

Factors relating to innovation  
management and compliance for  
women workers in the clothing  
industry

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## **Abstract**

There is a shortage of female workers performing innovative work in the clothing industry in the Kingdom of Saudi Arabia (KSA). This causes non-compliance of workers with any orders relating to innovation management. Evidence indicates that female workers are compliant with management instructions for routine work. However, in relation to innovation, there is still some non-compliance. This consequence has forced clothing organisations to worry about leaving the market quickly especially in the context of economic reforms in the Kingdom. The theory of reasoned action (TRA) is a model of behaviour adopted to investigate behavioural performance in order to understand workers' behavioural compliance. However, the TRA has not been used before to attempt to determine factors in female workers' non-compliance related to innovation management guidelines. The aims of this study were to identify internal (behavioural) and external factors (issued from organisations) that influence female workers' compliance with innovation guidelines. This study involved a self-administered questionnaire using variables raised in the TRA and in the literature review.

This study was conducted using convenience sampling to identify the compliance factors for female workers within five clothing factories in Jeddah and Makkah in the KSA. The study also used all social media and email. The questionnaire was designed to assess measures of compliance for female workers with innovation management, habits, intentions, attitudes and beliefs as TRA variables, while the organisational components assessed were awareness and knowledge, organisational culture, supervisory encouragement, communication, rewards and punishment, sufficient resources and periodic training. The sample was made up of 229 women, and was tested first by implementing logistic regression analysis to identify the relationships between compliance of female workers with innovation management instructions and variables of both TRA and organisational factors. The logistic results revealed that intention and belief from the TRA model were reasonably significant predictors for compliance, while habit was negatively significant at level 0.05. For organisational factors, sufficient resources is highly significant, followed by periodic training, moderately significant, and rewards and punishments, recorded as a less predicative factor significant to compliance. A set of factors – awareness and knowledge, communication, supervisory encouragement and understanding of organisations is not significant to compliance. In conclusion, these findings support the usefulness of the TRA model and identify the most effective organisational factors in predicting compliance of female workers with management orders relating to innovative practices. These results can be used to improve effective organisation strategies. Innovation processes thus continue in organisations. However, future studies could confirm the results of this study and expand on contextual variables.

## **Declaration of Authorship**

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### **Declaration of Authorship**

I am Nuha Nasser Alhazmi hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_ 04/12/2018 \_\_\_\_\_

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## **Dissemination of Research**

1. Poster entitled “Clothing firm, management innovation. The role of Saudi women in training” on 18<sup>th</sup> of September 2014 at the PGR Conference 2014: Beyond the Ivory Tower in Royal Holloway University in London.
2. Poster entitled “Clothing firm, management innovation. The role of Saudi women in training” on 31<sup>st</sup> - 1<sup>st</sup> of January 2015 at the Eighth Saudi Conference at Imperial College London.
3. Presentation entitled “The impact of innovation management on women’s role in the clothing industry in Saudi Arabia” on 26<sup>th</sup> of April 2017 at the annual PhD student conference in Royal Holloway University in London.

## Table of Contents

<i>Abstract</i> .....	i
<i>Declaration of Authorship</i> .....	ii
<i>Acknowledgment</i> .....	iii
<i>Dissemination of Research</i> .....	iv
<i>List of figures</i> .....	viii
<i>List of tables</i> .....	ix
<b>CHAPTER ONE – INTRODUCTION</b> .....	<b>10</b>
1.1. <i>Introduction</i> .....	10
1.2. <i>The clothing industry in the Kingdom of Saudi Arabia (KSA)</i> .....	12
1.3. <i>The worker shortage problem</i> .....	15
1.4. <i>Research gaps and opportunities</i> .....	18
1.5. <i>Research aims</i> .....	21
1.6. <i>Research significance</i> .....	23
1.7. <i>Research structure</i> .....	25
1.8. <i>Summary of chapter</i> .....	27
<b>CHAPTER TWO – CONVENTIONAL LITERATURE REVIEW</b> .....	<b>29</b>
2.1. <i>Introduction</i> .....	29
2.2. <i>Compliance</i> .....	30
2.3. <i>Innovation</i> .....	33
2.4. <i>Innovation management</i> .....	34
2.5. <i>Women and employment work</i> .....	37
2.6. <i>Theories used in understanding workers' compliance with innovation management</i> .....	39
2.6.1. <i>Human Capital Theory (HCT)</i> .....	39
2.6.2. <i>Social Cognitive Theory (SCT)</i> .....	41
2.6.3. <i>Transtheoretical Model (TTM)</i> .....	44
2.6.4. <i>Theory of Reasoned Action (TRA)</i> .....	46
2.6.4.1. <i>Behavioural factors</i> .....	50
2.6.4.2. <i>Intention factors</i> .....	52
2.6.4.3. <i>Attitude factors</i> .....	53
2.6.4.1. <i>(Cultural) belief factors</i> .....	54
2.7. <i>Organisational factors</i> .....	55
2.7.1. <i>Awareness and knowledge</i> .....	56
2.7.2. <i>Organisational culture</i> .....	57
2.7.3. <i>Supervisory encouragement</i> .....	59
2.7.4. <i>Communication</i> .....	61
2.7.5. <i>Rewards and punishments</i> .....	63
2.7.6. <i>Sufficient resources</i> .....	64
2.7.7. <i>Periodic training</i> .....	65
2.8. <i>Summary of chapter</i> .....	67
<b>CHAPTER THREE – CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS'</b> .....	<b>68</b>
3.1. <i>Conceptual Frame'</i> .....	70
3.2. <i>Research Questions'</i> .....	78
<b>CHAPTER FOUR – METHODOLOGY AND RESEARCH DESIGN</b> .....	<b>79</b>
4.1. <i>Introduction</i> .....	79
4.2. <i>Rationale of the thesis</i> .....	80
4.3. <i>Philosophy and strategy of the thesis</i> .....	81
4.4. <i>Operationalisations</i> .....	83
4.4.1. <i>Designing the thesis</i> .....	84
4.4.2. <i>Sample framework and the criteria</i> .....	87
4.4.3. <i>Measuring innovation management</i> .....	89
4.4.4. <i>Questionnaires administration</i> .....	91

4.4.5.	<i>Variables.....</i>	<i>101</i>
4.4.6.	<i>Reliability and validity.....</i>	<i>102</i>
4.4.7.	<i>Piloting and screening.....</i>	<i>105</i>
4.4.8.	<i>Administration, the instruments and responses .....</i>	<i>106</i>
4.4.9.	<i>Problems encountered during the fieldwork.....</i>	<i>108</i>
4.5.	<i>Summary of chapter .....</i>	<i>110</i>
<b>CHAPTER FIVE – RESULTS AND FINDINGS.....</b>		<b>111</b>
5.1.	<i>Introduction .....</i>	<i>111</i>
5.2.	<i>Data analysis process .....</i>	<i>112</i>
5.2.1.	<i>Preparation of data .....</i>	<i>113</i>
5.2.2.	<i>Checking accuracy .....</i>	<i>113</i>
5.2.3.	<i>Coding data .....</i>	<i>115</i>
5.3.	<i>Descriptive statistics.....</i>	<i>118</i>
5.3.1.	<i>Working type.....</i>	<i>120</i>
5.3.2.	<i>Age.....</i>	<i>121</i>
5.3.3.	<i>Gender.....</i>	<i>122</i>
5.3.4.	<i>Education.....</i>	<i>123</i>
5.3.5.	<i>Nationality .....</i>	<i>125</i>
5.3.6.	<i>Marital status.....</i>	<i>126</i>
5.3.7.	<i>Work hours .....</i>	<i>127</i>
5.3.8.	<i>Experiences.....</i>	<i>128</i>
5.4.	<i>Innovation management.....</i>	<i>130</i>
5.5.	<i>Compliance of women workers.....</i>	<i>132</i>
5.6.	<i>Women workers’ behaviour .....</i>	<i>132</i>
5.6.1.	<i>First factor: Behaviour (habit) .....</i>	<i>132</i>
5.6.2.	<i>Second factor: Intention .....</i>	<i>133</i>
5.6.3.	<i>Third factor: Attitude.....</i>	<i>134</i>
5.6.4.	<i>Fourth factor: belief .....</i>	<i>135</i>
5.7.	<i>Organisational factors.....</i>	<i>136</i>
5.7.1.	<i>First factor: Awareness and knowledge .....</i>	<i>136</i>
5.7.2.	<i>Second factor: Organisational culture .....</i>	<i>137</i>
5.7.3.	<i>Third factor: Supervisory encouragement .....</i>	<i>138</i>
5.7.4.	<i>Fourth factor: Communication.....</i>	<i>138</i>
5.7.5.	<i>Fifth factor: Rewards and punishments.....</i>	<i>139</i>
5.7.6.	<i>Sixth factor: Sufficient resources.....</i>	<i>139</i>
5.7.7.	<i>Seventh factor: Periodic training .....</i>	<i>140</i>
5.8.	<i>Factor analysis .....</i>	<i>141</i>
5.9.	<i>Relationship between compliance with innovation management instruction and different factors relating to humans and organisational .....</i>	<i>149</i>
5.10.	<i>Regression analysis .....</i>	<i>149</i>
5.11.	<i>Logistic regression results .....</i>	<i>155</i>
5.12.	<i>Summary of chapter .....</i>	<i>162</i>
<b>CHAPTER SIX – DISCUSSION .....</b>		<b>165</b>
6.1.	<i>Introduction .....</i>	<i>165</i>
6.2.	<i>Discussion of validity and reliability .....</i>	<i>165</i>
6.3.	<i>Discussion of key study findings .....</i>	<i>169</i>
6.4.	<i>Theoretical implications .....</i>	<i>180</i>
6.5.	<i>Implications for female worker practice.....</i>	<i>183</i>
<b>CHAPTER SEVEN – CONCLUSION .....</b>		<b>187</b>
7.1.	<i>Conclusion.....</i>	<i>187</i>
7.2.	<i>Limitations of the study and future research .....</i>	<i>192</i>
	<i>References.....</i>	<i>196</i>
	<i>Appendix A: Questionnaire (English Language) .....</i>	<i>222</i>
	<i>Appendix B: Questionnaire (Arabic language).....</i>	<i>230</i>

<i>Appendix C: Definition of variables</i> .....	237
<i>Appendix D: (Poster)</i> .....	242



## List of figures

Figure 1-1: The volatility of oil prices and rise in consumption	13
Figure 1-2: Summary of how the research lacuna was found from a sequential series of gaps	21
Figure 2-1: The social cognitive theory model	42
Figure 2-2: Theory of Reasoned Action (TRA)	47
Figure 2-3: Explanation of the TRA writing off subjective norms and adding belief	49
Figure 3-1: The conceptual framework of suggested factors influencing female workers' compliance with management innovation instructions	68
Figure 4-1: The deductive process	Error! Bookmark not defined.
Figure 4-2: Formatting research questions	92
Figure 5-1: Participants' work types	121
Figure 5-2: Participants' ages	122
Figure 5-3: Participants' education levels	124
Figure 5-4: Participants' nationality	126
Figure 5-5: Participants' marital status	127
Figure 5-6: Participants' working hours	128
Figure 5-7: Participants' experience in years	129
Figure 6-1: Structural model for the influencing factors for compliance with innovation management instructions	Error! Bookmark not defined.

## List of tables

Table 4-1: Factories of clothing textiles	88
Table 4-2: Coding items, scales of extant studies and main studies	97
Table 5-1: Female participants' characteristics	Error! Bookmark not defined.
Table 5-2: Descriptive analysis for innovation management	Error! Bookmark not defined.
Table 5-3: Descriptive analysis for compliance of women workers	132
Table 5-4: Descriptive analysis for habit variable	133
Table 5-5: Descriptive analysis for intention variable	134
Table 5-6: Descriptive analysis for attitude variable	134
Table 5-7: Descriptive analysis for the belief variable	136
Table 5-8: Descriptive analysis for awareness and knowledge variables	137
Table 5-9: Descriptive analysis for organisational culture	137
Table 5-10: Descriptive analysis for supervisory encouragement	138
Table 5-11: Descriptive analysis for communication	138
Table 5-12: Descriptive analysis for rewards and punishments	139
Table 5-13: Descriptive analysis for sufficient resources	140
Table 5-14: Descriptive analysis for periodic training	141
Table 5-15: Main assumptions of factor analysis	142
Table 5-16: Factor analysis of women workers (the internal factors)	145
Table 5-17: Factor analysis of clothing industry factory (external factors)	147
Table 5-18: Mean and SD of control variables	150
Table 5-19: Correlation matrix variables	151
Table 5-20: Estimates of a logit model of modern technology	157
Table 5-21: Estimates of a logit model of New Material Marketing	158
Table 5-22: Estimates of a logit model of Subjective Measures	159
Table 5-23: : Estimates of a logit model of reluctance-ideas	160
Table 5-24: Estimates of a logit model of reluctance-financial harm	162
Table 5-25: Summary logistic findings	164

## **Chapter One – Introduction**

### **1.1. Introduction**

This chapter presents the introduction to the thesis with an outline of the seven chapters which form the structure of the thesis. The chapter commences with the main research problem relating to the finding that female workers have refused to comply with innovation instructions. This research will assist the management of organisations to help female workers to comply with innovation instructions thus increasing innovation percentages as well as reducing the dependence of the Kingdom of Saudi Arabia (KSA) on oil and gas export revenues (Young, 2016). The Saudi government is seeking to expand the manufacturing, services and agricultural sectors to produce a diversified economy (International Business Publications, 2014). One important manufacturing area which is currently being developed is the clothing industry (MarketLine, 2013; Karabay and Kurumer, 2012). According to Abdul Aziz Al-Sareei, head of the committee of the Saudi National Industry Council, the “Saudi market would need the presence of trade names (national brands) in the garment industry” (Al-hassan, 2013, p. 1).

This has led to a rise of necessary innovations in Saudi clothing organisational life, which is a situation requiring control and monitoring to enhance and ensure continued working on innovation practices whether relating to products, services or technology. Women have a capacity to offer creative solutions and this is recognised in studies of untapped talent among female workers (Carter et al., 2007). Females often provide new and innovative solutions to any problems in organisations and tend to be entrepreneurs (Henry and Johnston, 2006). However, working in employment with low levels of skills, years of education and experience and multiple levels of culture in the workplace is challenging (Lam et al., 2006), which causes a shortage of innovative performance. Thus, workers sometimes unexpectedly do not comply with their management instructions and guidelines for innovation practices. Compliance

instructions in the clothing industry maintain factories with a focus on high quality and a goal of innovation (Schott et al., 2015; Huq et al., 2016). This sector is the focus of this research. A number of studies have indicated that compliance behaviour of the workforce relating to policies in organisations is influenced by intention, attitude and belief. In addition, workers' compliance is influenced by organisational environment, because it is part of management responsibility to ensure underlying worker adherence to innovation requirements (Hsu, 2013; Waly, 2013; Bauer, 2006).

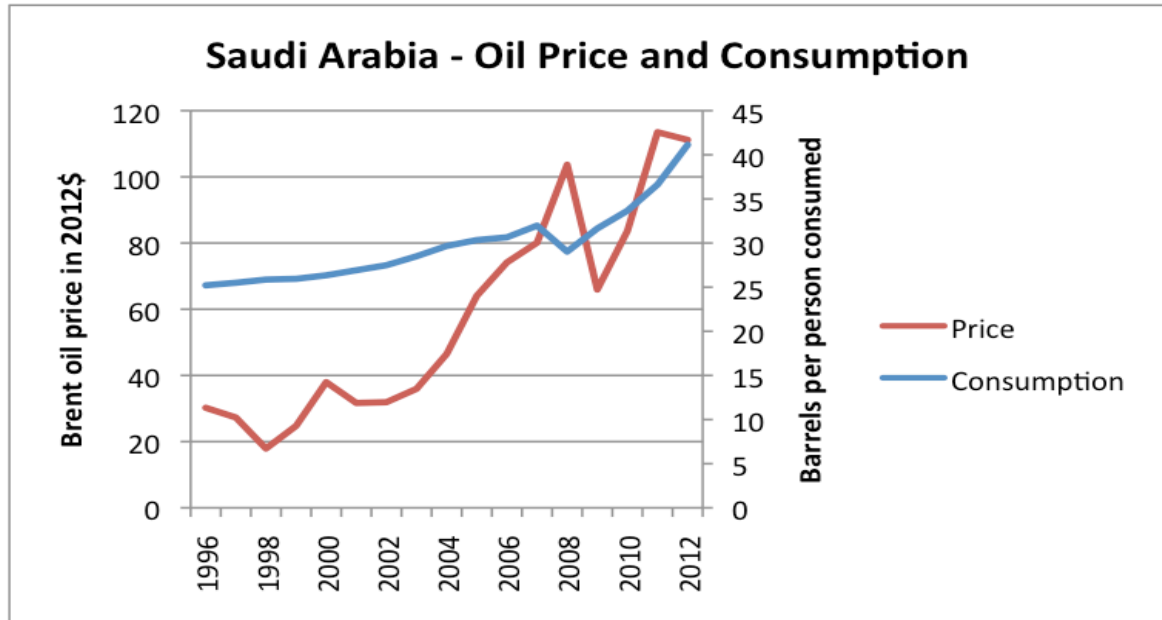
In this context, the TRA framework provided by Ajzen and Fishbein (1980) was implemented. In order to develop organisations, worker performance should be understood. The TRA offers a theoretical behaviour model that can understand a specific person's behaviour. The main goal of using the TRA is "to understand human behaviour, not merely predict it" (Ajzen and Fishbein, 1980, p. 6). The TRA proposed that an individual's intention can be to implement or not implement behaviour. Other factors also determining behaviours include individual attitudes along with intentions towards behaviours and beliefs, rather than subjective norms (Ajzen, 1988) – the latter represents the contribution made by this study. From this explanation, it is apparent that the TRA can predict compliance behaviour in relation to innovation practices by determining TRA variables, which are considered in the current study as internal factors. This is one of the study aims. Applying the TRA to a female worker's perspective leads to the proposal that females have their own behaviour towards compliance or non-compliance with instructions and guidelines. One important behavioural element of compliance is belief in many decisions that females have made as part of their nurture and their culture. At times, these represent a barrier to women to become involved in innovation practices. The study therefore hypothesised from the TRA that female workers' beliefs can be influenced by their cultural perceptions of their improvement or destruction of their career futures (Vincent et al., 1998).

Furthermore, this study uses the quantitative method for collection of data. This chapter will tentatively tap into current debates, which are covered in greater depth in chapter two. Second, the research problem and its associated research questions will be clearly stated. Third, the chapter will introduce the purpose and structure of the research. The chapter will then outline the significant factors explaining the inspiration and motivation for the research. Finally, the chapter sets out how the research was conducted and gives a summary of the chapter's conclusions.

## **1.2. The clothing industry in the Kingdom of Saudi Arabia (KSA)**

The KSA is one of the richest and largest areas in the Middle East and, currently, the economy of Saudi Arabia is considered to be one of the most stable in the world, as a result of its efficient and sustainable use of its natural resources, particularly its oil reserves (Gately et al., 2012). As the possessor of 18% of the world's petroleum reserves, Saudi Arabia's oil-based economy allows it, as the largest petroleum exporter, to play a leading part in OPEC (The Organisation of the Petroleum Exporting Countries). In recent decades, oil has promoted rapid growth in people's lives, but the rate of consumption will not cover oil exports in the long term as domestic consumption of oil is increasing each year in Saudi Arabia. Figure 1-1 demonstrates the fluctuation of oil prices from 1996 from high to low pricing. In contrast, consumption continues to rise. Clements (2017) showed the fluctuations in oil prices and the drop in the Saudi oil markets from \$57 to \$48 a barrel in 2017.

Figure 1-1: The volatility of oil prices and rise in consumption



Factoring this in along with projected increases in export demand, a balance between consumption and production requires at least a 2% increase in production each year (Gately et al., 2012). Schieber (2001) reported that, in 2020, the KSA's population will increase by 75% compared to an annual average growth of 2.8%. The United Nations (2008) predicted that the Saudi population will, in 2025, become around 39.8 million and increase to approaching 54.7 million people in 2050. Consequently, this unprecedented continued growth in population is driving the KSA to progress away from fossil fuels. Saudi Arabia has adopted new strategies to prepare the nation for the eventual depletion of its oil reserves and to reduce the country's reliance on dependent oil products and oil revenue as well as continuing to develop towards economic growth, recognising changing lifestyles through participation and uniting all private and government Saudi sectors (Young, 2016; Saudi vision, 2030, 2017). Since then, establishment of new national firms and diversifying industries, as well as developing

infrastructure have all formed part of Saudi economic policy to reduce consumption of oil revenues in preparation for natural gas reserves becoming scarce (International Business Publications, 2014; Asefeso, 2012). One sector that forms part of economic diversification is the clothing industry, which is considered as having potential for growth. According to Alhassan (2013), revenue from the apparel industry is the second largest source of income in Saudi Arabia after producing oil. This is because the Saudi market is considered a successful market in the Arab region as a result of the large number of pilgrims throughout the year (Smith, 2008). Hamdan (2007) stated that, between 2003 and 2004, imports of garments and textiles increased by 7% from 583,000 tons to 599,000 tons. MarketLine (2013) expected that clothing industry sales would increase revenue from purchases from \$6 billion in 2012 to \$7.6 billion in 2017. In comparison, the exports of this industry from Saudi Arabia reached about \$2,588,000 compared to the equivalent figure of \$32,549,000 for Bangladesh and \$51,763,000 for China (Parker, 2013). Oil wealth led to the emergence of global factories inevitably demanding professional workers. Replacing the oil booms that took place in the KSA with development projects in the clothing industry requires a good number of skilled managers and workers (AlBuqami, 2015).

However, the private clothing factory sector has suffered from shortages of professional workers and expert managers (Jassim and Shlash, 2008). Although fashion design colleges for females in the KSA have witnessed development practices and education using typical routines, the rate of Saudi designers and workers graduating successfully from those colleges is insufficient to meet increasing creativity demands or produce good quality to match development needs (Nader and AlHusseini, 2011; Mansour and Ebrahim, 2014). The clothing manufacturing industry employs Saudi workers with shortages in promoted skills but needs professionals in development projects and adopted international workers of both genders to fill the gap. Those continuing with process work have the same issue but their salaries are lower

(Nader and Hamdan, 2010). The results of this issue include workforces in Saudi clothing factories working using typical methods and shortage of renewal and innovation strategies in production lines or marketing. The reforms that began at the end of 2017 involved taking taxes from international workers, which, will increase every year. Factories engaging in mass production without any innovation methods left the markets quickly or remained unstable and in a state of destruction. Others manufacturing productions and presenting differently still block economic reforms. “In order for Saudi Arabia to achieve economic diversification, true entrepreneurship must begin within the Kingdom where new businesses are created based on innovation” (Thompson et al., 2012, p. 37).

### **1.3. The worker shortage problem**

The main research problem is that sewing workers are experiencing normal routine jobs and a shortage in creative works (Tu, 2010). The KSA is not an exceptional country in terms of worker shortage (Nader and AlHusseini, 2011) – developed countries have designed strategies to cope with worker skills shortage problems (Dychtwald et al., 2006). For example, in the United Kingdom (UK), Powley (2014) reported that UK clothing manufacturing is faced with a severe shortage of skilled workers. Notably, Tabbitt (2015) stated that 60% of sewing workers are aged over 40 years and garment manufacturing is struggling to work with younger people. It has been suggested to set up a private sewing school for factories to pass skills to workers’ generations before the art is lost. The Federation for Industry Sector Skills and Standards (2010) has highlighted an alarming skill shortage problem in the fashion and textiles sector. Despite this, the Scottish fashion and textiles sector is still much better than other nations’ fashion sectors.

Despite the notable development in fashion design and sewing colleges and courses depending on an educational approach, the KSA still faces low levels of female graduation,



limited to courses such as teaching, primarily resulting in worker performance shortage in Saudi clothing factories (Nader and AlHusseini, 2011). Alshaeir (2005) showed high levels of enrolment in clothing and textiles colleges and courses among student girls in high school, but a lack of adequate training. Saudi students do not favour the job option of becoming sewing workers because of negative perceptions with regard to heavy work associated with duties and long hours working with low income (Alzahrani, 2012; English, 2013). Negative perceptions of a sewing career could therefore discourage workers, causing them to look for other, more attractive vocations with better reputations.

The poor image of female sewing workers in general is blamed for lack of innovation, and employment as a sewing worker in a garment factory is still seen as a menial job (Bailey, 1993; Brem and Voigt, 2009), similar to working on the shop floor without any intention of achieving directorship in industry or entrepreneurship (Vaccaro et al., 2012; English, 2013; De Faoite et al., 2004). This drives workers to low interest in presenting innovative ideas and performing creative works. This negative picture, together with its associated factors, is the most important contributor to work shortages (Freel, 2000; Jowhar et al., 2010), and could also explain the shortages of workers in the wider KSA. Manolova et al. (2011) found that females consequently need a series of factors to motivate them and increase confidence in their competencies and abilities. A Saudi study by Al-darrab et al. (2013) proved that 40% of workers strongly believed their jobs to be of less importance.

Peters et al. (2002) described worker roles as restricted to sewing materials together and handling tasks for other workers in the wider process, only carrying out and executing managers' orders. In contrast, the view of Alsibani (2011) is that sewing workers participate in taking decisions in administration and are involved in research into solving problems and education – workers in quality control, for example, have the ability to come by unexpected and inexpensive solutions that cannot be achieved managers or professors. They have

enormous mental potential that is not used. Saudi clothing factories rely heavily on male workers from an international background, mainly India and Bangladesh, compared to the few factories employing females in both Saudi Arabia and international nations. Nader and Hamdan (2010) recorded that 44 clothing industries in the KSA produced different types of clothing, and the total number of non-Saudi workers stood at 20,206. The majority of these were male and few clothing factories adopted females – a mix of Saudi and international workers (Alzahrani, 2012). These are highlighted in this study. Each female worker brings an aspect of their cultural background, potentially creating multi-level culture in the sewing worker workplace which might impact negatively on creative performance or development of innovative ideas, even within the Saudi nation, as each worker has a different educational, social and cultural background, influencing their quality and creative performance ability. “People absorb in socialization and contribute toward their practical knowledge and skill in functioning in business” (Carter et al., 2006, p. 377). Social norms for Saudi women represented a strong influence (Almobaireek and Manolova, 2012). Social culture affects women’s work experience substantially in a way that is limited to traditional work, meaning that females often have less success, blocking themselves from advantages (Carter et al., 2006).

As a result of clothing factories increasing requests to improve production and progress, the management of factories face challenges in workers adapting to instructions and guidelines within low levels of skills, experiences and the multiple cultures with many consequences on final outcomes (Verdun, 2004; Hon and Lui, 2016; Priscilla et al., 2017; Crompton and Harris, 1998). In particular, the relevance of the impact of workers’ behaviour and beliefs upon their performance in turn impacts shortages in quality work (Ram and Trehan, 2010; Trehan and Rigg, 2007; Stark and Byra, 2018). Al-Dajani and Marlow (2010) noted that some sewing workers do not comply with their practices. The problem is exacerbated when the administration neglects to design systems that support and structure the worker environment

(Waly, 2013). Management is arguably limited in dealing with innovation processes, with a detrimental influence on worker compliance (Freel, 2000). This is mainly because creative performance and innovative ideas represent the spirit of clothing factories, keeping them competitive in the market. Responsibility lies first with the clothing administration and is participated in by all workers (Bailey, 1993). However, managers found reluctance in workers not supporting factories or relating to issues with particular workers (Anderson and Johnson, 2007; Eva et al., 2017). The factors impacting workers' willingness and intrinsic motivation to comply to ensure that standards of presenting innovative ideas or involvement in operating performance have been achieved should therefore be investigated. This is necessary for scholars interested in the subject of garment factories in the KSA taking responsibility for studying, developing and future planning to overcome their weaknesses and improve their main drivers, including employees, ensuring the progress of the industry and the country (Michael et al., 2004; Hamdan, 2007). This research therefore investigates the reasons impeding the compliance of female workers innovation management instructions.

#### **1.4. Research gaps and opportunities**

This section demonstrates how to identify relevant research gaps. Clothing industry studies have long presented how workers have suffered in this type of job in terms of poor working conditions, without mentioning whether clothing factory administration has improved worker performance or not (English, 2013; Natrass and Seekings, 2014). Workers' problems have undoubtedly been extensively discussed in the last decade (Crick and Chaudhry, 1996; Ram, 1992; Vinet et al., 1989), but it is necessary to find solutions and advance these issues. A range of research has been conducted into the development and planning of the Saudi retail sector for clothes (e.g. Almousa and Brosdahl, 2013; Aqeel, 2012; al-Mousa, 2011). Often, such studies consider consumer satisfaction; however, much research has also investigated Human

Resource Management in the clothing industry but concluded that solutions have rarely been implemented (Taplin et al., 2003). At this point, it becomes necessary to explore the satisfaction or rejection levels of employees, specifically in relation to their behaviour, attitudes, beliefs and intentions and innovation management in opposite areas. However, the two areas do not work together properly because clothing is a synonymous word for fashion, which changes based on the season and requires innovative ideas relating to design, supply chains and marketing to fulfil consumer demand (Qudrat-Ullah, 2009). Worker behaviour is linked to involvement with fashion changes and suggestions of innovative ideas. While Xerri and Brunetto (2013) discussed the limited nature of workers' innovative behaviour, employees certainly leave for other clothing firms because of energy depletion.

Next, the researcher observed that the examination of the behaviour and attitudes of employees in Saudi Arabia has largely focused on expatriates (Abbas and Paul, 1985; Bhuian et al., 2001; Showail et al., 2013). In the clothing industry literature, only a small proportion of studies discuss the characteristics of female employee behaviour (Mayrhofer and Scullion, 2002). This was established by Ahmad, (2011b, p. 124): "there are comparatively few studies on the behaviour and performance of women operated businesses in the Arab world". Kozar and Connell (2013) recommended studying it by examining the external and internal influences affecting practices. In relation to this point, writing questions is more sensible but something is still missing. The researcher therefore found that agreement of previous literature on employee behaviour could be strengthened or creativity ideas could be hindered (Kimberly and Evanisko, 1981). In addition, gender roles are different in solving problems depending on the behaviour and values complying with expectations in specific situations.

On the other hand, innovation management has not been discussed from the very particular perspectives of women – "innovation and women's empowerment are rarely discussed within the same context but each has essential value for human progress" (Malhotra

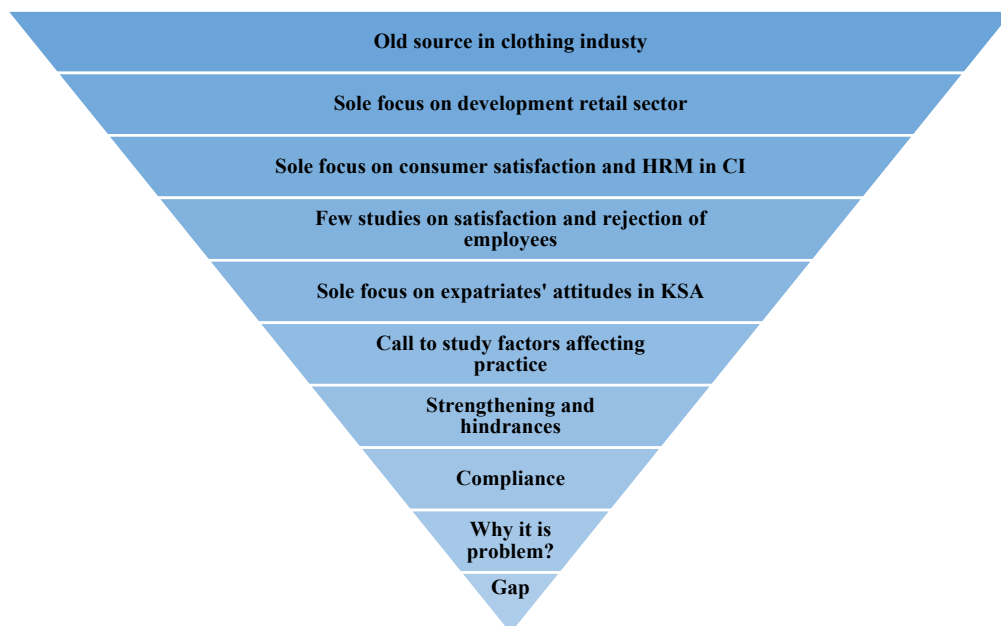
et al., 2009, p. 3), and Tidd and Bessant (2013) presented successful examples of innovation management retail. This thesis aims to address these research gaps. Hence, this study will endeavour to link the aforementioned three study issues and fill these gaps in the review in Saudi Arabia (see figure 1-1). The easiest way involves a careful understanding of social factors in Saudi Arabia, relying on any development (White et al., 2007).

To address these questions, it first needs to be understood why it is felt that there is a problem with the compliance of women in this industry with innovation and what has prompted the interest in this research area. The practice of creating an item of clothing into its many constituent parts for computerisation and mechanisation tended to remove or reduce the human skill and creativity element from clothing manufacturing (English, 2013). This emphasises the insufficiency in industries (Sabine and Katherine, 2011). In addition, this practice tends to create a state of apathy and acceptance of the status quo. Women may occupy secondary managerial roles which have poor promotional prospects (Carrillo and Gromb, 2007). Meanwhile, in the past, the industry relied on people with specialist skills who were not easy to replace (English, 2013). However, now, one of the main restrictions to the growth of enterprise and employment is the deficit in the availability of people possessing the skills and knowledge to comply with policies (Orser et al., 2012b). However, employees can produce innovative solutions and novel ideas through an approach of employee driven innovation (Kesting and Ulhøi, 2010; Koszewska, 2012), which means the workers involved in the innovation process have attained intensive knowledge of compliance with innovation instructions (Schott et al., 2015). These authors all fail to clearly analyse how employees might be motivated towards innovative solutions or participate in administration roles. This means that it is timely to explore any interaction between employees and management (Sabine and Katherine, 2011). Another possible research gap therefore arises from the interaction between employees and management. Any practices given to employees from management will be

affected according to Tracey (2012) who claims that HR practices have a direct effect on employees' motivation and behaviour as well as impacting on their knowledge and skills. For this reason, this thesis demonstrates that successful outcomes and positions within organisations were affected by determining personal and organisational factors (Orser and Leck, 2010; Waly et al., 2012).

Figure 1-2 below is a synopsis of the study lacunae, commencing at the widest part of the pyramid, then narrowing with information until it reaches a specific point not previously discussed.

Figure 1-2: Summary of how the research lacuna was found from a sequential series of gaps



## 1.5. Research aims

By comparing studies and building a bridge between the gaps presented in the previous section and the best personal knowledge of the author, this thesis helps the management of the clothing

industry through the pursuit of female workers who are reluctant to accept instructions relating to innovation for any reason, whether behavioural or organisation related. The under-utilisation of their capabilities means that factories have missed out on sizeable investments and also lose out when workers leave work (Bhatnagar, 2013; Brown et al., 2013). Additionally, it is presumed that factories will find it difficult to recruit new workers (Taplin et al., 2003). In particular, the KSA has resources such as oil, but the country has a problem with growth and lack of competitiveness in the global market of the clothing industry. The aim of this study is therefore to explore the reasons behind female workers' non-compliance with innovation management instructions in order to identify the influencing factors for improving the business capability of the clothing industry. The aim of the thesis has now been stated.

Identify the internal and external factors influencing innovation management and compliance in the context of Saudi women workers'.

This aim is divided into additional sub-aims:

1. Examine in depth the female employee behavioural factors that influence compliance with innovation management instructions.
2. Examine in depth the factors and reasons in clothing industry factories that influence Saudi women employees in relation to compliance with innovation management instructions.

The investigation of the two points will be the foundation of the thesis, and that will take place through two main groups, namely the internal factors from female behaviour and the external factors from the organisation. However, to further understand the objective, the

researcher addressed at the outset the concepts of compliance and innovation management in organisations and the economy. The study also highlights addressing the issue in terms of theories. The most appropriate theory was used to address the study's objective: the TRA. This would certainly support suggestions of influencing factors put forward in the literature (more information on the literature is given in sections 2.6.4.1 and 2.7) and utilised as solutions for easy implementation. A questionnaire will be used as a main approach, and female employees will be involved as participants, completing questionnaires to enable identification of the factors influencing workers in firms and to understand reasons for non-compliance with innovation management instruction. A quantitative data set will be created and analysed using regression techniques. The identities of firms and participants will be maintained securely and presented anonymously in the research. The real purpose behind the investigation factors is to study the role of Saudi high-level management in the clothing industry. The second benefit involves attempting to produce innovative products or services by simulating the processes and methods adopted in developed countries which have become successful in clothing manufacturing.

## **1.6. Research significance**

As this study is a new perspective on clothing industry research, innovation management instructions rely on compliance from female workers to contribute to the business. Complying with innovation instructions strengthens profitability and entrepreneurship, which are key to the success of factories (Doyle et al., 2013). The significance of this study relates to factors influencing female compliance, addressing a new side to female workers and thus continuing the work of previous researchers into female entrepreneurship such as Marlow, who focused on gender and entrepreneurship (Marlow and McAdam, 2013; Marlow and Martinez Dy, 2017; Marlow et al., 2018). Trehan studied action learning in small business (Trehan and Rigg, 2007;



Ram and Trehan, 2009; Ram and Trehan, 2010; Pedler and Trehan, 2008), while Manolova focused on nascent entrepreneurs (Manolova et al., 2011; Manolova et al., 2008), Al-Dajani contributed in the field of displaced and dispossessed entrepreneurs (Al-Dajani et al., 2015; Al-Dajani and Marlow, 2016) and Rouse's work explores entrepreneurship and family households (Rouse and Sappleton, 2009; Jayawarna et al., 2013; Rouse and Kitching, 2006; Butcher et al., 1998). There is undoubtedly a need for scholarly articles focused on women and innovation management; the paucity of this type of research has impeded the development of women (Malhotra et al., 2009). This thesis is therefore worthwhile because there is a paucity of studies into female management in the clothing industry (Llach et al., 2006) in general and in Saudi society in particular (Al-Asfour et al., 2017). This research helps owners and managers to improve their firms through knowledge of the factors involved in complying with innovation management instructions. The management of firms plays an important role for workers (Mellahi, 2007); changing management policies support firms' positions for workers who refuse to follow instructions (Mahroum and Al-Saleh, 2013). Studying influential factors also involves trying to convince workers to follow new instructions from management in order to protect firms from future risk (Llach et al., 2006) and shorten output lines (Chuang, 2009). Moreover, it is important to address factors related to female workers because most clothing industry companies have very good and experienced staff and it is disadvantageous to lay them off but, in fact, it is preferable to increase their knowledge (Vedel and Ellegaard, 2013) of innovation management. These factors will help workers themselves to know the reasons underlying their lack of competitiveness. The final point of significance in this research is the principle of innovation instruction, which leads to changes in working environments through the simplicity of psychological theory for use in management science, and trying to keep away from the misery established by previous researchers of the world of clothing manufacturing (for example, Huq et al., 2016) by enhancing innovation to change and revitalising activity in

factories. In addition, being focused on one branch of compliance with innovation in order to realise the importance of being innovative may instead increase continued resistance (Celik et al., 2016). Through investigation the influential factors of both behavioural thinking and organisational level could help understanding of the indicators of why some clothing industry factories are competitive while other factories just survive. Despite clothing industry literature examining workers' jobs, debate still exists about the relationship between non-compliance and hatred of jobs. For this reason, the research presents the introduction of two coherent aims. The literature review includes studies related to the aims that form the direction of the study, as well as presenting other scholars' biases and limitations. The literature is reviewed using tables, graphs, quotes and critical analysis. Finally, it is interesting to read and presented in an organised and systematic way in order to seek the determinate of compliance in clothing factories and increase the likelihood of innovation success.

### **1.7. Research structure**

The structure of this thesis is as follows:

- Chapter two is a conventional literature review – the second chapter reviews the issues examined in this research, including: (i) the compliance concept, (ii) innovation, (iii) innovation management, (iv) women and employment, and (v) theories used to understand innovation management and compliance. The literature review is then split into two, examining factors from these main categories: human factors and clothing industry factors. Finally, a summary of the chapter highlights gaps for further study.
- Chapter three continues the literature review section and focuses on the conceptual framework and research questions.

- Chapter four is the methodology section and this focuses on three main parts: (a) the rationale of the research; (b) philosophy of research; and, (c) operationalisation. This part includes many sections describing the questionnaire and its design such as: (i) Saudi Arabia as a research site; (ii) the sample framework; (iii) measuring innovation management; (v) the questionnaire and variables construction; (vi) reliability and validity; (vii) negotiating access; (viii) pilot tests; (ix) collecting data; (x) problems encountered during the fieldwork; and, finally (xi) a summary of the chapter.
- Chapter five presents the results and findings. This chapter analyses the data to obtain the results of critical factors that affect women in relation to compliance with innovation management instruction in the clothing industry. This chapter begins by outlining the necessary procedures to ensure safety before detailing analysis, comparisons and data. The following sections are included in the analysis and results chapter: (a) a data analysis process that includes preparation of data, checking accuracy and presenting coding data; (b) a description of statistics: each worker answered demographic questions, the responses from which are set out in graphs and compared to previous studies. The chapter also examines, (c) innovation management; (d) the clothing industry and compliance of women workers; (e) female workers' behavioural factors; and (f) clothing industry factors. Data from the five areas mentioned is displayed in tables and compared to similar results in previous studies. The following section is (g) factor analysis, which is a stage before data analysis, involving extracting valid questions. This is undertaken in each section and set out in tables. A comparison of studies is also carried out using mean and standard deviation (SD). The remaining sections are: (h) the relationship between compliance and innovation management

instructions; (i) regression analysis, OLS and logistic; (j) results; and (k) a summary of the chapter.

