CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

Because of the complexity of this inquiry, the study used a combined approach. Mixed methods research collects and synthesises quantitative and qualitative data using a variety of research procedures that may be grounded in philosophical assumptions and theoretical frameworks. This type of study is predicated on the concept that combining qualitative and quantitative data yields more meaningful results than using either method alone (Creswell & Creswell, 2018).

3.1.1 Mixed method

As per Burke et al. (2007), mixed methods entail the utilisation of meticulous techniques for collecting, assessing, and analysing both quantitative and qualitative data in order to address research inquiries or hypotheses. The design study incorporates two forms of data through various techniques such as integration, explanation, construction from one database to another, and embedding. The utilisation of philosophy (or worldview) and theory is a common practise in influencing research procedures. The integration of diverse techniques into a unified mixed methods design delineates the procedures to be implemented in a study. Contemporary literature, exemplified by the SAGE Handbook of Mixed Methods in the Social and Behavioural Sciences and SAGE's Journal of Mixed Methods Research, commonly employs the phrase mixed methods. However, alternative expressions, including but not limited to integrating, synthesis, quantitative and qualitative methods, multimethod, mixed research, and mixed methodology, are also utilised (Bryman, 2016; Creswell, 2015; Tashakkori & Teddlie, 2010).

The contemporary approach of mixed-method research has been developed by incorporating the knowledge and proficiency of professionals from diverse fields such as evaluation, education, management, sociology, and health sciences. The phenomenon has undergone evolution over a period of time and continues to undergo transformation, particularly with regard to procedural methodologies. The various publications delve into the phases of development (Creswell & Plano-Clark, 2011; Teddlie & Tashakkori, 2009). The utilisation of mixed methods research enables one to capitalise on the advantages of both qualitative and quantitative methodologies while simultaneously mitigating their respective limitations. The implementation of mixed methods research provides advanced and varied

research that captures the attention of prominent scholars in the respective field. This approach proves effective provided that the researcher also possesses qualitative data access (Creswell & Creswell, 2018).

The present study employed a convergent parallel design. The method of convergent design is widely recognised as the predominant approach for integrating multiple methodologies. The notion builds upon the previous tenet posited by Campbell and Fiske (1959) that comprehending a psychological attribute may require the consultation of various informational outlets. Scholars who utilised mixed methods surpassed the quantitative-only methodology proposed by Campbell and Fiske by incorporating qualitative data in their analyses. The layout in question has been a topic of scholarly debate since the 1970s, as noted by Jick (1979), and is widely regarded as one of the most frequently employed strategies. The convergent design was initially conceptualised as a triangulation design, wherein two distinct methods were employed to yield triangulated outcomes pertaining to a singular topic. The utilisation of this particular design is frequently misconstrued and erroneously employed by scholars for objectives that deviate from the production of triangulated outcomes (Creswell et al., 2003).

3.1.1.1 Convergent Parallel Design

The convergent parallel design, also known as the convergent design, is a research methodology that involves the simultaneous application of both quantitative and qualitative research methods. Researchers utilising this approach conduct independent evaluations of each method and subsequently integrate their respective findings (Creswell et al., 2003; Creswell & Clark, 2018; Creswell & Creswell, 2017). The researcher seeks to employ the embedded research design in a convergent way. The temporal aspect of data acquisition utilising diverse techniques is pertinent to this matter within an embedded system design. The term "concurrently" denotes a state of occurrence that is approximately simultaneous, while "sequentially" refers to a process that takes place one database at a time (Creswell & Creswell, 2017). When implementing a convergent strategy, it is common to practise to collect data simultaneously. The traditional quantitative research design is the main and larger design will however be embedded with qualitative design.

There are multiple approaches to address the research survey. The consideration of it either the research is to address participant's attitudes or experiences, compare groups, measurement of change over time, identification of relationships between variables and the like will help the researcher identify the quantitative design most appropriate (Coy, 2019).

