

Formulaic Utterances in English and Kurdish

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Abstract

This study is devoted to comprehensively examine formulaic utterances in English and Kurdish. Formulaic utterances are one of the essential components of daily language interactions. They are pre-constructed formulae that interactants usually share in their ongoing daily interactions. However, their appropriate use, recognition, and interpretation are not easy even for the literate native interactants. The culture, the nature of language, the context, the setting, the content, and even the personality of the interactants themselves and the nature of their relationship have impact on the use and interpretation of formulaic utterances.

At the very beginning, this paper starts by providing a general information about formulaic utterances and by defining the concept. Then, the type, the form and the structure of formulaic utterances will be comprehensively considered. After that, it presents the function, the role, and the significance of using such kind of utterances in the process of communication. This study, also, examines formulaic utterances across cultures as well as investigating their uses in terms of optionality and compulsion. The last point that is adopted in this study is associated with the meaning and the interpretation of formulaic utterances. Finally, this paper ends with the most significant concluding points that have been driven throughout conducting the study.

Overall, this paper aims at introducing formulaic utterances as well as indicating the points of similarities and differences of formulaic utterances in English and Kurdish in connection to their construction, function, use and interpretation.

1.1. The Introduction

Daily interactions usually consist of a significant number of formulaic utterances (Lanncker-Sidits and Rallon, 2004: 218); however, "they are more common in some languages than in others" (Davies, 1987:79). For instance, Tannen and Oztek (1981: 38) argue that "Greek has fewer fixed formulas than Turkish but many more than English". Therefore, the number and the significance of using formulaic utterances may vary from one language to another. This study examines formulaic utterances in English and Kurdish. The use of formulaic utterances can be observed in every single interaction in both languages. However, the significance, the degree, and the consequence of using them may be varied.

Many factors determine the nature and the degree of using formulaic utterances, such as: the impact culture, the observance of norms, the situation and the content of the interactions as well as the nature of relationship among the interactants. English culture is regarded as one of the individualistic cultures Hofstede (1984), whereas Kurdish culture is a one of the most collectivistic cultures. This means that Kurdish people observe cultural norms more and consequently. Since, formulaic utterances are categorised as culturally recommended patterns, it can be hypothesised that, Kurdish interactants use formulaic utterances more.

This study, to bring about an accurate result, compares the nature, the form, and the purpose behind using formulaic utterances in both languages. It aims at presenting the points of similarities and differences in terms of the form, the use and the consequence of ignoring formulaic utterance in English and Kurdish.

1.2. The Definition of Formulaic Utterances

Wood (2002: 3) defines formulaic utterances as “multiform strings produced and recalled as a chunk, like a single lexical item, rather than being generated from individual items and rules”. Wood considers that formulaic expressions are formulated in a period in the past to operate as immediate components of

interactions that interactants use, but not constitute, while interacting. However, he does not shed light on the purpose of using formulaic utterances in daily interactions, because according to Wray (1999: 213), “formulaic language offers processing benefits to speakers and hearers, by providing a short cut to production and comprehension”.

Thus, formulaic expressions can be defined as already constructed expressions that repeatedly used by the interactants to generally facilitate the process of interactions.

1.3. The Form and the Structure of Formulaic Utterances

Lancker-Sidtis and Rallon (2004: 222-35) present a long list of English formulaic expressions, such as, “help yourself”, “I warned you”, “I beg your pardon”, “I wish I were dead”, “how do you do”, “never mind”, and many others. Lancker-Sidtis and Rallon (2004: 209) add that “there are probably thousands of these utterances” in the English language. These formulaic utterances are categorised as *Multi-word expressions* (Jiang and Nekrasova, 2007: 433), *Proverbs* and *Idioms* (Mieder, 1984) and (Cutting and Bock, 1997), *Clichés*, *Slogans*, *Quotations* and *Allusions* (Alexander, 1984: 129), “discourse organiser” and “social routine formulae” (Stengers et al., 2011: 322).

Formulaic expressions in Kurdish language can fall under the same categories: proverbs (swa:r ta: naglena:bebaswa:r = Failure teaches success, idioms (success), idioms (tamandrež bi: = may have a long live), different types of multiple words (baya:nitba:š = good morning), allusions (daŕeyxwlapizaya = he acts as if he is Khwla Pizza), slogans /bizhyku:rd, bizhy Kurdistan/ and many others. So far, there is no any conducted study that has examined the number of formulaic interactions in Kurdish language and/or presented the proportion of their use in daily interactions; however, Kurdish native speakers can easily observe that Kurdish has thousands of formulaic expressions, which interactants, according to the context, use them either optionally or obligatorily.

According to Lancker-Sidtis and Rallon (2004: 208), formulaic expressions can have different grammatical patterns and tenses and some of them are even ill-formed; however, they are meaningful in ongoing interactions. Lancker-Sidtis and Rallon (2004: 208) adds that “formulaic expressions ...often contain lexical items with non literal or non standard meanings (e.g., “it broke the ice”)”.

Although the meaning of formulaic expressions are not always derived from their components, such as “by and large” which means *generally*, the meaning of some formulaic expressions, particularly non-idiomatic phrases and normal sentences, are taken from the meaning of their components, such as, do not worry, give me a chance and many others (Wray, 1999:215), (Wray and Perkins, 200:4) and (Lancker-Sidtis and Rallon, 2004: 208). This is also the case in Kurdish language, the meaning of some formulaic expressions (e.g. /baya:ni:t bash/ = good morning) are taken from their word components, whereas the meaning of some others (e.g. / ta: saresqa:n/ = (up to the bone) =absolutely) are not taken from the meaning of the word components.

Concerning the process of formulaic realisation, Davies (1987: 75) states that “there are...obvious difficulties in drawing a clear line what is formulaic and what is not”. It is not easy to distinguish formulaic expressions from new invented utterances, because what

some might regard as formulaic expression, others might not. For example, a linguist or an interesting figure may consider the English formulaic utterance *see you* and the Kurdish formulaic utterance (/sla:wbigayana/ = say hi) as formulaic expressions due to their regular uses by a wide range of people for a specific purpose, whereas they might be considered as non-formulaic utterances due to their simplicity in structure and their easily interpretation in meaning by others.

In general, any group of words that composed in the past, operate as a cluster, have a fixed structure, recalled as chunk and used repeatedly can be recognised as formulaic utterances.

1.4. The Function of Formulaic Utterances

According to Wray and Perkins (2000: 17), one of the crucial reasons of using formulaic expressions is to maintain the “physical and social survival of the individual through communication”. However, the purpose of using formulaic expressions may vary from one culture to another or from a person to another.

Formulaic expressions constitute “a short cut to production and comprehension” (Wray, 1999: 213), “serve as a quick and reliable way to achieve the desired communicative effect” (Conklin and Schmitt, 2008: 73), and “facilitate...communication” (Wood,2009: 40) among interactants. Nevertheless, formulaic expressions can have different functions in different cultures; for example, they (especially metaphoric formulae)are sometimes used in Kurdish to avoid directness while interacting. For instance, a Kurdish interactant may say (/hardamri:n/ = *definitely we will die*)instead of directly advising someone to stop being selfishness, arrogant, revengeful and/or other non-preferred characteristics. Using these formulaic expressions in Kurdish language give the speaker a chance to convey the message and simultaneously take precautionary stance to deny it to minimise the conflict if the recipient blamed the speaker for the critique.

1.5. Formulaic Utterances Across cultures.

Wood (2002:8) states that “Specific cultural situations provide specific contexts for the use of particular formulas, and only an understanding of the relevant dimensions of certain social situations and their relative value guarantees understanding of the meanings of the formulas that are highly likely to occur in them”. Thus, for Wood, a particular context usually requires a particular formulaic expression in order to smooth the process of communication among interactants, but failing to recall an appropriate formulaic expression may cause misunderstanding among interactants. Therefore, Davies(1987:79) states that “a successful language learner must know not only which formulas can be used for the performance of a particular illocutionary act, such as greeting or thinking, but also the kinds of context where such acts can be appropriately performed”. This supports the idea that interactant needs to fully understand a formulaic expression’s meaning and realise the context that this formulaic expression is used in order to convey the right message and guarantee the expected interpretation by the recipient.

Each culture or language has its own distinctive formulaic utterances, as Davies (1987: 80) states “a formula is required in one language whereas in the other no mark is required at all in the corresponding situation”. For instance, both English and Kurdish people use formulaic expressions to offer congratulations to newly married couples. However, the nature, the number, and the content of formulae in relation to offering marriage congratulations are different in English and Kurdish culture. For instance, Kurdish women usually say (/bada:ik y Kwra:nbyt/ = be a mother of boys) to the bride in addition to wishing the married couple good luck and having a long and happy life together (Shams, 2006: 89), whereas using the expression (/bada:ik y kicha:nbyt/ = be a mother of girls) definitely causes offence. Having a child or not for English is a private issue, that is wishing a baby

for others is offended (Clerk, 2013). English people also use some specific formulaic expressions to offer marriage congratulations; for example, according to Ernica (2011: NP), "congratulations and best wishes" are simply the most articulated expressions that are used to congratulate a married couple in English language, especially in writing. Ernica (2011:NP) adds that the English speaker has the freedom to select the expression that s/he prefers use it in a marriage occasion without feeling obliged to use a specific formulaic utterance.

1.6. The Use of Formulaic Utterances in Terms of Optionality and Compulsion

Concerning the consequence of using formulaic utterances in terms of optionality or compulsion, Tannen and Oztek (1981: 38) claims that "formulas in English tend towards the optional end". Obviously, Tannen and Oztek (1981: 38) adds that "The closest thing in English to obligatory situational formulas are expressions like "Happy Birthday," "Merry Christmas," "Happy New Year," and "Goodnight."". This study proves that the number of English formulaic utterances that Tannen and Oztek (1981: 38) call them "obligatory situational formulas" is very restricted. In contrast, according to (Shams, 2006: 62) Kurdish has hundreds of formulaic utterances that their use is obligatory in some specific situations, see table (number 1).

Kurdish interactants, unlike English interactants, usually expect from each other to use some particular formulaic utterances in some particular contexts. For instance, a Kurdish speaker usually expects the formulaic expression /xwa: le:lxosh bet/ =*may God forgive him* from the hearer when talking about his/her passed away father. The use of such compliment expressions is rare among English interactants, because English people are realistic, consequently they do not stand flattering expressions (Clerk, 2013).

Kurdish has thousands of formulaic expressions. People need to use them in a specific context in order to avoid causing offence. These formulaic expressions operate in different situations and contexts, but their illocutionary force may vary from one situation to another. The table below will introduce a number of formulaic expressions in Kurdish, and for each formulaic expression, only one situation is given that failing to use a formulaic expression may cause offence.

Table 1: Some selected Kurdish formulaic expressions with only one situation for each formulaic utterance that is used in.

N	Formulaic expressions	Translation	Only an example for the situation that it is expected to be used in
1	tamandrezhbi:t	May have a long life	When someone introduces you his/her children
2	Ba na:zyda:ik w ba:wkgawra bi	Be grown up under the care of his/her parents	For a new born baby

4	Ma:šaia:	God wills	while describing good attributes something or someone
5	Dastxo:ê be	(Bless your hand)* = thank you	To someone that hands something or doing a favour
6	Zaĥmatnabe	Excuse me	While asking someone to do something
7	a:fetit be	Be healthy	Used to someone who drinks the water you offer it
8	xwa la gwnahyxoê bet	May God forgive her/hem	While mention the name of a passed away person
9	naxêa bet la toê	Wish you achieve the same	It is used as a response to someone with a lower rank or achievements who congratulate on achieving something
10	xery le bbini:	Wish you to get benefit from	Sellers of expensive stuffs, such as cars and houses should say to the buyers

1.7. The Meaning and the Interpretation of Formulaic Utterances.

Wray and Perkins (2000: 18) state that "the driving force behind the socio-interactive formulas is ensuring that the speaker gets what he/she wants and is perceived as an individual within the group". Formulaic expressions are not easy to master because: 1) their meaning is not always taken from the meaning of its word components (Kecskes, 2007:193); 2) they can be used in different situations; and 3) they can have more than one interpretation (Kecskés, 2000: 611). For example, with expressions like "you bet" or 'piece of cake', it is hard to tell what they mean without a frame. They can obtain different meanings in different frames" (Kecskes, 2000: 611). Therefore, addressers need to be familiar with the meaning of formulaic utterances and recognize the contexts that these formulas are used in; in contrast, failing to use them correctly may cause offence.

Another significant issue that requires attention is associated with the consequences of using formulaic utterances in terms of politeness and impoliteness. Davies (1987: 76) places emphasis on politeness formulae and states that "since politeness formulas can be learned as indivisible and invariable units, a familiarity with their form can be achieved simply through memorization, with no great cognitive difficulty". Since "memorisation" is regarded as a major way of mastering formulaic utterances (Davies, 1987: 76), and because formulaic utterances are also recognised as "prefabricated" expressions (Wray, 2000: 1), it is possible to consider formulaic utterances as culturally agreed upon expressions.