- Chapter six presents the discussion. This chapter will provide a discussion of the findings from the quantitative stages. As such this involves reviewing and critically discussing the findings and the results; hence, the contribution of this thesis will add to the fields of management innovation and entrepreneurship. It therefore includes the following sections: (a) discussion of reliability and validity; (b) discussion of the key findings, presenting the inflecting factors relating to complying with innovation management instructions; (c) detailing theoretical and practical implications.
- Chapter seven presents the conclusions of this study by putting forward the study gaps and aims and highlighting the theoretical, practical and methodological contributions made, while noting a clear conclusion to the researcher's opinion covering all the sections of the thesis chapters. Finally, overall concise limitations and drawbacks of the study are outlined and recommendations for future research are made.

### **1.8. Summary of chapter**

To conclude, the chapter indicates that Saudi women who work in clothing firms resist compliance with management's call for innovations. This chapter demonstrates the nature of the thesis in terms of attempting to study influencing factors on women's compliance, such as behavioural and organisational factors, determining the factors that are causing problems with improved growth in the organisation in the future. Chapter one also demonstrates how to deal with this problem, initially examining studies of the clothing industry and commenting on the lack of new and updated studies. Most existing studies discuss retail or consumer satisfaction.

Innovation management is rarely examined in relation to any role in motivating employees, particularly resistant women, creating the lacuna to be filled by this study. The significance of the study is summed up by the importance of management responsibility for developing the new innovation systems, and changing women's thinking, rooted in generational ideas and lack of practical education. This chapter therefore draws the baseline of the present study, which will be adopted. The next chapter is an analytical review of the literature to address the main issues.

## **Chapter Two — Conventional literature review**

### **2.1. Introduction**

This chapter reviews the literature related to the study topic outlined in chapter one. The chapter begins with an overview of the definition of compliance to understand the practical behaviour of workers and the negative impact of continued non-compliance on workers in an organisation. The literature review provides a brief synopsis of innovation before addressing how innovation management can progress innovation and sustain organisational improvement, and how resistance among workers could delay management in improving their production effectiveness or break down innovation processes. The review also examines the nature of female society and gives an overview of female work. As such, this chapter addresses a range of relevant theories and models that are useful in determining behaviour factors in worker compliance. Each theory is presented, including their limitations and criticisms. This study analyses the TRA as a theoretical framework. The TRA offers a theoretical behaviour model that can understand a specific person's behaviour. The main goal of using the TRA is “to understand human behaviour, not merely predict it” (Ajzen and Fishbein, 1980, p. 6). The TRA proposed that an individual's intention can be to implement or not implement behaviour. Other factors also determining behaviours include individual attitudes along with intentions towards behaviours and beliefs, rather than subjective norms (Ajzen, 1988) – the latter represents the contribution made by this study. The remainder of the chapter aims to study the human and managerial factors that influence female workers. The main purpose of this thesis is to explore and investigate the internal and external reasons that influence Saudi women in complying with innovation management instruction. Finally, the conclusion summarises the main themes of the chapter.

## 2.2. Compliance

The definition of compliance involves following instructions and procedures in organisations with a degree of frequency (Kelman, 1958; McKay and Verhagen, 2015). Indeed, the subject of compliance has become vital in clothing industry studies (Alam, 2018; Pike, 2014) in a way it has not before, as administrations deal with workers by expelling them from work as a sole solution. However, compliance behaviour in organisations very rarely features in the literature (Anderson and Johnson, 2007). There is a pressing need to explain the compliance framework to guide the study and industrial practice (Burdon, 2016), particularly for female workers. Lack of compliance is an accepted definition, making it difficult to assess worker compliance with organisational guidelines, especially when new types of innovative work are required (Anderson and Johnson, 2007; Hyun et al., 2018; Fransen and Burgoon, 2014; Vance et al., 2012). This study therefore attempts to explore the linkage between compliance and worker innovation (Heller, 1998). Workers who follow managerial instructions and policies should be defined as compliant or adherent, as both are closely related to each other (Coughlan, 2005; McKay and Verhagen, 2015). The adherence term is a medical concept and utilised widely in this field (McKay and Verhagen, 2015). Meanwhile, compliance is more flexible and has been adopted in IT (Hu et al., 2012; Vance et al., 2012; Xue et al., 2011; Puhakainen and Siponen, 2010), medicine (Cole, 2008; Cole, 2006; Falk, 2001; Bauer, 2006) and management (Hyun et al., 2018; Burdon, 2016; Schott et al., 2015; Crossler et al., 2014). Adherence means following the exact programme without change while compliance is utilised to incorporate all workers, including managers, doing what is expected of them under organisational guidelines to develop (Coughlan, 2005; McKay and Verhagen, 2015; Cialdini and Goldstein, 2004). However, a number of researchers have stated that adherence is a term synonymous with compliance and has been used interchangeably as both terms describe the same aspect of one phenomenon (Bissonnette, 2008; Bissell et al., 2004). The term compliance has therefore been adopted,

mainly because, in the current thesis, compliance is relevant to the degree, frequency and level to which female workers follow instructions and orders to perform innovative work.

In the literature on perspectives of compliance behaviour, one group of authors asserts that compliance behaviour is considered as an engine for growth (Doyle et al., 2014; Waly, 2013). However, others view compliance as similar to submission and obedience, as in military or paternalistic associations (Cole, 2008; Falk, 2001). When examining compliance behaviour, it has been argued to contain components of expectations, values, motivations and other contextual factors part of humanity and impossible to ignore (Kelman, 1958). Consequently, managers and workers need to know that compliance is a small part of a person's life. Similarly, worker compliance behaviour should be recognised as a small part of work life (Eva et al., 2017). Compliant workers' behaviour is influenced by multiple factors such as culture, personality, organisational issues and lack of knowledge; all related to the nature of worker behaviour and thus incidences of non-compliance. This research concentrates on factors related to compliance with management instructions and guidelines among the workers facing poor training and deficiencies in experience as well as multi-cultural workers. These factors may result in barriers hindering compliance instructions and practices (Pirani, 2014).

Non-compliance behaviour such as ignorance and incompetence prevents workers from following instructions and organisational orders (Yaniv, 2001). Non-compliance is about active decisions in response to management instructions and organisational guidelines (El Kharbili et al., 2008). Decisions not to comply emerge from groups of personal characteristics, attitudes and beliefs influencing worker behaviour. Such decisions could also be associated with workers' ignorance and non-compliance (Hwang et al., 2017; Eva et al., 2017). The idea of complying with instructions is not a common subject in organisational literature, as the evidence indicates. In general, sewing workers are compliant with instructions and procedures in place in organisations (Alsibani, 2011), but, whilst compliance is related to innovative



performance, non-complying workers with such instructions have shown this. Inevitably, organisations set out guidelines to develop innovative products as a fundamental approach, enabling them to operate attentively, reinforce quality innovative service and enhance workers' practices in creative performance (Alam, 2018; Anderson and Johnson, 2007). Compliance is an obvious proviso for organisations to overcome a lack of training in education and weak experience in solving problems using innovative ideas (Heller, 1998; Weaver and Trevino, 2001). It also represents a means of developing entrepreneurial capacities at this stage, as well as the search for ideas and attempts to apply them (Alsibani, 2011). Cooperation between workers and managers with following instructions and guidelines issued from administrations is a cornerstone of innovative products and development of organisations (Doyle et al., 2013).

Scott and Bruce (1994) have argued that developments cannot work in an industry in which employees are unwilling to comply with new rules and standards. Consequently, the problem of unwillingness to comply with management has resulted from behaviour and organisational factors (Hu et al., 2012; Herath and Rao, 2009; Eva et al., 2017). Some organisational variables have contributed in the form of different methods of increasing non-compliance, such as lack of understanding of organisational goals, training deficits and poor equipment, all of which negatively influence workers' skills and thus innovative performance outcomes. Studies of non-compliance with organisational policies have been carried out in hospitals and IT organisations, these studies were initially based on identifying that both behavioural and organisational factors correlated with employee non-compliance (Bauer, 2006; Waly, 2013). Consequently, workers' behavioural compliance is dependent on two major factors – individual and organisational behaviour – where the individual works towards innovation and the instructions of management. Innovation is discussed in the following section and innovation management after that.

### **2.3. Innovation**

The definition of innovation has evolved from different fields and multiple perspectives based on innovation analysis purposes (Bakry, 2013). Innovation is not only associated with new markets, but is defined as introducing new productions, new methods of supply sources or new practices in organisations (Schumpeter, 1934). Innovation engages people, mainly driving to develop the industry, and cannot ignore the role of workers in contributing to innovation processes and sorting out production problems. Workers thus play an important role in organisational life. Nonetheless, many organisations have developed their technology and machine systems rather than individuals. In practice, however, this idea has been proven to be mistaken and clearly lacking, as technology and machines only contribute to quick production but workers engage in the innovation process and solve problems (Carayannis and Wetter, 2004; Jowhar et al., 2010). Innovation has also created new investment opportunities as the underpinning notion of innovation involves creating or introducing fresh ideas, particularly related to products (Bakry, 2013; Mohammad and Ahamd, 2013). This effectively contributes to raising the economic value of a country (Grossman, 1993) and success in progressing at industry level and thus at country level (Schumpeter, 1934; Tushman and Nadler, 1986). For example, the Hongdou group in the clothing industry chain has registered 110 patents (Lal and Mohnen, 2009).

Innovation has now become paramount in people's daily lives more than at any time. This investment has put organisations under pressure to produce more innovations, such as products, services and technology, to fulfil customer demands (Shavinina, 2003). Many parties have intervened in the innovation process, including suppliers, customers and other individuals, to generate ideas, identify markets and reduce use of time and internal resources (Chesbrough, 2012). This climate clearly shows levels of difference among female workers in lack of training, knowledge or experience or any personal reason leading to worker non-compliance.

This causes a breakdown or delay in the innovation process, meaning that customers cannot reveal the benefits of innovation at a reasonable price on time, delaying or breaking down processes and potentially producing obsolete innovation (Khdairi, 2003). For example, at the quality stage check in clothing factories, workers can bring brilliant ideas not expected to improve and solve problems in product design or technology processes, as they work around eight hours daily in the same position and can implement innovative ideas that managers cannot do or even think. In the researcher's experience, workers have mental power, are smart and have experience. However, refusal to improve a product because of lack of skills or any other reason means that the design of the product can be returned to the first designer for amendments to compensate for workers or removed entirely. This truly breaks down the innovative process, delaying products to submission and leading to factory fines from suppliers.

This therefore cannot solve the problem of non-compliance among workers through expelling them from organisations, as it costs more money to hire new employees and pay out to former employees. At this level, top management must deal with non-compliant people to convince and motivate them to work. The main principle of innovation is good management to ensure the success of innovation, as management determines if the organisation is interested in innovation (Leopold, 2017; Khdairi, 2003). Consequently, success in innovation could be viewed as compliant worker behaviour coinciding with management instructions and orders.

#### **2.4. Innovation management**

Since the 1980s, managing innovation has become a major feature of organisations (Roberts, 1998). Innovation management refers to how entrepreneurs cooperate with their employees in the process of developing innovative activities (Birkinshaw et al., 2008; Wright et al., 2012; Valmohammadi, 2012). Innovation management therefore assists workers in better understanding innovation, involving new management policies, applying new human resources

practices and generally improving organisational structure performance (Volberda et al., 2013). Organisations are responsible for clarifying what innovation means to employees, commensurate with their goals, and the role of management is shown in some cases – for example, involving non-compliance with innovation instructions (Birkinshaw et al., 2008; Vaccaro et al., 2012; Doyle et al., 2014). Innovation success therefore depends on the actions of management to motivate workers and reduce non-compliance with new standards, providing management supervision in the innovation model and rewards or training in applying different innovation approaches (Scott and Bruce, 1994; Hassan et al., 2013; Foxall, 2014).

Workers' performance affects the ability of organisations to overcome day-to-day problems and achieve strategic goals (Ersun and Karabulut, 2013). Admittedly, strict regulations or hierarchical forms in organisations create workers' behaviour that acts to stifle innovation (Amabile et al., 1996). It is critical to examine aspects such as intention and attitudes towards certain behaviour as these are important in predicting the actions of an employee. For example, in some cases, the attitudes of workers depend on their professional and educational levels. If these levels are very low, workers may never accept orders and guidelines from the administration. However, innovation management articles give limited attention to links with the topic of compliance (Doyle et al., 2014; Doyle et al., 2013). Even innovation management studies constitute a small proportion of innovation study. Volberda et al. (2014) have proven this, finding that just 3% of research is specifically focused on innovation management. Similarly, a study by Keupp et al. (2012) stated that only 25 of 342 articles included innovation management as their focus. This is unexpected, as innovation management is widely used as a key construct of innovation in regard to documenting clearly how tasks are undertaken and the extent to which procedures and rules are implemented in organisations, in turn influencing behaviour compliance towards the innovation process which could be codified and reinforced by management through provision of some organisational structures such as managerial

approaches (Eva et al., 2017).

Why does innovation management matter? The role of management is not simply to run the process of innovation, as it demands strong support and assistance from organisations and is different based on innovation type (Bakry, 2013). In some cases, management resorts to determining innovation and organising rules but ignores the non-compliance of workers who are drivers of innovation, resulting in innovation fizzling out (Hon and Lui, 2016; Eva et al., 2017). This indicates that the rate of successful innovation is relatively low and four innovation projects out of ten fail when they reach the marketplace (Griffin, 1997; Ottenbacher, 2007). Hon and Lui (2016) explained that the reasons for the potentially high failure rates of innovation can relate to limited management knowledge in dealing with innovation or resisting people – workers in our case – in changing their conventional practices and old ways of acting to participate in innovation. Scholars have emphasised that multiple factors inhibit or foster innovation and need to be addressed at individual and organisational level (Hon et al., 2014; Anderson et al., 2014; Wong, 2016; Hsu, 2013). Examining these factors is necessary to help managers deal with non-compliant workers with multi-level skills and cultures (Hon and Lui, 2016). Zhou and Shalley (2003) stated that organisational factors have two different roles in affecting individuals' work performance – informational and controlling roles. The first (informational) refers to providing encouragement and support for workers to be creative and become involved in innovation but the second role (controlling) means that organisational factors do not help workers or constrain them in taking innovating initiatives. Regardless of role type, it is essential for management to promote motivation and strengthen workers' feelings towards positive behaviour for engaging in innovation – product, service or technology.

Meanwhile, addressing organisational and human factors enables understanding of the reasons behind influencing workers' compliance to establish how management in organisations

deals with innovation cases and addresses their deficiencies. This study, however, concentrates on the female gender. The next section highlights the non-compliant behavioural options for female workers in the face of management instructions and guidelines towards innovation products, services or technologies.

## **2.5. Women and employment work**

Women still do not play an effective role in the development of industrialisation, and modern business thinking and training approaches need to be improved to compete globally (Jannadi and Al-Saggaf, 2000; Welsh et al., 2013). Some cultures and misconceptions are working to paralyse the thinking of women (Doumato, 1999; Hamdan, 2005). Participation in innovation processes in organisations not only attains competitive advantage but represents a means to progress and improve women workers' behaviour. The work of Cohen (2006) demonstrated that women involved in creative activities have positive and better mental health as such activities provide meaningful work through openness to new ideas and ways of seeking solutions to problems. In addition, the innovation experience in organisations provides psychologically for workers (Priscilla et al., 2017). Opportunities for female workers to comply with innovation instructions by coming up with ideas generate information in a novel way to enhance innovative products or become involved with the innovation process, representing chances to start entrepreneurial activities, as innovation is an essential entrepreneurial feature (Smith et al., 2016).

However, the nature of women workers' participation is based on choices, constraints and available opportunities (Crompton and Harris, 1998). For example, Mayrhofer and Scullion (2002) noted that female workers in garment factories faced difficulties in improving their careers. Indeed, old thinking and overloading of pressure on workers is potentially detrimental to their work outcomes and hinders the innovation process. However, possible explanations for these difficulties facing women include their feeling guilty about the balance

between family and work (AlMunajjed, 2010). Another possible reason is that women in particular operate their businesses as a result of family control and socio-cultural norms in many areas of society (Ahmad, 2011b). Crompton and Harris (1998) stated that home duties and childcare problems are not a barrier to developing women's employment, but, "what people think, believe and feel affects how they behave" (Bandura, 1986, p. 25), which results in them being unable to attend the training events they need in order to update their knowledge and skills (Ahmad, 2011b). This reduces the scope of female growth and ambition (Handoussa, 2006).

Changing work from normal routines to creative performance is certainly not easy (McHugh, 2016). Women with low reactions or innovative ability could find that innovation is a hard task, meaning that they choose routine tasks in industry to gain ability to begin innovations. They also prefer non-compliance with change and maintenance of habitual behaviour (Hon and Lui, 2016). Smith et al. (2016) explained the reason that women have less tendency to be involved in development activities than males because their beliefs created barriers to knock down. This is not generalised to all workers. Some workers may not comply in following instructions while others may prefer to participate in innovation activities because their female beliefs encourage them to comply with innovation guidelines for start-up projects.

It is apparent that the compliant behaviour of working women in their jobs is a reflection of reasons relating to personal nature and the structure of their work-life balance (Crompton and Harris, 1998; Hon and Lui, 2016; Bajpai and Shastri, 2018). These could also be non-compliance factors – "according to the theory of reasoned action, a person's intention is a function of two basic determinants, one personal in nature and the other reflecting social influence" (Ajzen and Fishbein, 1980, p. 6). This supports the author's view that lack of participation of women in development and business is because of personal reasons and socialisation, including belief and behaviour resulting from intentions. This quotation explores

the tacit institutional barriers that can prevent women workers from improving their performance in innovations and therefore strengthening their position in business. Compliant behaviour among women workers must therefore be detailed through addressing theories building on compliance behaviour.

## **2.6. Theories used in understanding workers' compliance with innovation management**

There is not a universal theory used currently in literature. This has invited academics to exchange theories from different disciplines, especially after an increasing and widening of the body of research to attempt to build a unified theory of compliance with innovation management. There are several reasons indicated in an antecedent paragraph that may influence the innovative practice of the female workforce. However, a grasp of these reasons and optimal ways to change female worker behaviour has still not been discovered. This has led to the utilisation of theories that address behaviour and guidance relating to innovation for designing professional standards for innovative products. A set of behavioural theories is used, and has been used and cited in literature relating to innovation management. However, no research has been carried out on compliance with female workers with innovation instructions in Saudi Arabia. There is therefore a lack of understanding of female workers' practices with regard to innovation management. This section will review the relevant theories: human capital theory, social cognitive theory (SCT), transtheoretical model (TTM) and the TRA.

### **2.6.1. Human Capital Theory (HCT)**

HCT is utilised in imaginative behaviour (e.g. McGuirk et al., 2015; Bhatnagar, 2012; Cruz et al., 2009) which has its roots in Adam Smith and examines employee behaviour. Furthermore, it is possible that greater production and efficiency may be created by investing in knowledge



and skill which consequently enhances cognitive capabilities (Martin et al., 2013). Certain variables of human capital such as education, ability and experience may have an impact upon the development of a business plan (Brixy and Hessels, 2010). HCT asserted that those employees who attained such variables have performance results which exceed that of employees with a lower proficiency level (Becker, 1964; Schultz, 1961). The following researchers have been particularly attracted to this theory in an entrepreneurial field: (e.g. Cassar, 2006; Colombo and Grilli, 2005; Cruz et al., 2009; Davidsson and Honig, 2003; Gimeno et al., 1997; Rauch et al., 2005; Unger et al., 2011; Martin et al., 2013). Persons can utilise their abilities to obtain creative results, or at least enhancement, to adjust their behaviour, dependent upon the three presuppositions. An employee's self-interest is consistent with the continuation of education which results in growth in economic results. This shapes aspiration and hence a feeling of progress, and employers capitalise on an educated workforce more skilled in new technology, as education principally delivers better performance from employees, so employers hire only specialist workers (Lauder, 2015). HCT is discussed because it implies that a person's performance in the workplace is dependent upon his/her investment within human capital, in which situation, the expression "capital" is inclusive of factors such as ability to use technologies, creativity, education and skills (Brixy and Hessels, 2010; Popovic, 2012; Smith-Hunter, 2006). Otherwise, every characteristic which can assist a person to attain a particular objective ought to be mentioned. Furthermore, businesses with the desire to enhance their productivity may, to some extent, make such investments.

Nevertheless, Zhao (2008, p. 805) has observed that "human capital theory violated everyday convention to treat humans as a kind of capital". HCT is a wider theory which is unable to investigate social elements, therefore it has failed (Tan, 2014). Additionally, in order to consider employees' standpoints, attempts have been made to assimilate this theory with social theories (Stiles et al., 2003). With regard to HCT, a further significant appraisal concerns

people's investment in education, which observed a lower potential in economic advancement (Lauder, 2015). However, this offers little towards explaining or modelling the understanding of the means by which variations emanate between those who participate in identical investment in training in their human capital, which additionally has a tendency to be descriptive. This indicates that it presents unprogressive interpretations of the means by which matters have developed instead of the ability to predict future occurrences. Furthermore (and also in this dissertation), it presents no interpretative power regarding individual behavioural intentions or decisions, meaning that HCT is an unsuitable means of expounding influential factors of workers' compliance with innovation instructions. Consequently, this theory is of no assistance to organisation management in comprehending the reasons why female workers refuse to comply.

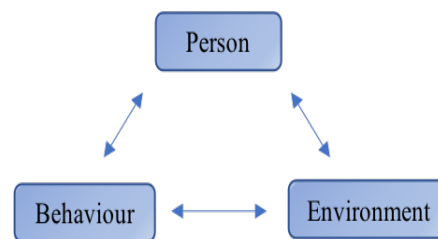
### **2.6.2. Social Cognitive Theory (SCT)**

SCT is the second theory that addresses the impact of the environment on human behaviour, published by Bandura (1986) for understanding the theoretical framework of the integration between social psychology and human behaviour. SCT confirms the importance of an individual's mind and thoughts on his/her behaviour (Shane, 2003). Bandura (1986) set out four core areas of SCT that make up human behaviour capabilities: the first is a capability of symbolising the meaning of behaviour through the formation of symbols in people's thoughts that give a meaning and concepts to their past experiences, enabling an individual to have forethought and consequence-behaviour, such as the ability to plan goals. Vicarious capability allows learning through observing others' behaviour, such as that of teachers, leaders and parents. This skill can develop humans as it offers insights into their behaviour. Self-regulation offers individuals the capacity to regulate and recognise their behaviour by themselves. Self-reflection involves individuals being able to modify and evaluate their intentions and behaviour

(Maddux, 1995), which is considered as “distinctly human” (Bandura, 1986, p. 20). This theory directed the researcher’s attentions to implement it by discussing the social factors that impact female behaviour.

SCT is founded in human belief as indicated above and can demonstrate the interactions between person, behaviour and environment (Glanz et al., 1990), which is known as “reciprocal determinism” (Bandura, 1986, p. 12), with the three factors influencing each other. Bandura’s notion states that the three factors have interacted dynamically so that any change in the people, behaviour or environment in the model directly correlates with another factor (see Figure 2-1).

Figure 2-1: The social cognitive theory model



*(Bandura, 1986, p. 24)*

According to the above model, the bilateral reciprocal relations between person and behaviour involve the person’s emotions and thoughts and that person’s actions. In this approach, a person's beliefs, expectations and goals are oriented to their behaviour, in turn affecting the person’s emotions and thoughts (Shepherd and Krueger, 2002). The interaction between person and environment occurring in the process influences a person’s characteristics in the environment, socially (for example, friends, family members and mates) and in physical environments (for example, study systems and working conditions), impacting on a person’s beliefs and expectations (Gregoire, 2003). The third interaction is bi-directional between behaviour and environment, whereby behaviour is influenced by political, cultural, social or environmental conditions (Lent et al., 2017). Thus, this model summarises the individual’s

impact on the environment and the contrast of the individual being impacted by the environment.

Moreover, the theory is concerned with the approach of self-efficacy, based on people carrying out a specific performance required for producing desired attainment (Bandura, 1997b). Self-efficacy is arguably defined as the abbreviation of the relationship between individual performance and psychology. It examines why individuals choose to comply or not, or become entrepreneurs or not (Sarasvathy, 2004). If self-efficacy links with achievement, firms produce at a higher level, as these values demonstrate risk taking and hard work (Zahra et al., 2002). Self-efficacy is considered a key element in self-reflection through its ability to change compliance behaviour in SCT. To clarify, if there is a difficult situation, the person's efficacy and belief inclines them to perform an action, whatever the action is, directly or indirectly. As stated in this model, a person engages in situations that they expect to manage and averts situations that their belief has perceived they cannot overcome (Bandura, 1991).

On the other hand, the central tenets of SCT are essentially similar to multi-level perspective approaches in research. These approaches support the viewpoint that intricate developments within human institutions such as innovative projects can only be comprehensively understood by examining them at a number of different levels such as individual and group level to which that individual belongs (Hmieleski and Baron, 2009). According to Ratten and Ratten (2007), SCT is built on the fundamental premise that in order for individuals to accept and adapt to change it is essential that they possess the appropriate skills to be able to confidently adopt an existing or new technology (Lent et al., 2017). However, high self-efficacy or self-confidence can, at times, produce the opposite effect where the individual puts less effort into achieving a certain task. High self-efficacy can occasionally result in an almost arrogant or inflated view of that person's real capabilities. This can occur when people assume they know more about certain processes than they really do and

consequently do not put in the effort that they ought to in order to achieve a certain task (Maibach and Murphy, 1995).

Bandura (1997b) posited that SCT builds on scientific data to predict individual behaviour in many innovative areas. For example, studies used SCT in creative self-efficacy to generate ideas and persuade others (e.g. Ng and Lucianetti, 2016; Axtell et al., 2000) in development innovation technology (e.g. Compeau et al., 1999; Ratten and Ratten, 2007). As such, Bandura (1997b; 1977) argued that if people have fear and anxiety, they probably have no increase in experiences of self-efficacy because of the negative mindset and emotions that control them. He suggested coping with problems and building up self-efficacy. That argument is given a sense unappropriated to this theory to study compliance of workers with innovation instructions. In addition, the theory is complex to apply in reality (Yami, 2015), as it proposes that any change in construct will lead to a change in another factor in this construct, but this assumption does not always hold because some changes in environment do not affect a person. As such, it is very difficult because it includes several concepts (Bauer, 2006) which could address innovation promotions but not address the reasons for resistance, which are behind the self-efficacy that builds up. As such, the purpose of the study is to take into account attempts to simplify the theory to implement it on females. As noted above, SCT has the ability to identify factors, such as values and beliefs that impact how a person acts, which are important factors that affect the compliance of workers who already have self-efficacy and motivation, either high or low. This was thought to be close to the study aim, to find factors that affect workers' compliance with instructions, but actually is far from the study aims.

### **2.6.3. Transtheoretical Model (TTM)**

The TTM, also referred to as the Stages of Change Model, was created by Prochaska and DiClemente during the late 1970s. TTM models evaluate change by analysing a person's

decision-making. The TTM's fundamental presupposition is the non-occurrence of speedy and definitive behavioural changes. Rather, it believes behavioural modification to be a gradual cyclical procedure, especially in the case of habitual behaviour. The TTM indicates that the following six steps of change are experienced by persons: pre-contemplation, contemplation, preparation, action, maintenance and termination (Moore, 2002). The original paradigm is established in the therapy sector and in connection with health issues – for example, immoderate smoking or drinking – as a treatment. Consequently, the TTM is utilised as a compliance procedure for the activity of a patient who is prepared to adjust his/her behaviour (e.g. DiClemente and Scott, 1997; Cole, 2006; Zimmerman et al., 2000). Although most TTM studies have been applied to the health sector, this paradigm has also been applied in entrepreneurship behaviour (Klonek et al., 2015; Jebarajakirthy and Thaichon, 2015). The TTM considered the improvement of study skills for a sample of students (Grant and Franklin, 2007), as well as teaching abilities for a management sample (Grant, 2010). It would be helpful to apply this paradigm to develop a progressive scheme for implementing innovations, with such a plan being adaptable to be used to test a sample of female workers. In addition, this technique does not disregard the impact of attitudes and beliefs. Furthermore, several contributions have been made to the assimilation of these three steps (Budd and Rollnick, 1996; Moore, 2002) or assimilated with other theories (Jebarajakirthy and Thaichon, 2015). Consequently, the TTM has been selected for the appraisal of the probability adopted to identify the factors of female workers' compliance with innovation management instructions.

Nevertheless, this paradigm has been criticised by many researchers, such as Bandura (1997a), who contended that the TTM steps are impossible as they overlap the transition stages, and people are unable to differentiate between access in and out of each step (Bandura, 1997a; Sutton, 1996; Sutton, 2000). Consequently, from a practical perspective, the interventions are insufficiently implemented (Riemsma et al., 2003). We cannot deny that the study discovered

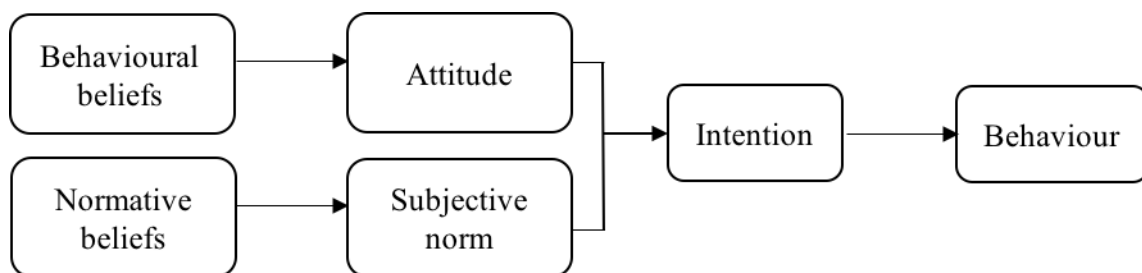
the TTM to be considerably affected in the intervention steps in certain situations such as cessation of smoking (Aveyard et al., 2006). According to Hall et al. (2006), there is no proven evidence that the TTM is more effective in a stage of change if the person has no desire to change, as this will result in the person being unresponsive to any stage. This claim has shown that the TTM has restricted effectiveness for behavioural change in a stages-based intervention. Consequently, we cannot regard this theory as a valid method of examining the reasons for non-compliance of female workers.

#### **2.6.4. Theory of Reasoned Action (TRA)**

The TRA is a model designed to understand an individual's behaviour and help determine their choices. The core aim of building the TRA, according to Ajzen and Fishbein (1980, p. 6), is, "to understand human behaviour, not merely in predict it". This premised that persons who carry out behaviour do this based on antecedent decisions in a quite rational way using the available information they have. As such, it is assumed that behaviour is directed towards the action that is involved in choosing whatever is favourable or unfavourable to the given action, meaning that human behaviour is not dominated by thoughtless and unconscious motives (Ajzen and Fishbein, 1980). However, human behaviour is established on factors, and the TRA postulates that there are three particular components to work with. The first is the behavioural intention of the person, which is the primary element in the theory. This is in turn constructed from their attitudes and subjective norms (Ajzen and Fishbein, 1980). Attitude is a measure of a person's estimation of performing an action, which could be a positive or negative estimation. Attitude is founded from a set of beliefs from that goal and estimations (Fishbein and Ajzen, 1975). Subjective norms, however, come from the person's estimation of what other people think about performing the action in question. These rely on normative beliefs, meaning that

others influence encouragement of desire and compliance (Fishbein and Ajzen, 1975). Figure 2-2 is a basic conceptual framework explaining the TRA factors.

Figure 2-2: Theory of Reasoned Action (TRA)



According to the theory, in order to understand a person's behaviour, it is worth studying their antecedent choices because the intention and other antecedent factors may have significant influence, which allows the TRA to explain and predict behaviour (Terry et al., 1993). The TRA has been widely implemented and successfully examined in different areas of studies in relation to health (Bauer, 2006; Head and Noar, 2014), IT (Mishra et al., 2014; Waly, 2013), innovation (Bin, 2012; Otieno et al., 2016), women (Govender and Khumalo, 2014), psychology (Burak et al., 2013) and banking (Yousafzai et al., 2010). Many other examples cannot be included here, but these results support the TRA predictions and the variables it utilises.

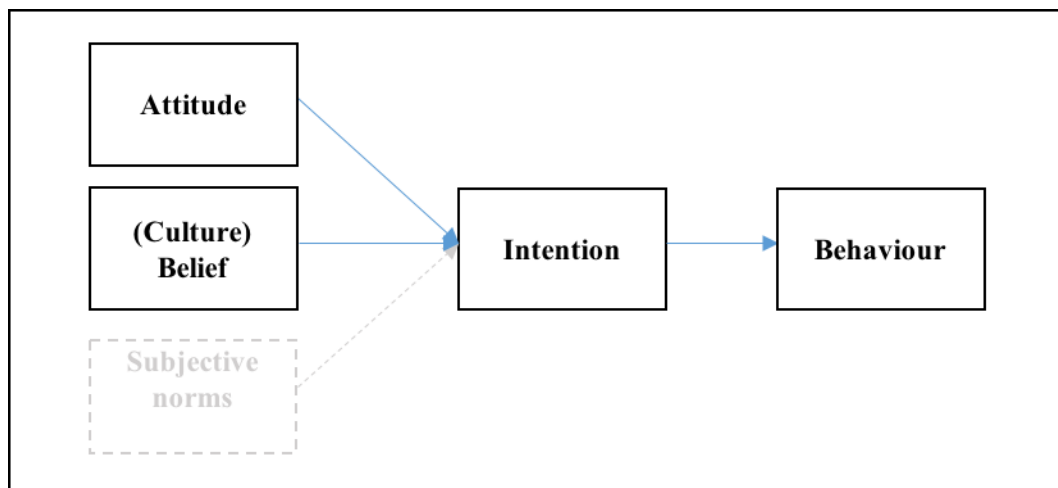
Any theory has criticisms, and the study begins to address these. The first argument is that the TRA is very rational (Bauer, 2006). In addition, the theory is complicated in measuring variables and applying the theory in practice, which makes it time consuming and weak in explanatory power (Grandón et al., 2011). To overcome this critique, this study attempts to



develop the theory to make it easy to implement. The study takes lessons from recent studies that contributed by developing the theory through the extension of some components or integrating with other models. For example, Otieno et al. (2016) explained how individual beliefs change behaviour. They establish the TRA and incorporate some determinations directly and indirectly to the behaviour factor for adopting new innovations. However, Gupta et al. (2017) used the framework of behavioural reasoning theory established by Westaby (2005) that linked the TRA, planned behaviour theory and the theory of explanation-based decision-making to solve the tradition related to the value of being open to change. These studies attempted to study the belief factor from the TRA alone or from a framework involving the TRA. On the other hand, from the original conception, Ajzen and Fishbein mentioned belief in many places in their books (1975; 1980), but it is not visible as a main component. In terms of beliefs, it influences an attitude along with the intention to perform behaviour. Culture and relevant individuals, on the other hand, are perceived expectations to determine subjective norms with the intention to comply or not comply with performed behaviour. In other words, subjective norms are “a function of beliefs but beliefs of a different kind” (Ajzen and Fishbein, 1980, p. 7). A weighting must therefore be applied to both attitude and subjective norms depending on the person in question. They might be the kind of person who cares little for the opinions of others, and so no great weighting could be applied to subjective norms (Hale et al., 2002). This claim matches the current study case in that relevant individuals and other people have less influence on female workers’ decisions, rather the beliefs that one grows up with, not related to Islam at all but a part of old-fashioned culture – see section on belief for more explanation. Consequently, in theory, the belief factor has taken the place of the subjective norm and taken its function of motivation whether to comply or not. Instead of referring to either attitude and subjective norms or behavioural belief and normative belief, our contribution incorporates the latter three elements in one factor. This belief factor is grounded

from nurture at home and societal influences, which construct, along with the attitude of the individual, towards an actual behaviour. This is the contribution of the TRA, according to Otieno et al. (2016), concluding that reasoned action is a strong theory but needs little modification to become capable of studying innovation fields. Waly (2013), for example, contributed to developing the TRA through adding the belief factor but this was not clearly outlined. Figure 2-3 explains the TRA with subjective norms excluded as it is not expected to affect Saudi women and adds the belief factor from culture.

Figure 2-3: Explanation of the TRA writing off subjective norms and adding belief



The fundamental advantage of the TRA is therefore that it separates out behavioural intent from behavioural action, so that the differences between the two can be examined in detail (Albarracin et al., 2001). None of the other theoretical assemblages offers this particular insight or would offer the same level of analysis for how women are resistant to innovation in this particular industry. However, the theory of planned behaviour (TPB) is born from the TRA and proposed by the same author (Ajzen, 1991). The TPB in turn is grounded on the same variables whilst adding a third, behavioural control (PBC). The TPB tries to understand that individual behaviour is not under volitional control to predict intention towards behaviour and actual

behaviour (Terry et al., 1993). The main difference between the TRA and TPB is that the latter includes PBC – the person may have resources and opportunities to act on the desired behaviour (Ajzen, 1991). For example, if a patient has access to medicine to stop smoking or drinking but does not actually comply, a possible explanation for this is that they possess the resource but their non-volitional control continues their behaviour of either smoking or drinking. The TPB therefore appears to be used specifically in health studies, which produced successful results. However, the situation in this study is different in that female workers have no access to developing opportunities and are volitionally resistant to involvement in innovation orders from management and these can be accepted.

To sum up, the TRA can work with the idea of people as the core assets of an organisation. This study has tried to correct the major criticisms noted in behavioural study using the TRA model, which was lacking in clarification on the definitions of the TRA construct. This lack of clear definition is not limited to behaviour but includes other behavioural expressions: intention, attitude and belief. Each term has played a part in prediction of people's actions to put meaning into understanding people's behaviour and workers' non-compliance. Nonetheless, the study focuses on the belief factor for its stronger impact on Saudi women's life. The TRA, with few of our contributions, therefore offers an understanding of female workers' behaviour and predicts causes to overcome their non-compliance with innovation management guidelines. Below, the personal factors related to the TRA are explained.

#### **2.6.4.1. Behavioural factors**

Behaviour is defined as transmission of individual intent into specific action and is therefore a result of a person's intention (Ajzen, 1988). More emphasis was placed on lack of innovations, technology and modern machines, and little was related to the issue of worker behaviour as they experienced non-compliance (Hon and Lui, 2016; Jowhar et al., 2010). Hsu (2013) has

evaluated comprehensively factors influencing innovation instructions and guidelines in organisations and found that non-compliant workers can influence or improve organisations in areas such as creativity and innovation practice. A central factor in the TRA model is a person's intention to implement behaviour. According to Fishbein (1994, p. xix), "...if properly assessed, people's intentions to perform a behaviour are very good predictors of behavioural performance".

In addition, compliance with innovation instructions – which is the study problem – is under the volitional control of individuals, and the relationship between volitional behaviour and intention is found to be highly significant (Ajzen, 1988). In other words, this means that non-compliant behaviour is the result of deliberate intent and decisions taken by female workers. As usual, individuals perform actions not based on their decisions and knowledge of their intentions, which is opposite to unintentional non-compliance behaviour based on forgetfulness or confusion (Yami, 2015). However, in the TRA model, it is necessary to identify people who are acting out particular behaviour (Carter, 1990). This may make this theory restrictive to the specific population when addressed. Terry et al. (1993), however, asserted that it was more likely that the TRA would operate successfully when the research population was defined clearly and more narrowly. This study therefore uses self-reported behaviour to direct observational advantages and explore how this thinking can be shaped by female workers. This study is not limited to examining target behaviour but defines the sample and examines internal factors such as intentions, attitudes and beliefs to assist female workers in compliant behaviour. Focusing on this factor, management can therefore drive female workers' behaviour towards compliance in innovation projects when they are suffering from a shortage of skills through capturing the motivational elements that impact their behaviour towards performing the target. The next section will highlight the functions of intention towards a behaviour.

#### 2.6.4.2. Intention factors

Intention is a reflection of female workers' motivations in the sense of a decision enacting behaviour. As a basic rule, whenever behavioural intention is strong, the behaviour is likely to be carried out, contributing to change in a person's outward behaviour (Ajzen, 1988; Ajzen and Fishbein, 1980). This viewpoint is compatible with Islamic philosophy and ethics – *Prophet Muhammad – may Allah's blessings and peace be upon him – say: "Actions are but by intention"* related by Bukhari and Muslim (Al-Bukhari, 1997). Measuring intention and volitional behaviour relies on two elements – the first of these is correspondence between intention and behaviour in action, time, context and target. More explanation, in order to determine the accuracy of prediction factors in the current research, could involve asking female workers to indicate their probability in relation to compliance (action) in following instructions and guidelines for innovation (target) when the management of an organisation provides the external factors (context) at a particular point (time) (Bauer, 2006). The second element of measuring intention involves strong links between intention and behaviour. Intention does not change before measuring specific behaviour (Ajzen and Fishbein, 1980). However, the initial intention may change based on new information or unexpected events, resulting in action towards the behaviour (Ajzen, 1988). According to the TRA, measuring behaviour and intention must take place as soon as possible (Terry et al., 1993). For instance, workers who experience non-compliance with management orders and guidelines in relation to participation in innovation practices or performance creativity might continue resistance or modify their intentions towards compliance for any reason. Consequently, intentions must be estimated at the same time as behaviour is examined in the questionnaire to make a significant assessment (Grandón et al, 2011).

