



FACTORS INFLUENCING LABOUR PRODUCTIVITY - AN APPLIED STUDY OF NON-OIL MANUFACTURING SECTORS IN THE KINGDOM OF SAUDI ARABIA

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Abstract

In light of the current economic reforms, non-oil industrial sector is the key indicator for the growth of national economy in Saudi Arabia, which aims to reduce dependence on oil and diversify the economic base. The productivity of this sector has emerged as a one of the main requirements for national transformation and achieves the Kingdom in 2030 vision to liberalize the national economy dependence on oil. This paper outlines an empirical study that determine the factors affecting the productivity of labour in the non-oil factories in Jeddah (Kingdom of Saudi Arabia), through the identification of physical, and job performance, affecting the labour productivity. A descriptive analytical method applied using a survey method and (352) samples collected from staff and workers within the production area in the factories. The data analyzed through SPSS using appropriate statistical techniques, both descriptive and analytical. Cronbach's alpha for physical, and job performance factors were high and the questionnaire instrument proved to be reliable, valid, and appropriate for this study. The results of the study showed that the application physical factors were significant and came in first place, followed by job performance factors, which were applied moderately. It has also become apparent through the study that there is a positive impact between labour Productivity and physical, and job performance. However, these factors can influence labour Productivity in varying proportions, and the level of impact can be arranged in the following order: job performance factors, physical factors. The result concluded that some factors included within the stated three variables have negative impact while others have positive impact on the productivity of workers. Lastly, the present study suggested model and recommendations that could aid in improving the labour Productivity in the non-oil manufacturing sector in KSA

Keywords: *Productivity of Labour, Industrial, Non-Oil Sector, Physical Factors, Job Performance Factors, Saudi Arabia.*

1. Introduction

The manufacturing companies are one of major driving force of economic growth. The Kingdom's non-oil industrial sector made considerable progress over the past four decades. The number of producing factories reached 6471 in 2013, with a total capital of SR 883 billion, and more than 843 thousand workers compared to 198 factories with a capital of SR 12 billion, and 34 thousand workers in 1974, and increased its contribution to the GDP from 7.7% in 1975 to 17% in 2013. (Saudi Industrial Development Fund, 2013). On the other had achieving high levels of productivity in the non-oil sector in the kingdom is considered a strategic necessity as emphasized by the kingdom's industrialization strategy of 1441 h, the 10th development plan, which is currently in implementation, and the international institutions such as the World Bank. (Syed 2017) The economic condition of Saudi Arabia is improving and hence the life style of the consumer is also changing which laid to the change in the retail formats of the region. Increasing productivity levels in the non-oil sectors in the Middle East will increase capacity and ability of the kingdom's competitiveness on the international level and encourage further investments from the private sector. This can be achieved by structural reforms with long term views with the purpose of improving the investment environment and complementing international Trade, especially with the decrease oil prices, which represent one of the challenges facing the Saudi economy in the short and long term, and the presence of many of the rapid changes taking place in this sector in recent years (Ministry of Commerce and Industry, 2009; Ministry of Economy and Planning, 2013).

Furthermore, even though the kingdom has spent large efforts to increase the non-oil sectors, they have still faced lower productivity in many industries. This is highlighted by the low contribution to GDP from the non-oil sectors which only account for 10%. This contribution is low in comparison with industrialized nations. Moreover it is also worth mentioning that this percentage contribution has not changed significantly over the last Three decades. In the 1970's contribution was 5.2%, in the 1980's 8.8%, in the mid 1990's it went up to 9%, it also went

higher in 2000 to 9.2% reaching the highest point in 2014 of 10.8 % . (Ministry of Commerce and Industry, 2014) To put this in perspective we can compare this with countries such as Malaysia where non-oil sectors as percentage of GDP account for a 50 % contribution, this is also the case in Argentina where its 36 %, in Germany and Japan its 30 % and in France its 21% contribution. (Al Hawari, 2008). According to Babiker (2007) that the low productivity is one of the factors contributing to lower rate of growth in Gulf national, where marginal productivity was negative for the periods of 2000-2003. In addition a study from the Arab Labour Organization (2010) stated that productivity in the Arab world has dropped as they were ranked at 130 out of 131. Moreover in the competitiveness report 2012-2013, that most Arab nations are in the last rankings, even with the low labour cost which should give a competitive advantage as it lowers production costs (Kora, 2014). The author attributes this to lower productivity, higher unemployment, lower work flexibility and inconsistencies in the employment market where educational institutions are not compatible with the employment market demands.