Consequently, the nature of the language, the sort of the culture, the context, the relationship between the interactants and many more factors determine the use and the

interpretation of formulaic utterances. For example, the formulaic utterance “Good night”, out of context, is normally interpreted as a polite expression, whereas within a context it may have different interpretations. “Good night”, within the context, may be used for *seeing off*, for *politely asking somebody to leave* (see the below recorded interactions), for *telling somebody to stop talking* and many more interpretations that only can be derived within the context.

An extract of a recorded interaction between a loved couple taken from You Tube “Paradise Found” movie.

B: Let me go

A: Please, give me a chance(1.2), please

B: Good night

A: one minute, [let me clarify]

B: [goodnight]

(1.2) = A pause for 1.2 seconds

[] = a symbol that indicates overlapping interactions

There is a consensus among discursive linguists, such as Fraser (1990: 233), Locher and Watts (2008: 78) and Culpeper (2010: 3235) who believe that expressions are not intrinsically polite or impolite out of context, but their actual meaning is derived from the ongoing context. They believe that what determines the meaning of the message that a formulaic expression conveys are context and interactants’ intention and perception other than the connotative meaning of the formulaic expressions. However, some expressions are formulated intrinsically to be used as polite elements of interactions although their interpretations are contextually determined. For example, the expressions like */a:fetit be/ = be healthy*, */ma:shalla:/ = God wills*, and many others are originally recommended by Islam to act politely but the context may change the meaning, i.e. their use may cause offence if they were used ironically.

In addition to the aforementioned, Kurdish language has many expressions that are originally founded to express impolite stances and mostly result in impolite interpretation by the recipients in almost contexts. Examples of Kurdish intrinsic impolite formulae are: (*/dam pi:s/ = dirty mouth** = a person that uses a lot of swear words); (*/zorbîe/ = talkative*); (*/Kw:riqaḥpa/ = son of a bitch*), (*/be axla:q/ = immoral*), (*/raza:gra:n/ = disgusting*), (*/zhna:ny/ = womanish*), and many others. However, these formulaic expressions might not be interpreted as impolite interactions, because, as we have mentioned earlier, utterances intrinsically are neither polite nor impolite.

Regarding the degree of using polite and impolite formulaic utterances in daily interactions, Culpeper (2010: 3238) argues that “impoliteness formulae are much less frequent than politeness formulae”. I believe that people generally try to engage politely with surroundings; however, the degree of using politeness formulae is culturally, contextually and personally dependant. Nevertheless, as average Leech (1983:105) states that “conflictive illocutions tend ...to be rather marginal to human linguistic behaviour in normal circumstances”.

If one traces the etymology and the advent of each formulaic expression, s/he may find that the majority of the formulaic expressions are formulated to maintain smooth communication among interactants because of a very simple assumption is that usually cultural, religious, and humanitarian principles recommend polite formulaic expressions rather than impolite ones. I believe that, if someone investigates formulaic expressions in (Torah, Quran, Bible, Confucian values, philosopher’s speeches and recommendations, educational organizations and books, curriculum, institutions and cultural norms), s/he can easily notice that all of them recommend polite formulaic utterances rather than impolite ones.

Overall, polite formulaic expressions as detached utterances are much more than the impolite ones, whereas in the context they lose their original sense and take their actual meaning from the context.

1.8. Conclusion:

- Formulaic utterances, in English and Kurdish, fall under the same categories, such as idioms, proverbs, multiple words, allusions, slogans, quotations, clichés, discourse analyser, and social routine formulae.
- The use, the consequence of ignoring and the interpretation of formulaic utterances in general and namely in English and Kurdish are determined by the impact of culture, the observance of norms, the setting, the situation and the content of the interactions as well as by the nature of relationship among the interactants.
- The degree of using of formulaic utterances generally may vary from one language to another. Kurdish interactants generally use formulaic utterances more compared to the English interactants due to the significance of observing cultural norms and of using culturally recommended patterns in collectivistic cultures.
- English has a couple of compulsory formulaic utterances, whereas Kurdish has hundreds of compulsory formulaic utterances that their ignoring in their required context may cause offence.

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پوختە ی توێژینه وه که

ئەم توێژنه وه یه ته رخا ن کراوه بۆ لیکۆلینه وه له ده برینه دهسته واژه یه کان له زمانی ئینگلیزی و کوردیدا. ده برینه دهسته واژه یه کان به شیکی سه ره کین له پیکهاته کانی گفتوگۆی رۆژانه. ئەمانه ش بریتین له وه ده برینه ی که له رابردو دا به ره مه یئراون و خراونه ته روو بۆ ئە وه ی وه ک دهسته واژه ی ئاماده کراو له گفتوگۆکانی دواتر دا له کات و شوینی گونجاو دا به کار به یئیریت. دروست به کاره یئان و جیا کردنه وه و لیکدانه وه ی و اتا کانیان کرداریکی ئاسان نیه ته نانه ت بۆ که سانی خوینده وار و رۆشه نییر، له بهر ئە وه ی سروشتی که لتور، جۆری زمان، ده ق، کات و شوین، پیگه ی کۆمه لایه تی، ناوه رۆکی بابته، که سایه تی قسه که ره کان و جۆری په یوه ندی نیوانیان و گه لی هۆکاری تری که سی و گشتی کارده کاته سه ر چۆنیه تی به کاره یئان و دروستی لیکدانه وه ی مانا کانیان.

سه ره تار، ئەم لیکۆلینه وه یه کورته باسیکی گشتگیر ده براره ی به کاره یئان و ناساندنی "ده برینه دهسته واژه یه کان" ده خاته روو. دواتر، ئاماژه ده کات به جۆر و شیوازی پیکهاته کانیان و هه روه ها ئە رک و گرنگی به کاره یئانیان له گفتوگۆکان دا روون ده کاته وه. بابته یکی تر که ئەم توێژینه وه یه له خۆی ده گریت بریتیه له ناساندنی کاریگه ریگه ری که لتوری له سه ر شیوازی به کاره یئان و لیکدانه وه ی مانای ده برینه دهسته واژه یه کان. هه روه ها ئەم توێژینه وه یه باس له ده برینه دهسته واژه یه کان له روانگه ی ناچاری و ئاره زوو مه ندانه وه ده کات وه شیوازی لیکدانه وه ی مانا کانیان له گفتوگۆکان دا

روونده کاته وه . له کۆتایی دا، گرنگترین ئەم دەرئەنجامانە ی که له م توێژینه وه یه دا پێی گه یشتوین ، ههروه ها لیستی سه رچاوه به کارهاتوو ه کان ئاماژه یان پێکراوه .

به کورتی، ئەم توێژینه وه یه دهربرینه دهسته واژه یه کان له ههردوو زمانی کوردی و ئینگلیزیدا دهخاته بهر باس و لیکۆلینه وه . وه هه ولده دات و خاله لیکچو و جیاوازه کان له رووی جوړ و ئه رک و پیکهاته وه و به کارهینانی دهسته واژه دهربرینه کان دهستنیشان بکات.

المخلص

یخصص هذه الدراسة بالبحث عن التعابير الاصطلاحية في اللغتين الإنجليزية والكردية. التعابير الاصطلاحية هي واحدة من المكونات الأساسية للتفاعلات اليومية. هذه التعابير شيدت في الماضي لكي تستعمل كالمصطلحات المهينة في التفاعلات اليومية الجارية. ومع ذلك استخدامهم بشكل الملائم ، والتمييزهم ، والتفسيرهم ليست بعملية سهلة حتى بالنسبة للناطقين باللغة الام لان الثقافة ، وطبيعة اللغة، و السياق ، و الزمان والمكان، و المحتوى، وحتى شخصية متفاعلين أنفسهم وطبيعة العلاقة بينهم لها تأثير على كيفية استخدامهم و تاويلهم.

في البداية، يبدأ هذه الدراسة بالعرض المعلومات عامة عن التعابير الاصطلاحية و تعريف هذا المفهوم. ثم ، سيتم النظر في نوع و شكل و بنية التعابير الاصطلاحية بشكل شامل. بعد ذلك ، يعرض وظيفتهم ، ودورهم ، وأهمية استخدامهم في عملية التواصل . هذه الدراسة ، أيضا ، يدرس التعابير الاصطلاحية عبر الثقافات وكذلك يبحث استخداماتها من حيث حرية الاختيار و الاستعمال الاجباري . و جانب الأخرى لهذه الدراسة متعلقة بدراسة المعنى و تفسير التعابير الاصطلاحية. و في الختام سجلنا اهم النتائج والتوصيات التي توصلنا اليها ، واتبعناهما بقائمة المصادر والمراجع.

باختصار، تهدف هذه الدراسة إلى تعريف التعابير الاصطلاحية بشك عمومي ، ولكن بشكل الخاص تشير إلى نقاط التشابه والاختلاف في التعابير الاصطلاحية في اللغتين الإنجليزية والكردية من حيث التكوين ، والوظيفة ، والاستخدام والتفسير .

An Evaluative Study of the Application of Teaching Modern Pedagogical Technology at College of Basic Education

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Abstract

The use of technology and its counterparts in education play an enormous role in helping students achieve their full development potential.

Given the role that education plays in preparing students to go into the world, it seems clear that there should be a connection between the world and the classroom. Unless education reflects the world in which it exists, it has no relevance for the students.

The study mainly explores the crucial facts behind teaching technology and its incomplete integrity within the process of pedagogical application in educational settings. The major concerns of this study center broadly on the accessibility of such a supportive additional means into education and its application as to facilitate and enhance learning outcomes.

The study aims integrally at the following questions, firstly; what is the students' perspective towards current comprehensive involvement of the course? , secondly; to what extent did the students benefit in courses of teaching technology during various sessions?

The study is composed of two fractions: theoretical and practical sections. The practical one is done through exposing students a number of questions and viewpoints in a questionnaire and then they are required to do in response to the items out of the questionnaire.

1. Introduction

1.1 The problem

Many up-to-date issues in current life need to be done with the help of technology and its counterparts. There seems that it is sometimes beyond humans' power to achieve business manually due either to the work load toughness or the limits of power. The term technology has become a common and familiar one for

many people worldwide. It has also become a talk point everywhere among people without getting to know with the core meaning and usability. Yet, as it plays a sole role in forwarding minuscule business, it seems strange as well among students and educational domains.

It has been for two years now that teaching technology has been incorporated into the educational process at English Department/ Basic Education College-Salahaddin University. Such a course was not free whatsoever from deficit or shortcomings but this doesn't indicate that the course runs out of use. Students' lack of enough familiarity, as an early start, with the subject as well as the course materials is among major sensitive issues for making the course work smoothly. Besides, lack of techniques and supportive equipment is said to be another hindrance for processing and integrating the contents of the course into education.

1.2 The Objective

The study aims primarily to find the responses of the following questions,

Firstly; what is the students' perspective towards current involvement of the course of Teaching Pedagogical Technology?

Secondly; to what extent have the students benefited from the courses during various sessions?

1.3 The Procedure

The study is one of the endeavors that requires evaluative procedures for its objectives. For meeting the study aims, a questionnaire is designed for the purpose of assessment. Then, the collected data are analyzed by using appropriate statistical means.

2. Technology

The term technology has been introduced in many ways and by different scholars long ago, for example, Bernard (1985, p.8) defines technology as "the means and processes through which we as a society produce the substance of our existence."

Likewise, Roland (1992, p.83) defines it as, "the systematic, purposeful manipulation of the material world. It has four components: materials, technique, power, and tools or machines. Thus, technology is the process of applying power by some technique through some medium of some tool or machine to alter some material in a useful way. These components are necessary and sufficient to describe any technology at any time, but they are static; they do not address technological change."

Then more precisely, technology is defined as "human innovation in action that involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities"(Manning and Johnson, 2011, p.4). There are likely to be systematic methods like a science as to set up various ways for technology to work out. The successful ways are thought to be about the applications of the technology tools and the solutions of expected problems.

In addition to what has been stated earlier, technology is used as a specific notion to attribute to a number of tools that are employed in conveying the content of a course to the audience (Ibid, p.9).

Nevertheless, the term technology has been introduced as a complex one since it was not only a mere concept by itself but bearing plentiful unanswered questions behind. The term technology seemed to be an intimidating one or even disappointing, sometimes. Such assumptions have resulted in making people feel insecure and even dread towards the term. On the other hand, there are some who feel quite comfortable and pessimistic. The whole point is true about its important uses and complex utility in everyday life.

It has appeared as opposed to proposed contradictions and yet served against itself. To avoid confusion, it seems that there should be clear cut dealings with project design and/or the way it relates to the curriculum. Other crucial concerns of teaching technology include the forms that got to be previously organized and set straightforward for teaching. The clearer the steps, the more sense the term can make (Petrina, 2007).