Given such consideration, despite the above point, this study gained insight into why female workers behave in a non-compliant way. The TRA model offers an illustration of a

deeper understanding of those workers' behaviour. Intention is an intermediate stage between beliefs, attitudes and behaviour in the model (Fishbein, 1994). In addition, intention is the second predication towards behaviour and is influenced by two other factors – attitude and belief and the contribution of the study rather than subjective norms. Both represent the main functions of female behaviour (Ajzen, 1988).

#### **2.6.4.3. Attitude factors**

Attitudes play a major role in predicting workers' behavioural intentions, as, if workers have a positive attitude, they are more likely to have a positive intention towards behaviour and compliance with innovation practices (Ajzen and Fishbein, 1980). A person's attitude is built from individual beliefs in performing a behaviour. For example, negative female attitudes about being innovative or compliance with innovation projects emerge from workers' beliefs – for example, that longer working hours affect family life or health, or ideas of continuously low income, potentially discouraging women from sewing work and resulting in female workers not complying or seeking better jobs. Other beliefs may also influence compliance. For example, management or environment can constrain workers' attitude to involvement in innovation practices. From the TRA lens, it is therefore possible to observe that workers' attitudes to influencing the area of compliance with innovation instructions and guidelines can be better grasped by understanding that this is influenced by beliefs (Terry et al., 1993). Although, construction of attitude is inaccessible for an exact observation, it can be measured and 'must be inferred from measurable responses' (Ajzen, 1988, p. 8). Ways to infer attitudes about questionnaire items depend on verbal responses. The attitude result in an empirical study represents a more successful measure (Fishbein, 1967). This study therefore adopted attitude measures from the empirical study. The next section asserts that beliefs represent a barrier and

concern faced repeatedly and daily, and that non-compliance with innovation instructions is important in design development in the organisations.

#### **2.6.4.1. (Cultural) belief factors**

Belief is defined as how people express their religious practices (Johan and Putit, 2014), or could be explained as parents coaching their children (Ismail et al., 2012) – “belief reflects a person’s past experience; exposure to different kinds of information leads to the formation of different beliefs” (Ajzen and Fishbein, 1980, p. 90). In Saudi Arabia, women are nurtured by Islam and a portion of ancient civilization – with great pride – but this small part of heritage entering some practices can influence individual liberty (Alotaibi et al., 2017). Islam affects every detail of a woman’s life, including gender equality and a preference for prioritising the care of children and husbands, allowing work as long as it does not conflict with basic responsibilities at home and gender division (Al-Asfour et al., 2017; Alotaibi et al., 2017). However, Saudi culture has created changes to these fundamental concepts such as a male-dominated society. In addition, some social laws are not related to Islam, which is not a good environment for women to progress (Mimouni and Metcalfe, 2012; Ramadan, 2009; Ahmad, 2011b; Danish and Smith, 2012). The TRA asserts that belief is a result of variables such as culture and social norms, which may be negative or positive in influencing worker compliance. Individuals can also hold sets of beliefs concerning particular given behaviours and some of these can influence behaviour.

This point demonstrates that women grow up with these practices of culture and beliefs as relevant influences from others. The belief factor that replaces subjective norms is therefore more comprehensive and easier to explain to foreign managers – for example, it is easier to say that Saudi female workers are influenced by belief and culture than to state that Saudi female workers have been impacted by subjective norms which came from normative beliefs, resulting

in the formation of a culture. This is very complex to explain. However, to simplify it, it is useful to add the belief factor to the TRA, as suggested by Otieno et al. (2016). Their study found subjective norms to have inadequate predictability and to be considered the weakest factor of predictor behaviour. It was suggested to remove subjective norms from a construct of behavioural models (Armitage and Conner, 2001).

The main premise that should be considered is that people's beliefs are usually reflected in their behaviour (Posner et al., 1987). For example, these include the belief that women cannot balance work pressure and family demands, thus fearing responsibility to do something new or the belief in the absent role model of a female. These kinds of beliefs thereby weaken productivity in creative work (Ahmad, 2011b; Bhatnagar, 2012). Particularly, some beliefs and cultural practices ascribed to religion are still present for Saudi women, making them less likely to follow new standards and rules, and they cannot easily accept instructions to be involved within an innovation plan. However, Marlow and Patton (2005) have argued that culture is not always the reason for female decline in their work. Indeed, in the present time, within the Saudi vision for 2030, women have influence on the perspective of how to be valuable and change beliefs stemming from culture, and management roles can be shaped by introducing new policies to enhance practice and performance for employees (Perello-Marín et al., 2013). As a result, management has the capability to control these issues through education and awareness.

## **2.7. Organisational factors**

According to Eva et al. (2017), organisational factors have mainly influenced workers' compliance behaviour by influencing their motivation. In the literature, limited studies discuss the organisational factors that help employees to comply in implementing innovations. For example, Hsu (2013) explored critical factors in the clothing industry influencing creativity. These factors included motivation, supervisory encouragement, teamwork, freedom, sufficient



resources and challenges. Moreover, Karpova et al. (2013) studied 28 businesses in the fashion industry, suggesting four factors or approaches for successful innovation in the industry – first, employees need formal training. Second, exercising plans for creative thinking is necessary. Third, various global experiences are required. Finally, secure innovation and challenging the environment are important. This section will highlight the organisational factors impacting workers' compliance with following innovation instructions and guidelines.

### **2.7.1. Awareness and knowledge**

Gaining knowledge is a proof of attaining insight into truthful awareness of organisational objectives (Leopold, 2017). Awareness of organisation goals and knowledge of innovation ideas grant workers the capability of easily making decisions and protecting future breakdown (Knapp et al., 2009; Abd-Elaziz et al., 2012; Fernández-Mesa et al., 2013; Muduli et al., 2013). According to Doyle et al. (2013), “knowledge is a key element and enabler of both innovation and compliance management”. When an organisation considers the value of innovation, awareness of organisational goals and the importance of innovation outcomes, this motivates workers to maximise their efforts in creative work (Hon and Lui, 2016). Through promoting female workers' knowledge to seek solutions for problems and being open to new approaches, sharing and transferring creativity and innovation, management contributes to this, also clarifying these views in communication or training sessions (McHugh, 2016; Knapp et al., 2009; Priscilla et al., 2017). Workers have different understandings of how to acquire knowledge and develop ideas. This is not strange, as workers in industrial organisations notably have a very limited level of awareness related to lack of training (Del Brio and Junquera, 2003). Workers continuously seek new knowledge to improve designs or machines to make products that lead to keeping the best workers (Khdaïri, 2003). However, awareness takes place by

means of a learning process. Clarifying this concept makes it easier for employees to change their attitudes about compliance with organisational guidelines.

However, Burdon (2016) considers compliance to be a theory rather than a practice. When raising awareness by means of communication or training, for example, organisations automatically learn about the responsiveness within a project. Compliance in organisations may therefore represent a source of confusion because workers might automatically comply and therefore be closer to achieving organisational goals (Khdairi, 2003). The issue here is if we surrender to Burdon's (2016) views on workers' non-compliance, it is necessary to ask how to persuade workers to transfer their creativity and innovation into processing, in case of apparent non-compliance phenomena. In contrast, lack of awareness and knowledge is the major cause of lack of innovation (Peneder, 2008). Further, awareness among workers is the most effective way to deal with shortages in performing innovative works. Subsequently, this factor helps workers to adhere to guidelines and prevents them from behaving in ways averting the principles of innovation instructions (Welch, 2011). In contrast, lack of awareness and knowledge is the major cause of lack of innovation (Peneder, 2008). Critically, if workers are not aware of future organisational goals, no blame can be placed onto workers because the responsibility for this lies on the shoulders of management – for example, to provide training sessions on the importance of innovation in organisational life detailing how workers can help or what exactly they can do. Exploiting this factor cuts short the idea of unwilling employees.

### **2.7.2. Organisational culture**

Undoubtedly, organisations are coming under unprecedented pressure to succeed in innovation and creativity (Cromptley and Cromptley, 2017). Any reaction from top management may lead to changes in individuals and their behaviour and, hence, result in changes to innovation processes (Martins and Terblanche, 2003). One factor influencing workers from organisation

management is organisational culture, which means “the way we do things around here” (Lundy and Cowling, 1996, p. 39). In other words, this provides a shared system of values and beliefs by leaders and personnel which is a form of mutual understanding and communication (Limpanitgul et al., 2013). Whenever organisational culture is strong, it influences efficacy in workers. For example, providing a statement of goals and missions ensures that each worker is on the same track in the organisation (Martins and Terblanche, 2003). However, workers might need some activities relating to innovative projects operating in organisations, which makes workers fall into the gap between what has been announced to do and what has taken place in organisations (de Guimarães et al., 2016; Vaccaro et al., 2012). This could reduce organisational effectiveness, with the consequence of non-compliance among workers and lack of understanding of how top management relates organisational goals to members’ abilities and skills (Corfield and Paton, 2016).

However, the question raised here concerns the relationship between organisational culture and innovation. Tushman and O’Reilly (1997) stated that organisational culture is a major element of organisational innovation, because organisational culture influences workers to implement innovative solutions, encouraging improvement of skills and keeping creative thinking up to date (Cropley and Cropley, 2017). A group of authors in the literature agree on the importance of organisational culture in the field of innovation (Alvesson, 2012; Chang and Lee, 2007; Lau and Ngo, 2004; Ruigrok and Achtenhagen, 1999), making it easier to encourage employees to work and comply with guidelines. However, there is little agreement about organisational culture supporting innovation (Arad et al., 1997). Applying too much culture will control workers and reduce innovation performance, increasing the possibility of non-compliance with guidelines. Innovation projects without instructions and guidelines from management are considered to be chaotic (Martins and Terblanche, 2003).

However, a problem emerges when top management misunderstands organisational culture (O'Donnell and Boyle, 2008), such as values and beliefs adopted from other countries or from successful factories, and implements conservative practices without taking into account the background of societies. For example, values in organisational culture in Saudi Arabia are more conservative and differ from those in other Arabic countries, despite these having the same language and religion. However, Saudi females adhere to different values. To ensure compliance of female workers with innovation guidelines and involvement in their organisational activities, top management needs to think of workers' backgrounds before introducing new values (Kraśnicka et al., 2018; Hogan and Coote, 2014) – “the only thing of real importance that leaders do is to create and manage culture; that the unique talent of leaders is their ability to understand and work with culture” (O'Donnell and Boyle, 2008, p. 4). Management therefore plays an important role in developing organisational culture and workers' backgrounds as this is a long and hard effort, especially with any changes or reforms. It is responsible for harmonising compliance of female workers with guidance in organisations and achieving minimum innovation failure or resistance. To sum up, lack of understanding of organisational culture cannot convince female workers to comply with innovation guidelines, particularly when there are innovation skills shortages. Top management understanding organisational culture and its critical role influences the production of innovation.

### **2.7.3. Supervisory encouragement**

The supervisory encouragement role involves clarification of organisational goals and determination of workers' tasks (McLean, 2005). O'Donnell and Boyle (2008) stated that, as top management puts in place organisational culture, workers should be encouraged if they need it. Supervisory encouragement orientates workers' performance levels, which, in turn, encourages behaviours and increases the likelihood of worker enthusiasm (Carson et al., 2004).

The importance of supervisory encouragement centres upon workers' need for obvious signals to support daily behaviours, generate creative energy and ensure the validity of organisational policies (Ramus, 2002). Supervisory encouragement falls under several areas – team managers, facilitators, supervisors and coordinators – but often one element is shared. The person's job has considerable influence over other workers and affects their compliance with innovation practices (Carson et al., 2004). Supervisory encouragement is associated with innovation and workers adjust quickly to changes that happen when they implement new practices (Knight et al., 2018). Probability of supervision benefiting and inspiring workers who face discouragement or frustration from social constructs or divide their attention and time, such as females, is high (Orser et al., 2012b; Greene et al., 2013). Lin and Liu (2012) found that supervisory encouragement factors are essential for a creativity climate and employee perception of innovation, and could mean lower employee outcomes when no supervision is in place. It is worth mentioning that the latter study and a series of studies mentioned the positive relationship between supervisor encouragement and individual creativity (Amabile et al., 1996; Zubair et al., 2015), employee innovation (Denti and Hemlin, 2016) and organisational innovation (Knight et al., 2018). On the contrary, no relationship exists between supervisor encouragement and an innovative environment (Chang and Yu, 2015). This study tries to prove the relationship between supervision encouragement and worker compliance with innovation management instructions. A dominant assumption behind this factor is its ongoing nature, not stopped for any reason such as lack of skills, poor education or low level of experiences which causes shortage of performing innovative practice (Hart et al., 1995). This factor is closer to workers' behaviour if they intend to be involved in innovation practices and compliance with instruction and policies (Ramus, 2002). It is important throughout supervision assessment for supervisors to be aware of limitations, professional or personal, likely to impede innovative performance (Hart et al., 1995). This is why supervisors develop and become involved in

innovation practice, making workers compliant with innovation management quickly. On the contrary, if supervisors are concerned only with workers improving themselves, the result is not satisfying for the organisation in the end. Supervisor appointment is therefore a top management responsibility and organisational structure should provide this factor when it is necessary to create an innovation product or service to ensure continuous work (Hu et al., 2018).

Supervisory encouragement thus enables female workers to comply with innovation guidelines and neglect of this factor can lead to non-compliance. As this factor is driven by top management in organisations, they have a responsibility to establish encouraging ways to influence workers to be compliant.

#### **2.7.4. Communication**

One of the images of supervision encouragement is communication between supervisors and workers (Welch, 2011). Communication towards compliance involves supervisors or managers attempting to induce workers to act creatively and involve themselves in innovative practices that those workers otherwise might not desire to perform (Anker and Feeley, 2011). However, little communication is likely to influence workers towards non-compliance with guidelines (Liao and Cheng, 2014). Communication is a means of raising employee compliance levels through helping them to internalise the steps which lead to production innovation and is an important factor as it transfers awareness and knowledge. Innovation practices cannot take place without communication with workers about knowledge and skills (Welch, 2011; Grigoras et al., 2014). Availability of this element allows female workers to explain their views and exchange ideas. From this factor, managers can realise that workers understand ideas, and the extent to which they are impeded in compliance by personal factors (Waly, 2013; Al Lily, 2011). Communication with workers draws innovative conclusions for organisations,

especially in the case of female workers lacking in performing innovative work (Østergaard et al., 2011). It is necessary to ensure that all workers are aware, “in advance [of], the organisation’s goals, objectives and the tasks that need to be completed from a good communication strategy” (Waly, 2013, p. 22). This factor is extended from the factors of awareness, knowledge and supervisory encouragement. The reason indicates this factor separately, although similar factors are linked to compliance. This factor, though, in particular, allows workers to discuss projects and exchange information or reject a stage and means of processing. It considers unloading ideas, and, hence, shaping these ideas. A group of academic researchers stated that the communication tool is a way to change individual attitude (Welch, 2011; Liao and Cheng, 2014; Waly, 2013). The first organisational factor (awareness and knowledge) just involves giving information which might be available, with workers expected to know and read it. Similarly, supervisory encouragement represented a guiding factor, providing and repeating information in case of workers not getting it. Although this benefits worker compliance, it is not a visible factor and it is hard to notice its results in the short term at least (Cheng et al., 2006). In this situation, workers are likely to be involved in innovation practices through persuasive communication methods, designing and complying with management orders at varying distances of time (Reissner and Pagan, 2013; McGuire, 1996).

Clearly, communication has been discussed extensively by previous researchers but this study notes that communication is a significant factor in reducing non-compliance of female workers particularly, in our case where workers lack skills and experiences and have shortages in innovative work. Management is responsible for creating, managing and organising communication content which is appropriate to those female workers. However, if workers are still non-compliant with management orders, it is necessary to move to the next organisational factor.

### **2.7.5. Rewards and punishments**

Innovative companies reward workers for their performance after successful innovation, or successful innovation itself can be considered rewarding for workers (Ahmed, 1998; Simanis and Hart, 2011). However, this section attempts to discuss the extent to which rewards help workers to comply with innovation instructions and female workers in performing innovative practices. Reward is considered a motivational factor for changing unwanted behaviour. Compliance therefore occurs when workers obtain specific rewards (Vance et al., 2012). It is expected that innovation involvement requests effort, endeavour and maximum responsibility. Organisational management must provide incentives for workers to comply and put in extra effort if they desire (Simanis and Hart, 2011). On the other hand, Eisenberger and Armeli (1997) have claimed that rewards have negatively impacted creativity, because rewards for controlling individual behaviour undermine innovative performance and also lead to suffering when the reward is large (James, 2005). Shalley and Gilson (2004) are reticent about rewards that have led to past compliance behaviour and argue that continued compliance with innovation practice is still desired. Organisations are therefore concerned with how to set out the reward structure for innovative ideas (Simanis and Hart, 2011). Good managers therefore give clear instructions to employees relating to rewards systems and how performance will lead to rewards (Shalley and Gilson, 2004).

Similarly, punishment is a powerful tool to prompt a person to change behaviour. However, “it is an erroneous assumption that conformity is encouraged only by a system of sanctions” (Kobayashi and Kerbo, 2012, p. 40). Workers may not be creative in environments where they receive punishment for breaking the status quo or are blamed when using new ideas (Shalley and Gilson, 2004). Both rewards and punishments are used by management in order to modify behaviour for influence on creativity (Muduli et al., 2013; Shalley and Gilson, 2004). However, those tools may not be effective in the long term because the problem is that an



employee's performance can be only be driven by the desire for reward and the fear of punishment (McMurray et al., 2013). Nonetheless, in some cases, these stimuli can be even more powerful in the improved performance of a worker (Waly, 2013). It is necessary, though, to consider alternatives to rewards and punishments which can have profound implications for the performance of many female workers, who should not be driven by fear because its effects are negative, leading to, for example, hating a job or leaving it after a period of time (Amabile, 1997; Bidwell et al., 2013). Clearly, reward and punishment are not bad in themselves in influencing innovation, but using these tools to express the importance of intrinsic motives and compliance with innovation instructions, as well as using rewards to recognise female workers in their attempts to become involved in innovation practices when they lack skills and experience, and sanctions for non-compliance with instructions that leads to disruption of the working line are all useful approaches. If workers are rewarded and punished on this basis, their innovation performance may be positively influenced.

#### **2.7.6. Sufficient resources**

It is apparent that previous factors cannot be implemented if resources are not sufficient. A number of studies have proved that sufficient resources motivate creativity and innovation in organisations (Amabile, 1997; Lin and Liu, 2012; Koen et al., 2014; Hekkert et al., 2007; Hsu, 2013; Halme and Korpela, 2014). It is essential to have enough resources in order to supply information systems, procedural assistance and training as well as any additional resources which are utilised to increase the output volume, such resources being considered significant influences upon compliant workers within organisational guidelines (West and Anderson, 1996). With existing innovative resources, workers can efficiently increase their performance in environments relating to procedures and participatory policies in innovation (de Guimarães et al., 2016). Resources may assume various shapes: for example, time is a resource which is

required for creative thinking at work, and any worker who is under time pressure is unlikely to participate in creative processes (Amabile et al., 2002). Other significant resources are experts who freely share information with others. In order to have the persuasive innovative information which companies require in order to support their workers and management, it is necessary for workers to meet other persons with creative concepts or activities (Mumford et al., 2002). Lastly, if workers are to be creative, material resources are necessary, and workers in the apparel industry will probably consider themselves able to participate in their work if they can access multiple resources allowing them to enhance performance (Bhatnagar, 2012; Williams, 2009; Hekkert et al., 2007). Nevertheless, managers ought to ensure that female workers have access to these resources and are able to use them, rather than leaving them to work without the resources (Calamel et al., 2012). From another perspective, without such resources, workers could experience burnout and such barriers can restrict the advancement of creative practices (Schroeder et al., 1989). Within circumstances, management cannot expect female workers who suffer from lack of skills and experience and different cultural backgrounds to comply with new standards (Srivastava and Gnyawali, 2011; Rosenbusch et al., 2011; Williams, 2009). Organisations where management guarantees the provision of an acceptable number of resources facilitate employees' work and inform female workers of available resources – optimal resources should lead to creative outcomes. Resource availability is indeed considered to be a principal requirement for workers' compliance with innovation management instructions.

#### **2.7.7. Periodic training**

All previous factors mentioned that organisational structure can be covered in training. Training shares knowledge and awareness, enables communication between workers and managers, encourages them, sets values relevant to workers' culture and provides information

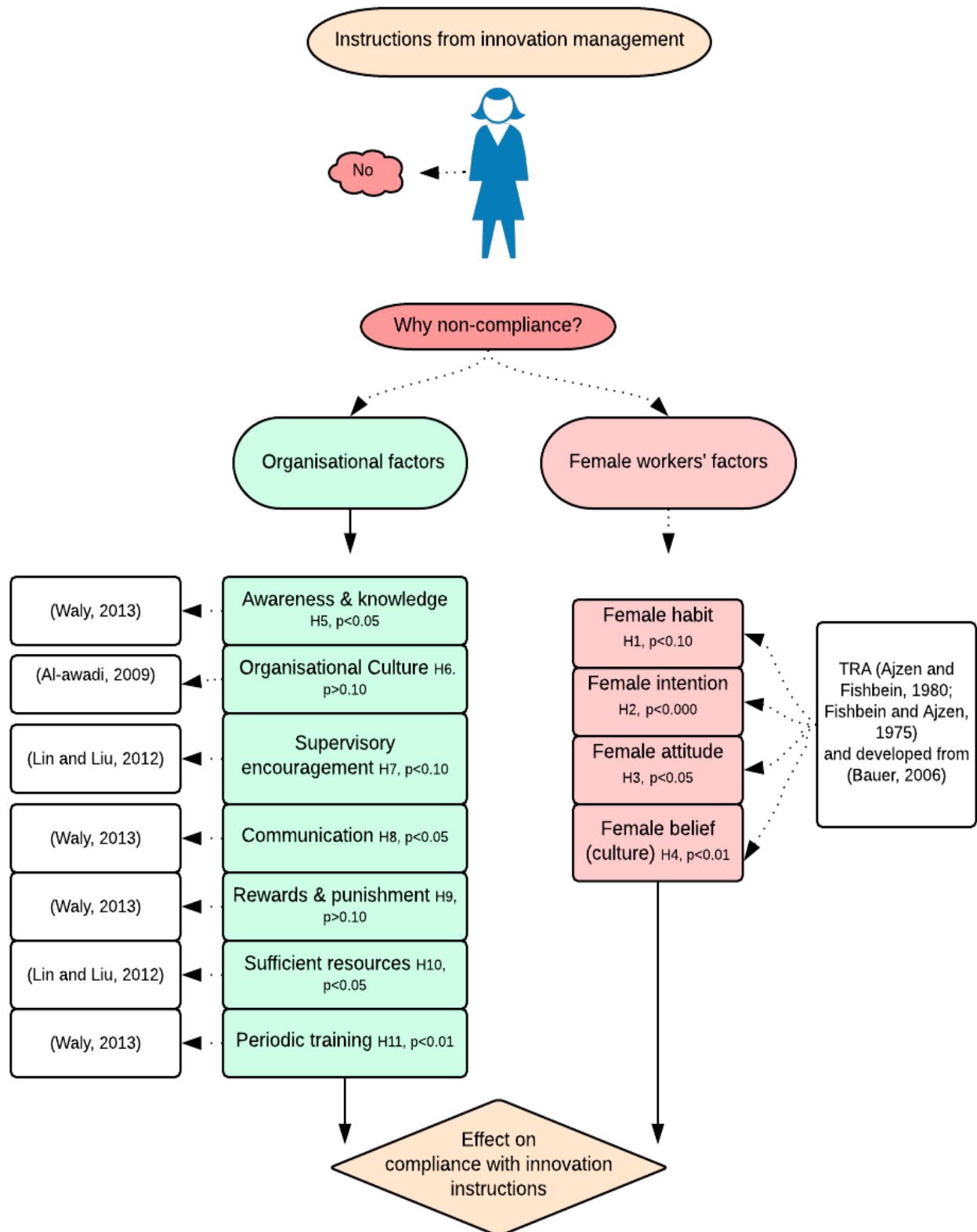
about available tools from resources that can be used. Incentives and sanctions can be included in training sessions for reducing non-compliance of workers (Al-awadi, 2009). Even personal factors preventing women from embracing innovation can be tackled in training, which can educate and persuade workers to comply, transferring knowledge to their daily work performance (Waly, 2013; Ho et al., 2011). Training has a motivational role to play in improving the work of the organisation, meaning that female workers overcome their shortages in innovative skills and acquire new knowledge during regular courses of training (Muduli et al., 2013). This means exceeding the compliance phase to its continuation phase. However, periodic training can be expensive and requires planning appropriate organisational goals. Meanwhile, it cannot secure returning investments effectively as management request, which makes implementing this factor difficult (Al-awadi, 2009). From this perspective, properly planned training programmes make workers more aware of the need for high quality. In this way, workers can gain in-depth insights into organisational issues, and can understand the need for change and become more adaptable to change that can be critical for the sustainability of the entire industry. If refusing this perspective, female employees do not fully prepare for innovative practices meaning that compliance will be interim (Li, 2012; Hasu et al., 2014). According to Hu et al. (2012); Puhakainen and Siponen (2010), well-designed training improves employees' ability to comply with organisational policies. Training is therefore an important element positively influencing female worker compliance with innovation management instructions. Furthermore, organisational management has a responsibility to assist workers by providing programmes of training about innovation that serve organisational objectives as this has profound implications for compliance of female workers with innovation instructions.

## **2.8. Summary of chapter**

In summary, female workers lack creativity and innovative performance in the KSA – sourced from the negative perceptions and poor images of female sewing workers – as well as contributing a lack of skills, education, experience and multi-level culture issues, causing non-compliance of workers with innovation management instructions and guidelines. Thus, low participation levels of women in the clothing industry are the result. Female workers' compliance with innovation management instructions is necessary to ensure the continued process and quality of innovation projects which leads to keeping clothing factories alive in the market. This research attempts to recognise the determinants from the TRA and the literature that impact workers' behaviour in moving towards compliance with innovation involvement in the clothing industry in the KSA. Based on the conventional literature review, three theoretical gaps are discussed in the literature. First, although scholars have studied women, compliance, innovation management and the clothing industry generally, we found a strong lack of theoretical foundations linking these concepts together. Second, from the review, it is not obvious whether human and organisational factors influence compliance behaviour. In addition, no one factor is successful in achieving workers' compliance at the present time. However, in our arsenal, all or some of these factors will probably help. Finally, top management has a responsibility to support and implement organisational factors relevant to female workers' compliance, thus serving organisational objectives. Meanwhile, management cannot act to support workers who suffer from shortages of innovative skills unless those female workers support organisational innovation functions through changing their cultural beliefs, attitudes and intentions to comply with management instructions.

## Chapter Three — Conceptual Framework and Research Questions

Figure 3-1: The conceptual framework of suggested factors influencing female workers' compliance with management innovation instructions



This section presents the conceptual research model that explicates the relationship between suggested factors and compliance with innovation instructions. Figure 3-1 determines the internal factors (behavioural) and external factors (organisational) that influence female workers' compliance with innovation management instructions and organisational guidelines. The key structure of the conceptual framework runs from up to down and right to left. These factors are identified built on previous empirical and conceptual studies as discussed in the literature. The extant reviews on individual compliance primarily relied on behavioural construction of intention, attitude and belief to influence personal conduct, as typified in the TRA (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) and developed from Bauer (2006). Female workers' compliance is shaped, on the other hand, by organisational factors that address which factors need to influence workers who lack innovative performance levels, awareness and knowledge, communication, rewards and punishment and training, developed from Waly (2013), organisational culture (Al-awadi, 2009) and supervisory encouragement and sufficient resources, adopted from Lin and Liu (2012). The factors relating to personal behaviour and factors issued from organisations and the relationship between these towards compliance are central to this study, as there is a pressing need to understand management and workers' roles in innovation projects, not blaming any side, in case of worker non-compliance for any of these reasons. Female workers' compliance is shaped on behaviour structure and constrained by organisational influences enacted by management. The influences of top management have to fully understand female worker behaviour in organisations.

### 3.1. Conceptual Frame

#### **Human behaviour: female behaviour**

Repeated behaviour becomes a habit and measures individual intentions, attitudes and beliefs (Verplanken et al., 1997). In fact, habits constitute a person's character, and an individual's character will nurture the future of that particular person (De Pelsmacker and Janssens, 2007). For example, rejection of compliance with innovation management instruction is a behaviour: if repeated, this rejection automatically becomes a habit. Workers' habits might come from social effects or human actions (Konrad, 2013). Habits among female workers were found to directly affect their thinking, cognitive ability to understand and efficiency in implementing innovation management practices (Al Rashedi et al., 2015). Furthermore, Avey et al. (2008) suggested that positive employee behaviour would have an impact on organisational change. Moreover, it has been found that employee habits were positively associated with compliance with management policies (Waly et al., 2012; Bauer, 2006) and innovation practices (Glăveanu, 2012). In the same line as these findings, (Vance et al., 2012) found that a degree of compliance with policies was influenced by employees' positive and negative habits. The researchers stated, "that habit has an important role in the context of employees' compliance with policies" (Vance et al., 2012, p. 194).

In contrast, Scott and Bruce (1994) suggested that negative habits related to innovation indirectly result in failure to solve problems in organisations, because, "habit is considered the most obvious barrier to creative thinking and innovation" (Davis, 1999, p. 166). However, Ram (1989, p. 24) clarifies that negative habit toward innovation is, "reluctance to change from current practices or routines to which he had become accustomed". Habits are often overcome to show satisfactory behaviour (Verplanken et al., 1997), whether positive or negative. Moreover, Avey et al. (2008) found that negative habits result in unproductive thinking. However, negative habits can reduce over time in cases where employees use positive

interpretations and apply self-monitoring. This is a way to transform employee habits towards success in business organisations (Duhigg, 2013).

On the other hand, females are strong in innovation and the generation of ideas (Shrader et al., 1997). We have therefore suggested that positive habits in the innovation concept will have a direct and positive effect on female workers' compliance with innovation management instructions.

Basically, the role of female workers in the industrial organisation depends on their intention, and whether women intended to become innovative or whether they intended to act in line with management and innovation instructions. Innovation instructions relate to following principles that allow female workers to formulate and devise new ways of executing various roles (Danish and Smith, 2012). It has therefore been found that innovation starts with an intention (Glăveanu, 2012), and for women to play an effective role in the clothing industry they have to nurture positive intentions at all times. A positive intention will act as a motivational factor (Sheeran, 2002; Verplanken et al., 1997) and they will act in line with management and innovation instructions.

However, lacking the intention to succeed and make a difference limits the roles played by workers (Budhwar et al., 2010). Reasons for lacking intentions have been put forward by Triandis (1979), who asserted that the creation of negative intentions or the prevention of intentions to perform behaviour might be the result of facilities and conditions in firms. In contrast, reluctance of employees to engage in certain behaviour will be lower if employees have control of this behaviour or have self-monitoring (Cheng et al., 2006). If the period of time between employee intentions and certain behaviour is shorter, there is therefore a correlation between intention and behaviour (Eagly and Chaiken, 1993). However, Triandis (1979) argued in the final section in favour of engaging in certain behaviour controlled by "habit" rather than positive "intentions". Nonetheless, they saw intentions as "people's



decisions to perform particular actions” (Sheeran, 2002). Similarly, cynical employee attitudes towards organisational change are expected to decrease as a result of positive intentions (Avey et al., 2008).

More precisely, women cannot be innovative if they do not intend to be, or if they have negative intentions. Nevertheless, the influence of women’s intentions and compliance was not discussed in innovation management instructions. In this research, we have therefore predicted that positive intention towards innovation will have an impact on female workers and their compliance through participation in business activities and their efficiency in executing innovation management practices.

Recent trends illustrate significant rates of growth in participation among Saudi women, estimating that 42% of Saudi women have started businesses by themselves. However, they still display weaknesses afflicting the character of business growth (Hamdan, 2005; Danish and Smith, 2012). Tremendous challenges relating to society and respective institutions are the main factors Saudi women still face (AlMunajjed, 2010). This is because cultural and social principles are likely to influence individuals’ attitudes in negative or positive ways: “a relationship between social influence and attitude is expected to exist” (Qasem, 2014, p. 60). In industrial organisations, female employee outcomes depend on attitudinal and behavioural responses (Mayrhofer and Scullion, 2002; Kehoe and Wright, 2013). Furthermore, it has been found that workers’ attitudes directly influence innovative behaviour in business (Naranjo-Valencia et al., 2011).

On the other hand, Hsu (2013, p. 272) argues that “the vicissitudes of culture have negatively impacted the clothing industry ... since the industry relies significantly on creativity”. Another reason for growth of negative attitudes of workers might involve the obligation to follow instructions not in their contracts (Rogelberg et al., 2000), false information (Cheng et al., 2006) or the removal of any rights from workers (Elizabeth et al.,

2012). In contrast, reduction of negative attitudes among workers and organisational factors are helpful in changing their attitudes – ways to achieve this include awareness and training (Muduli et al., 2013). Hence, in this research we predicted positive attitudes to management innovation instructions that will be able to motivate female workers to efficiently comply with management instructions.

Belief is a difficult concept to explain but embraces aspects of religious practices and cultural customs to either motivate or frustrate (Robinson et al., 2012; Lei, 2012). To create more innovative ways to comply with management practices, the management of organisations need to understand workers' cognitive beliefs (Hu et al., 2012). Worker beliefs have been seen in economic models through individual behaviour (Robinson et al., 2012; Bagheri et al., 2012). Nonetheless, in some organisations, much more well-designed innovation management endeavours have failed because of non-supportive employee beliefs (Lin, 2007; Du Plessis, 2007). However, it has been argued that, “beliefs and assumptions are often unable to provide helpful feedback regarding a new direction” (Sawhney et al., 2007). Furthermore, “belief [erodes] discoveries and ideas” (Bénabou et al., 2015). The reason in this study, linked to female workers in general, is the belief among women that men are superior to them (Hamdan, 2005). Other beliefs rooted in culture include fear of responsibility and that women cannot balance between their home and work demands (Ahmad, 2011b). These examples limit their levels of efficiency and prevent them from maximising their full potential within compliance to innovation instructions. However, they have to transform some of their beliefs (Al Lily, 2011). Innovation begins with transformed negative beliefs, changing predictions of employee involvement during contribution to innovation (Monge et al., 1992). Much research about innovation management does not mention whether belief is associated positively or negatively with innovation (Sawhney et al., 2007; Birkinshaw et al., 2008; Wright et al., 2012; Tidd and Bessant, 2013). However, Rogelberg et al. (2000) studied non-compliant employees using

surveys. They attributed their non-compliance to high levels of negative beliefs. However, in this study, we ask in cases of innovation management instructions whether or not the same correlation exists.

It is therefore suggested that positive beliefs of female workers towards innovation will support them in complying with innovation management instruction in the Saudi clothing industry (Budhwar et al., 2010).

### **Organisational factors**

Most organisational structures struggle to facilitate innovative elements, causing employees or workers to lack the skill set necessary to be innovative (Alghamedi, 2014; Danish and Smith, 2012). This study looked at seven elements, influenced in relation to innovation management and business growth. These include awareness and knowledge, organisational culture, supervisory engagement, communication, sufficient resources, rewards and punishments and training. Each of these is expected to have positive influences on compliance with innovation management instruction.

In relation to the first factor, awareness and knowledge that impacts on compliance of women workers, it has been found that female workers are limited in their awareness and lack knowledge regarding innovation (Welsh et al., 2013). In previous research, Monge et al. (1992) noted that employees who have a broader awareness of the drawbacks and consequences of innovative ideas that meet firm goals will facilitate firm applied innovation. Meanwhile, Cillo et al. (2010) found the linkage between innovation management and knowledge of workers to be a positive relationship, but this research produces different findings to the above studies, investigating a particular category – women – and a particular industry – the clothing industry. However, innovation levels need knowledge, including tacit and explicit knowledge (Fawzy

and Keri, 2000), but unwilling employees often do not show their knowledge because of lack of awareness of organisational goals.

The second factor is organisational culture, that is, “the lack of awareness of culture and cultural diversity may lead to misunderstanding and chaos in the workplace” (Alnaimi, 2012). It is imperative that organisations have further information about employees’ cultural backgrounds to acquire or share innovative products (Naranjo-Valencia et al., 2011). This helps management to realise that conservative society grants psychological safety towards the generation of ideas (Patterson et al., 2009). In addition, understanding organisational culture encourages employees to develop trust with their colleagues and management. The result is increasing effectiveness and response to innovation instructions (Muduli et al., 2013). Notwithstanding, managers often do not have the ability to understand organisational and employees’ work in terms of culture, which negatively affects employee interaction and knowledge utilisation and sharing (Alvesson, 2012). In summary, organisational culture is an employee behaviour but it is a management responsibility.

Employee attitudes will improve more as a result of positive relationships between managers and employees (Litzky et al., 2006). In addition, Sabine and Katherine (2011) determined that one innovation and growth barrier is lack of supervisory encouragement for creativity. Most studies have identified a relatively good relationship between creativity and supervisory encouragement (Oldham and Cummings, 1996; Tierney et al., 1999). However, it is necessary to be aware that supervisors must deal with people of varied personalities (Shalley and Gilson, 2004). The manager’s role is therefore to confirm that employees have the skills to undertake certain tasks relating to creativity (Hsu, 2013).

The fourth factor is communications. Some researchers, such as Østergaard et al. (2011), have defined communication as an interaction between all levels of employees in the organisation. This is because communication provides opportunities to involve employees in

teamwork and could produce favourable outcomes in different workplaces and help workers to overcome bias during work through communication with top management to enhance firms' missions (Yang and Konrad, 2011). These benefits of communication will return to the firms by means of diversity of knowledge base, including in the form of different education for workers and different background cultures (Østergaard et al., 2011). From communications meetings it has been possible to observe the need for new combinations of knowledge incorporating skills, experiences or learning, resulting in less cost and time wasted (Goffin and Mitchell, 2016). Thus, diversity of information and skills in communication meetings is likely to encourage innovative behaviour (Van der Vegt and Janssen, 2003). In contrast, shortage of design communication influences employees negatively (Nancy and Eleanna, 2009; Bindl and Parker, 2010), leading to poor employee improvement (Muduli et al., 2013). For the most part, communication that enhances innovation has a positive impact on employee engagement and refers to "self-confidence, co-operation with company policies" (Welch, 2011, p. 338).

Rewards have received much attention in any organisation but some researchers, such as Vance et al. (2012), consider rewards as threats when assessing unwanted employee behaviour relating to compliance and producing non-intrinsic compliance. On the other hand, when employees turn their backs on work and do not want to work, we expect that they are unable to develop organisations – in such instances, punishment is deserved (Vance et al., 2012). However, Hylton and Lin (2013) were concerned about the relationship between punishment of employees and innovation when creating new products. Notably, bad use of this tool results in more resistance from workers. On the other hand, rewards and punishments can result in hidden limitations, such as increased bias or inequality in pay or punishment (Bidwell et al., 2013). Clear regulations and declaration of rewards and punishments relating to innovation or creativity in factories therefore help workers to comply with instructions from administrations or do more by participating in ideas with management. "Rewards and

punishment associated with involvement in innovation are much more indirect” (Monge et al., 1992, p. 251).

Resource availability has been identified as more helpful for creative work (Sabine and Katherine, 2011). Managers’ activity allocates resources to organisational bodies (Klingebiel and Rammer, 2014). In addition, it was found that resource availability makes employees more likely to comply with policies (Herath and Rao, 2009). On the contrary, lack of sufficient resources or limited availability of resources could lead to the same result of failure in the competitive market (Sok and O’Cass, 2015). In Slovakia, there was a decreased level of innovation development and resources were not sufficient to work on because of poor innovation management in these companies (Šoltés and Gavurová, 2014). However, Rego et al. (2014) argued that scarcity of resources could trigger innovation. This argument is not compatible with this study’s objectives because we aim to identify factors related to compliance of resistant employees and a lack of sufficient resources will be an excuse for them. Egbetokun et al. (2008) reviewed literature in relation to Nigeria about the higher likelihood of a relationship between higher resource shortages and a drop in innovation activities in the manufacturing sector.