2. Lecture Review and Background

2.1 Concept of the Study

This study, focus on the labour productivity as the human resources are the most important factors of production, especially with the development of the behavioural sciences, labour laws, and the labour costs account for 30–60% of the total cost of a project (Jarkas, and Bitar, 2012). Also it is one of the most common and widely used measures of productivity (Hanna et al., 2002), as it an important measure of the short-term and cyclical changes in an economy. As well it is directly effect in standards of living, and allows an economy evaluation the human capital, physical capital and new technologies underlying trends (El-Gohary and Aziz , 2014).

Singh, Motwani, and Kumar (2000) argue that labour Productivity is often relegated to second rank, and neglected or ignored by those who influence production processes in manufacturing. Tangen (2002) explain that labour Productivity is frequently discussed by managers but rarely defined, often misunderstood and confused with similar terms such as efficiency, effectiveness, profitability, and seldom measured in an appropriate way, leading to productivity being disregarded or even to that contra productive decisions are taken. Although , There is no one specific definition of Labour productivity, but that most of the concepts of Labour productivity focused on productivity from two perspectives: quantitative approach " term Labour productivity " as "equal to the ratio between a volume measure of output (gross domestic product or gross value added) and a measure of input use (the total number of hours worked or total employment" (OECD, 2008, p.5) , and the administrative aspect, " term Labour productivity is based on the concepts of efficiency and effectiveness of labour in achieving optimal use of available resources , and the administration's ability to convert the input to the output of the Organization specifications required and at the lowest possible cost. (Al Hawari, 2008).

Many of the efforts of specialists and researchers in the classification of the factors affecting the Labour productivity. But There is no uniform classification of the factors affecting the laubor productivity , and may be the classifications differences due to the variation in the methods and methodology used by professionals and researchers . Related to the nature and objectives of the study and its objectives, it can be classified to: physical factors, and job performance factors

2.2 Physical Factors

Physical factors include: the physical working conditions such as: the lighting, ventilation, noise, cleaner, and furniture arrangement, technical assistance and equipment in the workplace (Dawalibi, 2008). Ashour, (1983) and Al Rashidi (2015) attention to know the impact of the physical environment on the labour Productivity, as a result of its impact on their acceptance of the work environment and the satisfaction and behaviour. the International Labour Office (2014), indicates low productivity of workers in the medium and small enterprises in developing countries, Because of poor physical working conditions in the workplace and occupational safety and health facilities. While study of Abud Al Rahman and Majeed (2012), in Iraq, indicted statistically significant differences between the physical work and improving productivity. The study of Hameed and Amjad (2009) concluded to strong correlation between workplace design and productivity, and that 58% of the variation in employee productivity due to the design of the work environment. Results of the study Hoskins (2006) indicates that 90% of the senior officials noted that the design of the workplace is important to them and affect their productivity, and expected to increase in the employee's performance up to 22%, if their offices are designed well

On the other hand International standards (ISO) indicated the importance of the technical factors in the physical environment of in work which include machinery, equipment, tools, devices, and everything physical which contribute to the production process, as well as the appropriate the physical work specifications with the work designed and the characteristics of individuals to increase productivity (Abud Al Rahman, and Majeed ,2008). Also Sutermeister provided and discussed many technical factors affecting on the labour productivity, namely: the quality of machinery and equipment, the design of production processes the quality of raw materials, and the work methods (HSP Case Services, 1980). Kukoleca (1962) believe that the characteristic of products and raw materials, the process and the volume of production, work organization the most important technical factors affecting on the labour productivity. Also Arab Labour Organization (2010) indicated many technical factors and technological such as : the degree of integration in production, the rate of capacity utilization, quality and suitability

of raw materials and the regularity of its flow, subdivision of production processes, the balance of the production line, the multiplicity of machinery systems, maintenance, the quality of production machines and tools and ease of access to and circulation among workers .

Also a number of researchers believe that the development of technology and equipment has contributed to renew, change production methods, and improve the performance of the technique of production; which leads to raise the effectiveness of labour productivity (Bin Ateg and Hjmaoa, 2002) Issa (2012) believes that the modern technology applications changed the various processes associated with manufacturing, led to the changing demand structure of the workforce, " owns the modern experience and skill, especially in automated processes. Hasan, and Abed (2008) notes that the process of the transfer of modern technology to factories in of developing countries is not easy and must make sure that the suitability of the environment, the behavioral patterns, and compatibility with the size of the project and the demand for products.