3. Why Teaching Technology?

The use of technology allows professors to diversify their lectures, display more information, and enhance students' learning. Using different technologies in the classroom can help professors save time and energy and allow for more attention to be paid to the course content. There are many different learning materials available to professors in order to help them with their teaching (*Using technology with learning*, (n.d.) available at: <http://www.facultydevelopment.ca>).

Advantages of using technology and learning materials are:

- More active learning
- Diversified teaching methods
- Better student attention
- Less time and energy for professors
- Visual stimulation (Ibid).

The other specific uses can be listed as:

1. Technology affords teachers and learners the opportunity to enhance their knowledge and computer skills.
2. Every home will be equipped with a computer and internet access and we will have students staying at home to get their education, even in kindergarten.
3. Students are in place to share their fore-going knowledge background with their counterpart classmates as well as other ordinary involvers.
4. Technology and Scientific-research will facilitate future teaching, learning, and monitoring of the student's academic achievement (*Student: technology in the classroom*, Anon., 2013).

Kurzweil (1999), expects that there will be profound changes in the coming year in the realm of education specifically, English teaching and learning. For him, the expected changes would have been foreseen and occurred within communication and education due to the sustainable changes and advances in technology.

He also predicted that the coming generation will provide most of their time getting engaged with their computers and will almost do their everyday works through them. In higher education, attempts are going to be made to pave the way for this vision and faculties are encouraged to provide courses on-line and urge the students to access them. In English language teaching, on-line courses have been or are being

developed by the major publishers and providers of English language teaching. Kurzweil's vision extends beyond the current reality of such courses, which rely on existing technologies of selected-response questions (such as multiple-choice), multimedia presentation, and computer-mediated communication in chat-rooms and discussions (Chapelle, 2003).

The uses of technology in education, online ones in particular, have no end point whatsoever. It is alleged that it can also be adapted with mass learning in large classes. Thus, it will fit the following educational forms or sorts of learning:

1. Student-centered learning

The variety of online tools draw on individual learning styles and help students become more versatile learners.

2. Collaborative learning

Online group work allows students to become more active participants in the learning process. Contributing input requires that students comprehend what is being discussed, organize their thinking coherently, and express that thinking with care.

3. Easy access to global resources

Students can acquire further input by having easy access to versatile courses available online. New technologies can be used to engage and motivate students. Technology can also be used to support students in their learning activities. Accessible for non-traditional students, online delivery of programs and courses makes participation possible for students who experience geographic and time barriers in gaining access to higher education. Draws on student interest in online learning, it has been brought out that many students are interested in online learning (Poe and Martha, eds., (n.d.)).

4. Technology: Instructional or Educational?

Saettler (2004) defines instructional technology as "a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and nonhuman resources to bring about more effective instruction" (p. 6). Likewise Saettler, AECT (2001) defines instructional technology as "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning."

The notion of instructional technology is not new but goes back too far into the history. There are many typical samples to give evidence to technology's existence namely, communication, through e-mail and Voice over Internet Protocol, streaming video and content presentations, blogs, writing through wikis, and synchronous Web conferencing. Learning is supposed to improve and step forward through using all of these tools. Then, instructional problems can be disclosed for the sake of solutions and better learning. So, if technology is conceived of as a process, then the tools will be called the instruments to make this process run, including some of specific tools that show the implementation are Skype, YouTube, VOIP,..etc. (Ibid).

Educational technology refers to a science that discusses processes by which specific tools are applied to instructional problems. This is relevant and strictly available in higher education as the courses become more divided either as fully online courses or blended ones.

Thus, educational technology has a wide range of connotations and generally refers to any use of technology for teaching and learning (e.g., books, computers, projectors, etc.) (Petrina, 2007). It basically derives from Audio-Visual Education, where artifacts such as AV materials, projectors, and teaching machines constituted the discipline. In universities, educational technology continues this tradition of instructional design and the current focus is on Web-based instruction and the efficient use of technologies for learning.

From the AECT Committee (1972), "Educational Technology is a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of learning resources and through the management of these processes." (Cited in, AECT, (2004).

Educational technology is a complex and integrated process, involving people, procedures, ideas, devices, and organization for analyzing problems and devising, implementing, evaluating, and managing solutions to those problems, involved in all aspects of human learning.

One of the common conceptions of Educational Technology connects with the development of the audio-visual movement in education and instructional training programs commencing in the First World War with developments arising out of master learning and programmed instruction trends in the fifty's spearheaded by individuals (105p.) (Luppicini, 2005).

5. The Tool of the study

The tool consists of a questionnaire which is composed of a number of items falling into two separate sections on the basis of study objectives. Each question item in the poll is supplemented with FIVE options including: (a- Totally b- Mostly c- Almost d-A little e- Never). Then each option is weighed a grade from Zero to Four. Some of the items were derived from Johnston and Baker (2002).

6. The Sample of the study

Seniors, fourth grade, at Basic Education College/ English Department are the major elements of the study that contribute to constituting major decision-making on the course and the uses as equal. Forty respondents took part doing questionnaire items. The questionnaire can be found at the end of the study.

7. Validity and Reliability of the study

To check validity, the question items were exposed to a Jury with a number of specialists to check the suitability and appropriateness of each item and then determine whether or not they should be set into application. Luckily, the juries talked in favour of the items and approved of them all. The table below gives details including name, position and qualification of each jury member:

No	Name	Acad. Position	Qualification
1	Ali Mahmmod Jukil	Asst Prof	PhD
2	Drakshan Yosif Othman	Lecturer	MA
3	Tahseen Hussein Rasool	Asst Lecturer	MA

The questionnaire's reliability was checked due to few advertent repetitions of some items in the questionnaire so as to detect whether the students were aware enough to give response rationally to each answer or just did them carelessly; in other words, to decide on the consistency of answer giving. The tabulated data in percentage show clear variables between any two repeated answers. The differences were colored differently for ease of access.

8. Data Collection

Question Number ONE: *Students' perspective towards current involvement of course elements*

Item No.	Never	A little	Almost	Mostly	Totally	Co-efficient	Percentage weight
1	0	3	10	26	1	2.6	66
2	0	3	11	22	4	2.7	67
3	0	4	25	10	1	2.2	55
4	0	2	13	21	4	2.7	67
5	0	5	20	10	5	2.4	59
6	3	12	9	14	2	2.0	50
7	2	5	19	11	3	2.2	55
8	0	4	14	18	4	2.6	64
9	1	3	8	21	7	2.8	69
10	0	3	16	20	1	2.5	62
11	0	5	14	16	5	2.5	63
12	0	4	9	24	3	2.7	66

Question Number TWO: *The extent of the student's benefit in the course of Teaching Technology*

Item No.	Never	A little	Almost	Mostly	Totally	Coe. Midst	Percentage weight
1	0	2	17	18	3	2.6	64
2	0	1	6	23	10	3.1	76
3	0	2	17	15	6	2.6	66
4	2	6	12	12	8	2.5	61
5	0	2	17	10	11	2.8	69
6	0	3	10	16	11	2.9	72
7	0	3	15	18	4	2.6	64
8	1	2	20	8	9	2.6	64
9	1	10	12	13	4	2.2	56
10	0	2	19	12	7	2.6	65
11	0	3	21	12	4	2.4	61
12	0	7	17	16	0	2.2	56
13	1	7	11	14	7	2.5	62
14	0	1	4	13	22	3.4	85

9. Data Analysis and Interpretation of the Items

A. *What is your reading and perspective towards current comprehensive involvement of course elements?*

For item number one, twenty six students representing (66 %), confirmed that most of the course elements are so designed that can align with the time provided for covering and in the best way. This in itself points out that the content of the course can do most of the students greater good and can meet their needs as well in their educational domain.

Students' knowledge par and other various aspects can be considerably improved equally with the learning process through the use of technology based on the findings brought out from the statistics representing (67%).

Given (55%) to the item shows that the required material sources are almost well prepared, effective and meaningful. In other words, the use of the sources as well as the materials seem to be fairly acceptable and sufficiently at hand.

Most of the respondents, indicating (67%), affirmed that the use of technology can be of greater impressiveness and amusement to the society members and mind freshening towards the world.

More than half of the students, representing (59%), asserted that the course objectives are plain and tailored to meet their academic needs. The inferred findings indicate a positive understanding concerning the flexibility as well as suitability of the

course contents. Whereas, the rest thought that the goals of the course are vague and are not compatible with their level.

Equally, half of the students confirmed that they will manage to actively get engaged in working with the help of technology for running their own tasks. On the other hand, they believed that it is difficult for the students to find adequate opportunity to efficiently work on what they learn, based on the data induced from the item representing (50%).

Respondents, indicating (55%), think that they are able to meet their needs, further practice their experience by the use of technology and can consequently reach their final ends.

The responses, indicating (64%), denote that if technology were used effectively and suited consistently with the curriculum of the study, it would be of promising support to pedagogical goals and school performances.

More than half of the students representing (69%) confirmed that the learning objectives can be achieved through the right use of technology. They also believed that technology enables them to get wider understanding about the key concepts of its tools and specific applications.

Students seemed satisfied with the coverage element and its compatibility with their necessity and ability, based on the details inferred representing (62%).

Apparently, more than half of the respondents denoting (63%) maintained that the choice of technology as a subject matter as well as its integration can align with their academic par. Moreover, they confided that the choice of technology is set on the basis of learning style improvement and variable abilities.

Less than three quarters of the students indicating (66%) were certain about the facility of their instructor for identifying the procedures and helping them track the resources per se.

B. The extent to which the students benefited in the course of teaching technology.

It has been confirmed that more than half of the students, rating (64%), have got awareness about the different ways of using technology to enhance and increase their outcomes, personal or academic.

About three quarters of the respondents recording (76%) asserted that they are fairly capable in using computer as a device and other equivalent information technologies. The findings contribute to final decision about students' feedback towards the efficiency in using technology which is something appealing after all.

More than half of the responses rating (66%) indicate that technology can play crucial role in managing the students' tasks and their daily business. The findings further show that various types of projects can be done through the use of technology with the least of effort.

The inferred data representing (61%) illustrate that not only is technology used for providing further more privilege by individuals, but also as an encouraging tool to let other students get to know as equal.

Technology is said to have a great role in the realm of researching based on the finding rating (69%). Students are satisfied and feel quite relaxed with one of the uses of technology for collecting data and online resources.

The percentage rate (72%) maintains that almost three fourth of the students are aware of various online programs and tools. Likewise, they are experienced in using them online to meet their goals and manage their business.

About (64%) of the responses assert that the tools and applications are appropriate for achieving educational objectives. In other words, the tools can help increase further understanding about any concept or scientific use being taught.

The students are fairly in favour of the statement of this item. They believe that, with the use of technology, there is no actual hinder challenging their workflow in daily life based on the percentage rate (64%).

The provided percentage for this item is (56%) which is disappointing of some sort. The facility making to reach at internet service is critical and out of reach in the area. By large, the students are undergoing lack of internet service at the present time.

The students have got use of their prior experience to use computers anywhere they are, at any time for any purpose, depending on the percentage (65%). This means that they have already had capability to use technology without any instruction or direction.

The findings induced from this item, indicating (61%), demonstrate the teacher's part in delivering the course content which is something valuable and prerequisite. It has been confirmed that the teacher is of effective support in performing any task either within the curriculum or outside.

Almost a bit more than half of the students, representing (56%), have still got problems with the tools identification, description, advantages and challenges. In this respect, they have to be further more acquainted with the terms and practice them again and again.

The findings, rating (62%), claim that the students have got additional chances to practice what they are going to learn. This can be seen through pair or group work with one another guided and instructed by the instructor.

Here, the students corroborate that any practical shift is extremely necessary for the sake of wider understanding and better learning outcomes. The percentage (85%) strongly affirms what has been inferred from their responses.

10. Findings and concluding remarks

The following conclusions are made based on the explanations of the given or recorded responses by the respondents and the percentages of the each item.

Generally, the findings here will be regarding the assessment of the syllabus from the students' point of view. One of the striking finding is that the students representing more than a half seem to have become satisfied with the content elements of Teaching Technology and have been confident about gaining uses during a specific period of time.

One more finding about the course element is that they really think that the technology use strongly associates with the course elements and does them what they are supposed to learn as outlined in the course book.

The students are going to make progress getting fully engaged working with technology and specifically with the programmes set in the syllabi to be taught. Apparently, they will acquire more instructional key concepts due to such big number of course elements. Fortunately, the various topics recommended to be taught are in their favor and work all properly with their par and skills, however; there might be some tools which sound really strange or even outdated.

One of the most striking and greatly rejoicing finding is that the students have gained a great amount of benefits from the subject as teaching technology. As percentages indicate, not only did they make use of it for educational issues, but; also for extracurricular ones.