Training is the last factor impacting compliance with innovation management instruction. Choo and Bowley (2007) found that training would positively influence productivity, thus raising brand value. Moreover, Acton and Golden (2003) have proven in their comparison between firms that used or did not use training that it not only positively influenced business growth but helped employees to manage work-related stress and to reach high levels of employee satisfaction in their careers. “Employee training is not only linked to improved business results but is also a powerful factor in shaping employee attitudes” (Latif, 2012, p. 211). However, employees who have not received training are less willing to accept organisational change (Gazioglu and Tansel, 2006). For instance, a woman might have brilliant

business ideas relating to the clothing sector. However, this woman will experience challenges in managing the idea (Al Rashedi et al., 2015) because of a lack of regular training which results in less understanding of how to contribute to work and hence the difficulty of changing employee behaviour to comply (Curtis, 2007; Maurer and Lippstreu, 2008). In addition, large numbers of studies have proved the importance of training on an employee's life and almost no literature linked training of women employees to compliance with innovation management instruction in which it was found that the relationship between an employee's orientation to learning and creativity was positively impacted (Bhatnagar, 2012). Thus, it is necessary to further confirm the association between periodic training and the compliance of women with innovation management instruction.

### **3.2. Research Questions**

The discussed contextual factors affect innovation management instructions, the review and framework presented here, advancing our understanding in specifying relevant issues and thus enhancing the study findings on predicated factors relating to compliance behaviour. Moreover, the factors examined were tested for managers/owners and workers and have not been tested in compliance studies before. The study enables the top management of organisations to improve the factors mentioned or create them if they are not available, attempting to identify why innovation management instructions in some clothing organisations are followed by workers, where they have a sense of developing organisations, but not in others. The research therefore attempted to answer the research questions are:

RQ 1 – What internal and external factors influence innovation management in the context of Saudi women workers?

RQ2 – What internal and external factors influence compliance in the context of Saudi women workers?

## **Chapter Four — Methodology and Research Design**

### **4.1. Introduction**

After the identification of gaps in the first chapter and the presentation of an extensive literature review relevant to the research questions in the second chapter, which included knowledge related to development of the TRA, utilised in shaping the study framework, this chapter explains the methodological approach taken in this research and the justification for the choice of this particular research strategy. In this context, the concept of methodology is defined by Gelo et al. (2008, p. 270) as a “set of rules, principles and formal conditions which ground and guide scientific inquiry in order to organise and increase our knowledge about phenomena”. The concept of methodology simply refers to the research tools used to collect data. The research methodology enables the attainment of a high quality of final outcomes. Selection of the most appropriate methods will also help to minimise wasting of effort in collecting data, ultimately assisting with the success of this research (Creswell and Clark, 2007; Williams, 2009). Diverse research methodologies exist, each of which provide ways for collecting data from a different range of sources. This chapter recognises this.

The beginning of this chapter therefore presented the rationale of this research to remind the reader of the underpinning research for which the methodology was used. As such, the second step is essential before conducting the research itself. A method known as the philosophical and design methodology was used to understand the philosophical position adopted in this research. The operationalisation method of research was also used, including all the relevant research steps.



## **4.2. Rationale of the thesis**

The literature review proves that lack of innovations results from resistance to compliance with management instructions; the reasons for this are related to employee behaviour and a firm's environment. The need for innovations in the clothing industry meets market requests in Saudi Arabia. "The clothing industry [...] is now under tremendous pressure to meet the ever-increasing demands of international clothing retailers" (Tokatli et al., 2010, p. 2001). This is not the only goal of this innovation management study. Compliance among females is considered an essential element in any organisation and was examined through, for example, engaging suitable strategies to boost successful innovation and enabling workers to put forward new ideas and techniques to management systems. It is much easier to control and manage workers' ideas and climate capabilities before starting to explore innovation strategy and process, minimising faults and reducing the chance of work stopping halfway. The emphasis on women workers strengthens their sense of ability to generate new solutions and facilitate work, focusing on Saudi workers rather than expatriates (see section 1.3.). From an international perspective, it is necessary to keep abreast of progress in innovations and producing creations in the clothing manufacturing world. It is therefore necessary to explore matters related to the participation of Saudi women in Saudi Arabia, which is the aim set out by this study – to link worker compliance factors with innovation management. This has not been linked in previous academic work in the area of clothing research. This will be addressed through looking at the factors influencing the behaviour of Saudi women and their compliance with innovation instructions within Saudi Arabia. The following sub-questions are presented as guiding this research:

What are the internal and external factors influencing Saudi women in complying with management innovation instructions?

- i. What are the female employees' behavioural factors that influence compliance with innovation management instruction?
- ii. What are the clothing industry factors that influence Saudi women employees in relation to compliance with innovation management instruction?

#### **4.3. Philosophy and strategy of the thesis**

Philosophical research involves expressing views and describing how they are organised, and is shaped on what the researcher thinks and the designs chosen (Newby, 2014). Any social science involving the methodology of philosophical positions discusses the natural reality construction called ontology. The opposite kind of philosophy involves gaining knowledge about social reality (epistemology), and collecting from this (methodological assumptions). These philosophies are central to this study (Bryman and Bell, 2003). The essential step in picking out the research design is understanding the methodology to be used to answer investigation questions (Easterby-Smith et al., 2012). This section briefly addresses philosophical strategies before incorporating these into the current study.

First, ontology explores the relationships between existence concepts in the real world (Blaikie, 2007), which tend to belong to opposing research categories: constructionism and objectivism. The first refers to a natural truth created around the researcher's view and accepts the multiple truths and paths to accessing them (Blaikie, 2007; Raskin, 2008). Objectivism is also linked to natural reality, but a single truth derives from natural observation and human action (Blaikie, 2007). Epistemology, in contrast, means creating knowledge from research data and analysis (Carter and Little, 2007). An epistemological position constitutes philosophical stances which are either post-positivist or interpretivist. Positivism is study of objective truth, where the researcher does not include their own values and feelings in the study (Gray, 2013) and the researcher is external to the object, relying on empirical test hypotheses.

Interpretivism, meanwhile, is similar to constructivism and moves researchers to interpret social life and accept the idea of multiple realities.

Linking this framework together is difficult (Newby, 2014), but, after overviewing these philosophical approaches, it is necessary to adopt philosophical stances in research problems. As stated in both chapters one and two, reality and the relationships between compliance and innovation management instructions are supported by objectivism in the ontological stance, while the epistemological stance is taken in the methodology chapter through positivist choices. Furthermore, this is in accordance with the researcher's philosophical positions.

Research strategy, on the other hand, involves quantitative and qualitative methodology, conducting different approaches in terms of the theory used, either deductive or inductive, and considering ontological and epistemological study stances (Bryman, 2012). Quantitative research is concerned with a deductive approach in terms of employing theory and deriving hypotheses. A deductive approach is commonly related to the positivism assumption. However, qualitative research is typically relevant to the inductive approach for building theory. This approach is linked to interpretivist positions (Gray, 2013).

Both strategies have strengths and weaknesses in the management area. Quantitative research embraces the collection of numerical data and analysis by the use of descriptive and inferential statistics for the analysis of the data (Matthews and Ross, 2010; Cohen et al., 2011). In attempting to discover the underlying trends in the population under investigation, a representative sample is selected, and it is often linked to testing of hypotheses (Cohen et al., 2011; Bryman, 2012). Based on a representative sample, the findings can then be generalised to the population at large with a high degree of confidence. Although quantitative research studies arrive at very precise numerical findings (Scandura and Williams, 2000), they cannot claim certainty or absolute truth, but almost the truth or approximate truth with high levels of

confidence, normally at the 95% level in social science research (Gray, 2013). Nevertheless, these research approaches also have certain limitations, especially their deficiency of depth and their tendency to postulate a deterministic explanation of human behaviour. Sometimes, these approaches are not appropriate for detecting in great depth the meanings that humans attach to their behaviour (Bauer, 2006).

On the contrary, qualitative research takes data from spoken and written material (Denscombe, 2014), working from the bottom up and beginning in observation phenomena, moving to measure the model. The research ends with developing theory (Bryman, 2012). Usually, the conclusions of a qualitative study give a precise and detailed description of the particular context (of organisational or social behaviour) (Denscombe, 2014; Cohen et al., 2011). The advantages are more exploratory in the beginning and very natural. In contrast, this strategy has been criticised in terms of its inability to replicate events, narrow in scope and thus easily falling prey to subjectivity (Bryman, 2012). A major criticism relevant to both qualitative and quantitative methods involves issues associated with validity and reliability (Kumar, 2014).

#### **4.4. Operationalisations**

Operationalisation refers to “the diverse sequence of transforming a theory into an object of practical value” (Comim, 2001, p. 1). The action specifies what the researcher should do to measure study concepts (Gray, 2013). The section therefore encompasses the research design and the aforementioned discussion of practical methods and rational reasons for the selection of the study sample and exclusion of other methods. In addition, this section looks at the choice of Saudi Arabia as the search site, then the sample framework and design, and the questionnaire itself and how it transforms the main research concepts into variables. This is followed by an assessment measuring innovation management and issues of validity. Reliability is then

discussed, and issues of piloting and sampling are addressed. This chapter ends by applying the discussion to data collection and explaining that most problems happen during the fieldwork journey.

#### **4.4.1. Designing the thesis**

The study design enables the description and justification of how to answer the study questions (Kumar, 2014). Seeking the answers to the research question is based on choice of philosophical stances and is influenced by data collection instruments and kinds of analysis which will shape the appropriate answers (Creswell, 2013). Consequently, the two sub-question perspectives are explanatory research attempts to clarify the relationships between the phenomena. Descriptive research is used to describe the prevalent situation systematically. An explanatory study was employed, using both qualitative and quantitative approaches, when structuring questions (Saunders et al., 2009). This involves innovation management research (Dawson and Andriopoulos, 2014; Pellicer et al., 2014).

It should be borne in mind that the study design is developed based on horizon time (Saunders et al., 2009). Quantitative study is classified by a longitudinal study, before-and-after study and cross-sectional study. A longitudinal study involves gathering factual information, which takes a long time and gives participants more information. The main advantage is provision of a factual picture of changing phenomena (Bryman, 2012). In contrast, a before-and-after study measures changes before and after they happen and takes less time. The disadvantage of this design is the difficulty involved in using the same sample twice (Kumar, 2014). Cross-sectional design is known as a status study and obtains a picture of the phenomenon at the time of the study taking place (Cohen et al., 2011). Cross-sectional studies have been commonly used in innovation research (Osterman, 1995; Capasso and Morrison, 2013; Xerri and Brunetto, 2013). Other studies were coupled with a longitudinal study in

innovation research (Messmann and Mulder, 2014). A cross-sectional approach is considered the most appropriate in this study, although its limitations will be mentioned in chapter seven.

A quantitative method can be an appropriate tool because factors affecting innovation management instruction in organisations are not available in secondary data, particularly in the field of Saudi women. Subsequently, the survey approach used is necessary to gain information. A large number of social studies have used quantitative approaches (Bryman, 2012). As such, survey questionnaires are still used in Saudi Arabia for collecting data (Al-Subaihi, 2008). This study used self-completion questionnaires for reduced bias, sometimes referred to as self-administrated questionnaires (Bryman, 2012). As such, participatory research is also employed in this research to advocate the involvement and increased activity of the research participants, reducing the gap between participants and researcher (Kumar, 2014). The participatory method is common in topics related to innovation (Dolinska et al., 2015; Wuehr et al., 2015; Taebi et al., 2014).

With advancement in technology, adopting online questionnaires to answer study questions and gather data has become quite common. In 2000, around 5% of the U.S. and Western Europe conducted market questionnaires via the internet (Al-Subaihi, 2008). The Communication and Information Technology Commission in Saudi Arabia (CITC) issued a report of the outcomes in 2015, noting usage of the internet at about 91% (CITC, 2015), a dramatic increase from 2009 when the average was about 65% of the population. The figure for 2007 was 52% for internet usage (CITC, 2011). The report stated that average internet usage on mobiles reached 82% among the population and recorded a figure of nearly 91% for social media networks (CITC, 2015). The merits of online questionnaires include the ability to post a link via email or social media applications to recruit potential respondents enabling easy response even on mobile phones (Kumar, 2014). Indeed, survey-based online questionnaires benefit from low costs and high speed when reaching a large sample of people (Yami, 2015).

They undeniably offer anonymity and an increased rate of return and ensure confidentiality. Questionnaires can also be returned to the researcher without fear, making this an optimal method for respondents (Gray, 2013). The technique has been used and administered extensively in the literature (Creswell, 2013).

On the other hand, there are rational reasons for not selecting other methods of questionnaire administration such as post, face-to-face delivery, telephone delivery and delivery and collection (Cohen et al., 2011). Although questionnaire administration will be discussed extensively later in this chapter, the reasons for excluding certain methods should be mentioned, although each has advantages and drawbacks. For example, posting questionnaires covers large sample groups across different regions, but is time consuming and there is a high probability of a low sample response rate, affecting reliability (Bryman, 2012). This type of method typically is not an active method in Saudi Arabia and would result in a low response rate. Also, data could go missing in the post. In contrast, conducting telephone questionnaires is easier and can lead to high levels of response rate. There are many issues with this design such as telephone line problems, missing information and misunderstandings that lead to bias (Denscombe, 2014). In addition, some researchers consider that a telephone questionnaire is not appropriate as a data collection method in social science research (Eboli and Mazzulla, 2012). While face-to-face questionnaires produce high response rates, the drawbacks include high cost and limited sample sizes (Denscombe, 2014). This method was excluded as it is nearly impossible to interview workers in the clothing industry, particularly male workers. Finally, the delivery and collection method has the same advantages as the face-to-face questionnaire and represents a good alternative in this research. However, this type was not selected because it is time consuming and expensive, resulting in problems with questionnaires being discarded because of desirability bias (Saunders et al., 2009).

#### **4.4.2. Sample framework and the criteria**

It is impossible to collect data and information from the entire population, as expressed in the discussion of the study topic, given the specific time period available and the need for accuracy. The sample must therefore often be specialised and small (Lohr, 2009). Gaining results from whole populations is not more useful and valuable than gathering data from the research sample (Saunders et al., 2009). However, selecting this sample is a very significant step in the important extraction of information and results from questionnaire surveys (Howitt and Cramer, 2011). “Choosing a study sample is an important step in any research project since it is rarely practical, efficient or ethical to study whole populations” (Marshall, 1996, p. 522). It is important for a quantitative approach to gain precise generalisability (Bryman, 2012).

The population of the present study is based in the clothing industry factories. Before discussing the sample, it should be noted that the textile and leather industries make materials for garments, shoes and handbags. In contrast, the clothing industry produces designs by famous designers and advertises in cities such as New York. This is called high fashion but clothes that are made by groups of people and sold in markets or malls are sometimes called mass fashion or ordinary clothes (Qudrat-Ullah, 2009). Lal and Mohnen (2009) explained that the clothing industry has much higher exports than the textile industry in Hong Kong, Macao in China and Singapore. However, in the KSA, the story is different. The textiles and leather industries are more attractive than clothing factories for exports. Textiles and leather products represent 52% of exports, the second highest level of exports in the Kingdom after chemical products, according to the annual report of the Saudi Industrial Development Fund (SIDF, 2015). This could be because clothing industry factories are lower factories than textiles and leather industry factories (see table 4-1).



**Table 4-1: Factories of clothing textiles**

<b>KSA cities</b>	<b>Number of clothing factories</b>	<b>Number of textiles and leather factories</b>	<b>Total</b>	<b>Percentage of total</b>
Riyadh	21	41	62	45.2%
Jeddah	9	28	37	27%
Makkah	2	2	4	2.9%
Medina	2	3	5	3.6%
Al-Dammam	2	12	14	10.2%
Oniza	1	3	4	2.9%
Al-Hofuf	2	3	5	3.6%
Al-Jubail	1	2	3	2.1%
Others city	0	3	3	2.1%
<b>Total</b>	<b>40</b>	<b>97</b>	<b>137</b>	<b>100%</b>

*Source: National Factory Directory, 2010; Ministry of Commerce and Industry, 2015*

The viable choice for survey sampling is convenience sampling, one branch of the non-probability technique. This relies on selecting a sample based on ease of access and the availability of individuals to be part of the research (Saunders et al., 2009). The advantages of convenience sampling include that it is interesting and can gather useful information and valuable data that is difficult to collect using probability sampling. However, this sample cannot be generalised to the entire population. The researcher found that, in a number of clothing factories, their managers were welcoming in offering access to factories and it was possible to communicate with all workers to conduct the questionnaire survey. As such, the study continued to invited workers, managers, owners and designers using all social media and email to involve participants in the questionnaire until the sample number was high enough for easy convenience sampling. This study examined the impact of factors relating to compliance on the Saudi organisations. The sampling geographical units are Saudi clothing factories in two

cities, Makkah and Jeddah, representing those available for study. All samples will be of both genders (male and female) between the ages of 25 and 60. The reason for choosing males in a sample is to explore other factors from a male perspective and can help results greatly, thus improving female workers. However, male perspectives could have hidden limitations because males in Saudi Arabia do not face difficulties, pressures and family commitments. Choosing an entirely female sample means that this study is based on the pressures that women face during their work in relation to society, work and themselves in relation to compliance with innovation instructions; female answers will be worth studying and representing the reality.

Identifying the sample to take part in this study will be accomplished through calling the numbers shown in the brochure entitled “National Factory Directory”, published in 2010 and available from the SIDF and using the electronic services Ministry of Commerce and Industry web, which all provide some details of every manufacturer, including the names of the firms, in which cities they conduct their activities and their telephone numbers. In relation to a number of respondents, one of the important assumptions in multiple regression is that respondents should exist in adequate numbers. Hair et al. (2010) state that the minimum number is five respondents for every independent variable (IV), or a 5:1 ratio. In this study we have eleven IVs, so 55 valid cases is the minimum number to meet the requirements of multiple regression. The researcher collected 269 surveys, which more than adequately meets the sample size criterion.

#### **4.4.3. Measuring innovation management**

Measuring innovation management helps managers to know when they have reached their organisational targets and when they experience limitations in their systems (Adams et al., 2006). Measurement of innovation management has been widely discussed in the literature (Volberda et al., 2013; Adams et al., 2006; Birkinshaw et al., 2008; Rese and Baier, 2011;

Nguyen-Thi and Mothe, 2010). However, “a scale of management innovation at the organisational level is not yet available” (Vaccaro et al., 2012, p. 38). Indeed, no innovation management measurement has been standardised, as each study is different from others according to the research orientation. This study, like its predecessor, is oriented towards studying a part of innovation management, in this case compliance with innovation management, because of the absence of a previous measure of such compliance.

This study has attempted to measure innovation management in a way relevant to compliance behaviour. Measuring compliance with innovation management is based on the results of interaction between personal compliance and organisational structures. This interaction represents the essential way to understand workplace behaviour (Eva et al., 2017). Organisations have made a major effort to reinforce female workers’ compliance with management (Kim and Kim, 2017). Lack of such effort is known to cause harm to innovation and creativity and compliance behaviour are highly likely to corroborate one another when undertaken (Amabile et al., 1996; Anderson and Johnson, 2007). This study examines technological presence, both automated and non-automated (Nguyen-Thi and Mothe, 2010). Without technology, workers cannot produce innovative products, and they are non-compliant with management instructions. The second factor examined is the presence of marketing lines. When workers know that innovation management in their organisations has marketing lines, this helps them to comply with management instructions, as they grasp that their organisations will make a profit (Narver and Slater, 1990). On the contrary, if they do not know if there are new marketing methods or not, this is likely to lead to non-compliance. In addition to the relevance of technology and marketing to determining innovation management measurement, several studies have implemented subjective assessment on innovation measures (e.g. Alegre et al., 2006; Blindenbach-Driessen et al., 2010). Subjective assessment of the adherence of workers to innovation practices gives an estimate of the improvement levels of top

management (Blindenbach-Driessen et al., 2010). Making mistakes in innovative products does happen, but an assessment can grasp what is wrong in order to avoid this (Kim and Kim, 2017). Assessment therefore ensures that workers' compliance coincides with innovation processes. An innovation management framework is used in this study for management levels to provide a basis for workers to comply with innovation practices (Adams et al., 2006). Nonetheless, other measures relate to innovation management.

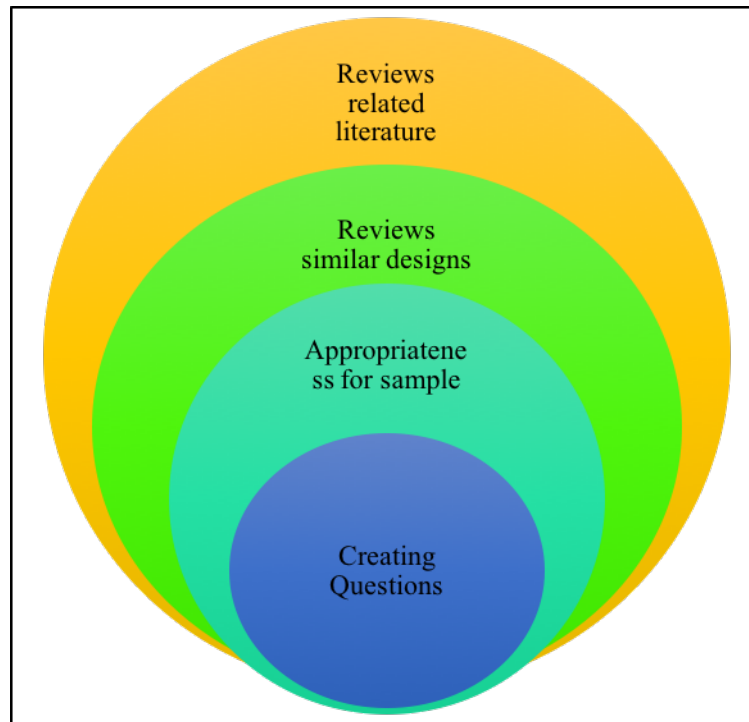
#### **4.4.4. Questionnaires administration**

Questionnaires are widely believed to be amongst the most prevalent data gathering approaches amongst researchers because of their ability to collect an extensive range of data regarding detailed or wide-ranging research issues (Marshall, 2005; McMillan, 2000) and make generalisations from data analysis while simultaneously allowing participants the ability to voice their individual opinions and beliefs (Caswell, 1989). "One way of getting into people's heads and making a better determination of what they thought and felt would be devise a questionnaire" (Worchel et al., 2000: , p. 19). In addition, administration of questionnaires is affected by the response rate and data reliability and validity (Saunders et al., 2009).

In the beginning, the main informant tools which will be adopted in the administration are based on ideas from Ajzen and Fishbein (1980) and Fishbein and Ajzen (1975). To develop the original scale of the researcher's questionnaire questions, she will then use three measurements – first, reviews related to literature on every factor; second, reviews of similar designs from previous studies (Amri, 2012; Chen, 2014; Qasem, 2014); third, appropriateness of instrument design for the participant sample. These instruments were applied and created questions for the questionnaire. A formulated, standardised questionnaire was created with precise and succinct instructions with the aim of gathering a broad range of data. Each and every grouping of questions had distinct, unique titles in order to guarantee that it was well defined and easy for the participants to follow (see figure 4-2).

Figure 4-1: Formatting research questions

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This research utilises closed questions with the aim of providing an assortment of available answers to be selected. Closed questions are particularly well liked because they generate quick, easy, standardised replies and the researcher can control the conversation. Consequently, these replies provide some depth of evaluation.

This research will use a seven-point Likert scale adopted by Ajzen and Fishbein (1980) and Bauer (2006). The Likert scale displays a group of items, consisting of an equal number of statements ranging from favourable to unfavourable (Gliem and Gliem, 2003). Borg and Gall (1983, p.423) noted that, “Likert scales are probably the most common types of attitude scales constructed”. Each measurement of the Likert scale can be confidently used with reliability and validity. Numbers ranging from (1) to (7) are used to evaluate respondents to address the level of strength of each factor influencing female employees in complying with innovation management instructions. The rationale underlying the researcher’s use of a seven-point scale is to reduce errors in measurement (Chen, 2014, p. 108). However, in the current study, the

Likert scale relied on the development of semantic differential scales, different in every section. When investigating TRA components, attitude, belief and intention are not easy to observe. However, the verbal form is a tool for easy detection. In line with Ajzen (1988, p. 8), “methods used to infer traits or attitudes rely on verbal responses to questionnaire items”. Female respondents are instructed to assess their behaviour, intentions, attitudes and belief factors by choosing one of the seven spaces from two objective couples. Waltz et al. (1991, p. 15) clarified the semantic differential scale as, “one of the most valid measures available for assessing the connotative aspects of meaning”.

The questionnaire is seven pages long: the first page is the title page and summary of the research, and also includes informed consent to complete the questionnaire, assuring participants of privacy of answers and all ethical procedures of Royal Holloway University in London. At the end of this page, the email address of the researcher was listed after the important tip was given that there are no right or wrong answers; answers should be chosen based on a participant’s experiences and what is right for them. The final design of the questionnaire consists of five parts, and each section of the questionnaire was developed from a set of authors with research objectives, literature review, and target sample of this study set out, taking into account translation into the Arabic language. The first section of the questionnaires is demographic and general information about female workers includes age, gender, education, citizenship, marital state, working hours and years of work. These questions were adopted from Bauer (2006). Innovation management is the second section of the questionnaire. This section built a picture of innovation management based on three items by using multiple choice answers of “Yes”, “No” or “Do Not Know” in relation to whether the factory had an innovation management system or not, adopted from Nguyen-Thi and Mothe (2010), Narver and Slater (1990) and Blindenbach-Driessen et al. (2010), and giving details on measuring innovation management. The third section was designed to collect information

related to innovation management about the compliance of female workers. The scale was adopted from Hon et al. (2014) using two items. Respondents were asked to provide their degree of agreement using a seven-point Likert scale ranging from 1 = “Strongly Disagree” to 7 = “Strongly Agree”.

The fourth section was about human behaviour. This part was divided into four areas: behaviour, intentions, attitudes and belief factors. Each factor contains questions to clarify the impact of these factors on compliance with innovation management instruction. It is measured based on what is “inferred from measurable responses” (Ajzen and Fishbein, 1980, p. 8). This section was guided by Ajzen and Fishbein (1980) and Fishbein and Ajzen (1975) and adopted from Bauer (2006) and includes:

- Measuring behaviour factors: in this study, assessment of the behaviour of female workers could be a factor in complying or not complying with innovation management instruction. Ajzen and Fishbein (1980) state that measuring behaviours through examining factors influences those doing it. This section includes questions about habits, norms, and knowledge. Female respondents have asked these questions to indicate their scores of compliance with innovation management instruction by using five items scored (from 1 = “Never” to 7 = “Always”); where 7 is a high score indicating behaviour factor influence on innovation management instruction.
- Measuring the intention factor: in line with the TRA, this covers female workers’ intentions to comply with innovation management instruction. Respondents were asked questions about whether they intended to comply with innovation management instruction or not. Use of data for five items on a seven-point Likert scale (from 1 = “Definitely do not intend” to 7 = “Definitely do intend”) was adopted to rate the

strength and weakness of intention of compliance with 7 rating a statement showing a higher level of intention in relation to innovation management instructions.

- Measuring the attitude factor: to obtain women's attitudes towards compliance with innovation management instructions, participants were asked 12 questions about the ability of female workers to be innovative and influences on their compliance with instructions. It requested that participants rate the statement (from 1 = "Not very certain" to 7 = "Very certain"); higher scores indicate that, certainly, female attitudes have a strong influence on compliance with innovation management instructions.
- Measuring the belief factor: in line with researcher contributions, belief is equally important as attitude in complying with innovation management instructions. Respondents were asked five questions about whether they had experienced positive or negative influences from culture to comply with innovation management instructions. The strength of belief statement was rated on a seven-point Likert scale (from 1 = "I definitely do not believe" to 7 = "I definitely believe"). 7 indicates a higher level of belief factor influencing compliance with innovation management instructions.

The fifth and last part of the questionnaire is designed to gather data about clothing industry factors affecting female compliance with innovation management instructions, and will collect data from 18 questions. The importance of each factor statement from the clothing industry was rated on a seven-point Likert scale ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree". The higher levels represent the importance of each factor relating to compliance of female workers with innovation management instructions. This section was divided into seven parts. The first of these is the awareness and knowledge factor, measured by asking for



responses about awareness and knowledge of firms' goals and lack of them (q41 to q43), adopted from Waly (2013). The second factor in this section is understanding organisational culture. This is measured by asking about understanding of whether the culture around Saudi female employees could convince them to comply with innovation management instructions (q44 to q45), adopted from Al-awadi (2009). The third factor is the provision of supervisory encouragement (q46 to q48), adopted from Lin and Liu (2012). The fourth and fifth factors are communication and rewards and punishments (q49 to q50 and q51 to q52), adopted from Waly (2013). Sufficient resources and periodic training are the last parts in this section. Sufficient resources questions asked participants about the availability of resources or shortages and whether these affect compliance with innovation management instructions. This factor is measured in two questions (q53 to q55), adopted from Lin and Liu (2012). Next, periodic training was measured by asking whether training encouraged employees to comply with innovation management instructions (q56 to q58). The scales are adopted from Waly (2013).

Finally, at the end of the questionnaire, there are two open questions about whether any further factors affected female workers in relation to compliance with management and whether there were any other suggestions they would like to mention. This question will help the researcher in future research and include recommendations. At the end of this page, there is a space for the respondent's email address if she would like to receive a copy of the results after completion of the study. Below is table 4-2, showing the coding items, the construction of the questionnaire, the main sources adopted for construction of the questionnaire and the measurement items those authors have used.

Table 4-2: Coding items, scales of extant studies and main studies

<b>Coding</b>	<b>Construct</b>	<b>Measurement item (scale)</b>	<b>Extant studies</b>	
1. Job type	What is your current job?	Nominal data	(Bauer, 2006)	
2. Age	What is your age?	Ratio data		
3. Gender	What is your gender?	Dichotomous data		
4. Education	What is the highest level of education you have completed?	Nominal data and Ratio data		
5. Nationality	Do you have Saudi citizenship?	Nominal data		
6. Marital status	Are you married?	Nominal data		
7. Working hours	How many hours daily are you working?	Nominal data		
8. Experiences	How many years have you worked on this job?	Ratio data		
9. IM technology	Does innovation management in your clothing factory involve the use of modern technology?	Yes–no questions	(Nguyen-Thi and Mothe, 2010)	
10.IM marketing	Does innovation management in clothing factories recognise new methods of marketing?	The scale of measurement is a five-point Likert scale between 1 (far below) to 5 (far exceeds).	(Narver and Slater, 1990)	
11.IM subjective assessment	Does innovation management in clothing factories provide subjective assessment measures?	Five-point semantic scale	(Blindenbach-Driessen et al., 2010)	
12.Non-compliance	Saudi women workers are reluctant to comply when management requires innovative ideas.	Seven-point Likert scale ranging from 1, strongly disagree, to 7, strongly agree	(Hon et al., 2014)	
13.Non-compliance	The reluctance of Saudi workers of comply with innovation instructions from management has caused serious loss of business			
14.New practices	Do you adopt new practices in the clothing industry?	The scale of measurement	(Bauer, 2006)	

15.Existing behaviour	Do you modify your existing behaviour to comply instructions from innovation management?	is a seven-point Likert scale between -3 (Never) to +3 (Always)		
16.Resistance compliance	Do you refuse to comply with management instructions because of workplace rules?			
17.Resistance to change	Do you refuse innovation instructions due to certain behaviours?			
18.Compliance and habit	Is there a relationship between your everyday habits and your compliance with management instructions?			
19.Desire	I strongly intend to be innovative.	The scale of measurement is a seven-point Likert scale between -3 (Definitely do not intend) to +3 (Definitely do intend)	(Bauer, 2006)	Guided by Ajzen and Fishbein (1980) and Ajzen, (1975)
20.New practices	I intend to adopt new practices in the clothing industry.			
21.Existing behaviour	I intend to modify existing behaviour to comply with instructions from innovation management.			
22.Resistance compliance	I intend to refuse to comply with innovation instructions due to workplace rules.			
23.Threat	I do not intend to comply with innovation management instruction because I perceive innovations as a threat.			
24.Take time	Affect my family relationship negatively.	The scale of measurement is a seven-point Likert scale between -3 (Not certain at all) to +3 (Very certain)	(Bauer, 2006)	
25.Lose job	Increase the risk of losing my job.			
26.Fight laziness	Fight laziness.			
27.Affect health	Adversely affect my health			
28.Money consumption	Spend a lot of money			
29.My life habits	Change the habits and norms which I have lived by			

30.As models for employees	Other people who work as models for employees			
31.Negative perceptions	Management eliminating negative perceptions about innovations			
32.Education	Education			
33.Entrepreneurship	Aspirations to be entrepreneurial			
34.Motivation	Is a way for management to motivate employees.			
35.Innovation concept	Understands clearly the concept of innovation from firm's view where I work.			
36.To be innovative	I believe that I have the personal skills to be able to effectively innovate.	The scale of measurement is a seven-point Likert scale between -3 (I should) to +3 (I should not)	(Bauer, 2006)	
37.Saudi cultural beliefs	I believe that Saudi culture hinders female workers from being more open to changing their behaviour.			
38.Saudi cultural beliefs	I believe that Saudi culture helps female workers to achieve their goals in the clothing industry.			
39.Saudi cultural beliefs	In clothing factories, I believe that culture affects female workers when following innovation instructions.			
40.Change employee attitude	I believe that the factory's management can change employees' attitudes toward innovation.			
41.Objectives knowledge	Knowledge of the objectives of the clothing manufacturing industry can help employees to be more willing to follow innovation management instructions.	The scale of measurement is a five-point Likert scale between strongly agree and strongly disagree	(Waly, 2013)	
42.Lack of awareness and knowledge	Lack of knowledge about innovations for women employees can lead to the breakdown of the industry in future.			
43.Management responsibility	Management of clothing industry factories is			

	responsible for providing awareness training sessions and for imparting knowledge to employees		
44. Understand cultural background	If management of clothing industry factories understands the cultural background of female employees, this will encourage employees to comply with innovation management instructions.	The scale of measurement is a five-point Likert scale between not important to very important and between not successful to very successful.	(Al-awadi, 2009)
45. Responsibility of organisational culture	Management of clothing industry factories is responsible for understanding the culture of female employees due to its effects on innovation.		
46. Influence supervisory encouragement	Supervisory encouragement influenced me to comply with innovation management instructions.	The scale of measurement is a four-point Likert scale	(Lin and Liu, 2012)
47. Neglect supervisory encouragement	One reason for the reluctance of female workers to comply with innovation instructions is the failure of supervisors to encourage them.		
48. Responsibility of supervisory encouragement	Management in the clothing industry is responsible for ensuring that there is supervisory encouragement that supports innovation.		
49. Communications influence	Communications between employees or supervisor and employees helps female workers comply with innovation management instructions.	The scale of measurement is a five-point Likert scale between strongly agree and strongly disagree	(Waly, 2013)
50. Communications responsibility	Management of clothing industry factory is responsible for maintaining communications between individuals in the firms.		
51. Rewards	Management of clothing industry uses rewards as tools for motivating female	The scale of measurement is a five-point	(Waly, 2013)

	workers to comply with innovation instructions.	Likert scale between strongly agree and strongly disagree	
52.Punishment	In some cases, the management of the clothing industry used punishments tool to comply with innovation instructions.		
53.Available resources	Available resources are sufficient to motivate creativity in the clothing industry.	The scale of measurement is a four-point Likert scale	(Lin and Liu, 2012)
54.Responsibility resources	Management of clothing industry should provide training for female workers on modern devices.		
55.Absent resources	My idea needs specific resources which are absent in my place of work at the clothing factory.		
56.Periodic training	Periodic training is one reason female workers comply with the instruction of innovation management in the clothing industry.	The scale of measurement is a five-point Likert scale between strongly agree and strongly disagree	(Waly, 2013)
57.Lack of training	Periodic training in the clothing industry can cope with various difficulties that are facing female workers.		
58.Management responsibility	Management of clothing industry factories is responsible for providing suitable training to female workers.		

#### 4.4.5. Variables

In terms of exploring variables in this thesis, it has tested the relationship between dependent variables (DVs) and IVs (Hair et al., 1998). One DV is compliance with innovation management instructions. This variable was therefore created because it is an effect variable; in particular, the researcher can predict an assessment of DVs as a result of a change of IVs. In contrast, IVs were created because they are causal variables. In other words there are variables

by which we can predict and which will be the reasons for change to DVs (Dancey and Reidy, 2011). The DV in the current research is related to Crossler et al.'s (2014) study, which called for the model to fit with actual compliance behaviour instead of intentions to comply.

The set of IVs includes the TRA variables, researcher contribution and organisational variables as follows: “women’s behaviour”, “women’s intentions”, “women’s attitudes” and “women’s beliefs”, “awareness and knowledge”, “understanding organisational culture”, “providing supervisory encouragement”, “communication”, “rewards and punishments”, “sufficient resources” and “periodic training”.

Control variables refer to the variables that should not form part of the study but do influence DVs (Cropley et al., 2013). There are six influential control variables affecting compliance with innovation management instruction: age of workers, education, nationality, marital status, working hours and experience, adopted from Bauer (2006). These variables, which help females to comply with innovation management easily and possess a background in work, makes them understand the purpose of innovation instructions.

#### **4.4.6. Reliability and validity**

Reliability and validity represent a pair of essential elements that demand careful reflection when formulating any research. Regardless of the methodology for the collection of data, it remains a core issue that such methodology is carefully evaluated in order to achieve the point at which research material becomes valid and reliably consistent. Each is necessary and insufficient alone to measure the instrument (Field, 2009).

Starting with reliability, this means a free measurement of any errors and an achievement of consistent internal results (Nunnally, 1978). This study utilised internal consistency reliability, tested using statistics of Cronbach’s alpha. The rationale of this is that it, “is the most appropriate reliability measure to use for Likert and semantic differential

scales” (Eagly and Chaiken, 1993, p.67). Cronbach’s alpha means all possible linkage between the items synthesising a scale and the linkage between scales themselves and every item, with domains between zero and one (Cronbach, 1951). In order to obtain reliable consistency from the participants’ responses, alpha should be higher than 0.60 to be considered acceptable (Bryman, 2012). In the background of reliable methods, there are a number of methods used in different studies. The researcher decided not to adopt any of them for reasons relating to research: the test–retest method was used to examine the same respondents twice (Field, 2009). We could not apply this method because we could barely obtain answers from workers. Another reliable method is parallel forms, which relies on creating two different forms of questions, split randomly and distributed to the same people. Reliability lies in the correlation between the forms (Crano et al., 2014). However, this method cannot be used because it requires the generation of a lot of questions and the questionnaire already consists of a large number of questions. The last method that will not be used in this study is inter-rater reliability, which refers to the degree of agreement collected by different raters (Bryman, 2012). The reason for exclusion of this measurement is that it needs sets of academics to work together.

Meanwhile, validity is complementary to reliability and both work to ensure that research is undertaken properly (Amri, 2012). Validity is used to measure what the research instrument plans to measure (Field, 2009). This research applied three main types of validity as follows: measurement validity, internal validity and external validity (Bryman, 2012). The first type is measurement validity, which is sometimes referred to as construct validity and measures what is supposed to be measured for indicating the study instrument quality through statistical procedures (Kumar, 2014). Construct validity can be assessed through convergent, discriminant, face and nomological validity (Messick, 1979). Convergent validity involves testing the same items more than twice. This can be achieved by conducting principle component analysis (PCA), and requires a correlation between variables exceeding .50, tested



in the factor analysis section. Discriminant validity refers to test measurements which are not assumed to relate each other, and indeed do not have a relationship (Campbell and Fiske, 1959). Discriminant validity can be assessed by displaying a correlation matrix in the section test assumptions. Face validity is implemented when experienced academics evaluate the study construct. Finally, nomological validity ensures that the findings from the measures fit with the theory of the study (Messick, 1979). This validity is outlined in chapter five after presenting the data analysis and illustrating that the results matched the study literature and framework. These methods are used to check for construct validity but none of the tests is considered ideal (Bryman, 2012).

Furthermore, the second type which will be utilised is internal validity, based on the idea that the IV causes the DV, sometimes called causality because internal validity raises the research question invariably particularly in cross-sectional designs which means collecting data from the population at one specific point in time to draw a conclusion associated with causality (Bryman, 2012). This was applied in this research. External validity asserts the generalisation of this study finding (Lei, 2012). Lastly, ecological validity refers to whether or not the individual could generalise the observed behaviour in the private section to a normal behaviour in the fieldwork (Schmuckler, 2001). However, this research excludes ecological validity because participants' answers will be on an online questionnaire in their phones, home computers or on firm computers where they work. Bryman (2012) believes that the collection of responses will create unnatural data but Field (2009) considers it as having limited ecological validity if researcher bias is eliminated. Unnaturalness of ecological validity could therefore cause problems in findings and for that reason is avoided in this study.

#### **4.4.7. Piloting and screening**

A pilot study means helping researchers to refine data collection instruments (Dubé and Paré, 2003). The researcher designed and formulated the questionnaire in English, then it was translated into Arabic and the Arabic version was translated into English again to ensure that the two versions are comparable in order to establish its clarity for native speakers. The researcher speaks two languages, English and Arabic, and contributed to evaluating back-translation. Transposition procedures were granted attention in the design, in the form of clear, beneficial statements that are easily understood. Academic professors who have experience in questionnaire construction and in teaching in management departments in the UK and other professors who teach in clothing and textiles departments in Saudi Arabia were therefore involved and assessed the survey tool once it was completed. The feedback from the academic staff is useful in confirming the compatibility of meaning between the questionnaire terms and the terms usually employed in Saudi industries. The demonstrated influence of questionnaire phrasing on response rate and accuracy makes this process all the more important (Ruane, 2005; Bryman, 2012).