There were several empirical studies in technical factors such as: Schmenner (2015) indicated many factors affecting labour productivity namely : the appropriate use of automation, link production, materials, equipment with control systems, and reduce costs. The results of the study Jarkas, and Bitar (2012) in Kuwait found that the top affecting factors are: Material availability, tool availability, work redone, and Overcrowded work areas. The results of the study Saranga, and Banker (2010) in pharmaceutical industrial sector in India indicates the significant improvement of technological changes which led to an improvement in the productivity of energy efficiency. Also study of Joshi and Singh (2010), in clothes manufacture in Indian concluded to achieved an overall growth in productivity by about 1.7% as a result of the change of technical competence. The results of the study Goher et al. (2010) specified the most important reasons that lead to low productivity namely : wasting time, unsuitable organization of departments and places of production facilities, lack of clear standards for preforms. on the other hand, many studies have focused on studying the impact of technology on productivity, Jenab et. Al (2015) study, reached to the importance of using computers to control and exchange of information for the production process to increase productivity, and that the choice of technology depends on competitive, operational strategies. Also there were many challenges in using new technology in Saudi Arabia, including: the high cost of equipment, loans, integrating new technologies, maintenance, and the scarcity of qualified workforce, training in advanced technologies. Also the results of Sarwar et. Al (2012) pointed achieved very low levels of labour productivity and due to low investment in technology in the automobile industry in Pakistan Kaming et al. (1997) studied factors affecting productivity of craftsmen in Indonesia; they found that the top affecting factors are: lack of materials, rework, work interference, absenteeism; lack of equipment, and tools.

2.3 Job Performance Factors

Many researchers associated the labour productivity with job performance factors such as: the number of workers, skill, scientific and cultural level, abilities of workers , interests and motivations, wages, , production units, incentives, work time, and administration deal with workers. In general all the previous factors interest in physical and moral aspects of the workers in order to influence to increase their productivity (AL Tibi, , 2001). In this study it will be divided as follows:

2. 3.1 Management Factors

Management affects labour productivity in a large number of decisions and methods such as: planning , organization , supervising , controlling , communicating and direct the work for the (Olson, 1982) . if employees lose their trust in the managerial competencies it becomes difficult to motivate them to complete their work, as organizational structure with the many parts it includes, plays a major roll in motivation. Management productivity is a main diminution in industrial sector management in order to utilize the best methods to increase productivity factors (Abu Kahf, 2005). Mustafa (1977) has focused on management methods and philosophies in improving employee productivity, considering factors such as work environment, training, incentives, employees satisfaction, work environment. Walton (1975) suggested many factors for management to improve employee productivity such as : Appropriate wages, safe working environment, opportunities to improve human resources and continue growth and security, social integration in the organization, constitutional in the organization of work, and the development of work. In developing countries, including Saudi Arabia , we find that despite large investments in technical factors in industrial development, but they do not have the same ability and interest in the creation of administrative cadres, organizational , only estimates of United Nations experts that developing countries can not invest more than 10% of national income due to lack of capacity and management skills, organizational and technical (Arab Fund for Economic and Social Development and the Arab Organization for Industrial Development and Mining, 2004).

2.2.1 Factors Affecting the Ability the Desire to Perform the Work:

May studies focused on two aspects of the impact on labour productivity including the desire and ability to work, as level of performance =ability x desire, so the ability to work is one of the essential equation of the labour productivity, its means possession of the qualities required to do the work required; which depend on education, training, work experience (HSP, 1989).. Therefore it is important to provide compatibility between ability to work and the nature of the work (Alazzaz and Whyte, 2015). Horner et al. (1989) stressed in the importance of

identifying the appropriate level of skills, and knowledge, and trends necessary to perform and its impacts on productivity work. This will be achieved by continuous development of employees and increasing their competence and knowledge of work, through education, which leads to increase knowledge of workers, through training, which contributes to increase the current and future capacity and skills of workers, and through the configuration, which helps to learn the knowledge, methods and new behaviors lead to a change in the ability of individuals to perform their jobs (Al Batoul, 2014). On the other hand, the desire of working is the other side equation of the labour productivity. the desire to perform the work is influenced by: values, beliefs, attitudes and employees' needs. The researchers focus on the many performance factors affecting productivity such as : job satisfaction ,employees policies (Atwi, 2010), wage and incentive system, motivation (Abud Al Majeed, 2013), participation in managerial decision-making, leadership, formal and informal and organization, the organizational climate (Hamalawy, 1993). AL Tibi (2011) discussed many of the factors affecting the productivity of the work such as including the competency, emotional, inspirational motivation, self-assessment, self-confidence, transparency adaptability, achievement-Orientation, initiative optimism, influence, teamwork and collaboration

Koys and DeCotiis (1993) indicated eight dimensions of organizational climate affect the performance and productivity of individuals, namely: independence, the degree of cohesion, confidence, work pressure, support, appreciation, justice, creativity. Gluskos and Kestelman (1971) believed that the personal, environmental and demographic factors influence the desire of workers. As well as socio-psychological needs of workers, supervisors and co-workers, chance to worker : do quality work, to promotion and to do interesting work, working hours. Looney (1992) indicated many problem face the manpower in the Gulf region related to a combination of education, economic, social, factors, such as lack of vocational education and training, and the lack of rehabilitation, a predominance of expatriate labour, the high rate of illiteracy, the women constitute a low percentages of manpower, and the refusal of many workers to undertake technical and manual work.