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Appendix

The Questionnaire Items

A. *What is your reading and perspective towards current comprehensive involvement of course elements?*

1. The course elements are designed to be covered in a way that serves the most in the best and during the least amount of time.

a- Totally b- Mostly c- Almost d-A little e- Never

2. Student learning, thinking and communication skills show improvement as a result of this use of technology.

a- Totally b- Mostly c- Almost d-A little e- Never

3. The required material sources are well prepared, effective and meaningful.

a- Totally b- Mostly c- Almost d-A little e- Never

4. Technology can be the source of great use for social engagement and group interaction as well as improving reasoning

a- Totally b- Mostly c- Almost d-A little e- Never

5. Educational objectives are clear and set upon students' motley levels. These goals adapt different learning styles and abilities. Students are able to set their own learning goals and achieve them within the context of the project.

a- Totally b- Mostly c- Almost d-A little e- Never

6. Students have opportunities to actively engage with the concepts and with technology by creating or designing a product themselves.

a- Totally b- Mostly c- Almost d-A little e- Never

7. The materials offer extensions for more motivated or experienced learners for further needs meeting and reaching at ultimate success.

a- Totally b- Mostly c- Almost d-A little e- Never

8. The technology use effectively supports and links with curriculum. It also supports future school achievement and departmental goals for technology use and for student learning.

a- Totally b- Mostly c- Almost d-A little e- Never

9. The use of technology helps students achieve learning objectives. Students are engaged and demonstrate a deeper conceptual understanding of key concepts of the technological tools or specific programs for each.

a- Totally b- Mostly c- Almost d-A little e- Never

10. The coverage elements are supposed to align with the students' ability and necessity.

a- Totally b- Mostly c- Almost d-A little e- Never

11. The choice and integration of technology is level appropriate and supports different learning styles and abilities.

a- Totally b- Mostly c- Almost d-A little e- Never

12. The teacher identifies resources and strategies for teaching any piece of task and specific concept.

a- Totally b- Mostly c- Almost d-A little e- Never

B. The extent to which the students benefited in the course of teaching technology.

1. I got aware of ways that technology can improve my productivity or the productivity of my personal or academic issues.

a- Totally b- Mostly c- Almost d-A little e- Never

2. I am able to use a computer and other related information technologies

a- Totally b- Mostly c- Almost d-A little e- Never

3. I use technology to do everyday tasks more effectively and efficiently, which gives me more time for work and make due facility for major and minor projects.

a- Totally b- Mostly c- Almost d-A little e- Never

4. I not only use technology to increase my productivity, but also encourage my fellow students to do the same as well.

a- Totally b- Mostly c- Almost d-A little e- Never

5. I got use a lot from technology for searching any online resources to gather professional information or researching.

a- Totally b- Mostly c- Almost d-A little e- Never

6. I understand and can use online interactive communications (chat or messaging) or even operating social networking websites like Facebook, Twitter, Linkdin, Google+...etc.

a- Totally b- Mostly c- Almost d-A little e- Never

7. There are technological tools appropriate for teaching and learning goals being carried out.

a- Totally b- Mostly c- Almost d-A little e- Never

8. With technology, almost all my everyday issues run smoothly

a- Totally b- Mostly c- Almost d-A little e- Never

9. Internet services are everywhere around in educational venue from which students can make use of

a- Totally b- Mostly c- Almost d-A little e- Never

10. I have acquired such ability to work on my PC at home to achieve my needs and others equally without being given any in advance instruction or guideline.

a- Totally b- Mostly c- Almost d-A little e- Never

11. Indicate the extent to which the teacher was center of help for demonstrating effective problem solving, exploration, creativity, and multiple solutions and effectively facilitates student learning and experiences.

a- Totally b- Mostly c- Almost d-A little e- Never

12. Students became more aware about identifying and describing uses, advantages, and challenges of each program or tool.

a- Totally b- Mostly c- Almost d-A little e- Never

13. Students are equipped with further discussions about the main points with each other as well as the lecturer for further enrichment activities common to technology classes.

a- Totally b- Mostly c- Almost d-A little e- Never

14. Practical shift after any theoretical class is something fruitful and much inspiring for students' understanding.

a- Totally b- Mostly c- Almost d-A little e- Never

پوختە

پەرۆردە و فێرکردن خزمەتی زۆری پێ گەیاندوین ھەر بەھۆی ئەویشەو تەوانیومانە پەرە بە کاری خۆمان بدەین و بەرھە پێشەو بەرین. لە مێانی پەرۆردە دا، تەکنەلۆژیا بە جۆرە جیاواژەکانیەو، سەرکەوتو بوو لەمەر بەدیھێنانی ئاواتەکانی قوتابیان و یارمەتی دانیان بۆ کار ئاسانی و جێ بەجێ کردنی مەبەستە رۆشنەکانیان. رۆلی پەرۆردە لە ئامادەکردن و راھێنانی قوتابیان بۆ چۆنە ناو جیھانی دەرۆو بۆ بواری فێرکردن بۆتە ھۆی ھێنانە کایەو پرسیک ئەویش گەیانندی واقیعی پۆلە بە ژینگە دەرۆو. فێرکردن و فێربون کاریگەری خۆیان لە دەست دەدەن ئەگەر ھاتو وینە راستەقینە رۆی دەرۆو نیشان نەدەن کە ئەمەیش بێ گومان بە یارمەتی تەکنەلۆژیاو دەبێت.

باسەکە رۆلێکی لێکۆلەرۆو دەبینیت لەمەر دەرخیستی راستیە شارەوکانی گوتنەو بەبەتی تەکنەلۆژیا لە بواری پەرۆردە دا و رۆلی ھەمیشەیی لە پڕۆسەکە دا لە کاتی کدا ناوەرۆکی سەرکە بەبەتە کە بریتی دەبێت لە ئاشکرا کردنی رادە بەرجەستەبونی تەکنەلۆژیا و شپۆوکانی و بواری بەکارخیستی لە پەرۆردە دا.

ئامانجی باسەکە لەم پڕسانەو دەرۆو، یەکەم، خۆیندەو بەیری قوتابیان لەمەر گشتگری ناوەرۆک و پلانی کۆرسەکە، دوووم، گەیشتن بە ئەنجامی رادە سود وەرگرتنی قوتابیان لە ناوەرۆکی بەبەتە کە لەماوێ سالی ئەکادیمی دا.

باسەکە لە دوو بەش پێک دێت، بەشی یەکەم تاییبەتە بە بواری تیۆری کە تیایدا پیناسە تەکنەلۆژیاو جۆر و سووکانی خراونەتە روو، بەشی دوووم پێک دێت لە شپۆو جێ بەجێ کردنی ئامانجی سەرکە بەسەکە ئەویش بە دراشتنی کویشنەریک دەبێت و دواتر پیدانی بە قوتابیان بۆ وەلام دانەو و دەربرینی رایان لەمەر پڕسەکان.

المخلص

التعليم بمثابة نافذة نرى من خلالها خيالنا والفضول التي تأخذنا إلى الرحلة المجهول وتعزيز قدرتنا على الإبداع . استخدام التكنولوجيا ونظيراتها في التعليم تلعب دورا كبيرا في مساعدة الطلاب على تحقيق إمكاناتهم و التنمية قدراتهم الكاملة. ونظرا للدور الذي يلعبه التعليم في إعداد الطلاب للانفتاح على العالم ، يبدو واضحا أنه ينبغي أن يكون هناك اتصال بين العالم و الفصول الدراسية . اذا لم يعكس التعليم العالم الذي كان موجودا ، فإن تعليم يكون بلا فائدة . الدراسة يستكشف أساسا الحقائق الحاسمة وراء تكنولوجيا التعليم و سلامتها غير مكتملة في إطار عملية تطبيق التربية في بيئة تعليمية . في حين ، الشواغل الرئيسية لهذه الدراسة يركز على نطاق واسع بشأن إمكانية الوصول إلى مثل هذه الوسائل إضافية داعمة في التعليم وتطبيقه لتسهيل وتعزيز مخرجات التعلم . وتهدف دراسة على اجابة عن الأسئلة التالية ، أولا ، ما هي القراءة لدى الطلاب حول مشاركة في تمارين الاستعاب في الدورة ؟ ، ثانيا " إلى اي مدى استفاد الطلاب من دورات في تكنولوجيا التدريس خلال دروس المختلفة؟ وتتألف الدراسة من جزئين: أقسام النظرية والعملية . ويتم ذلك من خلال عملية واحدة تعريض الطلاب عددا من الأسئلة ووجهات النظر في استبيان ومن ثم يتعين عليهم القيام به ردا على هذه البنود في الاستبيان .

Using Gas Chromatography Mass Spectroscopy to Analyse Fatty Acid Profile of Brown Sesame (*Sesamum indicum L.*) Seeds Oil

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Abstract

The oil was extracted with hexane from local sesame seeds, the oil content was 45.1% about of the seeds content. For fatty acid analysis of sesame oil Gas Chromatography–Mass Spectroscopy (GC-MS) was used, after esterification for crude oil. GC sufficiently separated the oil composition. Overall, 8 fatty acids was determined in sesame oil (SO). Oleic acid was the most abundant fatty acid with 47.8%, and followed by linoleic acid with 37.6% of the total oil content. Over 85% of SO comprised from unsaturated fatty acids. Palmitic acid and stearic acid were most common saturated fatty acids. MS provided accurate information on the fatty acids, and confirm the molecular mass of each Fatty Acid Methyl Esters (FAMES) and indicate unsaturated position in the fatty acid.

Index terms: Sesame oil, oil analysis, fatty acid profile, GC-MS.

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Introduction

Sesame (*Sesamum indicum L.*) is a member of the *Pedaliaceae* family (Uzun, *et al.*, 2007). It is an economically important seed crop which is widely cultivated in many parts of the world, primarily in tropical and subtropical areas (Abdurrahman, *et al.*, 2008). It has been used as a food source extensively for thousands of years, then later as significance for, edible oil, paste, cake, confectionary purposes, and flour (Kahyaoglu and Kaya, 2006; Gow-Chin and Shyi-Liang, 1989; Alessandro, *et al.*, 2010; Wen-Huey, 2007; Nuchanart, *et al.*, 2010). The extensive usage of sesame may be due to its highly stable oil content, nutritious protein, and savory nutty roasted flavor (Kahyaoglu and Kaya, 2006). The chemical composition of sesame seeds shows that the seed is an important source of oil (44–58%), protein (18–25%), carbohydrate (13.5%) and ash (5%) (Alessandro, *et al.*, 2010; Abdurrahman, *et al.*, 2008). Its oil has a mild taste and is high in unsaturated fatty acids about 85% (Gow-Chin and Shyi-Liang, 1989). The fat of sesame is important in the food industry due to its flavour and stability, and it can be used for cooking (Young, *et al.* 2010; Hüseyin, 2007; Uzun, *et al.* 2007). The SO prepared from roasted seed has a special flavour and long shelf-life (Young, *et al.* 2010; Hany, *et al.* 2000; Kahyaoglu and Kaya, 2006; Gow-Chin and Shyi-Liang, 1989). It has been known for many years that SO is highly resistant to oxidative deterioration as compared to other edible oils, (Gow-Chin and Shyi-Liang, 1989; Alessandro, *et al.*, 2010; Mohamed and Awatifb, 1998) because it is naturally contains useful antioxidants such as tocopherols and lignans (Young, *et al.* 2010; Edwald and Eunok, 2012; Hany, *et al.* 2000). High contents of essential linoleic (C18:2(*n*-9, 12)) and linolenic acids (C18:3(*n*-9, 12, 15)) are another merit of SO as a food source (Edwald and Eunok, 2012). The conventional process for preparation of SO involves cleaning, roasting, grinding, cooking and pressing, but not refining (Hany, *et al.* 2000). An assessment of identifying and qualifying of vegetable oils that obtained from different sources is a challenge to food industry, as an effort to meet consumer expectations. Generally this involves many tests, including analysis of fatty acids. Different techniques can be used to analyse fatty acid profile, one of them is Gas Chromatography (GC). (Babushok, *et al.*, 2011; Mehdi, *et al.* 2011; Oprean, *et al.* 1998; Gecgel, *et al.*, 2011)

The object of this study focused showing chemical properties of the sesame seeds. Also using GC-MS as separating and analysing techniques, to determine the profile of fatty acid composition of local brown sesame seeds oil. In particular, relying on using MS to determine full fatty acid profile by exploring the fragments.

Method and Material

Materials

Brown sesame seeds were purchased from local market in Rania city–Kurdistan Region-Iraq. All chemicals and solvents used were either analytical or HPLC grade. *n*-Butanol, chloroform, *n*-hexane and methanol were obtained from Fisher (UK). Free fatty acid standards (~99% purity) of palmitic, palmitoleic, stearic, oleic, linoleic, α -linolenic, arachidic and eicosenoic acid were purchased from Sigma-Aldrich (UK).