Before administering the final version of the questionnaire, a pilot test was conducted with a small sample of ten workers – five males and five females – to assess whether the questions could be clearly comprehended. This enabled checking of the required time for accomplishment of the task, how clear and detailed the questions were and the bearing the questions had on the subjects of the research topic. Pilot studies are essential, particularly where the researcher is not present to explain any misunderstandings that the respondents may have regarding the questions. As well as detection of unanswered questions, pilot tests also allow for observation of answer variation, checking for adequate questionnaire instructions and determination of participants' attention span. These are just some of the benefits of pilot studies (Sarantakos, 2005). Thus, the pilot study has been undertaken among a small group of workers

excluded from the main research sample. Moreover, the pilot study was conducted by taking into account the configuration of the main sample.

#### **4.4.8. Administration, the instruments and responses**

As indicated in the previous section, after making sure that the final questionnaire is valid, data collection can begin. There are many ways to obtain the target number of completed questionnaires. The researcher sent 1,030 messages, tweets, emails and SMS messages to 428 participants. 269 questionnaire responses were received, but only 229 were usable, with a response rate of 26.12% and clothing factories using electronic Google questionnaires (the free online survey software). The next section will describe in detail how data was collected between February and May 2016, the convince technique was employed in all methods,

Firstly, email was an important tool to communicate with participants. Electronic links to the questionnaire were sent with a short polite message requesting involvement. Most participants were owners and managers of clothing factories around Saudi Arabia and offered their details in the National Factory Directory, the SIDF and the Ministry of Commerce and Industry (MCI) database. The researcher also visited the women's section of *Batterjee factory* and both branches of the clothing firm *Nesma Embroidery and Tailoring Company* in Jeddah, phoning them first and making appointments. Before visiting days, the researcher sent online surveys by email to firms for the Arabic and English language questionnaires (see appendices A and B). During visits, the researcher described the research in brief to female workers and requested that women fill out the questionnaires online. At the end of the online surveys, it was requested that they return these. In the work field, the participatory approach formed part of the questionnaire process through exchange of numbers and social media usernames. The participatory approach is relevant to all forms of social media (WhatsApp, Twitter, Facebook and Instagram). Both Twitter and Instagram are currently fashionable tools in Saudi society for

giving opinions. The participatory approach is commonly used in innovation management both qualitatively (Brown and Frame, 2007) and quantitatively (Hasu et al., 2014). This approach was utilised to observe how quickly they evaluated the questions, thus helping to make the contributions and present the limitations set out in chapter five. Other social media forms such as YouTube and Snapchat were also used for data collection. YouTube includes advertisements for factories and clothing products in Saudi Arabia and these were used to send links to the discussion/help and request pages of relevant websites. On Snapchat, the researcher followed the famous account in Saudi Arabia called BravoShbab, that specialises in Saudi-only national ventures and Saudi businesses. This is a non-profit organisation and works for advertising designers and food projects. The researcher has made contributions to data collection in all of these ways through taking numbers and sending text messages with the questionnaire link. In addition, the study questionnaire was advertised on different Instagram accounts with thousands of followers.

The researcher also used personal contacts to find workers and recruited new people through her visits to factories to talk to new workers. However, this tool of the data collection process was exhausting and time consuming and involved working intensively. The final tool the researcher used to distribute questionnaires involved having her husband visit factories where all workers were male, including the Textiles & Readymade Garments Co. SAUDI THOBE in Makkah. In addition, another one of her family members visited the fashion show at the Jeddah Hilton, designed by Saudi women, as it is for specific people who carry invitation cards. The researcher then reached out to designers via their business cards. The researcher sent email reminders to encourage the completion of the questionnaire.

#### **4.4.9. Problems encountered during the fieldwork**

As with all studies, problems were basically relevant to the data collection and distribution processes. This research encountered certain difficulties before and during the data collection phases. The first problem faced involved identifying the correct sample from the National Factory Directory and MCI website. The data obtained was fragmented: the National Factory Directory was an electronic PDF file which contains the basic data for gaining access to firms – the name of the organisation, city and phone number. A few also include the postal address and email address without mentioning the exact location in Saudi Arabia. In contrast, the MCI is a search engine including all categories of firms formally registered in Saudi Arabia. Obstacles have been exacerbated on many sides. For example, some firms provided electronic files, but these do not match the website – for example, non-profit clothing industry companies. Similarly, with telephone numbers, and checking lists of telephone calls, it was found that some firms were out of service, had provided the wrong numbers or had changed the activity of their business and were thus eliminated from the chosen sample.

The second obstacle was faced when the researcher requested an appointment to visit and distribute the online questionnaire. Very few industries own a web page that offers their products, so the researcher sent a link to the questionnaires on the discussion page. In addition, the questionnaire was sent to email addresses previously included in the database. However, because of failure of the recipients' servers or technical problems, the emails and messages bounced back. The researcher then contacted each firm again to ensure the correct email address was used, mitigating the problem of firms being unable to cooperate with researchers but made harder when some managers refused to let me meet female employees because they worked from home or did not have women's sections.

After contacting and confirming with the three factories, the researcher and her relatives (the team) visited to distribute the questionnaires electronically. Issues raised included the

following: the firm locations were far apart. To minimise time, effort and travel distance, the team determined to visit each factory on one day. The cities of Makkah and Jeddah, in particular, are congested all year. Hours were therefore spent looking for factory locations and one of these factories was located outside of these cities.

One difficulty occurred in the distribution of electronic questionnaires when the participatory approach was used with workers. The researcher tweeted on her account the questionnaire link on Twitter, posted it on Instagram and sent a message on Facebook to the sample population for filling in the questionnaire on their iPhones or on computers in their workplaces after the importance of the survey was explained to them. A good number of participants helped the researcher by filling in the questionnaires. Other participants promised the researcher that they would do it on their computers at home but very few did this. However, some of the sample did not have accounts with the above social media networks. The researcher saved these participants' numbers to send their questionnaires on the WhatsApp application or by SMS, which definitely cost money. The researcher brought three iPads with her but there was no need to use one. The last challenge involved persuading participants when the researcher did not have any contact numbers for workers in the clothing sector to send the questionnaires to them. It was very hard to find people to trust the researcher and recruiting people to fill in the questionnaire. The last problem facing the team was that the male sample was very careless and not serious about completing the questionnaire, so their responses were eliminated. All of the problems presented above were caused by delaying the timeframe of the research. Nonetheless, 269 questionnaires were collected within four months. This period of time was sufficient to meet the needs of the study.

#### **4.5. Summary of chapter**

This chapter outlined the methodological approach and strategy for this study. It utilised a quantitative approach (questionnaire) for investigating the collected data. As such, it demonstrated the rational reasons for discussion of the study context and chosen method. The chapter also presented the type of questions used in this study, which took an explanatory approach. The structure of questionnaire administration with measurement variables was built in precisely and carefully. The research then involved a pilot study for the questionnaire to ensure that questions were valid before they were sent to the female workers. The framework for the sample came from the National Factory Directory and MCI. In addition, the study used innovative and participatory research methods to evaluate the questionnaire and identify the strengths and weaknesses from the workers' practices. Five clothing organisations were visited. They adopted all the social media applications and recruited people to increase the questionnaire response rate. However, no male responses were gathered from the usable questionnaires because they were careless in filling out their questionnaires. Ultimately, the chapter indicated the validity and reliability features, and these will be considered and applied in practice in the next chapter.

## **Chapter Five — Results and Findings**

### **5.1. Introduction**

The aim of this study is identifying the factors influencing Saudi women in complying with innovation management instruction in the clothing industry in Saudi Arabia. This study used the TRA to derive behaviour factors and utilised previous studies to determine the influencing factors. In the previous chapter, the methodology adopted for answering the research questions. This chapter of the research is dedicated to the process and analysis of the questionnaire data and allows the presentation of tables and figures that were obtained from the thesis problem. This chapter began with techniques used for gathering data and includes sections on preparing data, checking of accuracy and coding data. The next section presents an overview of the respondents and their main characteristics as well as drawing comparisons with respondents to other surveys of innovation management, and discussing women's participation in entrepreneurial behaviour and in the clothing industry in Saudi Arabia, the Gulf Cooperation Council (GCC) and other Asian countries. In addition, studies made in Europe, America and Africa are compared. It is difficult to find all these topics in Saudi studies and, accordingly, studies from other countries are used for benchmarking purposes. Comparisons with respondents to questions about human capital and workplace characteristics are then made. Following this, the study examines the process involved in producing data, but this includes complicated statistical methods. The current chapter details procedures for implementing factor analysis to reduce the variables. A correlation matrix was then used to check that the study construction is correlated. Subsequently, a regression tests were undertaken to investigate the relationships between independent and control variables with DVs, and compliance with innovation management instruction. Lastly, a summary is given, identifying factors from results in order to achieve research objectives. In the next chapter, external and internal factors



influencing female workers in relation to compliance with innovation management instruction in the clothing industry in Saudi Arabia are outlined in detail.

## **5.2. Data analysis process**

Prior to processing the data analysis, it should be mentioned that the research questionnaire has been constructed on scales and sources of previous research – as presented in chapter four. In order to develop the questionnaire and obtain information from it the data must be converted for processing, analysing and interpreting (Hashmi, 2015). Quantitative analysis involved graphically interpreting with a fitting statistical model. Furthermore, analytical data and statistics will assist in testing the research framework. The processing of quantitative data analysis passed into stages as follows: understanding the nature of the thesis problem – before collecting data, it is necessary to have a deep and clear picture of a problem to effectively interpret it in order to provide the results from data collected and based on research objectives. The second stage involves determining what the research purposes are going to measure and how to measure them. The crucial step is data collection, which used various and new methods for the lack of information and sources of this topic (see chapter four). Starting with in-depth and thoughtful analysis of a new set of data can lead to good outcomes. On the contrary, a quick analysis under pressure of time might mean the researcher focuses on just interesting features, or may lead to complicated outcomes. On this point, the researcher will therefore rerun the analysis and results for more amendments (Azzalini and Scarpa, 2012). To avoid unreliable results that can be happen, this study will consider the following important aspects: preparation of data for analysis and checking of accuracy, and understanding how to present and describe data.

### **5.2.1. Preparation of data**

When questionnaires have been distributed and administered and it is near the time of completing the data collection, the data should be prepared for analysis, but this step is made up of many parts, including logging into the main data by the researcher/user, appraising data for accuracy, converting the data into the Microsoft Excel programs or database, and downloading the statistical analysis programme Statistical Package for Social Sciences (SPSS) in order to deposit the questionnaires (Trochim and Donnelly, 2001; Bryman, 2012). Organising the data helps to save time and can also prevent any error or mistake, which is the main purpose of preparation. An environment of organisation and preparation will affect the quality of analysis and achieve the thesis objectives (Hashmi, 2015). This questionnaire is designed to be online based and most questions are in the form of multiple choice, choosing from a list and Likert scale meaning lack of any opportunity for errors.

### **5.2.2. Checking accuracy**

After the step indicated above, it is necessary to check the accuracy of the open questions on type of work if the response is not in the existing classification list, and the nationality if the respondent is not Saudi. The above two questions are considered vital to the research. It is impossible to have incomplete questionnaires because all the important questions state that they require an answer and respondents cannot move to the next page without answering, but it is possible to select a blank space if they chose “others” from the list. In this situation, to correct errors, the questionnaire is removed. The last two questions are optional for respondents, who write from their own point of view and give their opinions. The only errors corrected in this section are spelling mistakes. If it is left blank, this does not affect the questionnaire.

From the main questionnaire survey used for data collection, 269 questionnaires were returned, but, of these, 40 questionnaires were excluded; 33 of these made up the male sample unable to be used for analysis as there was such a small number in the sample, which could have a negative effect on the strength of the results. The reason for removal of the other seven questionnaires was that data was not completed, with blank spaces left for either the type of work or nationality, as indicated above. The remaining 229 questionnaires were used for analysis, representing a response rate of 26.12%. Although the response rate is important in terms of the soundness of the research along with the survey method, 90% of social science editors reported a response rate as a publication decision (Mellahi and Harris, 2016). Nonetheless, articles do not mention the total response rate (Joung and Park-Poaps, 2013; Avey et al., 2008). Cummings et al. (2001) reported that no clear rule determines what is an acceptable and unacceptable response rate. Yami (2015) examined the shortage of compliance in nursing care in Saudi Arabia. This research used the same sample size of questionnaires (229) but the response rate represented 95%. Similarly, a study of experimental evaluation of consumers after innovation failure used 229 subjects and obtained a 78.8% response rate in the first experiment (Liao and Cheng, 2014). The current study has a lower response rate than both the aforementioned studies despite being within the same sample account. Mellahi and Harris (2016) noted that the response rate in the fields of management and business research has decreased over time. In recent studies of management, the areas of women's behaviour and the clothing industry have response rates lower than 20% (e.g. Orser et al., 2012a; Orser et al., 2012b; Passakonjaras, 2012).

Checking of accuracy through avoiding bias takes place regardless of response bias or non-response bias. Response bias comes from incorrect answers rather than actual opinions held by participants in the sample, while non-response bias occurs when sample participants do not respond. All forms of bias reduce the validity of the sample. This study attempted to

suggest non-technical ways to help the survey process in avoiding bias as much as possible. The list of ways included: a well-designed survey structure, sending special invitations to respondents, sending an email link including the survey to the factories before visiting, taking part in fieldwork using participatory methods and thus developing relationships with respondents to recruit them, encouraging them to fill in the survey online because it adopted a self-administrative approach, meaning that it was easy to fill in using various methods, and informing sample participants that there is no wrong or right answer. Moreover, all the data is confidential to limit social desirability. This study used a technique proposed by Armstrong and Overton (1977) involving comparison between early and late respondents. This method was chosen because of the limited timeframe for the research. This type of method has been commonly used in innovation management studies (e.g. Forsman, 2011; Kim et al., 2012; Vaccaro et al., 2012). Respondents were classified into two groups: early respondents who completed the questionnaire within ten days and before sending the first reminders, and late respondents who sent the questionnaires after second reminders. After ten days, the first reminders were sent and then the second, with final reminders sent. If no response was received the email was removed from the list. The Mann-Whitney U test reveals no significant differences in terms of education (measured as formal education and high education), nationality (measured as Saudi and non-Saudi), marital status, experience (measured as less than five years and more than five) and type of work (measured as owner/manager and workers) and found the sample as representative, generalisable and of no risk of non-response bias.

### **5.2.3. Coding data**

For easy and correct analytical data and setting the appropriate methods for presenting the analyses, “understanding differences between types of data is extremely important when analysing data quantitatively” (Saunders et al., 2009, p.419). The other benefit of knowing the

data types is that the scale of measurements will be more precise (Dancey and Reidy, 2011; Saunders et al., 2009). This study applied a major type of quantitative data:

- Categorical data – the values in questionnaires can be organised in categories. These values point out the rank sequences or define the variables. With this knowledge, this type cannot be a quantitative statistic (Hashmi, 2015). There are other sub-divided types:
  - ❖ Descriptive or nominal means labels or categories of discrete data. For example, in this questionnaire, nationality and types of work. Dichotomous data is a type of nominal scale used with only two categories such as type of gender and whether married or not. This level of measurement does not follow a particular order (Dancey and Reidy, 2011).
  - ❖ Ranked or ordinal data means that the values are in an order range. The main part of this questionnaire will employ this scale to measure participants' responses on questions such as age, working hours, education and the Likert scale (Punch, 2013).
- Numerical or quantifiable data refers to amount and is measured statistically. This type of data is more precise than categorical data. It has two further sub-divisions:
  - ❖ Discrete or ratio data informs the specified value.
  - ❖ Continuous data refers to all the values that can be given on a number line, which is different and might include every value that has a meaning.

In the current research the data measurement scale is ordinal. However, the variables are treated as continuous. This is because, when the Likert scale is built on seven values, the variables are treated as continuous, in contrast with the Likert scale with five values,

where the variables are treated as ordinal data (Lærd, 2012). Once checked for accuracy and errors, and defined by types of data, the entire information collection can begin. Automatically, all collected data is stored in a spreadsheet in the Excel programme. Every column in the Excel matrix is a variable of each item in the questionnaire. On the opposite side, each row in the matrix represents a case or an individual unit. Entering information to the SPSS needs a data layout through the use of predefined codes by numerical values in each cell. This study utilised binary 0/1 coding to measure control variables in order to alleviate the measurement errors and problems that can result from Likert scales, as shown in table 5.1. The DV was transferred to the binary values and the IV was merged to the Harman one factor in factor analyses of both DVs and IVs, mentioned later on pages 143-144. The control variables are attributed that can influence female workers to comply with management instructions when they are making decisions to become involved in innovation practices. The control variables are measured by a set of factors, starting with age, which is equal to one when participants are aged 34 and younger, and zero in cases of older age. The education variable is equal to one when participants have more education than a Bachelor's degree and zero when lower than a Bachelor's degree. The variable nationality equals one when participants are Saudi and zero for non-Saudis, similar to the marital state variable. The working hours variable equals one if female workers are working 8 hours and higher, and zero in other cases of fewer hours. The experiences variable equals one if female workers have much experience of six years and higher and zero in other cases of less experience (Leiponen and Helfat, 2010; Martínez-Ros and Orfila-Sintes, 2012). Once the data has been dumped into SPSS, one can start getting data results (Bryman, 2012). Descriptive data refers to a comparison among variables numerically using measures of a central tendency and the mean. The other measure is a dispersion such as variance, range or SD (Saunders et al., 2009). The purpose of using the described statistical approach

is that it presents a good overall picture and includes all data in a user-friendly and orderly way (Hashmi, 2015). It can be applied with any type of data. However, median and mode cannot be used with certain types of data.

### 5.3. Descriptive statistics

This section shows descriptive statistical information about the respondents in order to ensure that data is presented in a meaningful and systematic way. This analysis examines demographic characteristics of the participants including age, gender, education, nationality, marriage, work hours, type and experience, in order to provide an overview of the data and to allow the reader to have a better understanding of how this study compares to previous research. This research has used a sample with convenience approach, including those working in the clothing industry in firms in Saudi Arabia. Five clothing organisations with access to social media and email were selected. Table 5.1 presents a brief summary of various demographic characteristics of respondents.

Table 5-1: Female participants' characteristics

<b>Demographics</b>	<b>Responses</b>	<b>Percentage</b>	<b>SPSS labelling entry</b>
Work type			
Worker	191	83.4 %	1
Manager or owner	33	14.4 %	0
Other	5	2.2 %	0
Age			
Less than 24 years	48	21 %	1
25–34 years	94	41 %	1

35–44 years	64	27.9 %	0
45–54 years	19	8.3 %	0
Over 55 years	4	1.7 %	0
Gender			
Female	229	100 %	1
Education			
Primary school	4	1.7 %	0
Secondary school	12	5.2 %	0
High school	72	31.4 %	0
Vocational training	20	8.7 %	0
Bachelor's degree	108	47.2 %	1
Higher education (e.g. Master's degree, PhD)	13	5.7 %	1
Nationality			
Saudi	198	86.5 %	1
Egyptian	17	7.4 %	0
Yemeni	6	2.6 %	0
Palestinian	1	.4 %	0
Chadian	1	.4 %	0
Bengali	1	.4 %	0
Nigerian	2	.9 %	0
Syrian	1	.4 %	0
Mauritanian	1	.4 %	0
Indian	1	.4 %	0
Marriage			
Yes	141	61.6 %	1
No	87	38 %	0
Working hours			
6 hours or fewer	49	21.4 %	0
8 hours	165	72.1 %	1
10 hours or more	15	6.6 %	1
Experience			
Less than 1 year	36	15.7 %	0
1–5 years	102	44.5 %	0
6–10 years	43	18.8 %	1



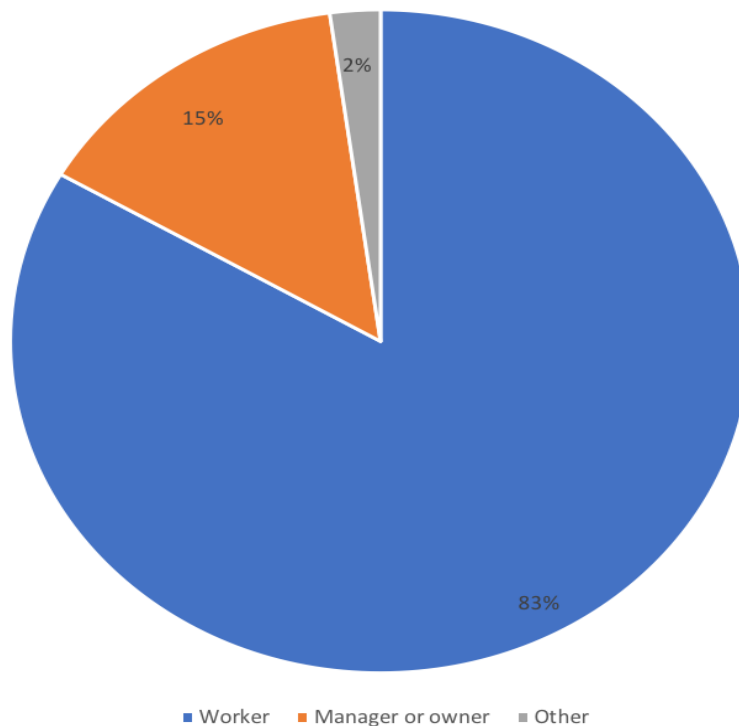
11–15 years	15	6.6 %	1
16–20 years	17	7.6 %	1

### 5.3.1. Working type

The first questions on work type distribution within the sample showed that most were workers (83%), in the form of sewing operators, designers on paper and computers or product designers, or working in auditing quality and coordinator quality, followed by managers or owners (14.4%). 2.2% of the sample were trainees. Answering this question will assist in addressing the main research objective by exploring later factors based on jobs (see figure 5-1). In comparison, the International Labour Organization (2014) reported that employment in the clothing industry was a very important source, accounting for 5% to 15% and an estimated 1.8 million workers in Europe. In Bangladesh, however, 250 to 450 workers are employed in medium-sized firms and 1500 to 6000 workers in large firms (Sen, 2013). Watchraveringkan, Karpova, Nelson, Hodges and Copeland (2010) interviewed 11 managers and two professors in a study of competitiveness in the apparel industry. In addition, they asserted that 500 workers worked in rural places in Thailand. Hines (2000) focused on the supply chain in the clothing industry in the UK, involving interviews with three managers. One was an owner and informed Hines that the factory employed 185 workers. Hsu (2013) and Wu et al. (2012) studied trainees in the clothing industry. The first study showed the percentages of Taiwanese participants in the survey employed in the clothing industry as follows: designers at 44% and marketers at 38%. In the second study, they sent a questionnaire only to managers in different positions and at different levels – approximately 279 questionnaires.

The current study obtained different percentages from the sample because of the low number of workers compared to previous studies.

Figure 5-1: Participants' work types

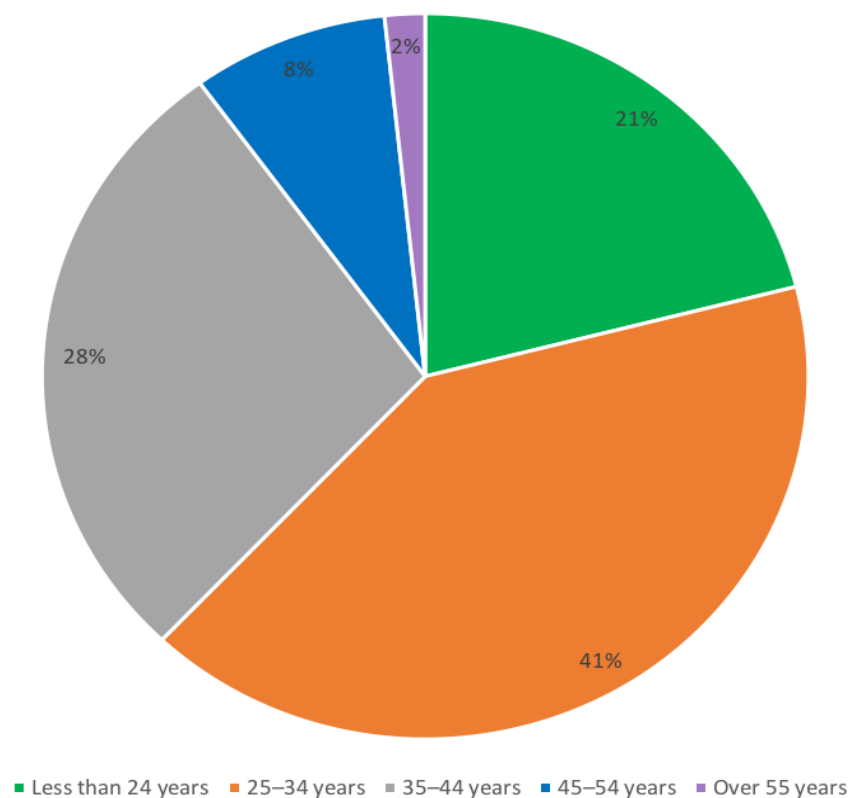


### 5.3.2. Age

The ages ranged from 24 to 55 years. One fifth of the respondents were less than 24 years old. Two fifths of the respondents were aged between 25 and 34 years old. 28% of the respondents were aged between 35 and 44 years old. A comparatively small proportion (10%) of the respondents were aged 45 years and older (see figure 5-2). Some studies have found evidence linking women's ages to the type of work undertaken. For example, Taiwanese women who started entrepreneurship were frequently aged between 35 and 45 (Sanyang and Huang, 2008), whereas, in the UK, it was found that female owners of new businesses were usually aged between 25 and 44 and that female owners of mature businesses were often aged between 35 and 54 (Roomi, 2013). A very similar study was undertaken by Neergaard et al. (2006). In addition, Sanyang and Huang (2008) stated that most Danish women started work at a younger age in traditional sectors, entering business when they became older. In the Saudi sector, on the other hand, female entrepreneurs start at an early age. For example, Ahmad (2011b) noted

that 57.9% were in their twenties and 42.1% were in their thirties. Similarly, another Saudi study by Alrubaishi, (2015) found that 45% of women in businesses were aged from 23 to 39 years old. In contrast, a Bangladeshi study by Tighe (2015) had a sample age range from 16 years to 45 years, but this is considered a minor study because the sample included those at a very young age who had started work. Furthermore, several studies linked women's ages and entrepreneurship components such as experience (Roberts, 1991), growth and development (Krasniqi et al., 2008; Madsen et al., 2003), and compliance with instructions (Bauer, 2006; Mayrhofer and Scullion, 2002). Below, figure 5-2 shows the age distribution of participants in this study:

Figure 5-2: Participants' ages



### 5.3.3. Gender

This study analysed a female-only sample, compared to other Saudi research such as the

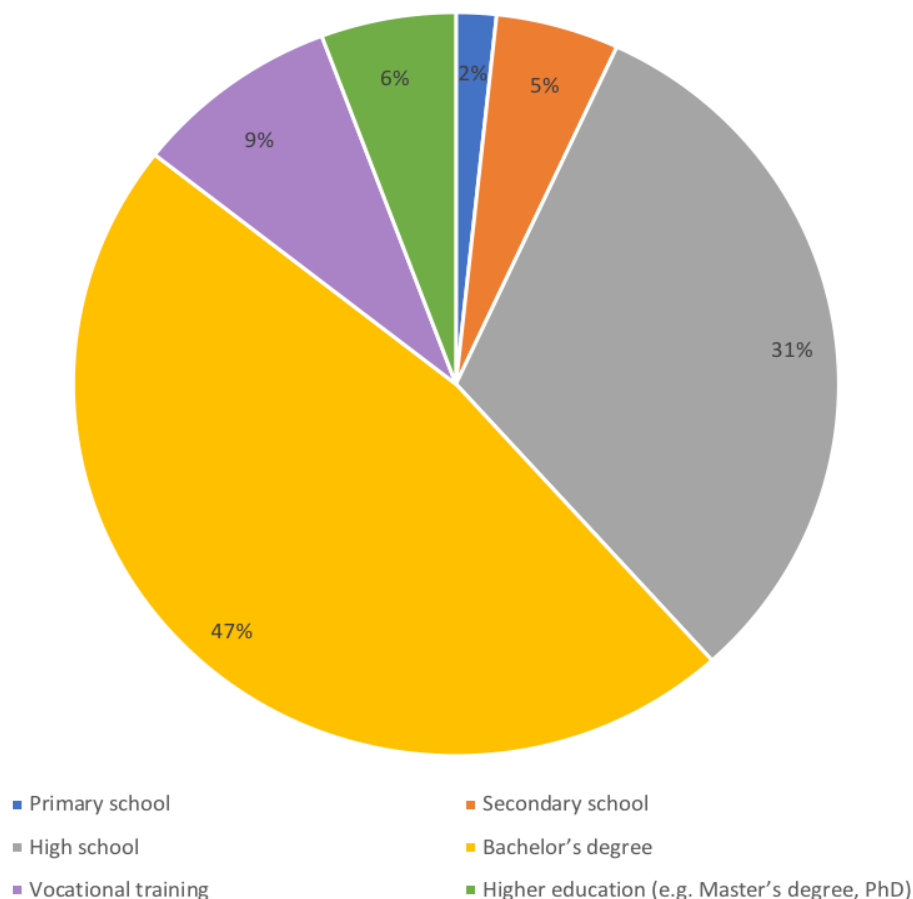
Ahmad (2011b) study of the characteristics of women entrepreneurs which was based on a 100% sample of Saudi females by interview. Similarly to in the Montreal region of Canada, Vinet et al. (1989) focused only on the female population to measure between medicines, drugs and working conditions in the clothing industry. However, other studies collected both genders in their samples and provided the ratio of them in clothing factories. Such studies included that of Rhee (1990), who reported that 90% of workers were female in Bangladeshi garments factories. Similarly, in Indian garments factories, 85% of workers were female (Sen, 2013), and 75% in the UK clothing industry (Taplin et al., 2003). Hsu (2013) collected eligible data relating to factors affecting employee creativity in the clothing industry in Taiwan from 77 females and 9 males. These studies demonstrated the low number of male workers in the clothing industry sector, which is exactly what happened in the Saudi Arabian sample – a lower number of males compared to females in the clothing industry, despite the fact that participants in the sample included managers, owners and workers. Female owners accounted for 56.6% in Canada (Orser and Leck, 2010), 17% in the UK (Eikhof et al., 2013), and only 8% in Japan (Schein, 2001), while, of Chinese managers, women made up 8.9% (Hildebrandt and Liu, 1988) and 12% in Saudi Arabia (AlMunajjed, 2010).

#### **5.3.4. Education**

Responses to the fourth question revealed that slightly less than half of the respondents had a Bachelor's degree (47.2%) and slightly more than one third of the respondents (31.4%) had a high school education. 8.7% had levels of educational achievement beyond high school of vocational training/education and 7% of the respondents had education below high school level. Higher education at Master's or PhD level accounted for 5.7% of the respondents (see figure 5-3). In comparison, a clothing industry study by Karpova et al. (2013) found that 20 of the 28 workers interviewed had graduated from apparel programmes. Similarly, in the clothing

industry in Taiwan, all the participants were educated beyond the level of high school (Hsu, 2013). However, Amebode (2009), in a study of Nigeria's clothing industry, found that 19.3% of workers had no formal education and 20.3% had not finished secondary school. Alessa (2013) used a sample of female and male entrepreneurs in Saudi Arabia and found that 51% of the females had graduated with Bachelor's degrees compared to 39.5% of the males. This good educational status influences the growth of innovation and shows that the Saudi community is an educated society.

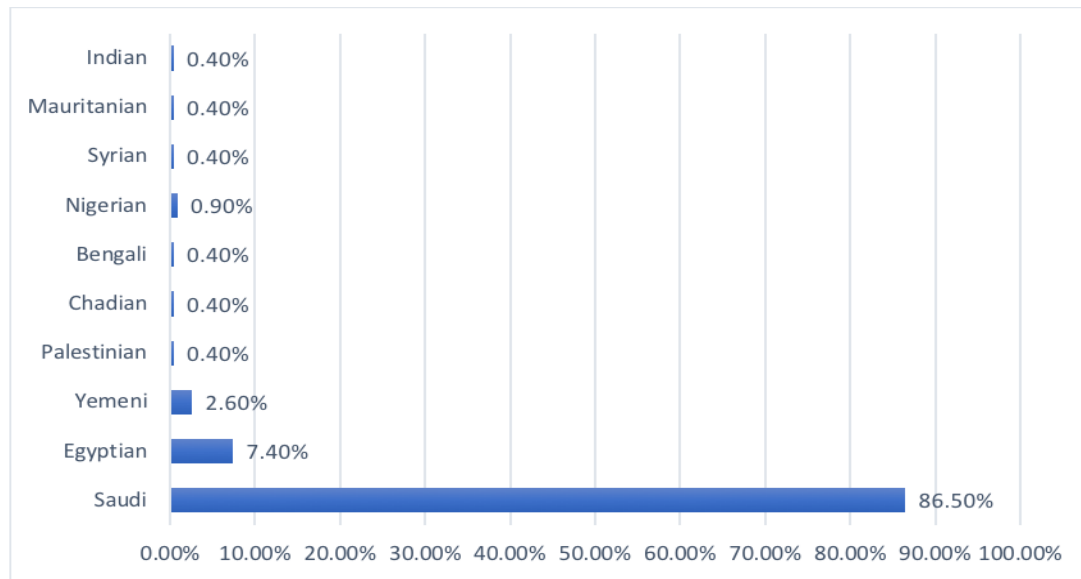
Figure 5-3: Participants' education levels



### 5.3.5. Nationality

The fifth question requested the participants to state their nationalities in order to assess how many Saudi and non-Saudi participants were included. 13.3% of the respondents were non-Saudi nationals and in rank order the following nationalities were reported: Egyptian (17), Yemeni (6), Palestinian (1), Chadian (1), Bengali (1), Nigerian (2), Syrian (1), Mauritian (1) and Indian (1), where the figure in parentheses is the number of respondents reporting that nationality. The aforementioned information is presented in the bar chart in figure 5-4, and it shows the respondents are overwhelmingly Saudi Women. Often, countries where labour was available in abundance did not mention the nationalities of workers because they were probably from the same country (Amebode, 2009; Hsu, 2013; Jana, 2010; Zaman, 2001). An old study by Light et al. (1999) discussed immigrant entrepreneurship in garment factories in Los Angeles. They listed owner and worker percentages according to nationality. For Asia the figures stood at 40.1% for owners and 13.2% for workers, and for North America this was 35.3% owners and 59.7% workers, while for the USA it was 28.5% owners and 6% workers. Under 20% of workers in Los Angeles garment factories were from other nationalities. This compared to the findings of Morris and Sedowski (2006), who identified workers in clothing firms based on their nationalities. They reported 25% for Asia, EU, Malagasy and Mauritian nearly 14%, America 3% and other regions about 20%. Although the study seeks Saudi opinion, the multiplicity of nationalities in Saudi Arabia is not surprising. According to Showail et al. (2013), 60% of workers are non-Saudi.

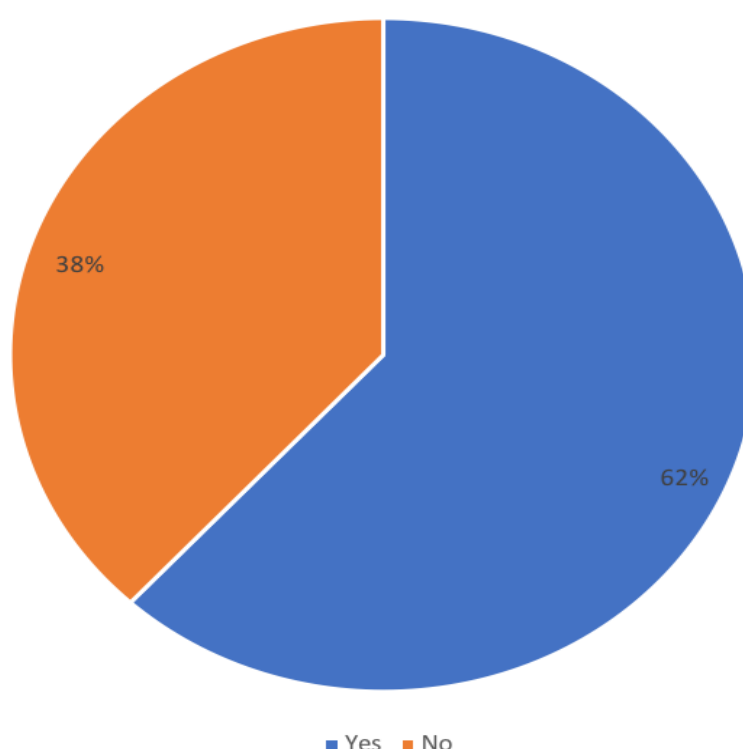
Figure 5-4: Participants' nationality



### 5.3.6. Marital status

The sixth question related to marital status. Almost two thirds of the participants were married (61.6%) and the remainder were unmarried (38%), either single, widowed or divorced (see figure 5-5). This question asked participants to explore whether marriage was a factor supporting or hindering compliance with innovation management instruction. Most participants in the sample were married. In comparison, Khare et al. (2012) showed in their study into fashion clothing involvement in India that married women represented 31.2% and single women 68.8%. However, Brown et al. (2013) reported, in their study of Cambodian workers, that 52.5% were currently married and 1.5% were separated, widowed or divorced. Alessa (2013) estimated of their sample that 58.5% were married females and 32.7% single females among Saudi entrepreneurs. However, married males represented 65.4% and unmarried males 33.2%. However, studies did not tell about the existence of a direct effect of marital status on the compliance with innovation management instruction.

Figure 5-5: Participants' marital status



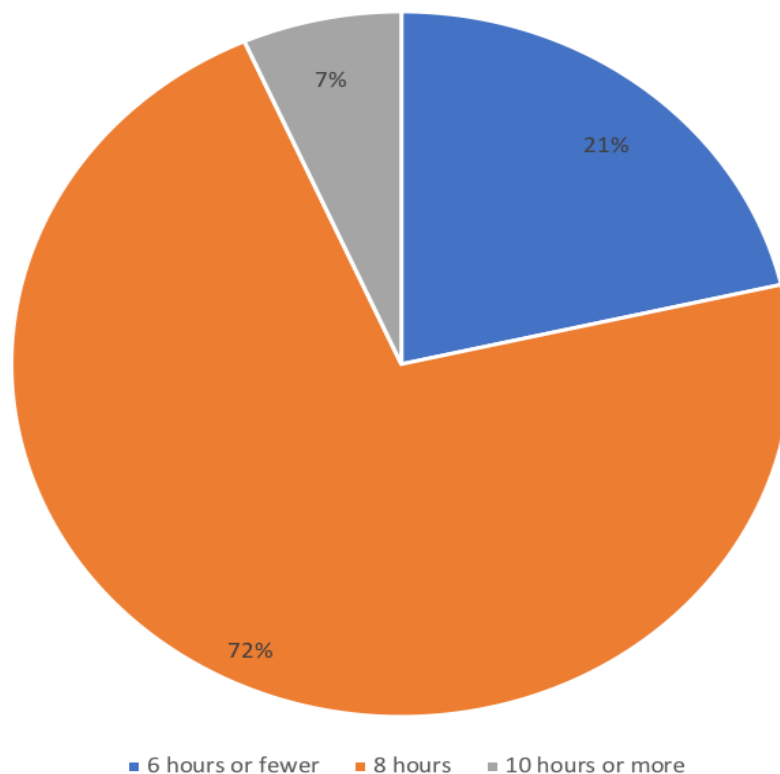
### 5.3.7. Work hours

Nearly one quarter of participants worked for six hours or less (21.4%) per day and two thirds worked eight hours. The remainder (6.6%) worked 10 hours or more every day (see figure 5-6). This question asked participants whether long or short hours were a significant factor, to assess the impact of this on workers' personal lives and thus factory competitiveness. Most studies of the clothing industry debating working hours showed complaints of long working hours (for example, Gupta and Hodges, 2012; Ichimura, 2011; Kozar and Connell, 2013; Luz, 2007). However, the International Labour Organization (2014) reported the establishment in 1919 of a maximum 40-hour working week, or eight-hour working day. However, Bangladeshi clothing factory workers usually worked at least nine to 12 hours a day, sometimes reaching 16 hours if there was work available (Sen, 2013). Indian clothing factory workers worked between eight and 10 hours depending on their jobs (Jana, 2010). In Nigeria, workers worked



long hours because of lack of employment opportunities (Amebode, 2009). Collins (2009) reported that some clothing factories had tried to cut down on working from 12 hours every day to eight hours. Long working hours in the clothing industry impacted negatively on creativity and compliance with innovation management instruction.

