstly, the English language versions were translated by a professional Arabic translator. Secondly, the Arabic version was also proofread by a proof-reader. Thirdly, the researcher compared the initial original English instrument with the translated version to check the consistency. Finally, both English and Arabic language questionnaires were ready for distribution to several people who were fluent in both.

### **3.5 Procedures of Data Gathering**

Data collection can be defined as a process of gathering data after the researcher has identified the values of information needed from respondents whereby this

information should provide the appropriate responses to the research questions (Cooper and Schindler 2011). In order to get strong and rigid sampling procedures for the proposal of quantitative data collection, the population response should implement close-ended responses (Creswell, 2009; H. K. Mohajan, 2021).

The study used the Likert scale for the survey data. The researcher targeted the population in the medical field area, specifically the employees of the public health sector under the Ministry of Health in the Kingdom of Bahrain. Then, the collection of this data went through the self-administrative questionnaire survey, which was designed specifically unbiased because the researcher was prohibited from any interference with respondents' answers in collecting data. The survey questionnaires for IWE, EP and EC would be put in the personal drop-off. Evidently, there are three main hospitals in the Kingdom of Bahrain, including 22 health centres, hence it is known that this vital sector obviously has a huge number of employees, around 9,816 people, which consists of 2,057 doctors, 7,589 nurses and 170 pharmacists. (NHRA, 2017).

Before distributing the questionnaire, an official approval letter was obtained from University Sains Islam Malaysia (USIM). Then, the researcher requested for permission to conduct this study verbally with the person in charge from the public health sector. Therefore, the research was conducted with the permission from the top management of the Ministry of Health of Bahrain prior to distributing the questionnaires. The survey was distributed randomly among the employees of the public health sector. The questionnaires were collected thereafter through appointments. As mentioned earlier, questionnaires were distributed personally by the researcher, assisted by some staffs of the hospital or health centres. The survey was conducted during the period from 5<sup>th</sup> of April 2019 to 13<sup>th</sup> of June 2019.

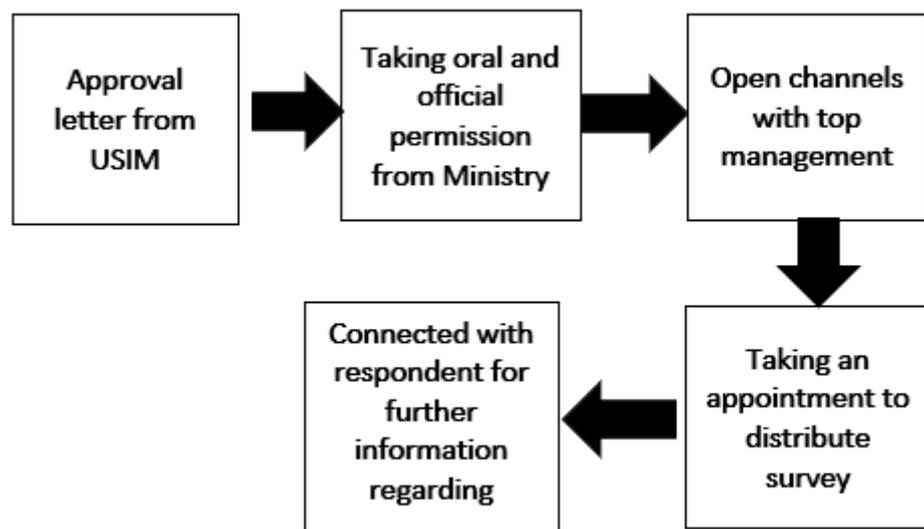


Figure 18: Data collection Procedures

### 3.6 Pilot Study

The pilot study is a pre-test conducted by the researcher to investigate the suitability of questions in the questionnaires, to streamline data collection procedures and to examine the time duration that might be taken by a respondent in filling up the questionnaires. Other than that, it was done to identify the logical problem that might occur during collecting data, for instance to examine the development and the accuracy of the research instrument, to determine the sample size, and to collect preliminary data, for all these reasons, a researcher has conducted a pilot study to identify whether the results of questionnaires are clear and accurate.