Oil Extraction

The sesame seeds were cleaned manually to remove all undesired matters such as dust, dirt, stones and chaff, also to remove an immature, broken seeds. The seeds were stored in sealed plastic bag at room temperature around 25 °C, in order to preserve the quality of the original seeds.

The grinded seeds (100 g) were transferred into conical flasks (250 ml). *n*-Hexane (150 ml) was added to the flasks and the flask stirred at room temperature for 3 hours. The solvent was filtered and further solvent (100 ml) added, then stirred for another 3 hours, this process repeated for three times. All the *n*-hexane solutions were combined and then filtered to remove any solid particles. The *n*-hexane was dried over magnesium sulphate (MgSO₄) then filtered again. Finally, the *n*-hexane was removed from the solution by rotary evaporator with water bath, temperature set to 40 °C. Under high vacuum all residual solvent was removed until a constant weight was obtained. The final product was golden yellow oil.

Fatty Acid Analysis

All standards and SO were esterified as described by Moser (2012). Accurate weight (2.0 g) of standards and SO was dissolved in sodium methoxide (1 M, 20 ml) and heated under reflux for 20 min to produce Fatty Acid Methyl Esters (FAMES). Deionised H₂O (50 ml) was added, and the solution extracted with *n*-hexane (3 x 100 ml). The combined organic extracts were dried (MgSO₄), filtered and evaporated at 40 °C. The transesterified samples, diluted 1:1000 with *n*-hexane, then injected to GC-MS. FAMES of standards and SO were analysed by GC Thermofisher Trace 1300. GC fitted with a DB-5 column (L 30 m, ID 0.25 mm, DF 0.25 mm). Injector type is a PTV, operating in split/splitless mode, with an injection volume of 1 μ l at 250 °C was used with a split flow of 20 ml min⁻¹. The initial temperature was set at 150 °C, which was held for 2 minutes. The temperature of oven was increased at a rate of 5 °C/min until final temperature, which was 260 °C and then hold for 5 minutes. The detector was a Thermofisher ITQ900. Electron impact (70 eV) ionisation was used for fragmentation with rate of 2 scans per second. All processing and analysis was carried out on Thermo Xcalibur, v 2.2.

Moisture Content

The moisture contents of unroasted sesame seeds were determined by using standard methods of AOAC (2000). Accurate amount of seeds (5.0 g) were put in oven at 105 °C until constant weight of the samples for nearly 72 hours.

Unsaponifiable Content

Unsaponifiable content of SO was determined by using standard methods of AOAC (2000). The crude oil (20 g) was dissolved in ethanolic potassium hydroxide (18M, 100 ml).

The mixture was refluxed for 2 hours, and cooled to room temperature. 100 ml of deionised water was added and mixed, and the mixture extracted with 100 ml of diethyl ether two times. The organic layer of the mixture was separated and washed with water (100 ml) three times. The organic layer was filtered, then dried over MgSO₄. The solvent was evaporated by rotary evaporator under vacuum at 40 °C, the residue is unsaponifiable content of SO.

Statistical Analysis

All Results and measurements were in three independent measurements, mean values \pm standard deviations were reported for each case. Analysis of variance was performed on statistical analysis system at a level of $P < 0.05$ to evaluate the significance of differences between mean values, using Duncan's multiple range test of the SAS System (version 8.2).

Result and Discussion

The SO was extracted from unroasted brown sesame seeds. The oil content was 45.1% of dried weight of the seeds (Table 1), however Mohamed and Awatifb (1998) found that the oil content was 45.4%. The moisture was 4.9% of the seeds weight. Kahyaoglu and Kaya (2006) reported that moisture content was 3.4% of the seeds weight, and temperature is a major parameter to effect moisture content.

Unsaponifiable content was about 1.2 %, which is refers to those substances frequently found in fats and oil as dissolved matters, which they cannot be saponified by alkali treatment. While they are soluble in ordinary fat and oil solvents. These compounds include higher aliphatic alcohols, sterols, tocopherol, carotenoids pigments and hydrocarbons.

Table 1. Chemical composition of brown sesame seeds of dried weight.	
Parameters	Area (%)
Moisture content	4.9 \pm 0.4
Oil content	45.1 \pm 0.8
Unsaponifiables matter	1.2 \pm 0.1

All the given values are means of three determinations \pm standard deviation.

Gas Chromatography (GC) is a technique to separate samples to its contents without decomposition, along stationary phase (column) by mobile phase (gas) (Mehdi, *et al.* 2011). The principle is when the sample eluted to the stationary phase can be separated, the time (retention time) is the period that sample will spend to pass throughout the column. The separation depends on the various chemical and physical properties and their reaction with the stationary phase. However column length, temperature and carrier gas are other parameters that can be counted to effect on separation quality. Gas chromatography–Mass Spectroscopy (GC-MS) is combined methods of two techniques. When a sample ran through GC, then it goes into mass spectrometer, (Babushok, *et al.* 2011). MS is improves the efficiency of the analysis. It helps to ionise, accelerate and detect the ionised molecules separately. Also the ionised molecules will breakdown to smaller part which they called fragments, which could be helpful to analysis the parts of a molecule. In the mass spectrometer fragments were detected as mass to charge ratio

(Oprean, *et al.* 1998). GC-MS can be operated to analyse the composition of lipid, in particular for determination fatty acid profile of oils (Babushok, *et al.* 2011; Mehdi, *et al.* 2011; Oprean, *et al.* 1998). Thus, transesterification of oil used to make an appropriately analyse volatile sample by GC-MS (Gecgel, *et al.*, 2011).

SO is composed mainly of triacylglycerols (triglycerides) about 98% of the oil. Full profile of SO was determined by comparing with standards with all reported fatty acids after esterified to FAMES (Table 2). Overall 8 fatty acids were identified and 86.2% of the oil was consisted of unsaturated fatty acids. Oleic acid was the most abundant fatty acid with 47.8% of the oil, followed by linoleic acid with 37.6%. Other studies showed that oleic acid was the most common fatty acid with some variations such as 41.8% by Young, *et al.* (2010) and 42% by Edwald and Eunok (2012), also linoleic acid was the second one. Also, a small amount of linolenic acid identified about 0.2%. Palmitic and Stearic acids as saturated fatty acids comprised the oil by 6.5% and 6.1% respectively, with some other minor saturated fatty acids. Young, *et al.* (2010) found palmitic acid and stearic acid were about 10.5% and 6.0%, however Hany, *et al.* (2000) found they were 8% and 5.3% respectively.

Fatty acids	Area (%)
Myristic C14:0	0.2± 0.01
Palmitic C16:0	6.5±0.08
Stearic C18:0	6.1±0.06
Oleic C18:1(<i>n</i> -9)	47.8±0.12
Linoleic C18:2(<i>n</i> -9,12)	37.6±0.44
Linolenic C18:3(<i>n</i> -9,12,15)	0.2±0.02
Arachidic C20:0	0.9±0.03
Eicosenoic C20:1(<i>n</i> -9)	0.5±0.02

All the given values are means of tree determinations ± standard deviation. C is refers to number of carbons in the fatty acids chain that followed by number, for instance C18:1(*n*-9) indicates that oleic acid has 18 carbons in fatty acid chain and in position 9 has unsaturated double bond.

The GC chromatogram (Figure 1) showed well separated the contents of the SO. For routine GC analysis, FAMES are commonly used and eluted in the column based on their respective molecular mass. When those fatty acids that with lower molecular mass come earlier compare to those with high molecular mass ((Babushok, *et al.* 2011; Mehdi, *et al.* 2011). For instance, it started to separate myristic acid first at 7.09 minutes and palmitic at 9.34 minutes as low molecular mass. After that fatty acids with 18 carbons separated that comprised most of the oil content, including stearic at 12.64 minutes, oleic and linoleic showed as sharp twin peaks at 13.00 and 13.76 minutes respectively and then linolenic. Despite that fatty acids with 18 carbons have differences in their structure because stearic is saturated, oleic is monounsaturated and linoleic and linolenic are polyunsaturated fatty acid. At the end of the chromatogram arachidic at 15.88 minutes and eicosenoic at 18.08 minutes showed up with trace amount, which lower than 1% of the oil.

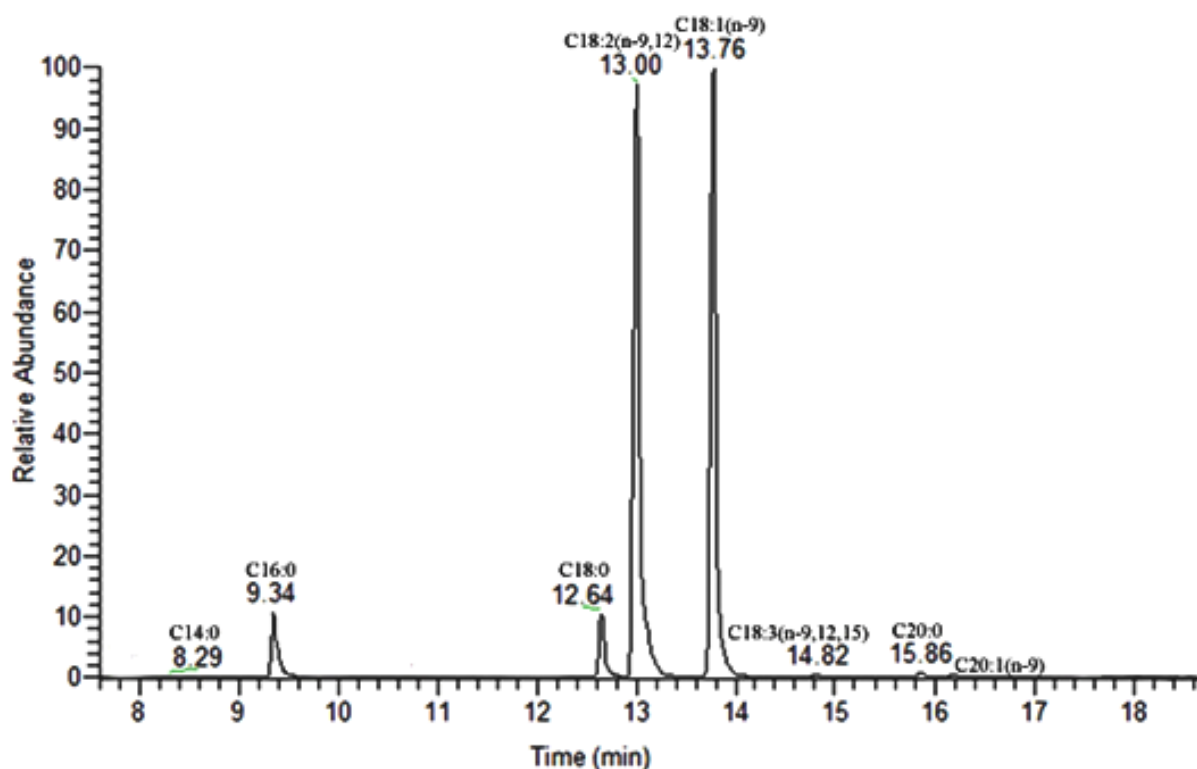


Figure 1. Representative GC chromatogram of labeled FAMES of sesame seed oil on GC Thermofisher Trace 1300, using DB-5 column.

In comparison, fatty acid composition of sesame oil from Kurdistan has some variation with sesame oil from eastern of Asia. Young, *et al.* (2010) and Edwald and Eunok (2012) determined different sesame oil from eastern of Asia mainly from Korea. Sesame oil from Korea has higher palmitic acid about 10%, and oleic and linoleic acid are about the same quantity, were 41 5%, while sesame oil from Kurdistan has 6.5% of palmitic, 47.8% of oleic acid and 37.6% of linoleic acid. However, Hany, *et al.* (2000), Mohamed and Awatifb (1998) and Uzun, *et al.* (2007) studied sesame oil from Turkey and Egypt, the fatty acid composition was very similar to sesame oil from Kurdistan with some variation about 1%, geographical location of the sesame seeds may be the main resin for variation and similarities.

In the MS, FAMES are identified by electron-impact MS, and their spectra are characterised by significant ion equivalent to m/z . For each peak in the GC chromatogram there is corresponded spectrum in the mass spectroscopy (Mehdi, *et al.* 2011; Oprean, *et al.* 1998). For instance, in the spectrum correspond to the peak at 9.34 minutes in chromatogram gives M^+ at $m/z = 270$ is clearly seen that refer to palmitic acid methyl ester. Also the fragments in the spectrum are corresponded to other parts of ionised fatty acids such as ion at $m/z = 239$ is reflect loss of methoxyl ion, and confirming that it is indeed a methyl ester. While the one at $m/z = 257$ is because of loos of methyl group (methyl ion without oxygen). The other fragment can be used to confirm the other parts of FAMES structure. The fragment at $m/z = 74$ is the resonance between three lost carbon unit with carbonyl group. The spectrum at 9.34 minutes which corresponds to palmitic acid methyl ester is shown in the Figure 2. This interpretation can be extended to the other spectra of mass spectroscopy of esterified fatty acids.