Figure 5-6: Participants' working hours

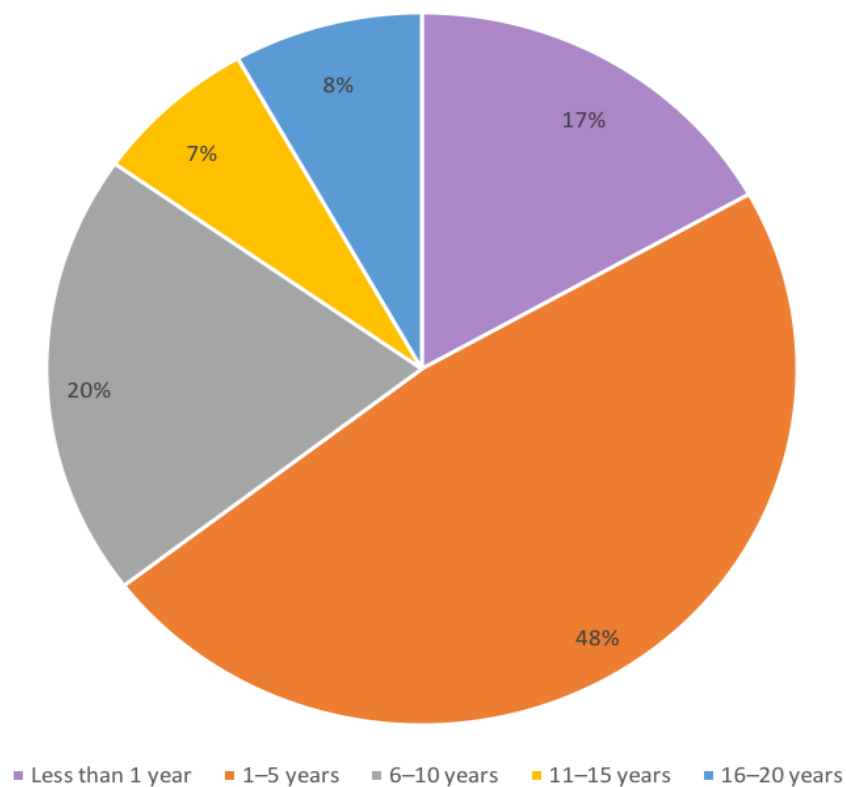


### 5.3.8. Experiences

The final question in the demographic data section showed that years of work experience ranged from less than one year to more than 21 years. Almost half of the respondents (48.1%) had work experience of one to five years. 18.8% had six to 10 years of work experience and 14.2% of the respondents had more than 10 years of work experience (see figure 5-7). An advantage in this question was that, despite the diversity of topics, there was no significant difference between options in the experience question. For example, Alessa (2013) looked at

the proportions of male and female entrepreneurs in Saudi Arabia who gave the Yes, No and Don't know options to identify their experience when starting a new business. In comparison, looking at Saudi market orientation, Hashmi (2015) found that 35% of participants had six to 10 years of experience in their firms, while 26% had fewer than five years. 27% of participants had between 10 and 20 years of experience, while only 11% had over 20 years of experience in their firms. Another important study for understanding textiles and clothing jobs from employers' perspectives was that of Muhammad and Ha-Brookshire (2011), who stated that workers' experience started at one year but management began at 10 years. This reflected the important place occupied by experience in the clothing industry.

Figure 5-7: Participants' experience in years



## 5.4. Innovation management

The second section analysed the survey responses in relation to innovation management. This part aims to determine whether the participants were qualified enough or had any experience in innovation management. Table 5-2 illustrates the descriptive statistical analysis of innovation management results, indicating that three questions have been applied to measure this item. The participants were requested to choose Yes or No answers for the first three questions. In the other three questions, they were asked to select one answer from three categories (Yes, No, I do not know), which had been written below each question.

Table 5-2: Descriptive analysis for innovation management

N	Q	Yes		No		I do not know		Mean	SD
		n	%	n	%	n	%		
Q9	Does innovation management in the clothing factory apply modern technology? (in your work or if ever heard)	96	41.9	10	4.4	123	53.7	2.70	1.46
Q10	Does innovation management in the clothing factory recognise new methods of marketing? (in your work or if ever heard)	104	45.4	19	8.3	106	46.3	2.55	1.45
Q11	Does innovation management in the clothing factory provide subjective assessment measures? (in your work or if ever heard)	140	61.1	9	3.9	80	34.9	2.13	1.43
Overall measure scale								7.38	3.50

SPSS coding 0= No and Don't know, 1= Yes

Three questions represent a scale of innovation management, assisting top management with understanding employee behaviour in relation to innovation. First, it is necessary to know

if firms have modern technology through this question, “does innovation management in clothing factories apply modern technology? (in your work or if ever heard)”. 42% of participants agreed that firms should have this. However, those participants stating that they did not know if their firms applied innovation management technology stood at 53.5%, which was of concern. This result matched with Hunt et al. (2013), who pointed out that successful innovation and the use of new technology were strongly correlated. Q10 was also used to measure innovation management: “does innovation management in clothing factories recognise new methods of marketing? (did you ever hear of this in your work?)”. As is evident in the table above, 45.4% of respondents confirmed the use of exciting innovation management marketing in their work. In contrast, nearly 20% claimed that they did not use innovation management marketing. However, nearly half of the participants (46.3%) did not know if there were new marketing methods. It is not unusual for workers to have little information about new ways of marketing. This opinion was asserted by Leiponen and Helfat (2010), who stated that 92% of firms successfully innovate products, and 65% of these firms had innovative processing, whether of products and marketing, but did not show this in their sales. Then employees have no ideas of new marketing. The last item used to measure innovation management was subjective assessment: “does innovation management in clothing factories provide subjective assessment measures? (in your work or if ever heard)”. Two thirds of the respondents (61.1%) agreed that they did have subjective assessment and other groups (34.9%) were not sure if it was available. The mean of innovation management is 7.38 and SD is 3.50. The mean and SD results for innovation management measurement is consistent with certain pertinent research (West, 1987).

### 5.5. Compliance of women workers

The second section of the questionnaire focused on women's compliance regarding innovation management instructions. Even closer societies than Saudi Arabia look for compliance factors – for example, Al-awadi (2009) revealed that organisations in Oman had no systems to check their workers' compliance with the policy. In this section, participants were asked two questions and responded by choosing their levels of agreement (strongly disagree to strongly agree). Below, table 5-3 illustrates a descriptive analysis of the compliance of women workers. This was used to measure the mean and SD of all answers and indicated that the mean responses of two items ranged from 2.32 to 5.97 and standard deviations marked a range from 1.63 to 2.27.

Table 5-3: Descriptive analysis for compliance of women workers

N	Q	Mean	SD
Q12	Saudi women workers are reluctant to comply when management requires innovative ideas	3.36	0.97
Q13	The reluctance of Saudi workers to comply with innovation instructions from management has caused serious loss of business	3.50	1.08
	Overall measurement scale	3.98	1.88

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.6. Women workers' behaviour

In order to measure human behaviour, four variables (behaviour, intention, attitude and belief) were used in this study based on theoretical background and the literature review to identify the compliance factors affecting innovation management instruction. Every section used seven Likert scale options with different categories of semantic words.

#### 5.6.1. First factor: Behaviour (habit)

As can be seen from the data in table 5-4, the scale of behavioural variables was measured using five questions. Every item in this scale ranged from 1 = Never to 7 = Always. It shows

the mean and SD of response results. The table indicates that there is slightly different variance between responses from participants. The mean ranges between 2.0 and 4.9 and the overall scale is 3.7. The second item of the habit variables reports the highest mean as 4.9 and displays modifying existing behaviour to comply with innovation management instruction. Based on the lowest mean of the behavioural variable, the fourth item has a value score of 2.0. In comparison, Hoch (2013) focused on shared leadership and innovation and found that the mean for innovative behaviour was 4.10 and the SD was 0.27, much higher than in the overall scale in the current study, although he used nine items in his scale. Another study in the UK by Fuchs and Edwards (2012) found pro-change behaviour of employees with a mean of 3.26 and SD of .75, which is slightly lower than the figure for the current study.

Table 5-4: Descriptive analysis for habit variable

N	Q	Mean	SD
Q14	Do you adopt new practices in the clothing industry?	4.8	1.0
Q15	Do you modify your existing behaviour to comply with instructions from innovation management?	4.9	0.8
Q16	Do you refuse to comply with management instructions because of workplace rules?	2.6	0.9
Q17	Do you refuse innovation instructions because of certain behaviour?	2.0	0.5
Q18	Is there a relationship between your everyday habits and your compliance with management instructions?	4.1	1.1
	Overall measurement scale	3.7	0.4

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.6.2. Second factor: Intention

The second variable examined in this research into women's intentions included five questions. This type of scale includes seven differential semantic Likert scale options from 1 = Definitely do not intend to 7 = Definitely do intend to (see table 5-5). From the table below, it is apparent that the intention factors of compliance with innovation management instruction are considered

important factors in the questionnaire. This section mean ranged from 2.24 to 6.16 and the SD ranged from 1.61 to 1.99.

Table 5-5: Descriptive analysis for intention variable

N	Q	Mean	SD
Q19	I strongly intend to be innovative	6.2	1.4
Q20	I intend to adopt new practices in the clothing industry	6.1	1.5
Q21	I intend to modify existing behaviour to comply with instructions from innovation management	5.9	1.5
Q22	I intend to refuse to comply with innovation instructions due to workplace rules	2.8	1.9
Q23	I do not intend to comply with innovation management instruction because I perceive innovations as a threat	2.2	1.7
	Overall measure scale	4.6	3.7

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.6.3. Third factor: Attitude

As can be seen in table 5-6, the influence of attitude factors relating to innovation management instruction were measured by asking 12 questions of participants divided into two groups. Each part had six questions investigating the influence of the main research question. This type of scale includes seven semantic differential Likert scale levels from 1 = Extremely uncertain to 7 = Extremely certain. In comparison with other studies, Monge et al. (1992) studied motivational predictors of organisational innovation by obtaining data from five organisations in the USA. Over 60% of employees never provided any suggestions over a period of one year.

Table 5-6: Descriptive analysis for attitude variable

N	Q	Mean	SD
	<i>I believe that being innovative will:</i>		
Q24	Negatively affect my family relationships	2.3	1.9

Q25	Increase the risk of losing my job	2.2	1.8
Q26	Fight laziness	5.7	1.9
Q27	Adversely affect my health	2.5	1.9
Q28	Cost a lot of money	4.3	2.0
Q29	Change the habits and norms which I have lived by	4.5	2.1
	Overall measurement scale	3.6	2.0

	<i>I believe that compliance with innovation management instruction in the clothing industry is influenced by:</i>		
Q30	Other people who work as models for employees	4.5	1.7
Q31	Management eliminating negative perceptions about innovations	4.9	1.7
Q32	Education	4.7	2.0
Q33	Aspirations to be entrepreneurial	5.5	1.7
Q34	Management motivating employees	6.1	1.4
Q35	Clear understanding of the concept of innovation from the firm's point of view where I work	6.0	1.5
	Overall measurement scale	5.2	.38

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

#### 5.6.4. Fourth factor: belief

The last human behaviour variable is female belief. This variable will be measured using five questions, each of them tested using seven Likert scale options ranging from 1 = I strongly do not believe at all to 7 = I strongly believe. The mean of scale for female belief is 5.2 and SD is 5.3, and table 5-7 shows the results of the belief variables of mean and SD. Joung and Park-Poaps (2013), who conducted their study in the USA, reported that, for family beliefs, the mean was 3.99 and the SD was 0.84. However, friend beliefs stood at an average of 3.67 and an SD of 0.82.



Table 5-7: Descriptive analysis for the belief variable

N	Q	Mean	SD
Q36	I believe that I have the personal skills to be able to effectively innovate	5.9	1.4
Q37	I believe that Saudi culture hinders female workers from being more open to changing their behaviour	4.1	2.0
Q38	I believe that Saudi culture helps female workers to achieve their goals in clothing industry firms	5.5	1.7
Q39	In the clothing factory, I believe that culture affects female workers when following innovation instructions	5.1	1.8
Q40	I believe that the factory's management can change employees' attitudes toward innovation	5.4	1.7
	Overall measurement scale	5.2	3.3

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

## 5.7. Organisational factors

The fifth section of the questionnaire looked at organisational factors and measured the agreement of each factor presented in the current literature review to identify whether these factors affected female workers in complying with innovation management instructions. All questions in this section ranged from 1 = Strongly disagree to 7 = Strongly agree.

### 5.7.1. First factor: Awareness and knowledge

Three questions were used to measure the awareness and knowledge factor. The higher mean is 6.13 and the lower is 5.23 but the higher SD is 1.94 and the lower is 1.39. The total mean scale is 5.84 and the SD 2.23 (see table 5-8). Egbetokun et al. (2008) studied factors that support capability to innovate in Nigerian firms where knowledge comes from the firm provided to the workforce. This has a mean of 12.21 and an SD of 6.21. In-depth knowledge of innovation activity has a mean of 7.70 and the SD is 6.83.

Table 5-8: Descriptive analysis for awareness and knowledge variables

N	Q	Mean	SD
Q41	Knowledge of the objectives of the clothing manufacturing industry can help employees to be more willing to follow innovation management instructions	6.13	1.39
Q42	Lack of knowledge about innovations among women employees can lead to the breakdown of the industry in future	5.23	1.94
Q43	Management of the clothing industry factory is responsible for providing awareness training sessions and for imparting knowledge to employees	5.93	1.68
	Overall measurement scale	5.84	2.23

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.7.2. Second factor: Organisational culture

The second factor is organisational culture. This variable was measured through asking participants to respond to two items. The mean is 5.77 and the SD is 2.62 (see table 5-9). In comparison to other studies, Karpova et al. (2013) examined creativity climate and perceived innovation in Taiwan and found that the mean was 2.50 and SD 0.58.

Table 5-9: Descriptive analysis for organisational culture

N	Q	Mean	SD
Q44	If management of clothing industry factories understands the cultural background of female employees, that will encourage employees to comply with innovation management instructions	5.97	1.49
Q45	Management of clothing industry factories is responsible for understanding the culture of female employees because of its effect on innovation	5.57	1.48
	Overall measurement scale	5.77	2.62

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.7.3. Third factor: Supervisory encouragement

The third factor affecting workers in complying with innovation management instruction is supervisory encouragement. This item was measured by asking participants to respond to three statements (see table 5-10). The mean range is between 5.30 and 6.03 but the scale of this variable is 5.66. SD ranges between 1.45 and 1.89, and the total SD of this scale is 2.80. In comparison, a Taiwanese study of creativity climate and innovation outcomes in organisations looked at supervisory encouragement and showed a mean of 2.49 and an SD of 0.51 (Lin and Liu, 2012).

Table 5-10: Descriptive analysis for supervisory encouragement

N	Q	Mean	SD
Q46	Supervisory encouragement influenced me to comply with management innovation instructions	5.61	1.64
Q47	One reason for the reluctance of female workers to comply with innovation instructions is the failure of supervisors to encourage them	5.30	1.89
Q48	Management in the clothing industry is responsible for ensuring that there is supervisory encouragement that supports innovation	6.03	1.45
	Overall measurement scale	5.65	2.80

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

### 5.7.4. Fourth factor: Communication

Communication is the fourth factor affecting innovation management instruction. This variable was measured using responses to two statements. Table 5-11 shows that the mean of the total scale is 6.06 and the SD is 2.48.

Table 5-11: Descriptive analysis for communication

Q	Mean	SD
Communications between employees and supervisor helps female worker compliance with innovation management instructions	6.25	1.33

Management of the clothing industry factory is responsible for maintaining communications between individuals in the firms	5.89	1.44
Overall measurement scale	6.06	2.48

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

#### 5.7.5. Fifth factor: Rewards and punishments

The fifth factor that influences female workers to comply with innovation management instructions is the rewards and punishments factor. It has a measurement scale showing a total mean of 5.07 and SD of 1.72 identified from two items (see table 5-12). This compares to McMurray et al. (2013), who tested contingent rewards and punishments in workplace innovation in Australian non-profit organisations, finding that the mean of rewards is 5.17, with an SD of 1.66, but that punishment has a 5.56 mean and 1.44 SD.

Table 5-12: Descriptive analysis for rewards and punishments

N	Q	Mean	SD
Q51	Management of the clothing industry used rewards as tools to motivate female workers to comply with innovation instructions	5.81	0.64
Q52	In some cases, the management of the clothing industry used punishment tools to comply with innovation instructions	4.33	0.87
	Overall measurement scale	5.07	1.72

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

#### 5.7.6. Sixth factor: Sufficient resources

The sixth factor was sufficient resources and this was measured through three items. The total measurement scale for the mean is 5.64, while this is 0.64 for the SD (see table 5-13). The Western study by Lin and Liu (2012), in comparison, found sufficient resources to be a dimension affecting a creativity climate in Taiwanese industries, with a mean of 0.92 and SD of 0.33. Another study by Sok and O'Cass (2015) found that lack of resources was variable in

relation to innovation exploration and exploitation, with a mean of 5.44 and SD of 0.67. This reveals the importance of available resources for creating innovation.

Table 5-13: Descriptive analysis for sufficient resources

N	Q	Mean	SD
Q53	Available resources are sufficient to motivate creativity in the clothing industry	5.87	0.60
Q54	Management of the clothing industry should provide training for female workers on modern devices	6.36	0.37
Q55	My idea needs specific resources which are absent in my place of work at the clothing factory	4.80	0.67
	Overall measurement scale	5.64	0.64

SPSS coding 0 = 1, 2, 3, 4. 1 = 5, 6, 7.

#### 5.7.7. Seventh factor: Periodic training

The last variable measured in the questionnaire was periodic training, using three items set out in table 5-14. The mean scale is 5.84 and the SD is 1.83. Studying this factor is necessary in that Ahmad (2011b) found that only 5% of the problems reported by Saudi women in maintaining business related to lack of continuous training. Li et al. (2012) study the impact of employee training on environmental attitude and hence sustainable development using a seven-point Likert scale. Their study found that the employee training mean was 5.92, which is a closer mean to the current study. Egbetokun et al.'s (2008) study revealed that the reasons for innovating products and processes in the Nigerian manufacturing sector involve training of CED and staff, with CED having a mean of 3.00 and SD a mean of 1.78, and training staff having a mean of 0.73 and SD of 0.45.

Table 5-14: Descriptive analysis for periodic training

N	Q	Mean	SD
Q56	Periodic training is one reason female workers comply with instructions relating to innovation management in the clothing industry	5.53	0.61
Q57	Periodic training in the clothing industry can cope with various difficulties facing female workers	5.89	0.58
Q58	Management of clothing industry factories is responsible for providing suitable training to female workers	6.09	0.38
	Overall measurement scale	5.84	1.83

SPSS coding 0= 1, 2, 3, 4. 1 = 5, 6, 7.

## 5.8. Factor analysis

Factor analysis is a statistical technique involving a set of variables when the study goal is to discover which variables correlate to others or are relatively independent of other variables. Most of the questionnaire studies have been analysed using factor analysis (Field, 2009). In addition, it is a tool for assessment of scale reliability and validity (Tabachnick and Fidell, 2007). Exploratory factor analysis (EFA) was used in this research to eliminate items able to negatively affect measurement validity and for ensuring credible results (Cheng et al., 2006). The present study applies scales to prove the study literature. These scales are developed from different contexts in different countries; it is therefore necessary to refine the scales using EFA. Field (2009) notes that inter-correlation between variables is the first factor to look at when conducting factor analysis. This means that variables have to correlate with each other perfectly – not very high “multicollinearity”. Principal Components Analysis (PCA) and orthogonal (varimax) rotation were then conducted to extract factors from the data set. According to Tabachnick and Fidell (2007), orthogonal (varimax) rotation is usually chosen in social research as it is considered easier to interpret and report than using oblique rotation in relation to tables of the structure matrix and factor pattern matrix. There should be between two and

five questions for each factor for greater accuracy (Löfsten, 2016). However, some sections have many questions –the attitude factor has six questions in each part.

On the other hand, there are assumptions to consider in order to support factorability. Hair et al. (2010) proposed providing an adequate level of EFA data. The correlation matrix has to be less than 0.9. The Kaiser–Mayer–Olkin (KMO) measure of sampling adequacy, that is applied to data to establish if there is a linear relationship between the study variables and if it is considered adequate to continue with the PCA, and indicate a number above .6 (Kaiser, 1974). Bartlett’s Test of Sphericity is highly important to verify that data has the same variance and the usefulness of this test has to be less than 0.05 (Bartlett, 1954).

The IVs in this study are therefore behaviour factors and organisational factors were the first to be measured in 27 questions. The areas examined were: (1) behaviour (habit), (2) intention, (3) attitude to being innovative and to compliance and (5) belief. The second dimension incorporated 18 questions covering (1) awareness and knowledge and (2) organisational culture (3) supervisory encouragement, (4) communication, (5) rewards and punishments, (6) sufficient resources and (7) periodic training. It is apparent from the table below (5-15) that all the assumptions of factor analysis are identical. The correlation matrix has a value of less than 0.9 and KMO has an accepted values range between 0.812 and 0.939. Lastly, Bartlett’s test was statistically significant at  $p=.000$ . Factor analysis is therefore valid for use in the current study, and the next section will apply factor analysis to women workers and the organisational factors in more detail.

Table 5-15: Main assumptions of factor analysis

	<b>Women workers factors</b>	<b>Organisational factors</b>
<b>Correlation matrix</b>	Less than 0.9	Less than 0.9
<b>KMO</b>	.812	.939
<b>Bartlett's test</b>	.000	.000

Through undertaking PCA to eliminate duplicated or redundant items in the fourth part and then the fifth part of questionnaire, the study considers the variables that affected females in relation to compliance with innovation management instruction. In this respect, the study started out with questionnaire items group by group in each section, four and five, estimating those with potential to be useful by performing EFA. The first result of applying factor analysis was the deletion of questions below 0.5. This practice continued several times until the representative factors able to be measured were identified. Field (2009) noted that the technique of factor analysis assists with inter-relationships between large numbers of variables and assists when illustrating these variables through underlying dimensions, as such establishing the validity of tested factors where predictions are made when it is known whether factor scores are high or low. After following these steps, q14 and q15 on behaviour, q22 and q23 on intention, q26 and q28 on attitude and q37 on belief were extracted from the construction of the questionnaire for loading into low components below 0.5 to give the constructs stability. As such, the organisational factors had coefficients greater than 0.5.

The final results of the PCA are explained in tables 5-16 and 5-17, revealing 11 components used for a Harman one factor test, as recommended by Podsakoff and Organ's (1986) guidelines. The eigenvalues explain 43.4% of behaviour, 42.7% of intention, 31.5% of attitude to both beginning innovation and compliance, and, finally, 42.6% for belief – total variance. However, table 5-17 lays out the factor analysis results, illustrating seven components, which are awareness and knowledge, explaining 52.64%, organisational culture, explaining 56.53%, supervisory encouragement, explaining 50.2%, communication, explaining 63.34%, rewards and punishment, explaining 41.6%, and sufficient resources and periodic training, explaining 46.5% and 52.5% of the total variance respectively.



*Compliance of female workers with innovation management instructions*

The DV constructs were designed in two sections – innovation management and compliance of female workers. Binary variables were recorded for DVs as follows: innovation management 1 = (yes), 0 = (no/don't know). For the compliance section questions, measurements were 1 = (5 to 7) and 0 = (1 to 4).

Table 5-16: Factor analysis of women workers (the internal factors)

<b>Statements</b>	<b>Behaviour</b>	<b>Intention</b>	<b>Attitude</b>	<b>Belief</b>
Q16: Do you refuse to comply with management instructions because of workplace rules?	<b>.81</b>			
Q17: Do you refuse innovation instructions due to certain behaviours?	<b>.81</b>			
Q18: Is there a relationship between your everyday habits and your compliance with management instructions?	<b>.61</b>			
Q20: I intend to adopt new practices in the clothing industry.		<b>.94</b>		
Q19: I strongly intend to be innovative.		<b>.94</b>		
Q21: I intend to modify existing behaviour to comply with instructions from innovation management.		<b>.88</b>		
Q24: Negatively affect my family relationships.			<b>.71</b>	
Q25: Increase the risk of losing my job.			<b>.70</b>	
Q27: Adversely affect my health.			<b>.69</b>	
Q29: Change the habit and norms which I live by.			<b>.58</b>	
Q34: Is there a way for management to motivate employees?			<b>.78</b>	
Q33: Aspirations to be entrepreneurial.			<b>.78</b>	
Q35: Understands clearly the concept of innovation from firm's view where I work.			<b>.74</b>	

Q30: Other people who work as models for employees.			.71	
Q31: Management eliminating negative perceptions about innovations.			.68	
Q32: Education.			.66	
Q39: In the clothing factory, I believe that culture affects female workers when giving innovation instructions.				.76
Q36: I believe that I have the personal skills to be able to effectively innovate.				.74
Q38: I believe that Saudi culture helps female workers to achieve their goals in the clothing industry.				.68
Q40: I believe that the factory's management can change employees' attitudes toward innovation.				.65
<b>Cronbach alpha</b>	<b>0.63</b>	<b>0.91</b>	<b>.83</b>	<b>0.64</b>

Table 5-17: Factor analysis of clothing industry factory (external factors)

Statement	Awareness and knowledge	Culture organisation	Supervisory encouragement	Communication	Rewards and punishments	Sufficient resources	Periodic training
Q43: The management of clothing industry factories is responsible for providing awareness training sessions and for imparting knowledge to employees.	<b>.89</b>						
Q41: Knowledge of the objectives of the clothing manufacturing industry can help employees to be more willing to follow innovation management instructions.	<b>.85</b>						
Q41: Lack of knowledge about innovations among women employees could lead to the breakdown of the industry in the future.	<b>.80</b>						
Q44: If the management of clothing industry factories understands the cultural background of female employees, this will encourage employees to comply with innovation management instructions.		<b>.87</b>					
Q45: The management of clothing industry factories is responsible for understanding the culture of female employees because of its effects on innovation.		<b>.87</b>					
Q46: Supervisory encouragement influenced me to comply with management innovation instructions.			<b>.81</b>				
Q47: One reason for the reluctance of female workers to comply with innovation instructions is the failure of supervisors to encourage them.			<b>.79</b>				

Q48: Management in the clothing industry is responsible for ensuring that there is supervisory encouragement that supports innovation.			.72				
Q49: Communications between supervisors and employees helps female workers comply with innovation management instructions.				.91			
Q50: The management of the clothing industry factory is responsible for maintaining communications between individuals in the firms.				.91			
Q51: The management of the clothing industry uses rewards as tools for motivating female workers to comply with innovation instructions.					.79		
Q52: In some cases, the management of the clothing industry used punishment tool to comply with innovation instructions.					.79		
Q54: The management of the clothing industry should provide training for female workers on modern devices.						.90	
Q53: Available resources are sufficient to motivate creativity in the clothing industry.						.81	
Q55: My idea needs specific resources which are absent in my place of work at the clothing factory.						.66	
Q57: Periodic training in the clothing industry can cope with various difficulties that are facing female workers.							.87
Q56: Periodic training is one reason female workers comply with instructions in innovation management in the clothing industry.							.85
Q58: The management of the clothing industry factory is responsible for providing suitable training to female workers.							.82
<b>Cronbach alpha</b>	<b>0.80</b>	<b>0.69</b>	<b>0.65</b>	<b>0.79</b>	<b>0.50</b>	<b>0.73</b>	<b>0.81</b>

### **5.9. Relationship between compliance with innovation management instruction and different factors relating to humans and organisational**

The current study intends to investigate the relationship between compliance with innovation management instruction and factors influencing female workers. These factors relate to the humanity of organisations applied to compliance with innovation management in a Saudi context, as it is expected that organisations need to have these factors in order to know how Saudi women workers comply and understand. This work comprehensively attempts to answer the following questions: what internal and external factors influence innovation management for Saudi women workers? What internal and external factors influence the compliance of Saudi women workers? The logistic regression analysis technique was therefore used to understand interactions between them in order to predict the influencing factors involved in Saudi female workforce members' compliance with innovation management instructions.

### **5.10. Regression analysis**

Regression analysis is a technique to examine the relationship between variables (Field, 2013). This study will analyse data using the logistic regression tool, usually applied when the dependent variable is binary with two values labelled 0 and 1. Independent variables can be nominal or ordinal as in the current study. According to Dancey and Reidy (2011), logistics is a model used to predict the probability of phenomena. This fits with the main objective in this research – predicting the internal and external factors that influence Saudi women workers to comply with innovation management instructions.

Based on this, the objective of the regression is how much the DV “compliance to innovation management instruction” changes as a result of IVs such as “women’s behaviour, intention, attitude and belief”. Awareness and knowledge, organisational culture, supervisory

encouragement, communication, rewards and punishments, sufficient resources and periodic training. However, alternatives to questionnaire analysis could be used, such as structural equation modelling, which relies on assessment between theory and variables, excluding, however, SEM because it is dependent on the availability of a large sample (Bauer, 2006). In this regard, regression has been selected and is deemed appropriate to employ variables which contribute to answering the questions. From the same respondents, workers, owners and managers, DVs and IVs have been derived. The assumptions made have therefore been checked to ensure regression free of bias and multicollinearity and thus validity data. Logistic regression has similar assumption as normal; linearity, independence and multicollinearity, which have been met.

Table 5-18 provides the mean and SD of control variables and table 5-19 shows the summary statistics of computing the correlation matrix. Parsons's correlation was applied to discover the relationship between variables in terms of the strength and direction. This analysis usually ranges from -1.00, meaning perfect negative correlation, to +1.00, meaning perfect positive correlation, but 0.00 means any relationship between variables (Cohen et al., 2011). According to Bryman (2012), it should be kept in mind that Pearson's correlation reveals the relationship between variables but not causality. It should be noted that table 5-19 indicated the high correlation between PT and ST of .74\*\* – multicollinearity may be a possibility.

Table 5-18: Mean and SD of control variables

<b>Control variables</b>	<b>Mean</b>	<b>SD</b>
1. Age	2.30	.93
2. Education	3.74	.94
3. Nationality	1.33	1.21
4. Marital status	1.37	.49
5. Working hours	1.87	.53
6. Experience	2.70	1.37

Table 5-19: Correlation matrix variables

	Modern technology	New material marketing	Subjective_ measures	reluctance ideas	Reluctance financial harm	age	Education	nationality	Marital status	Working hours	Experience	Habit	Intention	Attitude	Belief	Awareness & knowledge	Organisational culture	Supervisory encouragement	Communication	Rewards & punish	Sufficient resources	Periodic evaluation
Modern Technology	1																					
new material marketing	.593*	1																				
Subjective_ measures	.435*	.445*	1																			
reluctance ideas,	-.071	-.121	-.130*	1																		
Reluctance financial harm	-. .201*	-. .174*	-.152*	.282*	1																	
Age	-.011	-.015	-.055	-.003	-. .012	1																
Education	-. .189*	-.119	-. .174**	.010	.023	.212*	1															
Nationality	-.027	-.052	-.012	-.069	-. .074	.221*	.080	1														



Marital status	-.097	-.102	-.110	-.031	.020	-.385* *	.087	-	1												
Working hours	-.214* *	-.145*	-.171**	-.043	-.011	.138*	.114	.063	.018	1											
Experience	-.005	-.068	-.002	-.086	-.018	-.308* *	-.026	-.125*	.269* *	.020	1										
Habit	-.119	-.123*	-.189**	.201* *	.096	.047	-.027	-.065	.007	.144* .078	-	1									
Intention	.127* *	.198* *	.183**	.063	.118	.041	.006	-.033	-.145* *	-.321* *	-.083	-.113	1								
Attitude	.045	.116	.058	.086	.056	-.059	-.010	-.137*	.048	-.238* *	-.034	.072	.515* *	1							
Belief	.120	.180* *	.111	.085	.123* *	-.039	-.036	-.057	-.055	-.201* *	-.064	.043	.455* *	.573* *	1						

Awareness & Knowledge	.063	.040	.006	.051	.079	-.055	-	-	-.094	-	-	-	.476*	.491*	.512*	1						
							.023	.114		.185*	.03	.149	*	*	*							
										*	1	*										
Organizational Culture	.097	.055	.037	.102	.004	-.083	-	-	-	-	-	-	.457*	.506*	.448*	.731*	1					
							.065	.144	.125*	.209*	.03	.054	*	*	*	*						
								*		*	3											
Supervisory encouragement	.126*	.067	-.026	.089	.048	.026	-	-	-.063	-	.04	-	.453*	.523*	.435*	.705*	.695*	1				
							.036	.089		.229*	.03	.042	*	*	*	*	*					
										*												
Communication	.153*	.139*	.059	.050	.102	.009	-	-	-.103	-	-	.037	.533*	.527*	.521*	.653*	.638*	.659*	1			
							.117	.096		.280*	.04		*	*	*	*	*	*				
										*	0											
Rewards_Punishment	.067	.054	-.002	.016	.115	-.041	-	-	.011	-	-	.021	.318*	.417*	.325*	.483*	.509*	.452*	.549*	1		
							.038	.098		.240*	.05		*	*	*	*	*	*	*			
										*	2											
Sufficient resources	.093	.030	-.031	.162*	.089	-.063	-	-	-.094	-	-	.046	.377*	.534*	.419*	.632*	.608*	.605*	.654*	.562*	1	
				*			.122	.039		.244*	.05		*	*	*	*	*	*	*	*		
							*			*	9											
Periodic training	.139*	.151*	.003	.069	.031	-.027	-	-	-.094	-	-	.068	.389*	.517*	.453*	.604*	.581*	.634*	.640*	.569*	.760*	1
							.152	.042		.269*	.09		*	*	*	*	*	*	*	*	*	
							*			*	8											

Compliance of female workers with innovation management is a main dependent variable. AK: Awareness and knowledge, CO: Organisational culture, SE: Supervisory encouragement, C: Communication, R&P: Rewards and punishments, SR: Sufficient resources, PT: Periodic training.

\*. Correlation is significant at 0.05 level (2-tailed).

\*\*. Correlation is significant at 0.01 level (2-tailed).

## 5.11. Logistic regression results

### 5.11.1. Innovation management

The tables below show the regression of female worker compliance with innovation management instructions and enable examination of the study variables and identification of the factors that influence female workers.

For a preliminary analysis, all data for control variables was entered as logistic regression and transformed into dichotomous values, while independent variables were designed on Harman's single factor. Both control and independent variables were tested individually in the five elements in order to better understand the constructs of the compliance of female workers with innovation management instructions as follows: modern technology, new marketing material, subjective measures, reluctance relating to ideas and reluctance relating to financial harm. The first element of innovation management is modern technology application. Table 5.20 shows that the control variables of education and working hours were highly statistically negative when related to modern technology. The models explained that 16% of variance was associated with modern technology using the Nagelkerke *R* Square and correctly classified 66.8% of cases. This indicates that whenever women workers increase their education or their working hours, their levels of innovation decrease. In addition, the habit factor is the only variable related to applying modern technology, but this is negatively weak. This is a consequence of organisational management not informing women workers about new modern technology in their work, making them practise their negative habits of resistance to any orders and instruction from management. The test with the second element of innovation management (table 5.21) shows that all control and independent variables were examined simultaneously as usual. One of the control variables, the working hours variable, remains negatively related to new marketing material. Meanwhile, in the third test (table 5.22) in

particular, model 5 indicated that three control variables – education, material state and working hours – were negative as subjective assessment measures. On the other hand, both models 4 and 6 show that two factors – habit and intention – were significant. The first factor was negative as usual and the second factor had a positive relationship to new marketing material and subjective assessment measures. This indicates that bad habits still have a strong influence on compliance. Meanwhile, positive intention, even on a moderate level, has a role in the compliance of female workers with innovation management. The belief, awareness, knowledge, sufficient resources and periodic training factors were related only to new marketing material – positive and negative at different levels.

Table 5-20: Estimates of a logit model of modern technology

	<b>Model 1</b>	<b>Model 2</b>
Age	.159 (.321)	.076 (.341)
Education	<b>-.730 (.278)***</b>	<b>-.679 (.291)**</b>
Nationality	-.084 (.399)	-.201 (.419)
Marital status	-.337 (.306)	-.297 (.324)
Working_hours	<b>-1.216 (.387)***</b>	<b>-.925 (.420)**</b>
Experiences	.104 (.286)	.044 (.301)
Habit	-----	<b>-.272 (.150)*</b>
Intention	-----	.070 (.194)
Attitude	-----	-.208 (.198)
Belief	-----	.237 (.186)
Awareness_Knowledage	-----	-.372 (.243)
Organisation_Culture	-----	.019 (.227)
Supervisory_Encouragement	-----	.228 (.233)
Communcation	-----	.210 (.238)
Rewards_Punishment	-----	-.060 (.178)
Sufficient_resources	-----	-.107 (.237)
Periodic_training	-----	.216 (.238)
Constant	.217 (.479)	.259 (.508)
-2 Log likelihood	324.613	314.783 <sup>a</sup>
Cox & Snell R <sup>2</sup>	.083	.117
Nagelkerke R <sup>2</sup>	.113	.159
% Correctly Classified	64.5	66.8

Notes: \*\*\* Significant at 1% level; \*\* at 5% level; \* at 10% level; + at 12% level.

Table 5-21: Estimates of a logit model of New Material Marketing

	<b>Model 3</b>	<b>Model 4</b>
Age	-.082 (.312)	-.191 (.346)
Education	-.379 (.269)	-.367 (.291)
Nationality	-.304 (.389)	-.469 (.430)
Marital_status	-.391 (.297)	-.411 (.327)
Working_hours	<b>-.691 (.341)**</b>	-.148 (.392)
Experiences	-.238 (.279)	-.247 (.305)
Habit	-----	<b>-.382 (.154)**</b>
Intention	-----	<b>.347 (.203)*</b>
Attitude	-----	.059 (.202)
Belief	-----	<b>.337 (.188)*</b>
Awareness_Knowledge	-----	<b>-.445 (.247)*</b>
Organisation_Culture	-----	-.157 (.229)
Supervisory_Encouragement	-----	-.034 (.236)
Communcation	-----	.305 (.244)
Rewards_Punishment	-----	-.063 (.177)
Sufficient_resources	-----	<b>-.506 (.244)**</b>
Periodic_training	-----	<b>.591 (.245)**</b>
Constant	.595 (.471)	.636 (.525)
-2 Log likelihood	341.497 <sup>a</sup>	313.998 <sup>a</sup>
Cox & Snell R <sup>2</sup>	.045	.140
Nagelkerke R <sup>2</sup>	.061	.189
% Correctly Classified	63.0	68.7

Notes: \*\*\* Significant at 1% level; \*\* at 5% level; \* at 10% level; + at 12% level.

Table 5-22: Estimates of a logit model of Subjective Measures

	<b>Model 5</b>	<b>Model 6</b>
Age	-.201 (.310)	-.184 (.336)
Education	<b>-.581 (.269)**</b>	<b>-.737 (.290)**</b>
Nationality	.043 (.396)	-.016 (.431)
Marital_status	<b>-.517 (.301)*</b>	<b>-.514 (.327)+</b>
Working_hours	<b>-.744 (.317)**</b>	-.505 (.363)
Experiences	.069 (.279)	.083 (.301)
Habit	_____	<b>-.420 (.150)***</b>
Intention	_____	<b>.369 (.185)**</b>
Attitude	_____	.111 (.199)
Belief	_____	.246 (.180)
Awareness_Knowledge	_____	-.253 (.245)
Organisation_Culture	_____	.142 (.229)
Supervisory_Encouragement	_____	-.323 (.238)
Communcation	_____	.147 (.233)
Rewards_Punishment	_____	-.029 (.180)
Sufficient_resources	_____	-.292 (.244)
Periodic_training	_____	-.022 (.244)
Constant	<b>1.145 (.482)**</b>	<b>1.235 (.529)**</b>
-2 Log likelihood	340.537	316.850 <sup>a</sup>
Cox & Snell R <sup>2</sup>	.063	.144
Nagelkerke R <sup>2</sup>	-.085	.194
% Correctly Classified	62.6	67.9

Notes: \*\*\* Significant at 1% level; \*\* at 5% level; \* at 10% level; + at 12% level.

### 5.11.2. Compliance female workers

As previously discussed, analysis of logistic regression was used to examine the significance of the relationship between the influence on Saudi women of factors and compliance with innovation management. The responses of 5, 6 and 7 are coded as '1'. The responses of 5, 6 and 7 are indicating agreement to a question which is focusing upon 'reluctance' and thus a '1' in the dichotomous variable means that the respondents are reluctant to comply with management. In other words, there is non-compliance. The responses of 1, 2, 3 and 4 are coded as '0'. The responses of 1, 2, 3 and 4 are indicating disagreement to a question focussing upon



‘reluctance’. Thus a ‘0’ means that the respondents are not reluctant to comply with management. In other words, there is compliance. As shown in model 8 in table 5.23 two variables are statistically significantly related to reluctance to non-compliance at the 1% level and these variables are habit and sufficient resources. None of the other variables in Model 8 are statistically significant at up to 12%. The Nagelkerke R<sup>2</sup> is 19% for model 8.

In model 10 in table 24 three of the variables are positively statistically significantly related to the dependent variable and they are habit (10%), intention (10%), and rewards punishment (12%) where the figures in parentheses are the level of significance. In model 10 in table 24 one of the variables is negatively statistically related to the dependent variable and that is organizational culture. The Nagelkerke R<sup>2</sup> is 10% for model 10. This indicates that women worker respondents with good habits, intention to comply, available resources, and rewards and punishment feel protected from financial harm. Increasing understanding of organisational culture is associated with likelihood of financial harm.