Azhari et al., (2019) have defined a pilot study as a test conducted among volunteers from the targeted population. A pre-test is essential in determining the time needed by respondents to understand the questionnaire and fill up the answers from questions. From the pilot test, it was found that at least 9-10 minutes were needed in answering the questionnaires. After the pilot study, appropriate changes to the questionnaires were made accordingly based on comments and suggestions from volunteers. Later, the questionnaire was re-submitted to the experts for final approval.

In this regard, the researcher has already conducted a pilot study by distributing 40 questionnaires to the medical staff such as doctors, nurses and pharmacists from public health sector, which closely resembled the target population of this study based on the list of health centres and hospitals in the Kingdom of Bahrain. A total of 31 of the 40 healthcare workers targeted responded for a response rate at 77%.

The suggestions and comments from the feedback were beneficial as they helped to improve the questions for the final questionnaires. Five-point Likert Scales were presented to the samples for their perspectives on the variables of IWE, EC and EP and their dimensions on IWE as an independent variable, EP as dependent variables and finally EC as mediating variables. Statement of rating variables and their dimensions is as the indication given: 1 = Strongly Disagree, 2 = Disagree, 3=Neutral, 4 = Agree, 5 = Strongly Agree.

### **3.6.1 Instrument Validity**

Haradhan Kumar Mohajan, (2017) have defined validity as the ability to describe the concept via logical measurement, whereas reliability is concerned with accuracy and shows consistent measurement. Rönkkö & Cho, (2020) defined the validity as the degree to which a scale or set of measures accurately represents the concept of interest. Validity is essentially divided into the main types i.e., content (face) and construct validity.

In fact, content validity is the measure that shows the extent a measurement measures what is intended to measure. Therefore, the content validity is mainly based on the judgmental evaluation by experts to ensure that the measurement items comprise the construct measure of all the aspects of the construct. In this research, the content

validity of a research instrument was established through theoretical literature review and via the extensive process of items selection and modification in the development of the questionnaire.

To check the instrument's face validity, the questionnaire were given to several academic professors with experiences in the field of administration. The measurement scale and selected items for this study were assessed by the experts as follows: -

- (a) Four lecturers with a Ph.D. qualification from the University of Bahrain.
- (b) A director for the Office of the Deputy Director (Internationalization and Industry and Community Relations) at International Islamic University Malaysia (IIUM).

In fact, the lecturers' response was positive feedback on the measure.

Several comments and suggestions made by the panel of experts were taken into consideration especially regarding the rework and modifying of some items such as "I am very happy being a member of this university", where the researcher replaced the word "university" with the word "hospital" instead.

Experts have agreed on the consensus of the use of five Likert scales as they would be more suitable for the questionnaires. All comments, suggestions and the opinions provided by the experts were important and reflected in the pilot study questionnaire.

The primary purpose of taking this step is to benefit from their practices and theoretical experience when directing the questions in the questionnaire into the right direction.

Based on these experts' assessment, some modifications were made in the questionnaire, particularly on the demographic part and several questions related to the measurement of variables.

According to Azmi (2018), the authors stated that construct validity refers to the degree to which a set of items measures what they intend to measure and also construct validity can be tested through convergent validity and discriminant validity.

### 3.6.2 The Reliability

Reliability is the extent to which the instrument collects data that can be depended to be accurate. It is the degree to which the results obtained from the analysis of the data represent the measurement of the study. In this study, to ensure the validity of the data collection, instrument in the question passes the questionnaire with the specific objectives that ensure the answers would match these objectives (Sürücü, 2020).

Hair et al. (2010) indicated that the cornerstone characteristics of reliability are the stability level between measurements of the variables. Therefore, reliability analysis' main purpose is to emphasise evaluating the consistency of variable items in the right way. Fraenkel (2011) defined reliability as providing the same result for each testing time of measurements of construct or at least similar to that. (Sajeevanie et al., 2020) mentioned that the reliability instrument should be more than 0.6 to be accepted.

In this respect, this study conducts Cronbach Alpha using SPSS. The results of the internal consistency and reliability of the instrument used in this study, as based on Cronbach Alpha values are: TWE=.875, EP = 0.917 and EC = 929). As shown in Table 3.2, the reliability value for all constructs ranged between 0.875 and 0.934. Therefore, all the values for reliability Cronbach's Alpha were greater than the recommended of 0.7 (Hair et al., 2010). The table below presents the reliability of Cronbach's Alpha for a pilot test.