There are several empirical studies in this area such as : study Hinckeldeyn et al (2015), presence that the methods of operations management can applied and improve the productivity management in manufacturing. Survey El-Gohary and Aziz (2014) indicated the most factors affecting labour productivity in Egypt namely : Work experience and skills; incentive, the availability of materials and ease of handling; the leadership and management efficiency; and the efficiency of the supervision work. Social study (2014) in the construction industry in the United Arab Emirates. found that occupational pressures affected the productivity in 25% of the sample, as well as found and statistically significant between productivity and three influential factors related to: management, lack of support, and work pressure. The results of the. The results of the study Jarkas et al (2014) presented many factors with negative affect in productivity in the construction industry in Qatar namely : the lack of plans, slow process of decision-making, lower wages, delays in responding to requests for information, lack of skilled labour, shortage of materials, lack of clarity of the technical specifications, frequent decisions change during implementation and change the level of quality. While the results of study Freydon (2011) found the significant differences between productivity and physical environment, social environment, administrative systems, empowerment, incentives system.. While the results of Abud Al Qadir and Abu Sen (2011) indicted correlation between the of human resources management and productivity of workers; Where there is a statistical significance between the low productivity the and following independent factors: the shortage of labour, not applying scientific methodology in recruiting workers, lack of continuity of training programs, financial incentives not be linked with moral incentives, and inefficiency incentives to create satisfaction among workers. study of Gupta and Prasad (2011) that applied in (41) Indian - Japanese companies, and (35) Indian companies in the industrial sector. The results indicated to the factors affecting the productivity are: effective planning, and participation in decision-making, incentives, service training, assessment of training, human talent attraction, assessment and planning, human competencies. There are several empirical studies in this area such as Al Khatib (2010), focused on macro productivity in the non-oil sector in Saudi Arabia during the period (1970-2007), using the time-series analysis. The study results indicated that the macro factor productivity of production has increased each year at a rate of (0.5%), the growth physical capital (7.4%) and the growth of human capital (5.4%).). Results found a correlation between the macro productivity of factors of production and between each of the oil revenues, economic, and the rate of inflation. Estimates that each increase of 1% in each of the oil revenues, and economic, will lead to increased productivity at rate (0.39%, 0.78% respectively), while the high rate of inflation leads (1%) to reduce the level of productivity at rate (0.8%).. While Anastasia study (2008), which applied in the 178 Greek organization, indicated that the staff development, compensation, incentives, participation of workers, and job design affects the skills, attitudes, behavior of workers, and affecting their performance and productivity. Alinaitwi. et al. (2007) conducted a study aimed at identifying the factors affecting employee productivity in the UAE construction industry. They concluded that the most significant factors are proper work timings giving a balance between work and time for family, leadership skills of supervisors, technical qualifications, whether they are well paid or not and on time, security of job, transparency and accountability of management, payment of overtime, whether materials are available, procedures, policies, work method statements are available, personal skills, competency of supervisors and knowledge of work on an individual level. Survey OF Rojas and Aramvarekul (2003) indicated management systems and strategies had the greatest influence on labour productivity, followed by manpower, industry environment

3. Objectives Of The Study

The objective of the study is Identify the factors affecting the productivity in the non-oil manufacturing sector in KSA, to achieve this goal requires the following:

- 1) Identify physical factors affecting labour Productivity.
- 2) Identify job performance factors affecting labour Productivity.

4. Hypothesis of the Study

H1: There were statistically significant differences ($\alpha \leq 0.05$) between physical factors and labour Productivity in the non-oil manufacturing sector in KSA .

H2: There were statistically significant differences ($\alpha \leq 0.05$) between job performance factors and labour Productivity in the non-oil manufacturing sector in KSA

5. The Study Methodology and Scope

5.1 Approach Used: We considered a mixed-method approach to be suitable for our study. It followed descriptive and analytical methods for collection and analysis of the data based on secondary sources and field survey based on the use of the questionnaire.

5.2 The Study Population and Sample: The study targeted all staff and workers in production operations in in the non-oil factories in Jeddah. In view of a large number of respondents and the fieldwork resource limitations, a stratified random sample was used. The non-oil factories in Jeddah were divided into 21 geographical areas (Ministry of Commerce and Industry, 2014 a) and one was selected from each area randomly (big factories where there are at least 100 workers).