Table 5-23: Estimates of a logit model of reluctance-ideas

	<b>Model 7</b>	<b>Model 8</b>
Age	-.106 (.302)	-.048 (.326)
Education	.101 (.261)	.137 (.281)
Nationality	-.472 (.384)	-.447 (.416)
Marital_status	-.108 (.289)	.001 (.311)
Working_hours	-.173 (.311)	-.271 (.359)
Experiences	-.393 (.271)	-.370 (.289)
Habit	_____	<b>.474 (.151)***</b>
Intention	_____	.132 (.180)
Attitude	_____	-.115 (.191)
Belief	_____	.134 (.175)
Awareness_Knowledge	_____	-.144 (.238)
Organisation_Culture	_____	.190 (.224)
Supervisory_Encouragement	_____	.185 (.222)
Communcation	_____	-.311 (.223)
Rewards_Punishment	_____	-.195 (.175)
Sufficient_resources	_____	<b>.690 (.243)***</b>
Periodic_training	_____	-.322 (.231)
Constant	.571 (.461)	.436 (.501)

-2 Log likelihood	357.943 <sup>a</sup>	333.364 <sup>a</sup>
Cox & Snell R <sup>2</sup>	.016	.104
Nagelkerke R <sup>2</sup>	.022	.139
% Correctly Classified	54.2	62.6

Notes: \*\*\* Significant at 1% level; \*\* at 5% level; \* at 10% level; + at 12% level.  
A '1' value is non-compliance and a '0' value is compliance.

Table 5-24: Estimates of a logit model of reluctance-financial harm

	<b>Model 9</b>	<b>Model 10</b>
Age	-.017 (.299)	-.089 (.320)
Education	.118 (.260)	.097 (.277)
Nationality	-.464 (.384)	-.474 (.405)
Marital_status	.066 (.287)	.094 (.307)
Working_hours	-.041 (.308)	.164 (.352)
Experiences	-.130 (.269)	-.086 (.284)
Habit	_____	<b>.236 (.142)*</b>
Intention	_____	<b>.310 (.178)*</b>
Attitude	_____	-.213 (.188)
Belief	_____	.244 (.173)
Awareness_Knowledge	_____	.173 (.232)
Organisation_Culture	_____	<b>-.448 (.222)**</b>
Supervisory_Encouragement	_____	.058 (.219)
Communcation	_____	.077 (.225)
Rewards_Punishment	_____	<b>.268 (.173)+</b>
Sufficient_resources	_____	.285 (.226)
Periodic_training	_____	-.348 (.226)
Constant	.347 (.459)	.324 (.489)
-2 Log likelihood	361.196	343.134
Cox & Snell R <sup>2</sup>	.007	.074
Nagelkerke R <sup>2</sup>	.10	.098
% Correctly Classified	55.0	59.9

Notes: \*\*\* Significant at 1% level; \*\* at 5% level; \* at 10% level; + at 12% level.

## 5.12. Summary of chapter

This chapter has illustrated the data collected. This task is essential for the goals of this study. It is also necessary for the reader to know how the study tested variables. Furthermore, the chapter includes data methods and examined the statistical analysis for assessment validity and reliability construct to provide the results of tests. Factor analysis was undertaken several times for each group of items to remove factor loading below 0.5. The results of PCA were that 51 items were valid to use. Logistic regression analysis was performed to test concerning the factors influencing female workers, the main dependent variable was built from five dependent variables; modern technology, new marketing material, subjective measures, reluctance

relating to ideas and reluctance relating to financial harm. The first three dependent variables were coded values – (1) for Yes, (0) for No and Don't know – but reluctance relating to ideas and financial harm were coded (1) for 5 to 7 and (0) for 1 to 4. The dependent variables examined each control and independent variable separately. The first control variable, long working hours, was negatively related to innovation management in all three tables. Next, the increased educational level and marital status variables both negatively affect innovation management. None of the control variables related to reluctance about ideas and financial harm. On the other hand, human and organisational factors were ranged from negative to positive relating to the compliance of female workers on different levels of significance, even for the same factors tested on different elements of the dependent variable. This shows clearly that it is not possible to determine the effectiveness of specific factors alone or multiple factors in compliance, because of different innovation projects, female workers who do these creative processes, and also clothing organisations and management.

Table 5-25: Summary logistic findings

Main construct	Dependent variables	Core logistic findings
Compliance female workers with innovation management instructions	Modern technology	<p>The control variables of education and working hours were strongly negatively significant related to innovation management.</p> <p>Only the habit variable from the predicted factors was negatively significant related to innovation management</p>
	New material marketing	<p>Only one of the control variables, the working hours variable, is negatively significant at level 0.5 related to innovation management.</p> <p>Three suggested factors were positively significant related to innovation management – intention, belief and periodic training – only the latter was significantly good while the other two were significantly low.</p> <p>Another three suggested factors were negative: habits, sufficient resources and awareness and knowledge. The latter was significantly low related to innovation management, as opposed to the moderate significance of the other two factors.</p>
	Subjective measures	<p>The control variables, education and working hours, were moderately negative at level 0.5, but marital status was negatively low at level 0.1 related to innovation management.</p> <p>For the suggested factors habits and intention, habit was strongly negatively significant at level 0.1, and intention was positively significant at level 0.5 correlated to innovation management.</p>
	Reluctance-ideas	Habit and sufficient resources were strongly positively significant at level 1% related to non-compliance of female workers.
	Reluctance-financial harm	Habit and intention were positively significant at level 10%. Rewards and punishment had the lowest positive result of all factors and dependent variables at level 12%, but organisational culture is negatively significant at level 5% correlated to compliance of female workers.

## **Chapter Six — Discussion**

### **6.1. Introduction**

The objective of the research was to explore the internal and external factors incorporating the TRA and the organisational factors influencing innovation management and compliance of Saudi female workers. To achieve this objective, a review of the relevant literature and framework was conducted and presented in chapters two and three. The methodologies adopted to address the research questions and methods of data collection were outlined in chapter four and the findings from the analysis were presented in chapter five. This chapter is the stage meeting the objectives of the study and presenting a comprehensive discussion of the findings. This provides a discussion of validity and reliability, followed by a discussion of the key findings relating to the factors identified from the results to answer the main research question, stating that behavioural and organisational factors for female workers were between positive and negative for compliance with innovation management instructions.

### **6.2. Discussion of validity and reliability**

Before presenting the findings of this research in the following section, this section considers the issues of the validity and reliability of the findings. Previous studies proposed measurements of compliance – for example, Bauer (2006) and Yami (2015) in the health sector, Hu et al. (2012) in information security, and the measurement of innovation management in a study by Vaccaro et al. (2012). However, a lack of studies directly measure compliance with innovation management instructions. As stated in Doyle et al. (2013), studies have seldom been undertaken which connect compliance and innovation in business activities. Some studies found no connection between obedience and idea generation, including Turnipseed and

Turnipseed's (2013) research. Measurement of compliance items varies between studies. For example, among compliance with information system studies, Liang et al. (2013) have used managers' evaluation to measure employees' compliance behaviour. On the contrary, Xue et al. (2011) measured compliance intention using employee self-reports, like the current study. For scientific actions, a number of different methods have therefore been taken in research to investigate the merit of measuring compliance with innovation management instructions. According to Hinkin et al. (1997), Hinkin (1995) proposed a five-step guideline to ensure scale development as follows: item generations, developmental study design, factor analysis, assessment of internal consistency and construct validity. First, item generations relied on the creation of items for assessing the phenomena based on a theoretical definition and understanding of the relevant literature, called deductive scale development – a clear state in this research (Schwab, 1980).

The second issue is developmental study design, which incorporates another five cases: representation of the sample and response rate, description of the sample and size, questionnaire administration, scaling items and negative wording in the measure. First, this study has clearly described the response rate and sample, addressing its accuracy and checking non-response bias for inference representative of the population sample (see section 5.2.2.). Second, the sample size was 229 valid questionnaire responses, adequate for implementation of EFA, while the minimum number of valid questionnaires should be 150 to achieve accurate results in EFA and obtain good intercorrelations between items (Hinkin et al., 1997), as well as present the target population (section 4.4.2). Third, questionnaire administration involved screening each item for the DV and IV, which made it simple for respondents to understand, addressed a single issue and ensured that all items under terms from the relevant perspectives were not mixed with each other. These procedures were followed in order to ensure that the scale was properly constructed. While the number of research items in this study was 51

questions for female workers aged between 24 and 55 years old, five questions measured compliance with innovation management instructions, the remaining questions measure the 11 critical factors influencing female compliance. As such, there is no optimal number to determine questionnaire items agreed among scholars. This probably depends on the ages of respondents in the sample (Leung, 2001). However, research analysing few items could lead to a lack of validity and appear flawed. For example, Hashmi's (2015) study analysed only 15 items from employees' responses in a quantitative study. Similarly, if too many items are used in a questionnaire, this results in fatigue during analysis. For example, Bauer (2006) distributed a questionnaire which contained 128 items to nurses working in hospitals. Fourth, for the scaling of items, this research used a seven-point Likert scale for the appropriate scaling of question items, producing higher scores for validity and reliability with response categories starting from an end point of seven. Fewer items result in a weak scale, as proved by Hinkin et al. (1997). Lastly, the developmental study design is negatively worded, using one item to attract more respondents to the questionnaire. However, this causes problems with internal consistency (Barnette, 2000). Negative wording is not designed in the questionnaire.

The third factor involved in checking scale development is factor analysis. Principal components analysis with varimax rotation is the most conducted method in refining factoring (Tabachnick and Fidell, 2007). The current study implemented this technique for reduction of seven items below 0.5 loadings, as suggested in Field (2009). The fourth step was the assessment of internal consistency, referring to the test of the degree of correlation among items, measured using coefficient alpha (Cortina, 1993). Scale strength is impacted based on dropping inappropriate items in factor analysis, resulting in a reversal of validity and reliability. The measurement dimensions are behaviour ( $\alpha = 0.63$ ), intention ( $\alpha = 0.91$ ), attitude to beginning innovation ( $\alpha = 0.64$ ), attitude to compliance ( $\alpha = 0.82$ ), belief ( $\alpha = 0.64$ ), awareness and knowledge ( $\alpha = 0.80$ ), organisational culture ( $\alpha = 0.69$ ), supervisory encouragement ( $\alpha =$



0.65), communication ( $\alpha = 0.79$ ), rewards and punishment ( $\alpha = 0.50$ ), sufficient resources ( $\alpha = 0.73$ ) and periodic training ( $\alpha = 0.81$ ). The scale of all factors' compliance with innovation management instructions is ( $\alpha = .98$ ). Reliability is deemed acceptable for measurement of each construct except the reward and punishment measurement, which is considered to have poor reliability. The importance of internal consistency is well established though some studies relied upon reliability, such as Abdul-Rehman (2016). Finally, the fifth step is the study context. The importance of the concepts of workers' compliance and innovation management is referred to in a number of studies (Doyle et al., 2013; Doyle et al., 2014; Eva et al., 2017). The current study adapted the scale of compliance with innovation management instructions – the scale is unprecedented and was developed from European and North American literature and Eastern Asian countries' studies of organisational behaviour, innovation management and the clothing industry. These were created in different ways and in different cultures. Testing the compliance with innovation management instructions scale in the sample study needed some setting to facilitate the achievement of the objective results and was not affected by different cultures. Consequently, the researcher pre-formed settings to ensure an effective scale: built questionnaire matrices to institute a questionnaire template ready for mobilisation (see appendix A) using variable construction and reviewing the questions from five academics in total from Royal Holloway University and abroad. In addition, piloting and screening were undertaken before online distribution of the questionnaire, and, finally, the response rate was given for the validity scale.

It is clearly evident that there is a deficit of innovation management research into organisations (Volberda et al., 2014; Keupp et al., 2012). Almost no assessment of validity and reliability of this topic has been undertaken before in the KSA, particularly examining in clothing factories. Most solutions presented in previous studies in clothing organisations were quite dated (e.g. Phizacklea, 1990; Ram, 1992; Zeitlin and Totterdill, 1989). This study

attempts to present a framework for management to continue implementing innovation in organisations. In the end, the assessment of compliance with innovation management instructions supported the TRA and organisational factors. The study confirms the plea of Welsh et al. (2013) which called for more research into female behaviour on innovations through examining the family and external support in the economy in Saudi Arabia.

### **6.3. Discussion of key study findings**

As illustrated previously in the literature review, both the TRA components and organisational factors proposed contribute to compliance behaviour. The research conceptual framework suggested that each of the TRA components and organisational factors would be related for compliance of female workers with innovation management instructions. The aim of this research is therefore to determine the compliance reasons that help female workers to become involved in innovation practices either from the TRA or from organisational variables appropriate to Saudi female workers. Adding these findings to the literature explains why some organisations have developed innovations and have workers complying with orders easily while other organisations struggle and do not. The findings from this study present an insight into the responsibility of workers for their compliance, as well as enriching the role of organisational management in influencing and establishing supportive factors for compliance with innovation instructions.

#### **Compliance of female workers with innovation management instructions:**

The literature review and the framework argued that compliance is existent in organisational literature contexts. It is important to determine the reasons for non-compliance of female workers and establish systems within organisations to address behaviour change in order to encourage innovative practices and avoid painful consequences such as expulsion. The results

revealed that female worker compliance behaviour is affected by the organisational environments in which they work. Moreover, female workers were affected by behavioural factors and control variables. To determine these factors and their impact on the compliance of female workers with innovation management, the logistic regression test was used with five dependent variables: modern technology, new marketing material, subjective measures, reluctance relating to ideas and reluctance relating to financial harm. The factor results are as follows.

**Intention:** In the TRA model, intention was a main determinant of compliance behaviour. The first factor that was found to influence female workers positively in compliance with innovation management instructions. Upon examination of the intention of this study, the logistic regression analyses undertaken showed good significance levels for variables – new marketing material, subjective measures and reluctance relating to financial harm were at level 0.1 and higher. This factor was found to be moderately significant when tested and signified that intention was an important antecedent of compliance with innovation management instructions. In other words, without good intent, compliance would be unlikely. A previous study by Bauer (2006) supports this finding of a relationship between intention and compliance that is not surprising but interesting as it is the principal driver of behaviour and has strong motivational influence on compliance. Waly (2013) found that intention has a significant role to play in compliance. The power of intention can increase and decrease according to degree of motivation through encouraging women's intentions towards compliance (Sheeran, 2002). This finding of the current study showed that the approval and disapproval recorded by participants is considered a requirement of female worker behaviour for compliance with management instructions. The nature of sewing work includes extensive work with other workers, which could explain the importance of intention in predicting worker compliance

behaviour. In this regard, methods of persuading female workers involve influencing them to comply. In particular, managers might implement events or programmes which they can use to their advantage, affecting women's intentions to comply with innovation practices.

**Attitude and belief factors:** It was shown that attitudes in relation to innovation were not predicating factors towards compliance instructions of female workers and innovation management at any level. The evaluation by respondents assessed the causes of female worker attitudes about compliance, or performing innovative activities to carry out compliance. In this study framework suggested that attitude in relation to innovation will be positively significant to compliance of female workers. The results indicated that female workers' attitudes towards compliance with innovation were not related each other. This finding is not aligned with the TRA. Ajzen and Fishbein (1980) professed that positive attitude to compliance with an action would be a better predictor of behaviour. A similar finding relating to attitudes reported positive perceptions of compliance (Bauer, 2006; Yami, 2015). However, Rogelberg et al. (2000) were not able to determine the relationship between attitude and compliance. Several studies supported the current framework that worker attitude is a significant factor towards compliance with policies (Hu et al., 2012; Siponen et al., 2014). The results were opposite to what the study framework predicted. The literature and framework indicated that compliance behaviour can be determined from a combined set of attitudes and beliefs. However, the results proved that these factors can have different weights relating to their involvement in innovation practices. On the other hand, the current results show that the belief factor is more influential than the attitude factor in terms of its relationship to new marketing material while the attitude factor was not related to any dependent variables involved in compliance. According to the TRA assumptions, the attitude factor is determined by belief outcomes (Ajzen, 1980), whereby female workers believe in being innovative or complying with innovation management

instructions through accepting new marketing material. Beliefs therefore made more of a contribution than the attitude factor (Burak et al., 2013). These findings provide directions for professionals to develop alternative methods for female workers to be educated and increase their chances of promotion, providing a positive perception of innovation and encouraging them to be entrepreneurs. The findings clearly explain the innovation concept from an organisational view, providing female workers with methods and information that might help them to improve positive beliefs and challenge negativity, leading to intentions towards compliance behaviour.

In our contribution model of the TRA, it is suggested that female worker belief determines compliance behaviour with innovation management instructions, which provided support for this study's literature. Examination of logistic regression showed that female belief explained 19% of variance in applying new marketing material, which is one of the dependent variables influencing compliance of female workers with instructions. Belief can be determined by female worker culture rather than subjective norms, as the beliefs from culture relating to innovation represent an important aspect to enhancing compliance levels with instructions. In this study, female workers believed that culture helped them to achieve goals, be innovative and react positively to compliance with innovation management. Results of other studies proposed that belief enhances the compliance (Waly, 2013; Siponen et al., 2014).

According to Ajzen and Fishbein (1980), the TRA is under a person's volitional control and estimates are made based on personal decision-making. This may explain why it is not always possible to take into account societal norms and culture as influencing people's decisions. However, the TRA has been supported within studies in Western countries. Its successes have also been applied within various populations in oriental countries. The current study proposes that, for non-Western countries, such as Saudi Arabia, the belief component of the TRA shows that female workers' decisions are more relevant and responsive to culture,

and processing of decision-making is more collectivist (Al-Gahtani et al., 2007). Collectivist cultures rotate about groups of persons who, in this Saudi context, influence female workers' compliance behaviour. Female worker shortages in performing innovative and creative work appear to increase in collectivist cultures, as routine work in collective values still has priority and is significant. This could be attributed to differences in individualistic Western culture supporting innovative environments. Approval and disapproval of cultural beliefs are therefore important for female workers' compliance with innovation management instructions.

This study's findings draw attention to cultural belief values of participants and the effects of these on their behaviour towards compliance. Promoting cultural awareness enhances understandings of important innovations in organisations and in the clothing industry in particular, addressing sensitive issues in culture which lead to benefits in levels of knowledge and increasing female worker compliance with innovation management. In light of limited information about control culture in the Saudi context, female workers may not comply with management instructions relating to creativity and innovation. Further studies into awareness and education of female workers must be conducted to highlight that participation in innovative activities is compatible with cultural values through applying new ways of marketing and knowledge of new material used in marketing, but this is not a prime element of this study.

**Behaviour (habit):** the results of the habit variable fluctuate from negatively significant for innovation management elements and positively significant for non-compliance to ideas. This proves that a person's habit is different from those of other people. The majority of respondents mentioned that their negative habits represent a reason for their refusal to apply modern technology, new modern marketing and self-subjective assessment, leading to lack of knowledge. The same respondents showed their agreement that their habits represent a reason for reluctance relating to ideas and financial harm. Negative and positive responses from

participants proved the important role of female workers' habits in compliance behaviour. This finding is consistent with prior studies that also found a relationship between changing habits and routines to deliver compliance with innovation (Doyle et al., 2013) and compliance and behaviour (D'Arcy and Greene, 2014). This study determines that the non-compliance of women with participation in factory development is linked to female worker habits, effectively barriers rather than institutional challenges. Examination of behaviour variables advances our knowledge of the importance of this factor to motivate female workers to comply with innovation management instructions in the workplace.

Puhakainen and Siponen (2010) and Hu et al. (2012) reinforce the notion that top management participation is an external element able to shape worker behaviour for each factor and increase compliance with instructions. They demonstrate that a major strength of the TRA is its ability to determine participants' behaviour, and its attempt to explain the relationships between intention, belief, attitude and habit in relation to worker behaviour. The results of the TRA variables provide a vehicle for knowledge of behaviour systems in future innovation activities, especially in cases of non-compliance behaviour. The findings may indicate that workers' habits may reflect attitudes and beliefs. In the presence of these, habits did not encourage a high proportion of workers into compliance behaviour. Cultural belief factors and personal habits can therefore play an important role in formation of perceptions of compliance with innovation management instructions among female workers who perform little innovative work in organisations.

**Training:** The training value indicates knowledge about the importance of innovation management and is a powerful tool to shape behaviour for changing female worker attitudes to compliance. It is necessary to understand that regular training has to be formulated as one of the requirements to improve a worker's compliance and innovation, and is provided to partly support this study framework. The results show a positive correlation between periodic training

and applying new marketing material. The regular training of workers contributes to marketing plans, and is a way to manage women workers in organisational innovations. The study has not fully identified a relationship between training and compliance of women with instructions. Nonetheless, Hu et al. (2012) suggested that extensive training is the most effective method for workers to easily enact compliance behaviour, making them more likely to behave within organisational guidelines. This result is therefore not consistent with studies indicating that training positively influences compliance (Hu et al., 2012; Al-awadi, 2009; Waly, 2013; Hsu, 2013; Hasu et al., 2014; Xia and Lee, 2000). Upon a review of these results, intention was indicated as a factor predicting the compliance of female workers. However, belief of women workers and training were shown to be factors influential in innovation management. This expectation influences top management in relation to effort devoted to formal training programmes to change women workers' intentions and their beliefs when implementing innovation. There is therefore a fundamental need for training approaches including marketing knowledge for help in implementing targeted innovation and knowing its degree of complexity, size and interaction, because the effects of well-structured training involve creating innovative products. We suggest some training in, for example, how to innovate in new materials, what is expected for the next generation of clothes and new ways to dispose of used clothing. This result also indicates that there is no relationship between training and other elements of constructing innovation management such as adopting modern technology and subjective assessment.

**Awareness and knowledge:** The results presented indicated that awareness and knowledge were not positively significant to innovation management and compliance with instructions. They show negative correlation between awareness and knowledge and new marketing material marketing. The study framework suggested that awareness and knowledge positively



influence compliance among female workers. However, the result of the awareness and knowledge variable was the opposite of that suggested. The result expected was a relationship between compliance and workers' understanding of organisational policies in order to reduce problems of inconsistency which might occur. This expectation was built as many workers in organisations arguably have no idea of the final picture that the organisation wants to reach and have no understanding of their real roles in the organisation and where they are going in the future. Nonetheless, a group of authors (Sok and O'Cass, 2015; Al-awadi, 2009) related compliance to raising awareness and understanding of orders. However, the relationship is not correlated to most elements of compliance and innovation management, and only one element has a negative moderate correlation. One of the interpretation possibilities is that awareness of objectives of organisations can be raised through training sessions or communication for groups, individual workers, workers and directors. Another explanation might be that innovation instructions can be received by female workers during their work. For example, workers can be provided with information about organisational goals or systems through their work. The majority of respondents' answers agreed that there was no correlation between the awareness and knowledge factor and innovation management instructions, because information can be too complex or too long, impacting compliance. The findings in the current study therefore propose presenting information in various models for obtaining the best knowledge and awareness possible and that management in organisations is completely responsible for presenting this information. Based on this, female workers can obtain awareness and moreover comply with instructions and improve their attitudes, helping organisational management to reach their goals. However, this factor is not shown to be beneficial to both female workers and organisations in the current study

**Communication:** Relating to communications, two items were utilised to gain a measure of the relationship between communication and female workers' compliance with innovation management instructions. In this study, the logistic regression test shows that the communication factor was not correlated to compliance with innovation management instructions at any level or to any compliance and innovation management elements. However, previous studies have mentioned that communication is the strongest predictor of employee compliance (Al-awadi, 2009; Waly, 2013). However, this could be explained by communication not influencing female workers' compliance and rather consuming work time with discussions without value. The findings showed that communication does not improve female workers' effectiveness and efficiency and does not contribute to the enhancement of organisational outcomes. We found no correlation between communication and compliance and respondents' answers agreed that communication meetings do not motivate them to comply and information in communication meetings does not prepare them in advance – managers do not know employees' concerns. No progress is therefore achieved towards innovation, as a result of gaps between top management and workers, limiting communication between them (Mohammad and Ahamd, 2013). This finding from the current study adds to knowledge relating to this area and empirically supports the relationship between communication and innovation compliance instructions.

**Sufficient resources:** In the current study, the three categories cited were utilised to obtain a measure of sufficient resources in complying with instructions and innovation management instructions. Interestingly, this factor had two different significant statistical results with compliance instructions and innovation management questions. The first element was correlated negatively with new marketing material, while the second element was correlated positively strong with reluctance relating to ideas. This negative result is consistent with Payne

(1990), who stated that there is no evidence that available resources improve performance. Another study by Rego et al. (2014) found scarcity of resources as supporting competitive advantages, as in the Mexican footwear industry. This is contrary to a study by Schroeder et al. (1989) stating that industry management is completely responsible for available capital, otherwise innovation cannot occur. Studies have produced opposite and positive results – such studies include Lin and Liu (2012), Hsu (2013) and Amabile (1997). Our explanation relates to good negative significance between sufficient resources and new marketing material. It might be hard for workers to do anything without resources. If resources are not available and not provided for workers, it is therefore hard for them to recognise new material for marketing. Strong positivity between sufficient resources and reluctance relating to ideas indicates that resources comprise a wide array of underlying items such as time, material and funds, considered a basic bone of innovation. This is consistent with the work of West and Anderson (1996), which stated that the amount of resources determines the presence of innovation. Managers should provide adequate resources on different ideas to carry out innovative work. The space between disagreeing and agreeing on registration by female workers might play a role in valuing this factor in worker compliance with management instructions, and this effect on motivation to involve them in innovation practices is likely to be positive. Managers should provide adequate resources on differences to achieve compliance with innovative work.

**Supervisory encouragement:** Previous studies (Hsu, 2013; Amabile, 1997; Lin and Liu, 2012) were given supervisory encouragement strongly significantly to innovation and creativity. In this study, it was expected in the literature review and framework that supervisory encouragement related significantly to compliance with innovation management instructions. The result indicated that this factor is not related to compliance among female workers and innovation management. which is contrary to expectations and the existing literature. However,

the findings of Dewett (2007) and Al-awadi (2009) claimed for a need for monitoring to ensure that employees continue to abide by company policies, as the managers' roles encourage employees to increase their willingness to take steps forward in innovation. However, if the climate in the organisation has not helped workers to act innovatively, the supervisory encouragement factor is not enough to supporting workers in compliance with management guidelines.

**Understanding organisational culture:** Organisational culture plays a major role in encouraging employee compliance with their organisations (Hu et al., 2012). However, results from the logistic regression analysis were negatively significant for understanding of organisational culture and reluctance relating to financial harm. The results were also not related to other elements of compliance and innovation management. Meanwhile, studies producing opposite results, including that of Naranjo-Valencia et al. (2011), found that organisational culture is a clear way to determine innovation strategy. Similarly, Hu et al. (2012) produced a result showing a significant relationship between organisational culture and compliance. Despite its importance, this study showed understanding that management of the organisational culture of workers could not help them to accept orders and also negatively influenced financial harm. This could explain the negative correlation – organisational innovation will lose financially by attempting to transform organisational culture to community acceptance of innovation. Workers have the ability to comply with instructions for innovation management.

**Rewards and punishments:** In terms of rewards and punishment, as shown in the results of this study, these are related to compliance with innovation management instructions at a very low rate not exceeding 12%. Nonetheless, rewards and punishments represent a factor

predicting an effect of compliance with innovation management instructions, as reviewed in the literature. This result was, to an extent, consistent with the findings of a study of Eastern countries by McMurray et al. (2013), which found that contingent rewards are not statistically significant with workplace innovation in non-profit organisations. This is also aligned with Sarros et al. (2005), who found that punishment is negatively related to innovation and creativity. However, the study of Abd-Elaziz et al. (2012) found that rewards and recognition have become one of the success factors in adopting open innovations in Egypt because top management sometimes disregarded this technique after a period of using it. This result therefore may suggest that people cannot be compelled to innovate, through putting much effort or via sanctions that cannot be imposed on them to improve systems of work. The practical implications in organisations for managers should not involve rewards and sanctions incurred for compliance as this is not a way of motivating workers to comply.

#### **6.4. Theoretical implications**

The amendments to theory had the main implications, using the TRA in future management studies to understand employees' behaviour and predicting factors for preparing the innovation environment without studying social or psychology sciences in any depth. To illustrate this implication, this study advances the TRA, which states that, in general, individuals are responsible for making decisions. It is adopted for understanding women workers' behaviour and predicting their choices. Contributions are built on proposals (Ajzen, 1985). Attitudes and beliefs are affected by intentions, and intentions affect behaviour then become habit. This theory is nearly original but considers the belief factor to be an essential factor, as proposed by Otieno et al. (2016). In addition, it makes it easier to determine the belief factor in administrations rather than using subjective norms. Our contribution attempts to simplify the theory as applied in practice. This bold step of making little change to the main theory is to

help future researchers to investigate excluding subjective norms rather than adding more components just to improve the TRA. The findings of this study therefore present a strong support for TRA capacity with a new component (belief factor) for identifying the affective factors that assist in predicting behavioural compliance with management instructions among female workers. This shows that female worker behaviour can be predicted by intention, belief, and, habit. However, the study numbers related to compliance behaviour are very limited particularly among employees or workers (Waly, 2013; Bauer, 2006; Hon et al., 2014; Hon and Lui, 2016; Yami, 2015). These findings add to the literature, and benefit the application of the TRA model as a main framework for predicting behavioural compliance (Ajzen, 1985). In addition, this study explained a group of theories with a high possibility of fitting with this study purpose. finding implied that female workers had positive intentions and belief to comply, despite facing pressures from their negative habits. They were supported and motivated to comply with innovation instructions when the organisation also provided a fit and comfortable environment to practise innovation, represented by perfectly designed training programmes, provision of sufficient resources and rewards and punishment systems from managers. However, presenting awareness and knowledge of organisational goals, attempting to understand organisational culture, supervisory encouragement and communication between workers and managers did not make female workers comply with instruction. In addition, these did not help them to improve their performance in the form of compliance behaviour. This highlights that the findings of the current study are consistent with previous studies (Al-awadi, 2009; Hsu, 2013; Hu et al., 2012; Waly, 2013; Bauer, 2006).

Meanwhile, the TRA suggested that female workers' compliance behaviour is under volitional control. In other words, this means that the theory takes into consideration the implications of workers' actions, before they decide whether or not to engage in compliance behaviour. The usefulness of the TRA is therefore to study all factors that can influence their

engaging behaviour. The TRA therefore constitutes a successful model for predicting compliance behaviour, particularly when their volitional control is elevated. Opposition to the TPB can be appropriate for explaining behaviour but it is suggested that volitional control is low (Ajzen, 1991; Ajzen, 1980). In current research, the strength of the belief factor (the study contribution rather than subjective norms) is the second positive factor after the intention to predict. The study has asserted that the belief factor influences the way that female workers operate in their innovative practices, either positively or negatively, as a result of different cultural structures that they adopted. It has a role in impacting female desire to comply with innovation instruction. Nonetheless, the latent role of the belief factor that comes from cultural values has not been examined deeply, regarding compliance towards innovation guidelines among workers – that their belief is slightly different from that of workers who hold individualistic concepts in Western culture. Theoretically, the TRA will not operate and process the same path in this study as in all other female worker behavioural situations. It is therefore probably unknown how additional variables may influence worker behaviour in complying with innovation instructions, depending on actual study action and its context.

Additionally, it is argued that no TRA construct has explained the behavioural components, therefore limiting the accuracy of predictive factors (Grandón et al., 2011). This study used the TRA theoretical model for the investigation because TRA effectiveness predicts behavioural compliance, as has been demonstrated successfully in a number of studies, including compliance behaviour (Ajzen, 1991; Ajzen, 1980; Waly, 2013; Bauer, 2006; Burak et al, 2013; Tsai et al, 2012). However, in this study, the habit variable was the negative factor in the theory for prediction of female worker behaviour to participate in compliance, followed by positive intention and belief, but the attitude variable was not related to compliance with instructions in innovation management. These variables in the TRA may be necessary to examine in future research to demonstrate variance in carrying out compliance behaviour. The

author asserts that investigation of the TRA in different sections or genders also includes additional variables directly related to habit or attitude. This will lead to assistance in identifying the actual power for the belief factor in particular, evaluating the intention efficiency factor to engage in innovation practice or not to engage.

However, the conventional literature reviewed additional predictors to organisational factors introduced to find different solutions to the study problem and support the TRA, improving the validity and quality of the current study model. Overall, this thesis has contributed to determining paths to understanding the factors influencing female worker behaviour and compliance with innovation management instructions within a KSA context. In particular, the study findings proposed that the scale of compliance with innovation management instructions has been addressed as a first-time contribution. It is therefore reasonably assumed that these findings could be valuable to provide ways for replication in similar research studies of female workers in any sector, either the clothing industry or others in the KSA and beyond. This study may be worthwhile for designing theory based on compliance with innovation instructions through using our contribution variables or modifiabiles. The TRA can be extended to encompass other variables for future investigation, directing its evaluation and efficacy once implemented. Further discussion will be presented about the implications for female worker practice in the next section.

## **6.5. Implications for female worker practice**

A number of practical implications for female workers are associated with the current study. The findings revealed that intention, belief, training programmes, sufficient resources and rewards and punishment factors constitute the most important factors influencing female workers towards compliance behaviour. These ways can be recommended to increase the behaviour of compliance with instructions and organisations should target these tools to foster



positive and compliant behaviour. This study's findings suggest that attempts to motivate female workers to comply with management instructions will be enhanced by successful involvement with innovation practices. The findings of this study provide support for improving education in textile and fashion schools and institutions for female students in order to disseminate the best innovative and creative ideas across the clothing industry. These findings could help industrial managers, owners and professionals to realise the relationship between behavioural and organisational factors, and act in compliance with management instructions. In addition, these findings advocate that managers and owners provide these systems in their organisations in case they desire to continue to be competitive in the market. It is reasonable to state that promoting the engagement of female workers in complying with innovation guidelines requires focus on increasing their intention, belief, and change their negative habits. Providing information to female workers regarding the importance of innovation in organisational life and job consistency could be an effective way to motivate female workers to comply with innovation guidelines.

Overall, this study's findings suggest that the intention and belief variables were the positive variables of the behavioural factors. Similarly, the availability resources and training factors are the only variables recorded as the strongest of the organisational factors. Nonetheless, these results should be verified in future research which should examine these factors relating to compliance for all female workers in clothing factories in the KSA. All these factors suggested are designed to encourage female workers to comply. Organisations can identify the most influential factors for innovation, thus enhancing organisational performance. This could therefore determine appropriate factors for particular innovation, easily and quickly enabling workers to comply with instructions. Alternatively, using other factors may be necessary in the meantime or in the future. These findings aim to improve strategies for workers by suggesting and addressing instructions and guidelines to be adopted in organisations,

according to the objectives of each organisation. In turn, these could be used to develop female workers' behavioural compliance.

This study's findings support innovative ideas that could re-educate female workers to maximise positive outcomes relating to compliance, ensure training and workshops about innovation products and identify availability of resources and tools, as availability of resources has been found to be a persuasive way of encouraging compliance behaviour. Rewards and punishment tools support increasing involvement in innovation practices. These initiatives can change female worker intention, belief and habit. Managers and owners can find alternative ways to manage innovative products when implementing these findings and not succeeding.

The study findings showed the importance of organisational factors in compliance with innovation management instructions. It could be helpful for workers to focus on shaping their behaviour, where designing well-structured training programmes plays a basic role in changing habits towards compliance behaviour. Availability of all resources and tools provided by organisations to use in new operational plans encourages worker to comply, as opposed to lack of resources and tools, which restricts innovative work. It is not a favourable option to carry out compliance with innovation guidelines and instructions. Appropriate system of rewards and punishment can be persuasive to workers, and these pieces of information can create desirable intentions for complying and advocate targeting behaviour relating to belief and habit. Each the awareness and knowledge, supervisory encouragement and communications factors do not support innovation management in producing a better motivated workforce to continue with compliance.

The findings of the study may potentially help female workers, managers, owners, management lecturers, researchers in evolution and educators in textiles, fashion and clothing departments to develop and modify compliance factors to fit with innovation plans. Consequently, the usefulness of this study's findings develop an effective environment for

female workers for continuous innovation operation, not stopping or disabling such innovation. These findings continue to provide rewards and punishment systems for valuable participation with innovation practices, making available all tools and resources related to innovation practices and enabling workers to access these, and continuing training programmes and courses. Female workers will thus improve their work and overcome any issues they may face. These strategies are provided by organisational management, as it is responsible to ensure that these are provided for employees and their contributions support innovation. Consequently, it is proposed that these organisational factors help to increase the competence of female worker compliance and thus their work, but the female worker role is focused on enhancing their intention and positive belief from their culture, and enabling them to develop positive habits in order to comply with innovation instruction and guidelines consistently and appropriately.

## **Chapter Seven — Conclusion**

### **7.1. Conclusion**

In summary, female workers who lack education or multilevel culture work in traditional employment and block themselves from advantages and involvement in innovation practices, and management increases problems by neglecting to redesign the system. The TRA is a theoretical framework that has been implemented in this study to predict and determine the behavioural factor of compliance of female workers. In addition, it has used organisational factors across a wide array of previous reviews and contexts. Despite this theory's age, it has been used extensively for predicting compliance factors. However, predicting compliance behavioural factors for female workers has been very limited. The study's purpose is predicting and determining compliance behavioural and organisational factors that influence female workers toward carrying out the compliance with innovation management instructions in the clothing industry in Saudi Arabia.

This thesis has major strengths that have contributed strongly to theoretical literature on female worker compliance behaviour. This thesis was a necessary step to examine the factors influencing compliance with innovation management instructions and to draw attention to how to manage different people and the exploitation of factory mechanisms used to control female workers. The prime problem is related to some female workers in the Saudi clothing industry not complying with instructions given by management to engage with or become involved in innovations systems, and the key concerns if they continue not complying with innovation management instructions, resulting in factories losing out financially. Studying this issue assists improvement in compliance and workers' behaviour, contributing to factory performance and thus leading to satisfactory outcomes.

The second strength in this study, TRA has been adapted to analyse the behavioural factors of female employees, and the compliance factors for implementing innovation management processes. The TRA is built on three main components: subjective norms, attitudes and intentions (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). These components affect the behaviour of female workers, who have to comply or not comply. In earlier studies, Ajzen and Fishbein (1975) mentioned that beliefs also affected behaviour. However, they did not consider this as a constant factor in the same way as attitudes and intentions. The researcher therefore considers beliefs in relation to the TRA; this is the first of the researcher's contributions in the current study. On the other hand, subjective norms are defined as: "the perceived social pressure to perform or not to perform the behaviour" (Ajzen, 1991, p. 188) which further clarified what other people think about how individuals behave. Subjective norms have often been labelled as normative beliefs, defined as, "the perceived behavioural expectations of such important referent individuals or groups as the person's spouse, family and friends" (Ajzen, 1991, p. 188). All perceived expectations and references are beliefs in the final analysis (Ajzen and Fishbein, 1980). Subjective norms have therefore not been valued in this study because belief factors represent a substitute for these. In addition, the belief factor is easier for determining reasons in the current study and will be easier in future research. However, subjective norms are examined in many previous research studies in the clothing sector (Joung and Park-Poaps, 2013; Qasem, 2014). Another reason that subjective norms are not valued from the TRA in the current study is that this study focuses on non-complying females with innovation management instructions who do not care what other people think of what they are doing or not doing. However, the researcher has classified opinions of female workers as cultural beliefs. The researcher has therefore excluded subjective norms from the TRA in this research.

For the third core strength in this thesis, the researcher has attempted to assist the Saudi vision for 2030, which relates to the Kingdom becoming the highest pioneering economic investment force by the beginning of 2030. One part of this is investment by the clothing industry. The study presents ways of encouraging Saudi women to flourish in the organisation in general and the clothing industry particular, and thus economically. It considers rarely discussed concepts in one study. Some articles describe Saudi women's clothes (e.g. Almejmaj et al., 2014) or give information about clothing retailers and percentages, which are consumed by the Saudi people each year (Almousa and Brosdahl, 2013). This study attempts to examine factors affecting female workers about delays in innovations. This information emphasises the benefits of organisational progress towards contributing to attainment of the Saudi vision.

Similarly, the fourth strength of this thesis relates to improvement of understandings of the natural behaviour of Saudi women in fieldwork, including those not wanting to improve because of pre-existing pressures. Numerous researchers speak about Saudi women's entrepreneurship when they have money (Ahmad, 2011a; Ahmad, 2011b; Sadi and Al-Ghazali, 2012; Welsh et al., 2013), but almost no one talks about Saudi women workers in organisations and how they can be entrepreneurs from changing themselves. In this case, innovation topics are interesting for employees and policy makers (Barge-Gil, 2013). This study thus provides information about impacting factors which may inform policy makers and training professionals about seeking feminist opportunities for employees to support innovation and growth productivity (Orser and Leck, 2010). Recent studies face the challenge of scarce sources relating to employee innovation in the clothing industry. According to Hsu (2013, p. 273), "little is known about the conditions that promote employee's creativity performance in [the] clothing industry".

The fifth strength of this thesis in practice areas is that innovation management is difficult to illustrate by a single frame because every issue is linked to another in an organisation.