Quantitative in the view of Zainuddin (2014) is a synonym for any data collection technique (such as a questionnaire) or the procedure for data analysis (such as graphs or statistics) that therefore generates or uses numerical data. Quantitative research endeavours to validate or modify existing theories and practises through the identification of correlations between two or more variables. The findings are then utilised to draw inferences regarding the applicability of the results to diverse populations and contexts (Leedy and Ormrod, 2018).

Quantitative techniques are employed by researchers to optimise outcomes and circumvent the drawbacks associated with impromptu decision-making. The selection of a quantitative approach is contingent upon various factors such as the characteristics of the decision under investigation, the temporal scope of the decision-making process, and the available data. The establishment of efficient and effective departments is crucial for the success of businesses. This can only be attained through the meticulous application of quantitative methods (Nkuda, 2020). Quantitative techniques according to Mohajan (2020) have the probability of assessing certain features through well-structured data collection processes from a large sample to project the results to the full population is a quantitative methodology.

The principal advantage of utilising this particular research methodology lies in its ability to furnish a straightforward answer to the research inquiry by amalgamating and analysing data obtained from surveys. The generalizability of the quantitative/empirical findings extends beyond the geographical boundaries of the study, while the contextual relevance is confined to the specific area under investigation. It is feasible to extrapolate the findings of an empirical investigation carried out in a developed or developing nation to a less affluent country. This approach will collate views and recommendations from event attendees or eventgoers with attention paid to the study objectives to ascertain the rate of satisfaction, involvement, motivation and loyalty.

The qualitative approaches are emergent and naturalistic with the use of data to drive the salient information in the investigation without the investigator determining the important variables before the collection of the data (Coy, 2019). Qualitative research comprises a diverse array of techniques that are utilised to achieve objectives such as inquiry, comprehensive depiction, validation, hypothesis generation, issue identification, and evaluation (Leedy and Ormrod, 2018).

The objective of the embedded qualitative component is to investigate or examine the Ghana Government's policies and plans for the development of Leisure events. The plan of the government concerning tourism development through infrastructure and policy operations can

help curb situations of institutional constraints to leisure. The qualitative research design therefore focusses on policymakers of the Ghana Tourism Authority in question to identify and examine their feelings when developing the concept hence contributing to the study an effort to combine both theory and data-driven themes.

3.2 Participants

The seasonality of demand in event tourism is a significant feature (Maráková et al., 2018). There is therefore a constant change and fluctuation among residents and visitors/tourists. Event visitors/tourists made up of 18 years and above participated in the study. The Ghana Tourism Authority management team in charge of policy-making contributes to the study to ascertain the true objectives when policies for leisure events. Ghana government policymakers from Ghana Tourism Authority contributes to the National agenda and plans towards the development of the Tourism Industry. Due to the nature of the study, the criteria are set for collecting information from people who have ever attended the event in past to compare the detailed information and ascertain the true picture of the event. Concerning the nature of research at outdoor events, it is suitable to use multistage sampling (cluster random) to reach your required sample size.

3.3 Population & Sampling

Probability sampling was utilized to answer the research questions and achieve the study's objectives. According to Bhatt (2020), probability sampling is a strategy in which there is a chance of being selected in every population that can be reliably established. Cluster probability sampling is considered for this study. Cluster sampling is a viable approach when compiling a comprehensive list of the constituents of a population is not feasible or practical (Creswell and Creswell, 2018). Initially, the researcher identifies clusters, which refer to groups or organisations. Subsequently, the researcher procures the names of individuals who are affiliated with these clusters. Finally, the researcher extracts samples from within these clusters. The population is however made of the city indigenes who serve as tourists or attendees at these cultural events are part of the reason for the reason for the organised event to commemorate their traditional culture.