- used the following formula to determine the size of the sample (Weiss and Haselt, 1991). And use the sample stratified proportional to determine the sample size in each plant (Table 1), The total number of **study population** =4134 , and the total number of sample size =355. 400 questionnaires were distributed. Out of the total of 400 questionnaires, 352 were accepted for the purpose of analysis , the method of simple random sample in the distribution of the questionnaire.

$$n = \frac{M}{[(S^2 * (M-1)) \div pq] + 1}$$

Table (1) The study population and sample

Products Sector	Popula tion	Sam ple	Products Sector	populat ion	Samp le	Products Sector	popul ation	Sample e
Food products	150	13	Printing, recorded media	80	7	Fabricated metal	294	25
Drinks	210	18	coke	190	16	Computers, electronic	134	11
Textiles	145	12	chemical	230	20	Electrical equipment	130	11
Clothing	260	22	Pharmaceutical products	195	17	Machinery and equipment	100	7
Leather	100	7	rubber and plastics	250	21	Motor vehicle, vehicles	122	10
Wood	145	12	non-metallic minerals	280	24	Transport equipment other	196	17
Paper and paper products	600	51	Basic metals	183	16	Fabricated metal products	180	15

* Data were collected from the records of the factories listed in the table

It was evident from data analysis for the study sample characterization of the sample according to the following:

converged number of years of experience in the study sample both had experience ranging from age 5 year rate (27.6 %), with those who have years of experience of 11-15 by (22.2%), and there was a good number of those who have experience of 6-10 years (19.9 %), and is an indication of the efficiency of the sample possessing expertise in the industrial sector. With regard to qualification was the highest number for the study sample has a college degree (27.8 %), while the lowest percentage is anyone who holds a degree as the primary (8%). This is an indication of

the efficiency of the sample scientifically. Regarding nationality, the study sample was concentrated in non Saudi nationality (90.1%), while the percentage of non-Saudi (9.9 %), indicating that the large foreign workers in this sector size, and also decrease the number of Saudis working in a technical jobs. Regarding age was concentrated study sample in the age group of 31 years - 40 years old by (39.2 %), followed by the age group of 41 - 50 (32.7 %), indication of the efficiency of the sample .

5.3. Data Collection Tool

1 - Questionnaire has been used as a tool for primary data collection, which is specially prepared by the researchers for the purposes of the study. List survey was designed in its final form in two parts: general data and basic data (57 statement), researchers have adopted in the preparation of this part on the Likert scale (five level), the questionnaire was distributed in both Arabic and English Language.

2-Test the validity and reliability of the questionnaire: Questionnaire has been presented to six arbitrators of the operations staff in the non-oil manufacturing sector. And to the members of the faculty Economics and Management at King Abdul Aziz University who are specialists and have knowledge in operations management.

3- Results indicated that the overall reliability coefficient using Cronbach Alpha equation (0.969), and that the value of Cronbach's alpha coefficients for phrases dimensions of the study ranged between (0.977-0.919). And the Pearson correlation coefficient between the scores of each axis and the total score for the research tool statistically significant at the level (0.01), this confirms that the measure has a high degree of stability and internal consistency.

6. Data Analysis and Result

This section presents the results of analysing data and discussion the hypotheses in the study tables (2), (3), and (4). They are as follows:

Table (2)
The impact of physical and job performance Factors in labour Productivity

Independent factors	Arithmetic mean	Standard deviation	Beta	T .Test		F .Test		R2 for each independent variable	correlation
				T	Level of significance	F	Level of significance		
Physical Factors	4,19	0,87	0,342	41.068	0,000	1686.564	0,000	0.828	0,910
Job Performance Factors	3,36	0.82	0,732	81.948	0,000	6715.522	0,000	0.950	0,975

Is clear from the above table that physical factors are the most application and importance in the factories followed by job performance factors. However, the factors able to influence the labour Productivity in varying proportions according to the following: 1. job performance factors, 2. physical factors.

6-1 Results of the Analysis of the First Hypothesis: “There were statistically significant differences ($\alpha \leq 0.05$) between physical factors and labour Productivity in the non-oil manufacturing sector in KSA . The results indicate the following:

- Descriptive statistics indicated the first rank of the exists factors is physical factors, which exists highly degree (mean 4.19), also the means of all physical factors were ranged from 4.39 to 4.1. This results expected related to the increasing growth of investments in the manufacturing sector in the KSA (Ministry of Economy and Planning, 2010), and its effects, both in improving the physical working or technical factors. Especially in proper lighting, number of machinery and equipment suitable for the size of production, optimal utilization of production capacity which came in the first rank and widely applied.

- Factor analysis (Varimax Rotation) was used to identify the items that correlate highly, which are assumed to be an “element” of the physical factors. The results indicated that rotated factor loading suggested three factors that explain the physical factors, which accounted for a total of 69.06 % of the variance of sample’ opinions. Factor 1: Work processes explain a 30.93 % of the physical factors, suggested that seven-scale items had acceptable significant loadings which are: production style, internal organization, balance in the production lines, time performance of the work, work methods, and arrive the raw material. Factor 2: physical working conditions explain a 30.13 % of the physical factors, suggested that five-scale items had acceptable significant loadings which are: degree heat and cold, proper ventilation, proper lighting, machines condition, and maintenance programs. Factor 3: Technology explain a 7.99 % of the physical factors, includes using of modern technology in equipment and machine. These factors agrees with Labour Office (2014) , Dawalibi (2008), Abud Al Rahman, and Majeed (2008), and Issa (2012).