Therefore, this study investigated all the reasons that make up compliance and not compliance to innovation instructions, one by one. The findings are essential for helping organisations to redesign their system to be in line with managing innovation in the orders that are given to their workers. Furthermore, it is vital that owners and managers might take these factors into account when managing innovation and giving instructions in order to protect the production lines from future risk. It is a major managerial target to encourage employees to drive innovation (Hasu et al., 2014). According to Qudrat-Ullah (2009, p. 2), “managers in the apparel industry are constantly looking for ways, strategies, and methods to manage risks and demand related uncertainties”. Nonetheless, managers/owners in this study are not keen to provide comfortable and suitable environments to involve workers in innovative practice and compliance with their management instructions.

The sixth strength is that the study has taken an interdisciplinary research approach which refers to a combination of literature from innovation management, female behaviour and the clothing industry literature. Issues relating to these topics gave a sense of substantial overlap – however, it was a necessary step to treat the disparate literature to create new knowledge and benefit from a broader perspective to research the specific sector in detail (Walker, 2014). A number of authors have called for researchers to take an interdisciplinary approach (Agarwal and Hoetker, 2007; Hitt et al., 2007). The scale of compliance with innovation management instructions created from interdisciplinary research has therefore been examined as a first-time contribution. In addition, the study used convenience sampling and a participatory approach that relied on easy-to-reach people and depends on cooperative study with people. To gain information about real problems with available target people, the researcher used different innovative ways to share actions with participants. Initially, use was made of social media, emails and websites of clothing industry factories but it was rare for factories to respond to emails. Alternative methods included visiting factories, recruiting

people to find more participants, and advertising for famous people on social media, but convenience sampling cannot be generalised to all countries. Overall, the findings of this thesis support the TRA in predicting female workers' behaviour in complying with management instructions. However, the habit factor was the negatively statistically significant data in the TRA framework, as opposed to the belief factor, which was a good and positive predictor of female compliance with innovation management instructions, but the attitude factor was not correlated to innovation management instructions. On the other hand, the findings of organisational factors indicate that some factors support compliance, such as rewards and punishments, recoded as the weakest positive factor, followed by sufficient resources, which is recorded once as negative and another time as positive and strongly significant, and periodic training, which is a moderate predictive factor significant to innovation management. This reveals that female workers were highly likely to comply with training sessions provided as these include information related to other factors. Awareness and knowledge, supervisory encouragement and communication did not add any statistical significance to female compliance with management instructions. Meanwhile, compliance fluctuates among factors, according to its content. This finding also indicated that female workers are more compliant with innovation management instructions with intentions to follow instructions and training programmes, availability of recourses and innovation tools, and rewards and punishment systems. Developing effective strategies should target workers' intentions and beliefs that affect their habits and thus encourage favourable actual behaviour. More specifically, this thesis can assist in reducing working hours, development of education and orientation programmes for training in improving compliance behaviour. Using current findings, future studies should use the TRA model to test the belief factor rather than subjective norms or expand it to include additional variables in order to examine worker behaviour in the form of compliance with innovation management instructions.



## **7.2. Limitations of the study and future research**

As with most previous studies, this research has limitations that need to be discussed. Although it was one of the few studies to measure workers' compliance with innovation management instructions and procedures, employing the TRA and organisational factors, there were certain limitations that should be acknowledged. The following paragraph is an extraction of these particular limitations and this then leads to an agenda for future research.

The major limitation was the lack of determination of levels of compliance. In this study, the TRA predicted factors but did not examine the relationships between worker behaviour and actual compliance with instructions and between intentions and actual compliance behaviour. For this reason, it used the TRA. However, Ajzen and Fishbein (1980) pointed to measurement of compliance behaviour through observation, but the observation method was absent in this study as it was too difficult to observe participants while using the quantitative methodology. In addition, the type of current research is the cross-sectional design which means that time is limited to address the influencing factors in organisations and there is no possibility to observe the inferred influencing factors for determining the level of compliance among workers. Moreover, it was impossible to infer directional causation in studies of cross-sectional design and correlation data (Erez and Gati, 2004). The inferences made in this research build on the cause and effect in the relationship, so the literature supported influence but are not directly causal. This is a major constraint and there are two ways to cope with measuring levels of compliance. It is therefore highly recommended that future studies are carried out that incorporate qualitative methodology design, in terms of understanding the nature of women's behaviour in organisations and thus providing a rich description and accurate details of the sample under investigation. The consequences of this proposition complement this study, continuing to explore how these factors impact compliant workers. Qualitative methods have the ability to further address the type of orders that management

requests to involve innovation. Also, the subject can be investigated if innovations would be of value to the clothing industry. A quantitative method, on the other hand, offers a broad investigation of the relationship between phenomena which is the reason for adopting it. It should be noted that a qualitative approach would require a lot of time and thought, and could perhaps be obtained through a set of methods, making it very challenging. Therefore, in studying innovation management with regard to influencing factors, it is possible that the qualitative approach is not advantageous to gather information on worker behaviour and their organisational effects. Future researchers will be helpful if they apply these factors and work over a longer time period with an assessment every six months, providing further information on female workers' behaviour and for grasping the degree of compliance in workers. Future research could also consider a longitudinal design to examine the relationship described in the current study, instead of a cross-sectional design.

A second limitation in the theoretical and methodological approach involved examining these factors in specific contexts and collecting data from one specific region in Saudi Arabia (the Western region). Analysis of data was limited to exclusively female respondents, but the male ratio is zero. A more detailed study on factors influencing employees in the clothing industry was conducted in Thailand (Hsu, 2013), which is radically different from the KSA in terms of society and culture. It would thus be interesting in future research to investigate the relationship between factors in Gulf countries with a similar society and culture. In addition, the study could be replicated in eastern states to establish the significance of the belief factor with, for example, compliance with innovation instructions. A larger study could then be carried out in Western countries. These suggestions might benefit from comparison between countries, or from applying international sample surveys for a compliance scale. Within the specific sample, the fact that the sample limited the findings to female workers may be a limitation (Vinet et al., 1989). In addition, although the respondent number of our study was

reasonably acceptable, other studies had far larger samples (Khare et al., 2012; Kozar and Connell, 2013). The findings cannot therefore be taken as completely generalisable and may not be able to be interpreted by other countries. Consequently, future studies are recommended to try to replicate the results achieved from our study and applying the techniques used in different regions and adopting a larger sample size including both genders or a male-only sample, enabling an interesting comparison across genders (Walker, 2014). This could strengthen the research findings.

This research demonstrates that compliance and innovation management in the clothing industry is generally superficial. It is known that the clothing industry included many sections to start with: prediction of design, planning, designing, implementation, checking of quality and, finally, packing and distribution (Hsu, 2013; Lee and Kleiner, 2001). However, the purpose of this research points to influencing factors in the clothing industry without being specific. In addition, it is not easy to discuss each section in depth or discuss sections without others. The scarcity of examples of compliance in the clothing industry and of existing examples in literature about compliance in technology not in clothing is also a factor. Innovation management is also a new science and it is important that human resources management and quality management care about populating and assessing products. However, innovation management focuses on people and inventions until successful products are achieved. Despite this limitation, there is a chance for future researchers to concentrate on one stage of the clothing industry and implement innovation management in it. Realistic examples could then be extracted.

Although these influencing factors do matter for compliance with innovation in different ways, the research is exempt from examining all factors influencing compliance with innovation instructions and only focuses on those commensurate with Saudi women. This may increase intentions to study other factors including, for example, company size or salary, to

establish other reasons for non-compliance. In addition, with regard to compliance variables, only independent and control variables were used. In future studies, the current questionnaire model could be expanded by adding other factors such as moderating or mediation variables to achieve a deeper understanding of the compliance relationship. Another suggestion might also involve future studies using current factors such as moderating or mediation variables. Furthermore, future studies could add other factors related to this study context to measure compliance with innovation management as independent and control variables. For example factors in the study of Hsu (2013) have potential to provide a useful insight into this area. On the other hand, the study stopped when identifying the factors which are the goal in this study, but what would happen if women still refused to comply with policies or were not persuaded to change their behaviour? Future research might involve a feasibility study on the effectiveness of factors for compliance.

One of the biggest theoretical contributions mentioned in the previous section involved not using subject norms and adding belief as a major component. However, this theory excluded one of the main parts and no research has done this before. This limitation could be true, but it is considered a bold step for research to extract what is useful from a theory for research and what it ultimately aims for. This amends the TRA and constructs a theory appropriate for Saudi women in industry, but possibly was mistaken. There is a chance for future studies to develop the TRA because it is old and needs to be made simpler and more appropriate to the current situation. Another critique could be raised that the theory is focused on Saudi culture in this research but, “[the] Saudi Arabian industrial sector has a long way to move towards building up a new industrial culture” (Al-darrab et al., 2013, p. 352). However, better late than never, and future research should study how to respect culture in developing innovation inside organisations.

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## Appendix A: Questionnaire (English Language)

*"In the name of God, the Most Gracious, the Most Merciful"*

This questionnaire is the part of the requirements for the collection of data on the subject of my doctoral thesis, in entitled "The impact of innovation management and the role of women in the clothing industry in Saudi Arabia." First innovation management on the simplified; it is the factory adds new idea on the product and then adding a creative idea from administration in order to speed sold in the market. A simple example: if factory produces new design has not been raised yet, the administration management could cooperate with one of the fashion home in the world to sell a product or it could create a Website to sell a product. So, there is a cooperation between all levels of employees in the factory of the administration, staff and workers. however, the factory or the company issued instructions to facilitate the things to look for innovation and development. But there is a class of non-workers unwilling to comply with these instructions because some reasons, whether these reasons related to their behaviour or related to the factory.

For this, the researcher designed this survey in order to achieve the goal of a research to know these reasons which called factors of noncompliance Saudi women worker the instructions of innovation management in clothing industry. This questionnaire with all respect to those who work in the clothing manufacturing sector in Saudi Arabia by male and female workers, admins or owners.

It should be noted that participation in this questionnaire is voluntary, and moreover, your responses will be treated with the strictest confidence which is also a moral requirement to conduct research with the Royal Holloway University of London. Each answer has a very high value. They help the researcher access to reliable and objective results, so please answer all questions. Just remember that there is no answer true or false. But I hope to read term management innovation at the top of the page and general instructions before you start to answer.

Please accept my the highest respectful

PhD researcher: Nuha Alhazmi

Management school

Innovation and Entrepreneurship, [Pxtm009@live.rhul.ac.uk](mailto:Pxtm009@live.rhul.ac.uk)

- **General instructions**

The questionnaire consists of five parts: personal information about the participant, innovation management, clothing industry and women working, influencing factors from workers themselves and finally influencing factors from the factory. Most of the questions are multiple options from number (1) to number (7) or drop-down menu where you can choose only one answer, there is also additional space for the last question to include the suspension of your Furthermore there and brief explanations of some of the questions to clarify what it means to this question.

Please choose the most appropriate answered of each question. If you want to comment on any question, please do so in a place dedicated or communicate with me 'Pxtm009@live.rhul.ac.uk mail and I will be happy to receive contact and feedback.

- **Section one: Demographic data**

The goal of the questions in this section to understand the demographic background of the members of the sample. This information is important to the survey so it must be accurate responses.

1. What is your current job?	Worker	Manager/owner	Other (please specify)			
2. What is your age?	24 and less	25-34	35-44	45-54	55+	
3. What is your gender?	Female		Male			
4. What is the highest level of education you have completed?	Primary school	Secondary school	High school	Bachelor's degree	Vocational training	Higher education (e.g master, PhD)
5. Do you have Saudi citizenship?	Yes		No		If no please specify your nationality)	
6. Are you married?	Yes		No			
7. How many hours daily	6 hours or less	8 hours	10 hours or more			



are you working?						
8. How many years you have worked on this job?	Less than one year	Between 1 to 5 years	between 6 to 10 years	between 11 to 15 years	between 16 to 20 years	more than 21 years

- Section two: innovation management**

9. Does Innovation Management in your clothing factory involve the use of modern technology? (in your work or if ever hear)	Yes	No	Don't know
10. Does IM in clothing factory recognise new methods of marketing? (in your work or if ever hear)	Yes	No	Don't know
11. Does IM in clothing factory provide subjective assessment measures? (in your work or if ever hear)	Yes	No	Don't know

- Section three: compliance female workers**

Please indicate your likelihood using the scale below  
where 1 Never to 7 Always. You may give any score in-between!

12. Saudi women workers are reluctant to comply when management requires innovative ideas								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
13. The reluctance of Saudi workers to comply with innovation instructions from management has caused serious loss of business								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

- Section four: human behaviour**

***First factor: Behaviour***

Please indicate your likelihood using the scale below  
where 1 Never to 7 Always. You may give any score in-between!

14. Do you adopt new practices in the clothing industry?								
Never	1	2	3	4	5	6	7	Always
15. Do you modify your existing behaviour to comply instructions from innovation management?								
Never	1	2	3	4	5	6	7	Always
16. Do you refuse to comply with management instructions because of workplace rules?								
Never	1	2	3	4	5	6	7	Always

17. Do you refuse innovation instructions because of certain behaviours?								
Never	1	2	3	4	5	6	7	Always
18. Is there a relationship between your everyday habits and your compliance with management instructions?								
Never	1	2	3	4	5	6	7	Always

### ***Second factor: Intention***

Please indicate your likelihood using the scale below

where 1 Definitely do not intend to 7 Definitely do intend. You may give any score in-between!

19. I strongly intend to be innovative								
Definitely do not intend	1	2	3	4	5	6	7	Definitely do intend
20. I intend to adopt new practices in clothing industry								
Definitely do not intend	1	2	3	4	5	6	7	Definitely do intend
21. I intend to modify existing behaviour to comply with instructions from innovation management								
Definitely do not intend	1	2	3	4	5	6	7	Definitely do intend
22. I intend to refuse to comply with innovation instructions due to workplace rules								
Definitely do not intend	1	2	3	4	5	6	7	Definitely do intend
23. I do not intend to comply with innovation management instruction because I perceive innovations as a threat								
Definitely do not intend	1	2	3	4	5	6	7	Definitely do intend

### ***Third factor: attitude***

Please indicate your likelihood using the scale below

where 1 Not very certain to 7 Very certain. You may give any score in-between!

<b>I believe that being innovative will:</b>								
24. Affect negatively to my family relationship								
Not very certain	1	2	3	4	5	6	7	Very certain
25. Increase the risk of losing my job.								
Not very certain	1	2	3	4	5	6	7	Very certain
26. Fight laziness.								
Not very certain	1	2	3	4	5	6	7	Very certain

27. Adversely affect my health								
Not very certain	1	2	3	4	5	6	7	Very certain
28. Cost a lot of money								
Strongly Disagree	1	2	3	4	5	6	7	Very certain
29. Change the habits and norms which I have lived by								
Not very certain	1	2	3	4	5	6	7	Very certain

<b>I believe that compliance with innovation management instructions in clothing industry is influenced by:</b>								
30. Other people who work as models for employees.								
Not very certain	1	2	3	4	5	6	7	Very certain
31. Management eliminating negative perceptions about innovations.								
Not very certain	1	2	3	4	5	6	7	Very certain
32. Education								
Not very certain	1	2	3	4	5	6	7	Very certain
33. Aspirations to be entrepreneurial								
Not very certain	1	2	3	4	5	6	7	Very certain
34. Management motivating employees.								
Strongly Disagree	1	2	3	4	5	6	7	Very certain
35. Clearly understanding of the concept of innovation from firm's view-where I work.								
Not very certain	1	2	3	4	5	6	7	Very certain

***Fourth factor: belief***

Please indicate your likelihood using the scale below

where 1 I do not belief to 7 I strongly belief. You may give any score in-between!

36. I believe that I have the personal skills to be able to effectively innovate								
I strongly do not belief	1	2	3	4	5	6	7	I strongly belief
37. I believe that Saudi culture hinders female worker from being more open to changing their behaviour.								

I strongly do not belief	1	2	3	4	5	6	7	I strongly belief
38. I believe that Saudi culture helps female workers to achieve their goals in clothing industry								
I strongly do not belief	1	2	3	4	5	6	7	I strongly belief
39. In clothing factory, I believe that culture affects female workers when following innovation instructions								
I strongly do not belief	1	2	3	4	5	6	7	I strongly belief
40. I believe that the factory's management can change employees' attitudes toward innovation								
I strongly do not belief	1	2	3	4	5	6	7	I strongly belief

- **Section five: clothing industry factors**

The purpose of this section to determine the factors that affect with compliance from clothing factory. The first factor: tawareness of industry's goals and knowledge information in the innovation sector

Please indicate your likelihood using the scale below

where 1 Strongly disagree to 7 I Strongly agree. You may give any score in-between

***First factor: Awareness and knowledge***

41. Knowledge of the objectives of the clothing manufacturing industry can help employees to be more willing to follow innovation management instructions.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
42. Lack of knowledge about innovations among women employees can lead to the breakdown of the industry in future								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
43. Management of clothing industry factory is responsible for providing awareness training sessions and for imparting knowledge to employees								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Second factor: Organisational culture***

44. If management of clothing industry factories understands the culture background of female employee's, that will encourage employees to compliance with innovation management instructions.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

45. Management of clothing industry factories is responsible for understanding the culture of female employees because of its effects on innovation.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Third factor: Supervisory encouragement***

46. Supervisory encouragement influenced me to comply with management innovation instructions								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
47. One reason for the reluctance of female workers to comply with innovation instructions is the failure of supervisors to encourage them								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
48. Management in the clothing industry is responsible for ensuring that there is supervisory encouragement that supports innovation.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Fourth factor: Communication***

49. Communications between employees or supervisor helps female worker compliance with innovation management instructions.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
50. Management of clothing industry factory is responsible for maintaining communications between individuals in the firms.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Fifth factor: Rewards and punishment***

51. Management of clothing industry use rewards as tools for motivate female workers to comply with innovation instructions.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
52. In some cases, the management of clothing industry used punishment tool to comply with innovation instructions.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Sixth factor: Sufficient resources***

53. Available resources are sufficient to motivate creativity in the clothing industry								
--	--	--	--	--	--	--	--	--

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
54. Management of clothing industry should provide training for female workers on modern devices								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
55. My idea needs specific resources which are absent in my place of work at clothing factory.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

***Seventh factor: Periodic training***

56. Periodic training is one reason female workers comply with instructions relating to innovation management at clothing industry.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
57. Periodic training at clothing industry can cope with various difficulties facing female workers.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
58. Managements of clothing industry factories is responsible for provide suitable training to female workers.								
Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

**Your Point:**

- Form your knowledge; what is first reason that Saudi female workers in the clothing industry do not comply with innovation management instruction? -----(No more than three words).
- If there any other suggestions they would like to mention! Or any further factors affect female workers in relation to compliance with management.

**Your email if you like to know the results.**

## Appendix B: Questionnaire (Arabic language)

بسم الله الرحمن الرحيم

تعتبر هذه الاستبانة جزء من متطلبات لجمع البيانات حول موضوع رسالة الدكتوراه التي تحمل عنوان " أثر ادارة الابتكار على دور المرأة في صناعة الملابس في المملكة العربية السعودية". أولاً إدارة الابتكار بشكل مبسط: هي تطوير المنتج و من ثم يضاف اليها من الادارة فكرة جديدة من اجل سرعة بيعها في السوق ، لذلك يقال لها ابتكار لأنها فكرتين، فكرة من الموظفين وفكرة من الادارة. والمصنع او الشركة تصدر تعليمات لتيسير امور الابتكار من البحث عن الجديد والتطوير في المصنع. لكن هناك فئة من العاملات الغير راغبات في الالتزام بهذه التعليمات لأسباب سواء اكانت بسلوكهم او اسباب تتعلق من المصنع وجميعها بشكل او بآخر تكون مؤثرة على التزام العاملات لإدارة الابتكار.

من أجل ذلك قامت الباحثة بتصميم هذا الاستبيان لتحقيق هدف البحث وهي معرفة الاسباب والتي تسمى العوامل المؤثر على اتباع العاملات السعوديات لتعليمات الابتكار في مصنع الملابس. وهذا الاستبيان يختص فقط بكل من يعمل في قطاع تصنيع الملابس في السعودية من قبل العاملين والعاملات، المدراء او الإداريين من كلا الجنسين.

وتجدر الإشارة الى أن المشاركة في هذه الاستبانة تطوعية، وعلاوة على ذلك، سيتم التعامل مع ردودكم بسرية تامة التي هي أيضا مطلبا أخلاقيا لإجراء البحوث مع جامعة رويال هالولواي بلندن. وكل اجابة لها قيمة عالية جداً. فهي تساعد الباحثة على الوصول الى نتائج موثوقة و موضوعية، لذلك ارجو اجابة كل الاسئلة. فقط ضع/ي علامة على الرقم التي تعبر بشكل وثيق عن موقفك أو رأيك. فقط تذكر/ي انه لا يوجد اجابة صح او خطأ. **لكن ارجوا قراءة مصطلح ادارة الابتكار في اعلى**

**الصفحة قبل البدء في الاجابة.**

نهى ناصر الحازمي

جامعة رويال هولواي بلندن

تخصص ادارة

قسم الابتكار و ريادة الاعمال

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## ارشادات عامة

الاستبيان مكون من خمس اقسام: معلومات شخصية عن المشارك، ادارة الابتكار، صناعة الملابس والمرأة العاملة، العوامل المؤثرة من العاملة و اخيرا العوامل المؤثرة من المصنع. معظم الأسئلة هي خيارات متعددة من رقم ١ الى رقم ٧ او قائمة منسدلة حيث يمكنك اختيار إجابة واحدة فقط، أيضا هناك مساحة إضافية لآخر سؤال لتشمل التعليق الخاصة بك وعلاوة على ذلك هناك شرح موجزة لبعض الأسئلة لتوضيح ما يعنيه هذا السؤال.

يرجى اختيار انسب اجابه لكل سؤال . إذا كنت ترغب في التعليق على أي سؤال ، يرجى القيام بذلك في المكان المخصص أو التواصل معي عبر البريد الإلكتروني [Pxtm009@live.rhul.ac.uk](mailto:Pxtm009@live.rhul.ac.uk) وسأكون سعيدة بتواصلك واستقبال ملاحظاتك.

## القسم الأول: معلومات شخصية

هدف الأسئلة في هذا القسم لفهم الخلفية الديموغرافية لأفراد العينة. هذه المعلومات مهمة للمسح لذلك يجب أن تكون الردود دقيقة.

1. ماهو عمك الحالي	عامل/ة	مدير/ة او اداري/ة	اخرى
2. العمر	أقل من ٢٤	٢٥ - ٣٤	٣٥ - ٤٤      ٤٥ - ٥٤      ٥٥ - ٦٠
3. الجنس	ذكر	أنثى	
4. ماهو اخر مرحلة تعليمية	الابتدائية	المتوسطة	الثانوية      بكالوريوس      دراسات عليا (ماجستير، دكتوراه)
5. هل الجنسية السعودية	هل الجنسية السعودية	هل الجنسية السعودية	إذا (لا) الرجاء تحديد الجنسية.....
6. هل انت متزوج/ة	نعم	لا	
7. كم عدد ساعات العمل اليومية	٦ ساعات أو أقل	٨ ساعات	١٠ ساعات أو أكثر
8. كم عدد سنوات العمل في هذه الوظيفة	أقل من ٥ سنه	من سنة الى ٥ سنوات	من ٦ الى ١٠ سنوات      من ١١ الى ١٥ سنه      من ١٦ الى ٢٠ سنه      أكثر من ٢١ سنه

## القسم الثاني: إدارة الابتكار

هدف هذا القسم لمعرفة اذا ما كان مصنع الملابس يطبق ادارة الابتكار او لا. الرجاء اختيار الإجابة من القائمة المنسدلة



9. هل وحدة ادارة الابتكار في مصنع للملابس تطبق التكنولوجيا الحديثة؟ (إذا سمعت عن ذلك في اي وقت مضى أو موجود في عملك)	نعم	لا	لا اعرف
10. هل وحدة ادارة الابتكار في مصنع للملابس تنظم أساليب جديدة للتسويق؟ (إذا سمعت عن ذلك في اي وقت مضى أو موجود في عملك)	نعم	لا	لا اعرف
11. هل وحدة ادارة الابتكار في مصنع الملابس لديها تقييم شخصي؟ (إذا سمعت عن ذلك في اي وقت مضى أو موجود في عملك)	نعم	لا	لا اعرف

### القسم الثالث: امتثال العاملات

الرجاء اختيار الاحتمال الاقرب لك من (1) لا اوافق بشدة الى (7) أوافق بشدة.

12. هناك رفض بين العاملات السعوديات عند طلب الادارة فكرة مبتكرة للمنتجات	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
13. أحد اسباب خسارة المصنع هو رفض العاملات السعوديات الالتزام بتعليمات ادارة الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة

### القسم الرابع: شخصية العاملة:

#### (العامل الاول) السلوك

هدف هذا الجزء من الدراسة معرفة هل شخصية العاملة وما يتبعها سلوكها او نيتها او موقفها او اعتقاداتها هو احد

14. هل اعتمدت/ي على اتخاذ عادات سلوكية جديدة في صناعة الملابس.	أبداً	١	٢	٣	٤	٥	٦	٧	دائماً
15. هل قمت/ ي بتعديل سلوكياتك الموجودة فيك حتى تلتزم/ي بتعليمات إدارة الابتكار	أبداً	١	٢	٣	٤	٥	٦	٧	دائماً
16. هل رفضتي الالتزام بتعليمات ادارة الابتكار بسبب انظمة العمل.	أبداً	١	٢	٣	٤	٥	٦	٧	دائماً
17. هل رفضتي تعليمات ادارة الابتكار بسبب سلوك محدد فيك	أبداً	١	٢	٣	٤	٥	٦	٧	دائماً
18. هل ترى ان هناك علاقة بين عاداتك اليومية والتزامك بتعليمات الادارة	أبداً	١	٢	٣	٤	٥	٦	٧	دائماً

العوامل المؤثرة في التزام العاملة بتعليمات ادارة الابتكار التي تدعو الى المشاركة في طرح الافكار الابداعية. لذلك

ارجو اختيار الاحتمال الاقرب لك من (1) أبداً الى (7) دائماً.

**(القسم الثاني): النية**

لذلك ارجو اختيار الاحتمال الاقرب لك من (١) بالتأكيد لا انوي الى (٧) بالتأكيد انوي.

19. انا بقوة انوي ان اكون مبتكرة							
بالتأكيد لا انوي	١	٢	٣	٤	٥	٦	٧ بالتأكيد انوي
20. انا انوي ان اتخذ عادات جديدة في سلوكياتي عند صناعة الملابس.							
بالتأكيد لا انوي	١	٢	٣	٤	٥	٦	٧ بالتأكيد انوي
21. انا انوي ان اعدل سلوكياتي الموجودة في الالتزام بتعليمات ادارة الابتكار							
بالتأكيد لا انوي	١	٢	٣	٤	٥	٦	٧ بالتأكيد انوي
22. انا انوي ان ارفض الالتزام بتعليمات الابتكار نظرا للأنظمة العمل							
بالتأكيد لا انوي	١	٢	٣	٤	٥	٦	٧ بالتأكيد انوي
23. أتصور الابتكار كتهديد لذلك انوي عدم الامتثال لتعليمات ادارة الابتكار							
بالتأكيد لا انوي	١	٢	٣	٤	٥	٦	٧ بالتأكيد انوي

**(العامل الثالث): الموقف**

يقصد به طريقة تفكيرك او موقفك

لذلك ارجو اختيار الاحتمال الاقرب لك من (١) ليس مؤكد تماماً الى (٧) مؤكد جداً.

انا اعتقد كوني مبتكرة سوف...							
24. تؤثر سلبياً في علاقتي بعائلتي							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً
25. تزيد خطر خسارتي للعمل							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً
26. تحارب الكسل							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً
27. تؤثر سلباً على صحتي							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً
28. انفق مال للتنفيذ							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً
29. تغيير عاداتي التي عشت بها طول عمري							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً

**انا اعتقد ان اتباعي لتعليمات ادارة الابتكار في مصنع الملابس تتأثر بـ:**

30. الذين يعملوا كنموذج للعاملات مثل المدراء							
ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧ مؤكداً جداً

31. الادارة التي تعمل على القضاء على التصورات السلبية حول الابتكار	ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧	مؤكد جداً
32. التعليم	ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧	مؤكد جداً
33. تطلعات العاملة لتكون في مجال ريادة الاعمال	ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧	مؤكد جداً
34. تشجيع الادارة للموظفين	ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧	مؤكد جداً
35. فهم واضح لمعنى الابتكار	ليس مؤكداً تماماً	١	٢	٣	٤	٥	٦	٧	مؤكد جداً

#### (العامل الرابع): الاعتقاد

العوامل الثقافية يقصد به العادات والتقاليد والعوامل المحيطة بالعاملة لذلك ارجو اختيار الاحتمال الاقرب لك من ١ لا أعتقد بقوة الى ٧ اعتقد بقوة

36. لدي مهارات شخصية تجعلني مبتكر/ة	لا أعتقد بقوة	١	٢	٣	٤	٥	٦	٧	أعتقد بقوة
37. العوامل الثقافية تعيق العاملة السعودية من ان تغيير سلوكها	لا أعتقد بقوة	١	٢	٣	٤	٥	٦	٧	أعتقد بقوة
38. العوامل الثقافية تساعد العاملة السعودية لتحقيق أهدافها عند صناعة الملابس	لا أعتقد بقوة	١	٢	٣	٤	٥	٦	٧	أعتقد بقوة
39. في مصنع الملابس، العوامل الثقافية تؤثر على العاملة في اتباعها لتعليمات ادارة الابتكار	لا أعتقد بقوة	١	٢	٣	٤	٥	٦	٧	أعتقد بقوة
40. ادارة مصنع الملابس يمكن ان تغيير موقف الموظفين تجاه الابتكار	لا أعتقد بقوة	١	٢	٣	٤	٥	٦	٧	أعتقد بقوة

#### الجزء الرابع: عوامل من مصانع صناعة الملابس

هدف هذا القسم لتحديد العوامل التي تؤثر على الامتثال العاملات من مصنع الملابس لذلك الرجاء اختيار الاحتمال الاقرب لك من (1) لا اوافق بشدة الى (7) أوافق بشدة.

#### (العامل الاول): الوعي والمعرفة

41. معرفة العاملات بأهداف مصنع الملابس يسهل اتباعهم لتعليمات ادارة الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
42. نقص المعرفة عن الابتكارات بين العاملات يمكن ان تعطل صناعة الملابس على المدى البعيد	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
43. ادارة مصنع الملابس مسؤولة عن توفير دورات تدريبية عن الوعي بأهمية الابتكار									

لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
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#### (العامل الثاني): ثقافة المصنع

يقصد به تفهم الإدارة لثقافة التعاملات في السعودية.

44. إذا تفهمت إدارة مصنع الملابس الخلفية الثقافية للعاملات، من شأنها أن تشجعهن على الامتنثال لتعليمات إدارة الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
45. إدارة مصنع الملابس مسؤولة عن فهم الخلفية الثقافية للعاملات بسبب آثاره على الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة

#### (العامل الثالث): الإشراف التشجيعي

يقصد به تشجيع المشرفين على العمل بالامتثال لتعليمات الإدارة للمشاركة في الابتكار

46. الإشراف التشجيعي تؤثر علي في التقيد بتعليمات إدارة الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
47. احدى أسباب رفض العاملات في التقيد بتعليمات الابتكار هو فشل المشرفين لتشجيعهم	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
48. إدارة مصنع الملابس مسؤولة أن يكون لديها الإشراف التشجيعي التي تدعم الابتكار.	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة

#### (العامل الرابع): تبادل الآراء

49. تبادل الآراء بين المشرف والموظفين او الموظفين انفسهم تساعد العاملات لاتباع تعليمات إدارة الابتكار.	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
50. إدارة مصنع الملابس مسؤولة لتعزيز تبادل الآراء بين الأفراد في الشركات.	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة

#### (العامل الخامس): المكافآت والعقوبات

51. استخدام إدارة مصنع الملابس اسلوب المكافآت للالتزام بالعاملات بالتعليمات ادارة الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة
52. في بعض الحالات، إدارة مصنع الملابس تستخدم اسلوب العقوبات للتقيد بالعاملات بتعليمات الابتكار	لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧	أوافق بشدة

#### (العامل السادس): كفاية الموارد

53. وجود موارد الكافية للأبداع في مصنع الملابس تشجع العاملات لاتباع تعليمات ادارة الابتكار.							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة
54. إدارة مصنع الملابس مسؤولة عن تدريب العاملات على الأجهزة الحديثة							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة
55. فكرتي تحتاج إلى موارد محددة والتي غابت في عملي في مصنع للملابس.							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة

#### (العامل السابع): التدريبات الدورية

56. احدى اسباب تقييد العاملات بتعليمات للإدارة للابتكار هي التدريبات الدورية.							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة
57. التدريبات الدورية في مصنع الملابس تتغلب على الصعوبات التي تواجهها العاملات.							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة
58. إدارة مصنع الملابس مسؤولة عن توفير تدريبات دورية عن الابتكار للعاملات							
لا أوافق بشدة	١	٢	٣	٤	٥	٦	٧ أوافق بشدة

#### أسئلة اختيارية

من خلال معرفتك. ما هو السبب الأول أن العاملات السعوديات في صناعة الملابس لا تلتزم بتعليمات إدارة الابتكار؟  
( في ثلاث كلمات فقط )  
وجهة نظرك: إذا كان هناك أي اقتراحات أخرى تود/ي ذكرها! أو أي عوامل أخرى تؤثر على العاملات فيما يتعلق بالامتثال للإدارة.

## Appendix C: Definition of variables

Variables	Description
Modern technology	Modern technology, the first dependent variable (dummy variable based on Q9 “Does innovation management in the clothing factory apply modern technology?”: value 1 for yes; 0 for No, Don’t know).
New material marketing	New materials marketing, the second dependent variable (dummy variable based on Q10 “Does innovation management in the clothing factory recognise new materials of marketing?”: value 1 for yes; 0 for No, Don’t know).
Subjective measure	Subjective measure in innovation, the third dependent variable (dummy variable based on Q11 “Does innovation in the clothing factory provide subjective measure?”: value 1 for yes; 0 for No, Don’t know).
Reluctance ideas	Saudi women workers’ reluctance to comply when management requires innovative ideas, the fourth dependent variable (dummy variable based on based on a 7 point scale to the question Q12 “Saudi women workers are reluctant to comply when management requires innovative ideas” : value 1 for 5 to 7; 0 for 1 to 4).
Reluctance financial harm	The reluctance of Saudi workers to comply with instructions from management has caused serious loss of business, the fifth dependent variable (dummy variable based on a 7 point scale to the question Q13 “The reluctance of Saudi workers to comply with instructions from management has caused serious loss of business” : value 1 for 5 to 7; 0 for 1 to 4).
Age	Control variable of age of the respondents (dummy variable: value 1 for ages of 34 years and younger; 0 for ages of 25 to 33 years old).
Education	Control variable of the level of education of the respondents (dummy variable: value 1 for holding a Bachelor’s degree, or higher, education qualification; 0 for lower levels of education qualifications).
Nationality	Control variable of the nationality of the respondents (dummy variable 1 for Saudi nationals; 0 otherwise).

Marital status	Control variable of the marital status of the respondents (dummy variable: value 1 for being married; 0 otherwise).
Working hours	Control variable of the number of working hours of the respondents (dummy variable: value 1 for 8 hours and higher; 0 otherwise).
Experience	Control variable of the number of years of experience of the respondents (dummy variable: value 1 for 6 years and higher; 0 otherwise).
Habit	Independent variable of behavioural habit, based on a 7 point scale and reduced by factor analysis to utilise 3 questions: Q16 Do you refuse with comply with management instructions because of workplace rules Q17 Do you refuse innovations instructions due to certain behaviour Q18 Is there relationship between your everyday habit and your compliance to management instructions
Intention	Independent variable of intention, based on a 7 point scale and reduced by factor analysis to utilise 3 questions: Q19 I strongly intent to be innovative Q20 I intend to adopt new practices in the clothing industry Q21 I intend to modify existing behaviour to comply with instructions from innovation management
Attitude	Independent variable of the influence of attitude factors relating to innovation management instruction, based on a 7 point scale and reduced by factor analysis to utilize the following: Q24 Negatively affect my family relationships Q25 Increase the risk of losing my job Q26 Fight laziness Q27 Adversely affect my health Q28 Spend a lot of money Q29 Change the habits and norms which I have lived by Q30 Other people who work as models for employees Q31 Management eliminating negative perceptions about innovations Q32 Education Q33 Aspirations to be entrepreneurial Q34 Is a way for management to motivate employees

	Q35 Clearly understands the concept of innovation from the firm's point of view where I work
Belief	<p>Independent variable of belief, based on a 7 point scale and reduced by factor analysis to become the following:</p> <p>Q36 I belief that I have the personal skills to be able to effectively innovate</p> <p>Q37 I belief that Saudi culture hinders female workers from being more open to changing their behaviour</p> <p>Q38 I belief that Saudi culture helps female workers to achieving their goals in clothing industry firms</p> <p>Q39 In the clothing factory, I belief that culture affect female workers when following innovation instructions</p> <p>Q40 I belief that the factory's management can change employees' attitudes toward innovation</p>
Awareness and knowledge	<p>Independent variable of awareness and knowledge, based on a 7 point scale and reduced by factor analysis to become 3 questions:</p> <p>Q41 Knowledge of the objectives of the clothing manufacturing industry can help employees to be more willing to follow innovation management instructions</p> <p>Q42 Lack of knowledge about innovations in women employees can lead to the breakdown of the industry in future</p> <p>Q43 Management of the clothing industry factory is responsible for providing awareness training sessions and for imparting knowledge to employees</p>
Organizational culture	<p>Independent variable of organizational culture, based on a 7 point scale and reduced by factor analysis to become 2 questions:</p> <p>Q44 If management of the clothing industry factory understands the cultural background of female employees, that will encourage employees to comply with innovation management instructions</p> <p>Q45 Management of the clothing industry factories is responsible for understanding the culture of female employees due to its effect on innovation</p>



Supervisory encouragement	<p>Independent variable of supervisory encouragement, based on a 7 point scale and reduced by factor analysis to become 3 questions:</p> <p>Q46 Supervisory encouragement influenced me to comply with management innovation instructions</p> <p>Q47 One reason for the reluctance of female workers to comply with innovation instructions is the failure of supervisors to encourage them</p> <p>Q48 Management in the clothing industry is responsible for ensuring that there is supervisory encouragement that supports innovation</p>
Communication	<p>Independent variable of communication, based on a 7 point scale and reduced by factor analysis to become 2 questions:</p> <p>Q49 Communications between employees and supervisor and employees helps female workers compliance with innovation management instructions</p> <p>Q50 Management of the clothing industry factory is responsible for maintaining communications between individuals in the firms</p>
Rewards and punishment	<p>Independent variable of rewards and punishment, based on a 7 point scale and reduced by factor analysis to become 2 questions:</p> <p>Q51 Management of the clothing industry used rewards as tools to motivating female workers to compliance with innovation instructions</p> <p>Q52 In some cases, the management of the clothing industry used punishments tools to comply with innovation instructions</p>
Sufficient resources	<p>Independent variable of sufficient resources, based on a 7 point scale and reduced by factor analysis to become 3 questions:</p> <p>Q53 Available resources are sufficient to motivate creativity in the clothing industry</p> <p>Q54 Management of the clothing industry should provide training for female workers on modern devices</p> <p>Q55 My idea needs specific resources which are absent in my place of work at the clothing factory</p>
Periodic training	<p>Independent variable of periodic training, based on a 7 point scale and reduced by factor analysis to become 3 questions:</p> <p>Q56 Periodic training is one reason female workers comply with the instruction of innovation management in the clothing industry</p>

	<p>Q57 Periodic training in the clothing industry can cope with various difficulties that are facing female workers</p> <p>Q58 Management of the clothing industry factory is responsible to providing suitable training to female workers</p>
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## Appendix D: (Poster)

# Clothing Firm, Management Innovation. The Role of Saudi Women in Training

Student Name : Nuha Alhazmi, Phd management,  
Supervisor: Dr. Paul Robson

**The problem:** Managing innovation in Saudi Arabia is proving to be problematic, mainly because of a deficit in the knowledge required to bring about innovation. There is also a reluctance on the part of some Saudi women to see their roles in a new light to include the possibility of directorship and management.



**The relationship between theory and practice:**  
The research will use the principle of action reasons theory as a means of determining the behaviour factors of female employees which will be of assistance in developing non-compliance strategies for implementing and managing the process of innovation in clothing firms.

**The impact of research:**  
Identifying the critical barriers and factors that have affected management innovation amongst Saudi women in the clothing industry forms the main research impact. Personal and professional training programmes are resulting in better awareness compliance with industry policies. This thesis will contribute a simple model plan on management innovation.



**Challenges in engaging with the public:**  
The big challenge for Saudi women with talent is how to manage innovation and how to employ it through changing behaviours acquired from culture or misunderstandings of Islam.



**Public engagement and academia:** This thesis focused on women in the clothing industry because the lack of female management studies has impeded the development of scholarship generally within this industry which has traditionally been the domain of women.

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