The study has a city population focus that serve as the visitors/tourists (attendees) to leisure activities who have ever attended or visited a cultural event before and are 18 years and above. A major leisure centre/activity from three zoned belts of the country Ghana namely the Northern belt (Kumasi Metropolitan), Southern belt (Accra Metropolitan) and Central belt (Ho

Municipality) is considered in the study. Ghana Statistical Service (2021) in its 2021 report recorded as follows:

Table 3.1 Zone City Population

Zone City	Population
Ho Municipal	180,420
Kumasi Metropolis	443,981
Accra Metropolis	248,124

Source: GSS (2021)

Due to the three zoned belts of the population, cluster random sampling was used to select participants randomly that are spread out geographically within the metropolis and the municipality. In the situation of the proposed study, the estimation of the sample size for event attendees is constrained by the unavailability of reliable event attendee data at organised outdoor events in the three zones (Central, Southern and Northern) of Ghana's selected cities due to the event category as an open space venue type. To estimate the sample size of event attendees, direct attendee data for the events in the country is needed for determining sample size from a given population guided by the principle of 'the larger the sample size, the better, taking into account the time and resource constraints.

3.3.1 Calculating a Sample for Proportions

To perform this calculation, it is necessary to indicate a margin of error, which represents the degree to which the estimated value of the sample is allowed to deviate from the true value. To determine the appropriate sample size, one may utilise the previously mentioned formula for confidence intervals. However, it is necessary to modify the expression to account for the margin of error and subsequently solve for the variable n. The equation required to calculate the sample size is presented below.

$$\text{Unlimited population: } n = \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2}$$

$$\text{Finite population: } n' = \frac{n}{1 + \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2 N}}$$

Where z denotes the z score

ε is the tolerance for error

N denotes the population size.

$\hat{p}$ denotes the population proportion.

To ascertain the plans of the Ghana Tourism Industry that could boost the event industry, three (3) top management personnel of (GTA) is applicable to participate in the interview to be embedded in the larger quantitative data. These people are expected to possess adequate knowledge of the subject matter to provide information accordingly. Regularisation backed with state policies of developing leisure events and its activities in transforming the Ghana Tourism industry is of great importance. This has necessitated the call for including the policymakers of the Ghana Tourism Authority in the survey to possess adequate knowledge and information on the subject matter.

Table 1.2 Zone City Population Above 18 Years

Zone City	Population	18 yrs. and above
Ho Municipal	180,420	153,357
Kumasi Metropolis	443,981	337,384
Accra Metropolis	248,124	210,905
Total	872,525	701,646

Source:GSS (2021)

$$n = \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2}$$

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384.16$$

By use of the sample size calulator with the total population of 701,646, a total of 384 respondents were targeted. This means 384 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within ±5% of the measured/surveyed value. However, in quest to get more respondents to achieve best results, a total of 461 respondents were achieved for the study.

3.4 Research Instrument

Self-administered questionnaires was used for the quantitative study part of the research to measure both motivational determinant factors and expectations. Rahmat *et al.* (2011), Kruger and Saayman (2018a) and Hair, and Celsi (2017) proposed steps are considered. The first section (A) was designed using nominal scales. It focuses on attendees'/visitors' socio-demographic, geographic and psychographic profiles. Items relating to age, gender, educational background, position, income level, location, city, region, working experience,

values, interests, personality, and lifestyle are asked in this section and deal with the respondents' involvement in the event with differentiation of being a participant/performer and or attendee/goers. Section (B) also consist of visitor segmentation/groups, items assessing some emotional solidarity scale constructs on the part of visitors' anticipation and past experiences, community attachment and motivational factors.

Section (C) includes behavioural factors, visitors' commitment and discouragement to leisure events and their relationship with Loyalty and retention. This satisfies the content of validity. This helps generate and develop new factors for future assessment. It is therefore imperative to know that views from respondents add value to the attainment of the study objectives. Ten (10) fieldworkers for each event venue totalling thirty (30) field assistants were used to intercept with the questionnaires upon arrival and collection done upon leaving the venue on the same day. To ensure the correct sample is collected, the questionnaires was given to only those present at the event venue. Only adults 18 years and above were allowed to complete the survey.

The procedure for collecting data using the qualitative medium was to purposefully select the participants. This was done to aid the study problem and research question to be thoroughly understood. The study utilised Miles and Huberman (1994) framework of four dimensions pertaining to participants and the site, namely: (a) the context in which the research was conducted, (b) the individuals who were observed or interviewed, (c) the activities that were observed or discussed with the participants, and (d) the dynamic nature of the events that unfolded within the context, as undertaken by the participants.