-Test the hypothesis with using multiple regression method. Results indicate evidence of the validity of this hypothesis, tables (2), (3) as follows: Test value "P" is equal to (1686,564), is statistically significant at the level (0.000), and indicates the effect of quality of the regression model of physical factors in achieve productivity of workers. The value of the coefficient of determination $R^2 = 0.828$, which means that the physical independent variables Labour Office (2014) which selected explain the impact on productivity of workers (83 %). The value of the regression coefficient Beta = 0.342, it means the following: positive regression coefficient Indicate positive relationship between physical factors and productivity of workers, in the sense that the application of physical factors led to improved labour Productivity. The value of the regression coefficient means that the greater physical factors by one unit, productivity of workers increased by 0.34 units. Positive correlation coefficient significant at the level (0.01) confirms the influential positive relationship between physical factors and productivity of workers. The effect of physical factors in labour Productivity is expected result, and agrees with many studies (Hameed and Amjad ,2009; Kukoleca ,1962). However, this effect came in second rank may be due to inability to manage large resources (Arab Labour Organization ,2010)

- Using the method of multiple regression analysis – Stepwise- to determine the effect of each independent physical variable in labour Productivity (Table 3), the results indicated: The values of (T) and (F) are statistically significant between the independent variables and the labour Productivity. The correlation coefficients positive between three variables and the impact on labour Productivity , as well as the regression coefficients is positive, which confirms the positive impact of three variables to production, these three variables have contribute to explain 33 % of the dependent variable or unpredictable as follows: the quality of raw materials ranked first and explained (29%) of the variance in the dependent variable, this results may related to the effect of the quality of the raw material to the non-stop production lines or machines and not damaged during the production processes , also this results agree with many studies (Schmenner, 2015; Kukoleca, 1962). The second factor is Modern technology in equipment and machinery, this result is consistent with studies of Saranga and Banker (2010), Joshi and Sing (2010) . Finally, the balance of the production affecting productivity, which means the squence of production processes,, also the results consistent with International Labour Office (2010). Noticeable that all the environmental factors which were applied largely were not influential in productivity may due to "these factors are protective factors, as the lack of these factors leads to a feeling of dissatisfaction, and their presence does not mean increased productivity.

Table (3)
Multiple regression analysis model of the impact of physical factors
on labour Productivity

Arrangement of independent variables	R	R ²	Beta	T .Test		F .Test	
				T	significance	F	significance
Depends on the use of quality suitable raw materials	0.539	0.290	0.376	0.539	0.000	143.236	0.000
Depends on the use of modern technology in equipment and machinery	0,537	0,329	0.189	0,537	0.000	85.481	0.000
There is consistency (balance) in the production lines	0.583	0.329	0.130	0.583	0.001	59.583	0.000

6-2 Results of the Analysis of the Second Hypothesis: " There were statistically significant differences ($\alpha \leq 0.05$) between job performance factors and labour Productivity in the non-oil manufacturing sector in KSA. The results indicate the following:

- Descriptive statistics indicated the second rank of the exists factors is job performance factors, which exists medium degree (mean 3.36), also the means of all job performance factors were ranged from 3.61 to 2.51. This result indicated that performance factors did not exist at the required level, which reflects its importance in productivity of workers, may be due to lack of capacity, administrative, organizational and technical skills in the factories (Arab Fund for Economic and Social Development and the Arab Organization for Industrial Development and Mining, 2004). In addition Most of the factories depends on low-wages workers, which are often low efficiency, with inadequate of education and vocational training (Babacar ,.2007)

- Factor analysis (Varimax Rotation) was used to identify the items that correlate highly, which are assumed to be an "element" of the job performance factors. The results indicated that rotated factor loading suggested seven factors that explain the job performance factors, which accounted for a total of 75.753 % of the variance of sample' opinions. Factor 1: control and communications explain a 20.01 % of the job performance factors, suggested six - scale items had acceptable significant loadings which are: addressing distractions, effectiveness of the decision-making, effective communication, ongoing follow-up to assess the results, effective guidance for employees, and effectiveness of information systems. Factor 2: Organizing explains a 17. 28 % of the job performance factors, suggested five -scale items had acceptable significant loadings which are: organizational competencies effective,