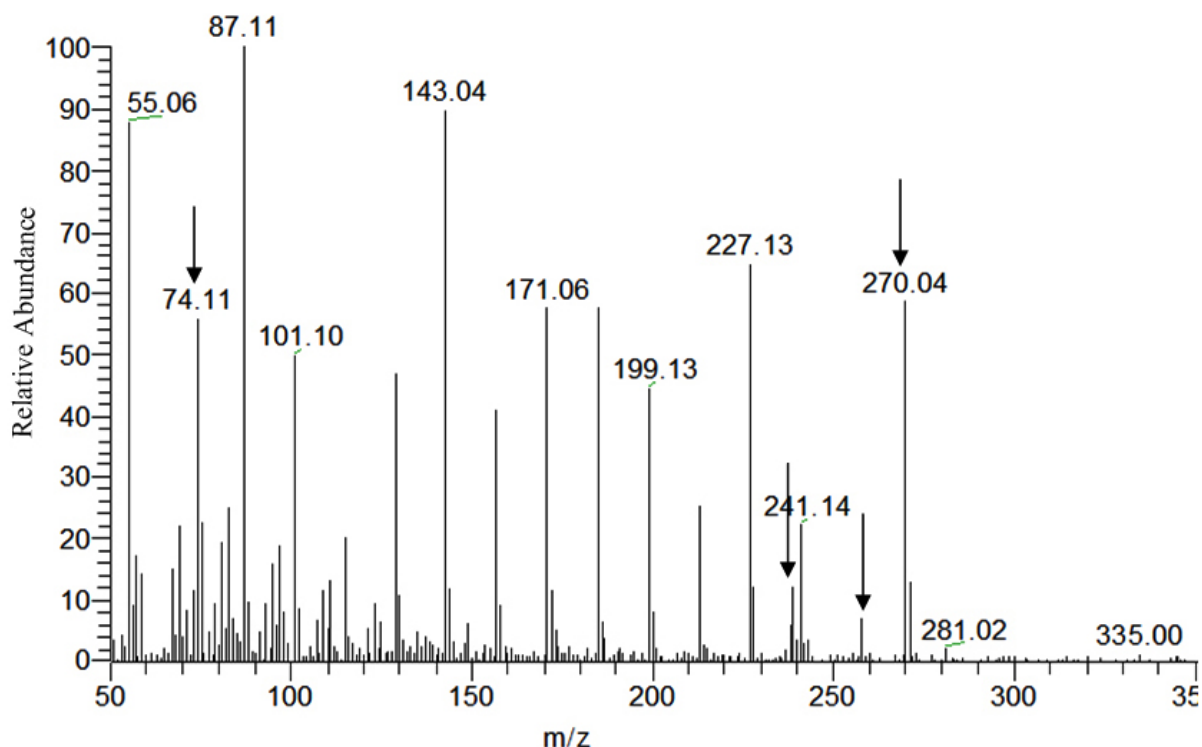


Figure 2. The spectrum of the palmitic acid methyl ester by GC-MS of sesame seed oil.

The spectrum of mass spectroscopy for the peak at 13.76 minutes of GC chromatogram gives M^+ $m/z = 296$ which is equivalent to oleic acid methyl ester, and ions representing loss of the elements of methanol is $m/z = 264$ (Figure 3). Also the fragments are corresponded to other parts of oleic acid after bombarded with electron such as ions at $m/z = 237$ are reflecting for losing methoxyl moiety. The loss of a C3 unit (carbons 2 to 4) with carbonyl group formed ion $m/z = 74$. Fragment at 126 m/z and 156 m/z are correspond to breaking fatty acid chain in the unsaturated carbons.

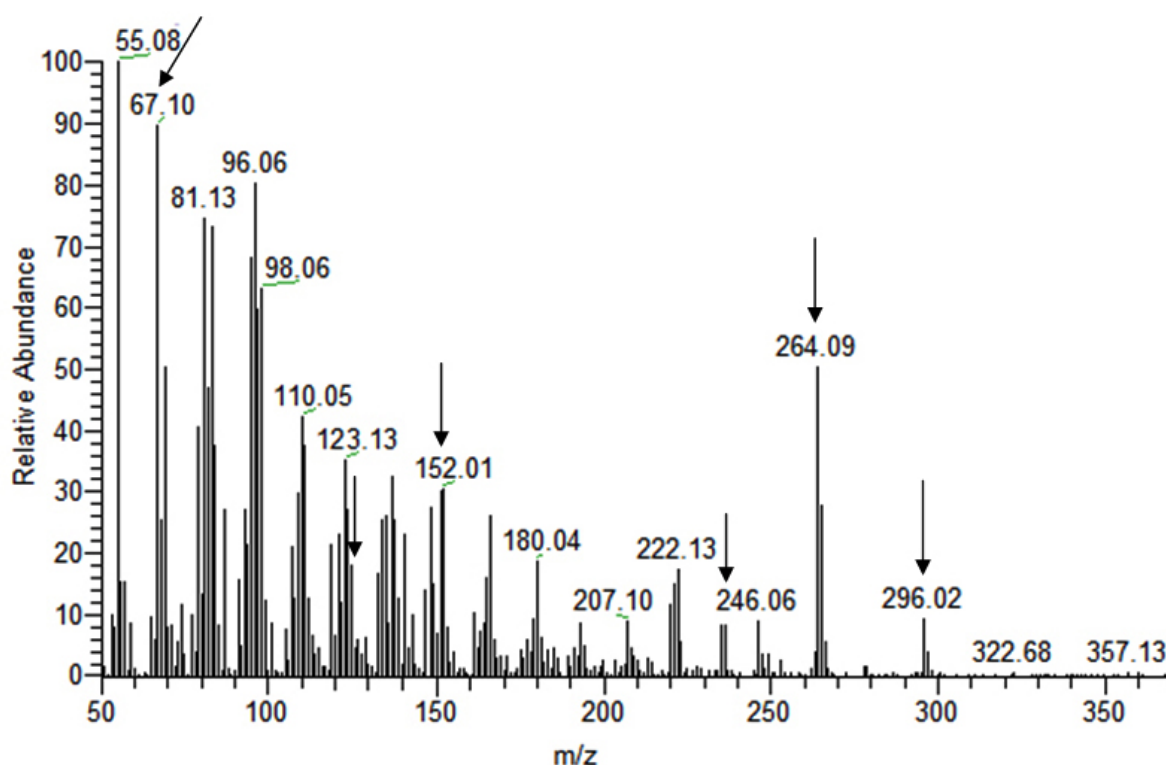


Figure 3. The spectrum of the oleic acid methyl ester by GC-MS of sesame seed oil.

The spectrum representing the peak at 13.00 minutes in chromatogram gives $M^+ = 294$ m/z , it correspond to linoleic acid methyl ester as shown in figure 4. The ion with 263 m/z for losses methoxyl group. Breaking first double bond between carbon 9 and 10 the fragments give ions 124 and 212 m/z for carbonyl group and aliphatic part with second double bond. Breaking in second double bond between carbons 12 and 13 gives ion 81 m/z for aliphatic chain after double bond. Thus, fragments at 81, 95, 109 and 123 m/z could be useful to locate the double bond because the fragments are reflected for double bonds.

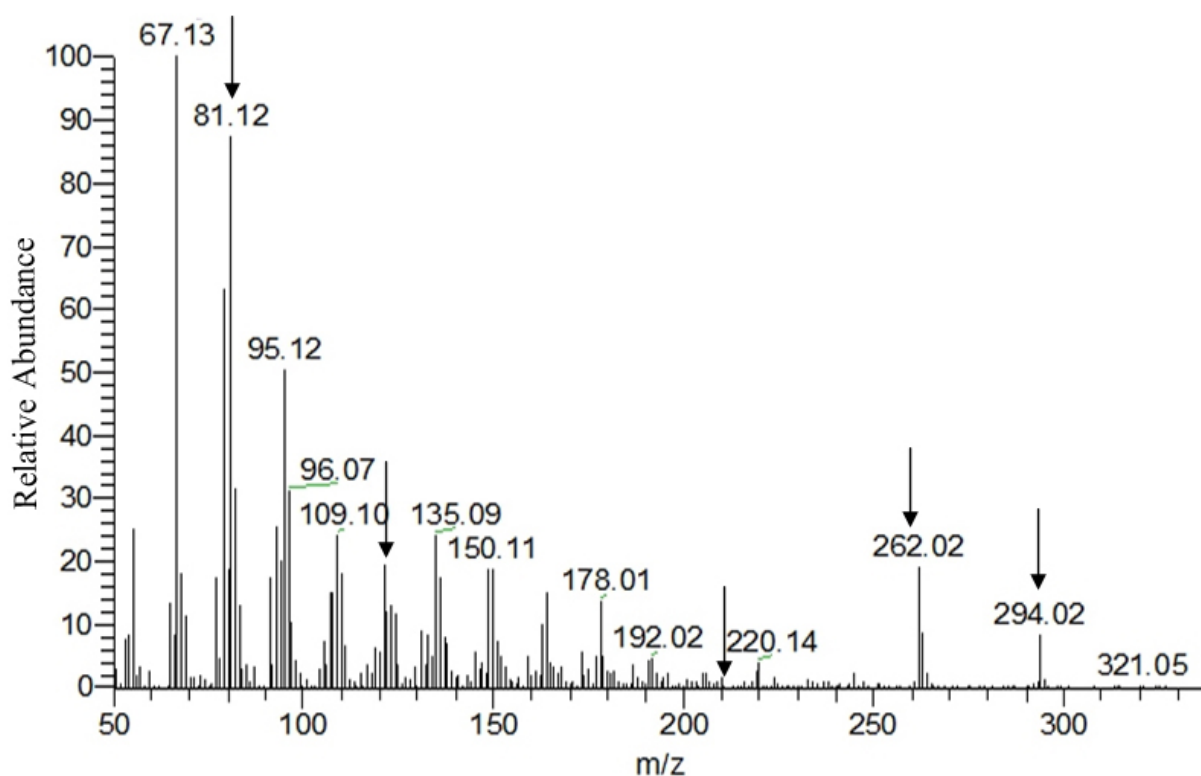


Figure 4. The spectrum of the linoleic acid methyl ester by GC- MS of sesame seed oil.

Conclusion

GC-MS as analytical techniques was able to separate sesame oil sufficiently. During the analysis of sesame oil, 8 fatty acids were determined. Unsaturated fatty acids were the most abundant in the composition of sesame oil, which was composed about 86.2%. In particular, oleic acid was the most abundant fatty acid in the oil, that comprised 47.85%, followed by linoleic acid with 37.63%. As saturated fatty acid palmitic acid was the most common one with 6.55% and then followed by stearic acid with 6.1%. In comparison of fatty acid profile, sesame oil from Kurdistan had some variation compare sesame oil from countries of eastern of Asia, however it is very similar with sesame oil from middle east countries. Oleic acid about half of the oil content, which is similar to olive oil. However the linoleic acid content was higher that olive oil. Therefore SO can be used for more nutrition purposes as olive oil. In term of identifying individual fatty acids MS provided accurate information on all of the fatty acids. The molecular mass of all fatty acids were confirmed by MS, also for unsaturated fatty acids, the position of unsaturated were identified by MS successfully.

Further study can be conducted on analysis of Polyphenols (Antioxidant), Perpoxides, Vitamines and polycyclic Aromatic Hydrocarbons (PAHs) for local sesame seeds, using different solvent system extraction and different analytical techniques, as far as author concerned there is no data.

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به کارهينانی ناميری گازه رهنگناسی (گازه رهنگکيشی) – بارسته شه به نکه شیکاری بوشیکردنه وهی ترشه چه ورییه کان له رۆنی کونجی (*Sesamum indicum L.*) قاوهیی (بۆر) ی خۆمالی دا

پوخته

به به کارهينانی هيکسان رۆن له دهنگی کونجی خۆمالی ده رهينرا، رۆنه که نزيکهی ٤٥,١٪ دهنگه کونجيه کانی پيک هينابوو. بۆ شیکردنه وهی ترشه چه ورییه کان له رۆنی کونجیدا ناميری گازه رهنگناسی (گازه رهنگکيشی) – بارسته شه به نکه شیکاری به کارهاتوووه، دواي ئه وهی رۆنه خاوه که ئه سته ريینی بۆ کراوه و اتا: کراوه به ئه سته ر. ناميری گازه رهنگناسی به سه رکه تووی پيکه اتهی رۆنه که ی شیکرده وه. به شيوه يه کی گشتی ٨ ترشه چه وری دۆزراونه وه له رۆنی کونجیدا. ترشی ئۆليک زۆريه ی رۆنه که ی پيکه يناوه، به نزيکه یی ٤٧,٨٪ پيکه اتهی رۆنه که، وه دوايی ئه و ترشی لينۆليک ديت به ريژه ی ٣٧,٦٪ له پيکه اتهی رۆنه که دا. زياتر له ٨٥٪ ی رۆنه که له ترشی نا تير پيکه اته وه. ترشه کانی پالميتک و ستياریک له ترشه باوه تيره کان بوون. ناميری بارسته شه به نکه شیکاری زانياری ووردی ئاماده کردوه له سه ر ترشه چه ورییه کان، وه بارسته گه ردی ميسايل ئه سته ری ترشه چه ورییه کانی دلنيا کرده وه، ههروه ها له گه ل رۆنکردنه وهی شوینی جوته به ند له ترشه چه ورییه کان دا.