The interview was attended by three (3) representatives from the Ghana Tourism Authority. The data collection process for a particular research area was facilitated through a semi-structured instrument during the interview, which aligns with the exploratory nature of the study. Adams (2015), proposes a method to facilitate the introduction of significant themes during interviews, with the aim of capturing the interviewees' reality rather than the researchers. This approach can foster a more seamless and authentic discourse. The conversation took place via telephone.

To accommodate participants residing in remote locations or those who were unavailable during the scheduled visit, individual interviews were conducted via telephone (Harrell & Melissa, 2019; Saunders et al., 2019). According to Creswell & Creswell (2017) conducting research using online surveys offers advantages such as reduced costs, increased autonomy for the researcher in determining the direction of inquiry, and decreased manual labour in data collection. Providing participants with the opportunity to schedule interviews at

their convenience ensures that their work schedules are not disrupted and does not interfere with the workday of others (DeJonckheere & Vaughn, 2019; Drabble et al., 2016). Farooq & De Villiers (2017) and Oltmann (2016) contend that phone interviews afford respondents the opportunity to be more forthcoming due to the convenience factor. It is suggested that the likelihood of social pressure affecting a response is lower in a phone interview compared to an in-person meeting. (DeJonckheere & Vaughn, 2019; Drabble et al., 2016; Oltmann, 2016a)

3.5 Research procedures

The embedded research approach in the study has the Quantitative (QUAN) as the primary data set and the qualitative (QUAL) playing the secondary role.
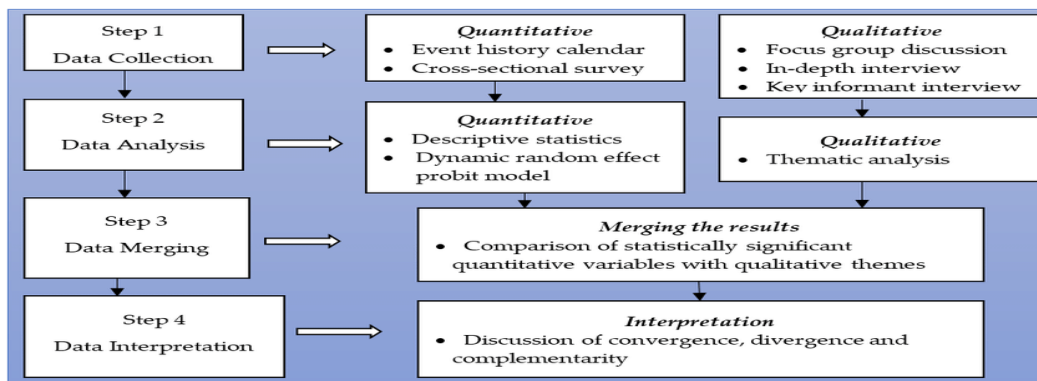

Figure 1 Flow Chart of Convergent Mixed Methods Research Design.

Source: (Creswell & Creswell, 2018; Creswell & Plano-Clark, 2011)

In the first step of the study design, the quantitative part of the study employs self-administered questionnaires to leisure event visitors/tourists and residents of 18 years and above whilst the qualitative part of the study employs in-depth interviews for the policymakers of Ghana Tourism Authority at the head office in the capital city of Accra.

The first section (A) employs nominal scales at the pre-test level. It concentrates on the socio-demographic profiles of the respondents. In this section of demographic factors, respondents are asked about their Sex, Age, Religion, Nationality, Region, Education, Marital Status, Occupation, Current, Working Type, Level of Employment, Years in Current Position, Monthly Income and their psychographic profile with the factors as their Personality traits which include Openness (Insight, Imagination), Extraversion (Excited, Sociable, Assertive, Emotionally expressive, Conscientiousness (thoughtful, good impulse control, good directed behaviour), Agreeableness (Trust, Kind, Affection) and Neuroticism (sad, Moody, Emotional instability); Social classes which include Top-class, Middle class and Lower class; Rate of attending cultural festivals as a leisure, Major cultural events and Rate of attending an event.