wage systems, system of evaluate the performance, organizational structure, and informal Organizing . Factor 3: Ability and desire to work explains a 14. 11 % of the job performance factors, suggested five –scale items had acceptable significant loadings which are: experience, self-capabilities, knowledge, skill, and workers have a desire to acquire knowledge and science, Factor 4: Comfort workers explains a 9. 34 % of the job performance factors, suggested three -scale items had acceptable significant loadings which are: health insurance, work shifts, and rest periods. Factor 5: Social needs explains a 6.50 % of the job performance factors, suggested two –scale items which are: relationships and friendships with friends respect for others. Factor 6: administrative environment explains a 4. 83 % of the job performance factors, suggested one item " prevailing administrative environment'. Factor 7: Deal with workers explains a 3. 66 % of the job performance factors, suggested one item " systems and policies to deal with workers". This results expected as it's include many of the factors relating to the job performance affected in ,and agrees with many studies which link productivity with administrative factors , Ability and desire of (Jarkas et al ,2014; Sook dial ,2014)

- Test the hypothesis with using multiple regression method. Results indicate evidence of the validity of this hypothesis, tables (2), (4) as follows: Test value "P" is equal to (6715.522), is statistically significant at the level (0.000), and indicates the effect of quality of the regression model of job performance factors in achieve productivity of workers, .The value of the coefficient of determination $R^2 = 0.95$, which means that the job performance independent variables which selected explain the impact on productivity of workers (95 %). The value of the regression coefficient Beta = 0.732, it means the following: positive regression coefficient Indicate positive relationship between job performance factors and productivity of workers in the sense that the application of job performance factors led to improved productivity. The value of the regression coefficient means that the greater job performance factors by one unit, labour Productivity increased by 0.73 unit. Positive correlation coefficient significant at the level (0.01) confirms the influential positive relationship between job performance factors and productivity of workers.

- Using the method of multiple regression analysis gradual Stepwise to determine the effect of each independent job performance variable in labour Productivity (Table 4), the results indicated: The values of (T) and (F) are statistically significant between the independent variables and the labour Productivity. The correlation coefficients positive between ten variables and the impact on productivity of workers, as well as the regression coefficients is positive- except for five variables- . These 12 variables have contributed to explain 53.3 % of the dependent variable or unpredictable. In general these variables can be divided into three Dimensions : (1) The ability to work, which has a positive impact and the most important on productivity of workers, as the ability to work is one of the main equation for productivity of workers, and consistent with the findings of the study of Babiker (2007) and study of the Arab labour Organization (2010). (2) Administration, includes the most important variables affecting labour Productivity - eight variables, which indicate to the importance of effective management functions in achieving labour Productivity. This result expected and reflect the importance of management and its direct impact on productivity of workers and the ability and desire of workers (Derek et al, 2009). These factors can be divided related to its effect in labour Productivity into two parts: factors with positive impact in productivity of workers includes : shifts and rest periods, Informal and formal organization, Addressing of deviations. This result also is consistent with many of the studies (Freyedon ,2011 ;Arab Fund for Economic and Social Development and the Arab Organization for Industrial Development and Mining, 2004). Others factors with negative impact in productivity, may be due to a lack of administrative capacity, organizational and technical skills required for these advanced industries (Jarkas et al (2014). (3) The desire of workers includes three factors with negative impact on labour Productivity incentives for workers linked to productivity, wage systems, and feels of accomplishment and achieve the goals. This may be due to the moderately level of applied these factors , and its negative reflect on the level of performance and labour Productivity (Al-Humaidi and Tan, 2010). This result is consistent with the studies of Sookdial (2014) and El-Gohary et.al (2014).

Table (4)
Multiple regression analysis model of the impact of job performance factors on labour Productivity

Arrangement of independent variables	R	R ²	Beta	T .Test		F .Test	
				T	significance	F	significance
Appropriate practical skill	0.573	0,328	0.522	7.699	0.000	170.834	0.000
Appropriate of shifts and rest periods	0.599	0,358	0.311	5.490	0.000	97.468	0.000
Affective decision-making process related to the production	0.619	0.384	-0.471	-6.872	0.000	72.217	0.000
Informal organization is well	0.649	0.421	0.254	4.970	0.000	63.0474	0.000
Addressing of deviations rapidly	0.671	0.45	0.388	5.875	0.000	56.474	0.000
Applies accurate timetables of the production process	0.681	0.464	-0.207	-3.235	0.001	49.789	0.000

Effective organizational competencies	0.694	0.482	0.478	6.135	0.000	45.713	0.000
Incentives for workers linked to productivity	0.704	0.496	-0.214	3.016	0.003	42.230	0.000
Appropriate wage	0.713	0.508	-0.243	-3.567	0.000	39.265	0.000
leaders with excellent technical knowledge	0.719	0.517	-0.181	-2.848	0.005	36.486	0.000
Leaders participation the employees in decision-making	0.726	0.527	0.206	3.151	0.002	34.485	0.000
Workers feels of accomplishment and achieve the goals	0.73	0.533	-0.126	-2.003	0.046	32.226	0.000