باستخدام کروماتوغرافيا الغاز قداس الطيفي لتحليل الأحماض الدهنية الملف من أسمر السمسم (*Sesamum indicum L.*) زيت بذور محلي

ملخص

تم استخلاص الزيت من بذور السمسم المحلية باستخدام مذيب الهكسان وكان محتوى الزيت ٤٥٪ عن محتوى بذور السمسم، لتحليل الأحماض الأمينية الناتجة من زيت السمسم باستخدام الفصل الكروماتوغرافي والتحليل طيفي الكتلي بعد عملية استرة لحم زيت السمسم المستخلص حيث تم فصل مكونات الزيت الرئيسية وهي ٨ احماض دهنية وكان حامض الأوليك الأكثر وفرة بجوالي ٤٧,٨٪ ويليه حامض اللينوليك بجوالي ٣٧,٦٪ من محتوى الكلية للزيت. اكثر من ٨٥٪ تشمل حوامض دهنية غير مشبعة. حامض البالميتك وحامض ستيرك من اكثر الأحماض المشبعة شيوعا. قدمت تقنية التحليل طيفي الكتلي معلومات دقيقة ومؤكدة عن الأوزان الجزيئية لكل حامض، و تشير استرات المثيل الحامضية على وجود احماض دهنية غير مشبعة.

Lipid Peroxidation and Renal Function Response to the Kidney Stone Formation

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Abstract

This study included 106 stone former patients (60 males with 46 females), Who attended the Teaching Hospital in Sulaimani Governorate between April to June 2012. The diagnosis of the cases was done in the hospital, based on history, clinical examination followed by kidney urinary bladder KUB x-ray, ultrasonography, IVU and urinalysis, also the study included 30 healthy (15 male with 15 female) person regarded as control group. The investigations included measurement of the renal function tests parameters and malodialdehyde (MDA) as lipid peroxidation marker in stone formers.

Automatic chemical analyzer (Benchtop automatic biochemistry analyzer used for estimating total protein, urea, creatinine and uric acid.

The results revealed that the kidney stone formers are more prevalent in adult's age range 31-40 years in both sexes, and more predominantly found in males. Also the results showed that calcium-containing stones are the major types of renal stones that distributed in Sulaimani Governorate.

With respect to the kidney response to the stone formation, the results demonstrated significant elevation in the levels of the serum creatinine, urea and uric acid while total protein lowered significantly in both sex groups. The results demonstrated a significant increase in serum phosphorus level in both male and female group with a non significant increase in serum calcium and sodium levels in both male and female group whereas serum potassium level was non significantly decreased in both male and female group patients i when compared with control group in both sexes. Also the result showed significant elevation of MDA concentration in both sex groups. In conclusion the data of this study revealed that the renal stone formation is age and sex dependent, it was more prevalent in aged persons and in men, and the state lowered the kidney clearance tolerance resulted in oxidative stress state.

Key Words: Renal Stone Formers, Renal tests, Electrolytes, Lipid peroxidation

Introduction

Kidney stone disease is the third most common chronic ailment globally affecting human kind for many centuries. The medical terminology for kidney stone is nephrolithiasis, renal calculi and urolithiasis (Bukhari, 2004). In extreme cases, kidney stone can cause two problems; when it

moves or when it grows to disrupt kidney function and damage occurs that lead to kidney malfunction, even kidney failure (Desmond, 2002).

Kidney stone is a solid material that may contain various combinations of chemical forms in the kidney out of substances in the urine, they occur when salts in the urine precipitate and form solid materials. The stone contains different chemical salts that originate from a wide variety of metabolic and environmental disturbances (Sharda and Zia, 2006). Normally, urine contains chemicals that prevent or inhibit the formation of the crystals; however, these inhibitors do not seem to work for everyone. Urolithiasis is a consequence of complex physical processes and the pathogenesis of stone formation is a multifactorial process (McLean *et al.*, 1990). Urinary stones are typically classified by their chemical composition into calcium-containing, struvite, uric acid, or other compounds (Lieske and Segura, 2004). Various epidemiological factors such as nutrition, age, sex, socio-economic status, climate, disease conditions, crystallization dynamics and heredity have been mentioned in the etiology of renal stones (Shoma *et al.*, 2007; Thomas, 2010).

There are different components from which the kidney stones can be made; however, the most common one is calcium. Most urinary calculi are composed primarily of a poorly soluble salt with a small amount of protein, containing calcium (Ca^{+2}) as a main constituent (Heilberg, 2000). Hypercalciuria is the most common of the abnormalities causing this stone type formation; it increases the risk of stone formation by raising saturation of stone forming salts and reducing the endogenous stone inhibitors. The medical evaluation must identify patients at risk for recurrent stone formation (Malhotra, 2008).

Kidney diseases attack the nephrons, altering their ability to filter blood and produce urine (William and Cowley, 2005). Nephrolithiasis may be associated with nephron damage in a significant number of individuals and decrease renal function (Daniell *et al.*, 2005).

Creatinine, urea and uric acid are frequently used to assess kidney function. Elevated serum levels of them indicate kidney dysfunction, because filtration and secretion are impaired (Lawrence *et al.*, 2003).

Increased excretion of oxalate and deposition of calcium oxalate crystals in the renal tubules are associated with renal epithelial injury and that products of cellular damage can act as heterogenous nucleators of both calcium oxalate and calcium phosphate crystals in the animal model. Oxalate can induce lipid peroxidation. Lipid peroxidation represents oxidative tissue damage by superoxide, hydroxyl radicals, and hydrogen peroxide, which results in structural alteration to membranes and the functional impairment of the cellular component. The oxalate induced peroxidative injury has been implicated in the pathogenesis of calcium oxalate stone formation. An alteration in the balance between oxidants and antioxidants favoring a prooxidant

state is a hallmark of several Diseases like chronic renal failure, various kidney diseases, cancer, hypertension, atherosclerosis and diabetes (Sandhya *et al.*, 2010).

Sodium ions have several functions like regulating acid-base balance in body fluid, protecting skin during rest and muscle activity. Kidneys have an important role in maintaining the concentration of sodium ion, where it is reabsorb about 99% in nephrons tubules and exit 1% with urine. Kidney excretes sodium ions through sweating with different degrees, also through gastrointestinal tract. Eating large amounts of sodium more than that the body needs causes an increase in its concentration in extracellular fluid, especially in chronic and acute renal disease (Kumar and Bert, 1998). Potassium ions have main and different effects on several mechanisms in the body like muscle contraction, neurotransmission and enzyme reactions with the different concentration percentages in internal and external fluid. Decreased potassium concentrations in cells are largely due to increased excretes by kidneys. Same diseases cause hyperkalemia like Addison's disease and more present in patients with chronic and acute renal disease under treatment with dialysis (Dow and Fettman, 1992). Increasing calcium concentration in blood results from several reasons including hyperthyroidism, endocrine glands dysfunctions, and intake high rang of vitamin D or renal failure (Kasem, 2004). Elevation in serum concentration of ionized calcium and phosphate reflects the solubility of the bone mineral. This assumes that circulating concentration of ionized calcium and phosphate are maintained at a constant product, representing saturation with respect to a particular phase of calcium phosphate in bone, the decline in serum calcium that accompanies arise in serum phosphate (Hamid, 2008). This investigation was aimed measurement of the renal function tests parameters and lipid peroxidation marker in stone formers.

Materials and Methods

This study included (106) patients of renal stone former (60 men with 46 women), who attended the Teaching Hospital in Sulaimani Governorate from April to December, 2012. The diagnosis of the cases was done in the hospital, based on the clinical examination followed by kidney-urinary bladder KUB x-ray, ultrasonography, intravenous urography IVU and urinalysis. Also this study included 30 healthy (15 men with 15 women) people at same ages free from signs and symptoms of lipid disorders, hypertension, diabetes mellitus, and renal/cardiovascular diseases. They were randomly selected as a healthy group for comparison. The patients were grouped according to the age and sex. The study included investigation of the renal function test parameters in stone formers beside changes in serum lipid peroxidation.

Collection of blood samples

Five ml of venous blood samples were obtained from both patients and healthy groups by sterile disposable syringe. After coagulation of the blood, each blood sample was centrifuged for 3

minutes at 4000 rpm to get a clear and cell free serum. The serum was used for renal function tests parameters and serum MDA concentration.

Biochemical measurements

The colorimetric Elitech Diagnostic kits were used for estimating renal function test parameters (serum total protein, creatinine, uric acid and blood urea,) and the electrolytes leveles (calcium, phosphorus, sodium and potassium in the serum). In this method, 1 ml of serum added to Flexor tube and the concentrations of the parameters were analyzed using automatic chemical

Ages group	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
Patient									

analyzer (Benchtop automatic biochemistry analyzer (ELITech) (FLEXOR EL200, ELITech clinical systems), France).

MDA was determined in the serum as mentioned by Buege and Aust (1978). The determination is based on the reaction of MDA with the product thiobarbituric acid (TBA) as result forming MDA-TBA2 adduct. 1ml of the reagent was added to 0.5 ml of the serum; after mixing, the solution was heated in water bath about 70C for 15 minutes, and then centrifuge in 2000 rpm. Light absorbance at the supernatant solution was determined at 532 nm against blank. Concentration of MDA was determination by the following equation:

The concentration of MDA was calculated by the following equation

$$\text{MDA } (\mu\text{mol/L}) = \frac{\text{Absorbance at 532nm}}{L \times E_0} \times \text{Dilution factor}$$

Where

L: light path (1cm). E₀: Extinction coefficient 1.56 × 10⁵ M⁻¹. Cm⁻¹

Results

Incidence of the kidney Stone Distribution

In this study, the age range of kidney stone distribution was ranged from 1 to 80 years with a peak level in the adults between (31-40) years, represented by 33.03 % of the patients and the lowest distribution was in the age group between (71-80) years represented by 1.89 % of patients (Table 1 and Fig. 1).

Table 1: Incidence of the kidney stone in relation to age

No. of Patients	3	7	18	35	13	21	7	2	106
% of Patients	2.83	6.6	16.98	33.03	12.26	19.81	6.6	1.89	100%

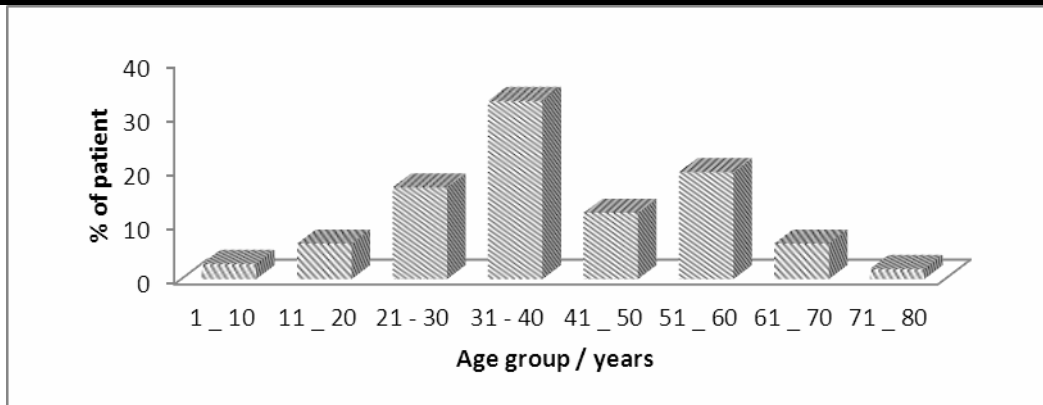


Figure 1: Incidence of the kidney stone in relation to age

The data of this study showed, that kidney stone distribution depend on sex, it showed high prevalence in the male group (56.6%) of e the patients, as compared with the female group (43.4%), (Table 2 and Fig. 2).