Section (B) discusses issues which include assessing some emotional solidarity scale constructs (Welcoming nature, Emotional closeness and Sympathetic Understanding) on the part of visitors' anticipation and past experiences, community attachment on the part of residents, and motivational factors. This has confirmed the conditions in hypotheses 1,2 and 3. Section (C) covers behavioural factors (Personal psychological factors, Subjective norms and Perceived behavioural control), visitors' commitment to and dissatisfaction with leisure events, and their relationship with loyalty and retention for hypothesis 8 confirmation.

Step two of the study discusses the descriptive statistics of the quantitative part of the study at the intervention level where Partial Least Square (PLS) Structural Equation Modelling (SEM) was used for the analysis. This is a new piece of software for structural equation modelling (SEM). PLS-SEM is used to effectively, accurately, and efficiently model and analyse the interrelationships between latent constructs. More importantly, the multiple inter-relationship equations in a model are computed concurrently. Thematic scrutiny is done on the interviews conducted. Transcriptions of digital recordings are made, data is investigated, and major themes are identified.

Step three of the study employs the data merging of both quantitative and qualitative part of the study with the comparison of the statistically significant quantitative variables with qualitative themes.

Step four shows the interpretation in the form of discussions of convergence, divergence and the complementarity. While the results section reports on the quantitative databases' findings.

3.6. Measure

3.6.1 Emotional Solidarity

Table 3.3 Measurement of Emotional Solidarity Variable

Construct	Measurement	Item	Previous Source	Measurement Scale

Hospitality attitude (Welcoming nature)	5-items adapted from Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018) The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	I feel hospitable when I go to leisure events. I feel other visitors appreciate the contribution I make to add value to the event.	Emotional Solidarity Scale (ESS). Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018).	Ordinal

Inner intimacy (Emotional closeness)	5-items adapted from Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018). The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	I feel close to some other attendees I have met after the event Closer ties and bonds have been generated that have fostered return visits.	Emotional Solidarity Scale (ESS). Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018).	Ordinal

Good feeling nature (Sympathetic understanding)	5-items adapted from Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018). The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	I feel affection toward the host residents. I identify myself with the event hosts. I have a lot of mutual commonalities with the most visitors	Emotional Solidarity Scale (ESS). Woosnam and Aleshinloye (2013), Woosnam and Norman (2010) Joo et al. (2018), Xiangping Li and Wan (2017), Woosnam et al. (2014 and 2017), and Woosnam and Aleshinloye (2018).	Ordinal

Author (2023)

3.6.2 Motivation factors

Table 3.4 Measurement of Motivation Factors

Construct	Measurement	Item	Previous Source	Measurement Scale
Intrinsic Motivation	5-items adapted from Sheldon and Elliot, (1999), Benedetti (2012) and, AbiGhannam et al. (2019) The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	The leisure activity at the event is enjoyable. The activities at the event are interesting.	Identifying intrinsic motivation factors. Sheldon and Elliot, (1999), Benedetti (2012) and, AbiGhannam et al. (2019)	Ordinal

Author (2023)

3.6. Behavioural intentions

Table 3.5 Measurement of Behavioural intentions Variable

Construct	Measurement	Item	Previous Source	Measurement Scale

Personal Psychological Factors (Attitude)	5-items adapted from Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019) The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	I have a positive motive when embarking on leisure travels. When I attend leisure events, I feel better about myself afterwards	Measuring Behavioural Intentions. Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019)	Ordinal
Social Support (Norms)	5-items adapted from Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019) The measurements were	The social environment is always conducive to the event. Most people admire my involvement in leisure events due to	Measuring Behavioural Intentions. Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019)	Ordinal

	conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	my emotional solidarity		
Barrier-Free Environment (Control)	5-items adapted from Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019). The measurements were conducted using a five-point scale, with a rating of 1 indicating strong disagreement and a rating of 5 indicating strong agreement.	Accessibility to good infrastructure encourages my visit to leisure events. The weather influences my decision to attend leisure event	Measuring Behavioural Intentions. Kim and Heesup (2010), Erul et al. (2020), Hasani et al. (2016), and Joo et al. (2019).	Ordinal