Table 12: Statistical Summary of Reliability Analysis

Construct	No. of Items	Cronbach's Alpha	Overall
Islamic work ethics	23	.875	<b>0.905</b>
Employee commitment	18	.929	
Employee performance	19	.911	

### 3.7 Data Analysis Procedure

The data collected were analysed using the quantitative method because the quantitative method was the best way to elucidate phenomena through collecting numerical data. The data were analysed using data screening through the determination of the study outliers, missing data, normality of distributions, multi-collinearity and Mahalanobis Distance to ensure that the data collected were suitable for further analyses.

To achieve a more meaningful analysis, descriptive statistics were used to find answers to the research questions. Descriptive data were used in this study to summarise the data collected from the sample of participants (employees) who participated in the study. The latest version of SEM was used in this study to emphasize the correlation between the independent variable, which is Islamic work ethics (IWE), employee performance (EP) as a dependent variable and employee commitment (EC) as a mediation variable of this study. Moreover, SEM was more suitable for this study since it is the “subject to test the existing model or theory and also estimating causal relations using a combination of statistical data (Travern1 et al., 2021).

Furthermore, SEM has a major advance for theory testing and theory development (Hair Black and Babin 2010). The research model has several latent variables and the mediating variable EC’s SEM which was compatible for this study. (Luna-Arocas, R

and Camps, 2008) In this study, the hypothesized model was measured using SEM and fit indices were used to obtain the goodness of the model (Marcoulides, K. M., & Yuan, 2020). Moreover, the SPSS program was also utilised in this study for several reasons; one of them is the significant benefit that SPSS could provide when conducting descriptive analysis, profile respondent and data screening, which includes missing data and response bias.

### **3.8 Justification for Using Structural Equation Model (SEM)**

Essentially, the primary purpose of using SEM is to analyse the moderating effect. SEM has two types of the model i.e., the structural model and the measurement model, both of them called interrelated models (Gefen and Straub, 2011). The first type of this model is the measurement model, which is also known as confirmatory factor analysis (CFA). Through this model construct was defined and the observed variable was allocated whereas other models were known as regression or path analysis that determined the relationship between the latent variables (Black, WC, Babin, BJ Anderson, RE & Tatham, 2010; Saeidi, T., Mesbah, M., & Habibian, 2020).

Indeed, it is crucial to clarify the latent variable that has been a representative of the theoretical construct, which can be difficult as it cannot be observed directly, when it is exogenous from an independent variable or endogenous from the dependent variable in the model (Purwanto, 2021). Moreover, SEM is a useful program as a tool for prediction and statistical model building (Urbach and Ahlemann, 2010).

The current study used SEM as the core analysis method due to its need for an analysis of mediating effects EC. Moreover, SEM can also construct the paths in the final model (Revised Model). SEM is also utilized to analyse causal relationships between the latent variables. These relationships explain changes in the variables

(exogenous constructs) that will affect other variables (endogenous constructs). Furthermore, SEM has used both models to conduct measurement and structure modelling while assessing the reliability and validity of construct measurement through moulding, is seen as the best one to use. Another reason why structural modelling was used to conduct the analysis of bivariate correlation and analyses of regression was to find the correlation and relationship of their impact on the constructs.

One of the main vital functions of SEM is that it permits a set of correlations among large numbers of constructs to be tested. Moreover, it can test all the relationships entirely and simultaneously. By applying SEM, the researcher will get several benefits and advantages. Firstly, SEM is considered as confirmatory, while others are exploratory. Secondly, SEM procedures may employ both uses of observed and unobserved data analysis. Finally, SEM has the capacity of multivariate modelling relationships and an indirect effect. Most of those essential features are not available in other multivariate procedures. Therefore, based on these advantages, this study has chosen SEM to analyse the data further.

### **3.9 Conclusion**

This chapter discusses the research design and method that have been used in this study. Specifically, it addresses the issues in questionnaire design, pilot test and measurement of variables and the reliability test result. Each instrument construct is found reliable for use in the main study and it is believed that using stratified random sample is the most appropriate selection. Other than that, this chapter highlights target population, sampling design and data collection techniques. Finally, one may find the

justification of statistical techniques employed in the data analysis process. The following chapter presents the results of the study based on the data collected.