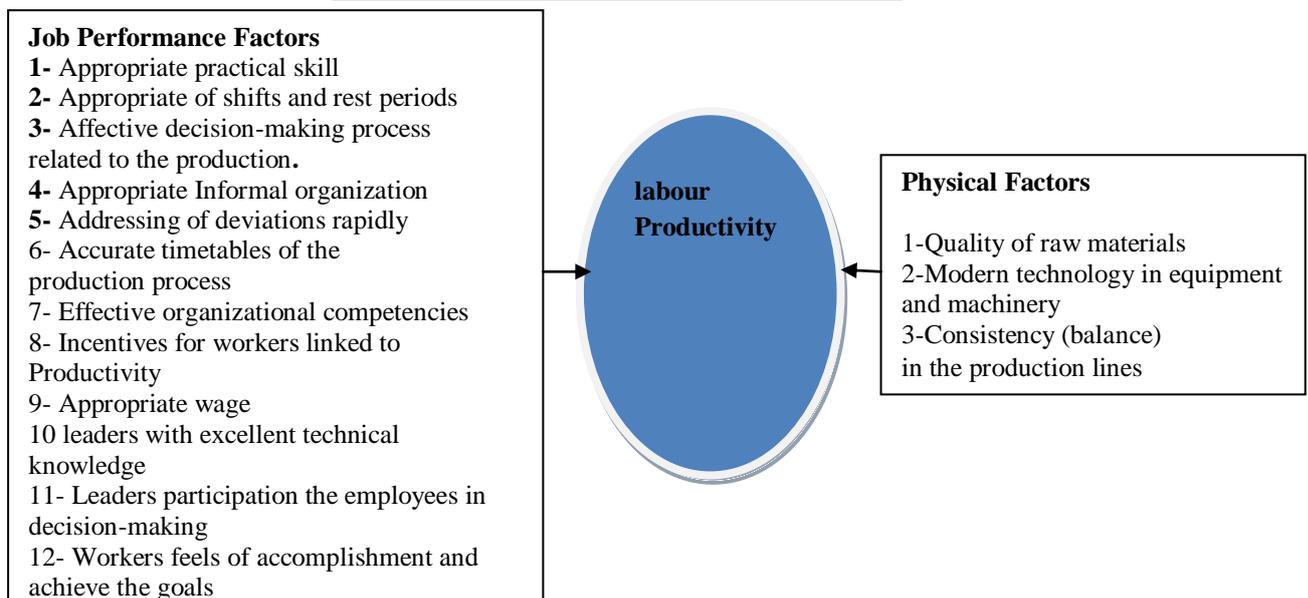
7. Conclusions

In light of the analysis and discussion of the results of the field study can be reached the following conclusions: Large foreign labour, and lower number of Saudi workers in operation management and technical executive work in the non-oil manufacturing in the Kingdom. These factories Interested in applying physical factors more than job performance factors. identify ten factors relevant to labour Productivity as following : working methods, physical conditions of work, technology, control, communications, organization, ability and desire to work, Convenience workers, social needs, climate administrative, dealing with workers. The regression relationship between physical factors and job performance factors , and the level of labour Productivity in the following equation: **labour Productivity** = (0.342 × physical factors) + (0.732 × functionality factors). job performance factors are the most important factors to improve productivity of workers, Also There are fifteen influential factors in **labour Productivity** are clear in the Figure (1) in the non-oil manufacturing in KSA

8. Recommendations

Application of the proposed model (Figure 1), which includes the factors affecting to improve labour Productivity, starting with improving the application of job performance, and improve the application of high-significant factors to influence the labour Productivity .Long-term investment in Saudi human resources by training and education vocational or university- in the technical work associated with the production lines and the use of modern technology, and operation management. Connecting these programs practical aspects, and a good incentive systems, and open areas for the work of the female in this area. Benefit from the results of the study in the areas of improved labour Productivity in the various factories, with taking into consideration the limitation of the study such as the study only applied in the non-oil manufacturing sector in Jeddah city, and focused only in to the factors affecting the productivity of workers. introduction of department under the name of productivity management in the Ministry of trade and industry interested in developing plans and methods to help the manufacturing to increase their productivity. Finally conducting future studies such as productivity measurement, detailed studies of partial productivity of the factors that have been studied and the different ways appropriate to improve it, studies focus on the other factors not addressed in this study, such as external factors affecting productivity.

Figure (1) Model to Improve Labour Productivity



Acknowledgements

Progressing researcher thanks and appreciation for the support of the king Abdulaziz City for Science and Technology (KACST) for this study, which was funded in the framework of research grant No. (M S-34-11).

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