Author (2023)

3.7 Data Analysis

A method that is being used increasingly in quantitative educational research according to Wong (2013) and Ali *et al.* (2018) is *Structural Equation Modelling* (SEM). Structural Equation Modelling (SEM) was used in the analysis of this research. The filled questionnaires from event attendees or goers will therefore be analysed by this medium. Like multilevel modelling, SEM further advances the discipline by solving both substantive and statistical problems that traditional methods cannot handle. SEM is based on principles used in regression analysis. Structural Equation Modelling (SEM) is a powerful quantitative data analysis technique that enables the estimation and examination of theoretical correlations between and among latent and/or observable variables. The utilisation of it was first introduced by Tabachnick and Fidell (2007) Ramli et al. (2018) assert that path analysis is a statistical technique that integrates regression and component analysis to manage multiple relationships and assess them from various viewpoints, ranging from exploratory to confirmatory research.

The utilisation of Partial Least Square Structural Equation Modelling (PLS-SEM) preferred over Covariance Based SEM. The utilisation of SmartPLS software is imperative for the execution of variance-based Structural Equation Modelling (SEM). Several studies including Hair, Ringle and Sarstedt (2011) and Ali *et al.* (2018) claims that one of the primary purposes of CB-SEM is to estimate a covariance matrix that is statistically very near to the covariance matrix of the actual sample data. Consequently, the prioritisation of ensuring a strong correspondence between the data and the model is emphasised, assuming that the latter is valid. The CB-SEM techniques are not effective in serving the prediction objective of this research. Joe et al. (2017) and Sarstedt et al. (2020) posited that the Maximum Likelihood (ML) applications of Confirmatory Factor Analysis-Structural Equation Modelling (CB-SEM), commonly neglect the transgression of the method's fundamental assumptions.. PLS-SEM is typically a more practical approach than CB-SEM since it does not require these tight distributional assumptions.

Ultimately, Nunkoo, Ramkissoon and Gursoy (2013) expressed a desire for improved empirical research and practises within the field of tourism studies through the utilisation of SEM. The authors of the study emphasised the importance of consulting statistical journals, such as Structural Equation Modelling: A Multidisciplinary Journal and Multivariate Behavioural Research, which feature simulation exercises that showcase advancements in SEM.

Partial Least Square (PLS) Structural Equation Modelling (SEM) was employed for the analysis. This is relatively recent advancement in the realm of Structural Equation Modelling

(SEM) software. The researcher used Partial Least Square (PLS) Structural Equation Modelling (SEM) to model and assess the connections between latent constructs in a timely manner without sacrificing accuracy or precision. In addition, all of the model's equations of interdependence can be solved at once. This software can, as has been mentioned, translate the theoretical framework into readable graphics for further study. In addition, researchers can make path diagrams by drawing them instead of writing equations or inputting commands. Confirmatory Factor Analysis (CFA) can be used by the researcher themselves to verify the accuracy of the model used to quantify a latent component. Structural Equation Modelling (SEM) is the next step after Confirmatory Factor Analysis (CFA) is finished. As a result, PLS-SEM is a quick, efficient, and straightforward tool for theoretical analysis and experimentation (Arbuckle, 2005; Byrne, 2013; Ramli et al., 2018).

Interviews are employed as a means of conducting data analysis, identifying themes, and transcribing digital recordings. This study utilises the following methodologies: The methodology employed in this study involves iterative listening and reading of the transcripts in order to classify participants' responses based on shared concepts or patterns. The identified themes were subsequently be explicated, scrutinised, and interpreted, while also establishing links between the data and pertinent scholarly works. The conclusion of an interview is typically determined by the interviewer's perception that all pertinent topics have been addressed. All these are suggested by Saunders et al. (2019) and Drabble et al. (2016).

3.7.1 Data Integration

In analysing the data of concurrent embedded mixed method design, integration has to be considered. An integrated approach to data collection and analysis is achieved through the interconnection of multiple data collection and analysis sites, resulting in an embedded methodology. This holds significant relevance in intricate interventional methodologies, albeit not limited to them. The embedding methodology is noteworthy due to its integration of both qualitative and quantitative methods for data collection across various phases of the research procedure. Linkage is a crucial aspect of embedding, encompassing a range of activities such as joining, building, or connecting (Fetters et al., 2013). The process of embedding occurs prior to the commencement of the trial, wherein qualitative data, or a blend of qualitative and quantitative data, is utilised to perform tasks such as refining outcome measures, comprehending contextual factors that may result in bias and necessitate control, or constructing measurement instruments that was employed throughout the trial (Creswell & Creswell, 2018; Fetters et al., 2013).

The trial gathered qualitative data either to get a more in-depth understanding of the external elements that could affect the outcomes of the trial or to provide thorough insights into the experiences of the trial participants. Both of these goals were accomplished through the collection of qualitative data. The collecting of qualitative data after a study has been completed can provide insights into anomalies, make it easier for participants and researchers to reflect, and generate innovative hypotheses for pre-implementation treatments that was used outside of laboratory settings (Creswell & Creswell, 2017; Creswell & Plano-Clark, 2011; Hamilton et al., 2013).

3.7.2 Data Transformation

Integration is accomplished through the transformation of data in two stages. The first step is to transform qualitative data into quantitative data. The data that have been transformed are then combined with the data that have not been transformed in the second step. The application of coding to qualitative data in qualitative studies was done, and then conduct a process known as content analysis, which involves counting the frequency of different codes or domains that have been identified (Krippendorff, 2018).

Within the framework of mixed methods research, the term "data transformation" pertains to the utilisation of content analysis as a means of converting qualitative data into quantitative counts and variables. The aforementioned facilitates the assimilation of non-quantitative data into a quantitative repository. The accuracy of the quantitative representation of qualitative data is determined by comparing the results obtained from content analysis and mixed methods to a quantitative database (Creswell & Creswell, 2018; Krippendorff, 2018)

3.8 Ethical Considerations

The researcher was very mindful of the established codes of conduct, regulations, and or principles guiding research work of this nature. For ethical reasons, considerations such as informed consent, the right to privacy and honesty was taken seriously. All consent forms prior to the start of any experimental activity was strictly adhered to.

Ethics in conducting research is very important and due to the challenges around the conduct of research, the higher institution of learning emphasizes the protection of the dignity and safety of research participants (Brennen, 2017). In order to conduct research that adheres to ethical principles, it is necessary to obtain informed consent from participants. This consent may be given through either verbal or written means (Hesse-Biber & Leavy, 2004; Locke et al., 2013). The consent form was given to all that matter with clear aims, methodology and

potential risks that may be encountered as a result of the research. Verbal consent was considered if a participant is illiterate or absent during the research process.

Deception, which refers to the deliberate distortion of information pertaining to the objectives, characteristics, or outcomes of a study, constitutes a significant element of unethical research (Drew, Hardman and Hosp, 2014, p. 67). Deception of participants can occur either prior to or during a study as noted by Brennen (2017). The study's authenticity was not misrepresented to the participants, and they were not asked to provide a limited amount of data for analysis. Consequently, the investigator shall furnish a transparent and candid depiction of the complete process of gathering data. This may lead to participants feeling deceived into their involvement.

Privacy and confidentiality are other aspects of research conduct that are very significant (Wiles et al., 2008). These terms have their meaning even though they are used interchangeably. To protect the privacy of a participant means to protect the way and manner the participant presents in the public domain (Fouka & Mantzorou, 2011). Anonymity is a key issue to adhere to by protecting the identity of the project participants. The protocols for storing and managing data are considered confidential. The act of possessing research data and engaging in widespread dissemination of said data beyond the confines of the research project is considered to be unethical. The confidentiality and non-disclosure of this research will be rigorously maintained. Throughout the study, a pseudonym was employed to obscure the identities of the participants (Smyth & Williamson, 2004). Ensuring the security and non-coercion of study participants is of utmost importance. It is imperative to eliminate any elements that could potentially influence individuals to behave in a manner that is contrary to ethical principles.