Table 2: Variability of kidney stone distribution in relation to sex

Age group	male patients		female patients	
	No.	%	No.	%
1 – 10	1	1.6	2	4.3
11 – 20	5	8.3	2	4.3
21 – 30	10	16.7	8	17.4
31 – 40	22	36.7	13	28.3
41 – 50	8	13.3	5	10.9
51 – 60	10	16.7	11	23.9
61 – 70	3	5	4	8.6
71 – 80	1	1.6	1	2.2
Total	60	56.6%	46	43.4%

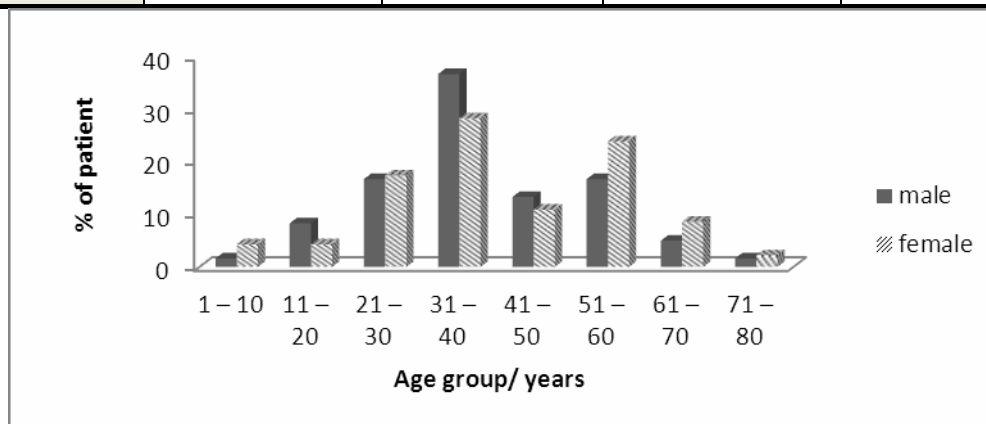


Figure 2: Variability of kidney stone distribution in relation to sex

In the current study of the enrolled stone formers patients, the results showed that the ratio of distribution of the disease was different on the bases of stone type. The results revealed that kidney

stone of the calcium oxalate and calcium phosphate type comprise about (35.7%) of the total enrolled patients in Sulaimani government, followed by the formers of uric acid type (21.4%), while cystine type represents the lowest ratio (0 %) in the studied patients (Table 3 and Fig.3).

Table 3: The ratio of kidney stone formation according to the stone type

Type of Stone	Calcium Oxalate	Calcium phosphate	Calcium Phosphate + calcium oxalate	Struvite	Uric acid	Cystine	Total
Total patient							
N0.of Patients	2	2	5	2	3	0	14
% of Patients	14.3	14.3	35.7	14.3	21.4	0	100%

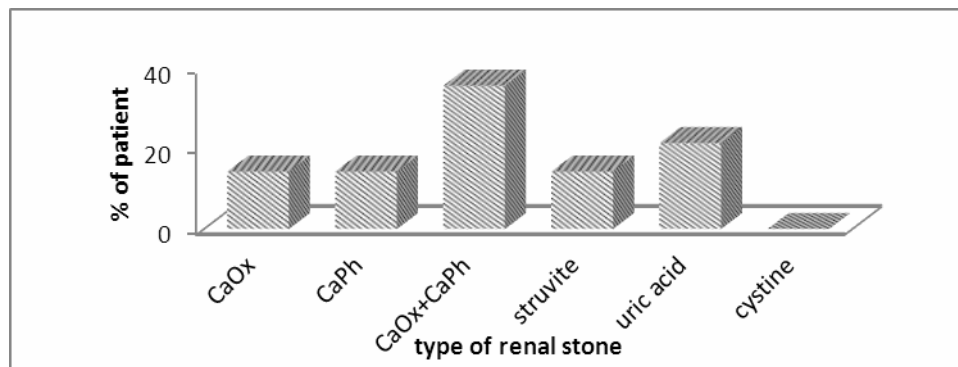


Figure 3: The ratio of stone formation according to the stone type

Biochemical analysis

The results of this study revealed significant increase ($P < 0.05$) in serum levels of urea, creatinine, and uric acid and significant decreasing of total protein in kidney stone former patients when compared with those of the control groups in both sexes (Table 4 and Fig. 4).

Table 4: Renal function test parameters in kidney stone former patients

parameters	Sex group	Control mean \pm S.E.	Patient mean \pm S.E.	Statistical evaluate
Serum protein (g/dl)	Male	7.598 \pm 0.199	6.881 \pm 0.123*	$P < 0.05$
	Female	7.468 \pm 0.1847	6.699 \pm 0.158*	$P < 0.05$
Blood urea (mg/dl)	Male	21.21 \pm 1.419	35.08 \pm 1.415*	$P < 0.05$
	Female	20.5 \pm 2.121	34.41 \pm 1.881*	$P < 0.05$
Serum creatinine (mg/dl)	Male	0.67 \pm 0.055	1.076 \pm 0.056*	$P < 0.05$
	Female	0.555 \pm 0.055	1.076 \pm 0.102*	$P < 0.05$
Serum uric acid (mg/dl)	Male	3.33 \pm 0.21	5.528 \pm 0.165*	$P < 0.05$
	Female	3.1 \pm 0.271	5.191 \pm 0.211*	$P < 0.05$

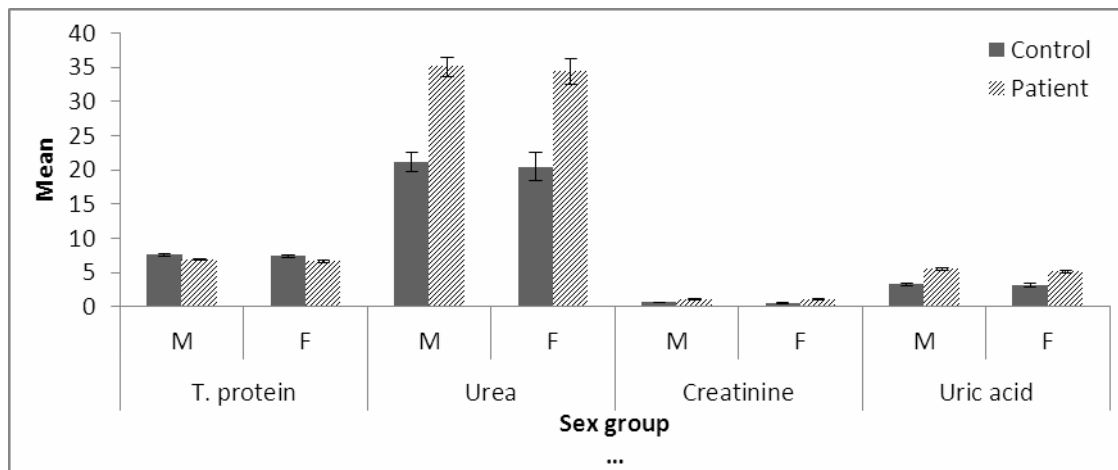


Figure 4: Renal function test parameters in kidney stone former patients

The results of this study demonstrated significant increase ($P < 0.05$) in serum phosphorus concentration in kidney stone former patients when compared with those of the control groups in both sexes, while other electrolytes levels, calcium and sodium showed a non significant increase with non significant decrease of potassium in kidney stone former patients when compared with those of the control group in both sexes (Table 5 and Fig. 5).

Table 5: Electrolytes levels in kidney stone former patients

Serum electrolytes	Sex group	Control mean \pm S.E.	Patient mean \pm S.E.	Statistical evaluate
Calcium (mg/dl)	Male	8.986 \pm 0.1433	9.197 \pm 0.062	Nil
	Female	8.9 \pm 0.1524	9.057 \pm 0.0853	Nil
Phosphorus (mg/dl)	Male	2.745 \pm 0.10579	3.2098 \pm 0.06678 *	$P < 0.05$
	Female	2.9875 \pm 0.09537	3.3491 \pm 0.06679 *	$P < 0.05$
Sodium (mEq/L)	Male	141.69 \pm 0.835	142.64 \pm 0.317	Nil
	Female	140.4 \pm 1.435	141.84 \pm 0.438	Nil
Potassium (mEq/L)	Male	4.2186 \pm 0.08699	3.9 \pm 0.11547	Nil
	Female	4.113 \pm 0.1129	3.76 \pm 0.1965	Nil

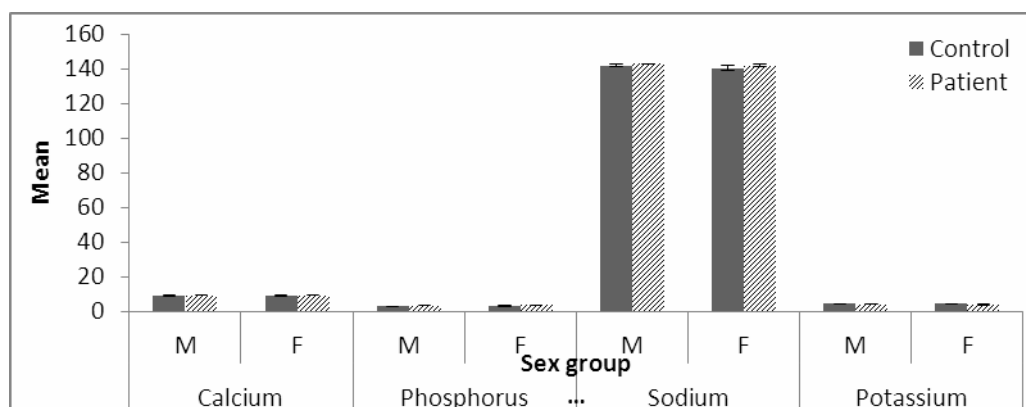


Figure 5: Electrolytes levels in kidney stone former patients

Table 5 demonstrates a significant increase ($P < 0.05$) in serum MDA concentration in kidney stone former patients when compared with those of the control groups in both sexes.

Table 6: Malondialdehyde concentration in kidney stone former

MDA($\mu\text{mol/L} \times 10^5$) Sex group	Control mean \pm S.E.	Patients mean \pm S.E.	Statistical evaluate
Male	0.4728 \pm 0.02	1.0842 \pm 0.09 *	P < 0.05
Female	0.4586 \pm 0.02	0.8525 \pm 0.08 *	P < 0.05

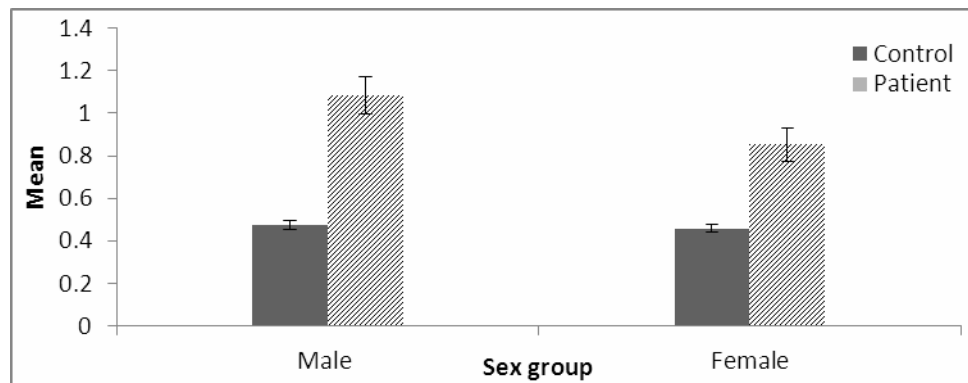


Figure 6: Malondialdehyde concentration in kidney stone former

Discussion

The age range of kidney stone distribution in Sulaimani city was 1 to 80 years with a peak level in the adult ages between 31-40 years represented by a higher ratio of the disease. This result suggested that kidney stone formation is dependent on age. Also age dependence of stone formation were observed in some previous studies (Sandhya *et al.*, 2010; Thomas, 2010 ; Senthly, 2011). The intestinal absorption of many nutrients that influence stone formation, such as calcium, may be reduced in the elderly (Abrams, 2001; Sandhya *et al.*, 2010).

The sex dependent in distribution of stone formers; and males were more exposed to kidney stone. This may be related to hormonal effects, high inhibitory activity, lower food intake and lower body size in females. In addition, previously demonstrated increased citrate concentrations in the urine of women were regarded as main renal stone inhibitors (Heller *et al.*, 2002; Qaader *et al.*, 2006). Increased incidence of kidney stone formation in males also has been attributed to increased dietary protein intake, which increases urinary excretion of phosphates and magnesium and reduces urinary citrate concentration, while some reports indicated that endogenous estrogen and estrogen treatment in postmenopausal women may decrease the risk of stone recurrence by lowering urinary calcium and calcium oxalate saturation (Sandhya *et al.*, 2010).

The majority of stones in included community were composed of calcium oxalate, calcium phosphate and uric acid. This is an indication of the influence of environmental factors including,

dietary habits, and water supply (Ajayi *et al.*, 2007). Some factors, like the decrease of oxalate ratio in diet, high intake of sugar, high intake of animal protein or sodium salt, causing increase of calcium excretion in urine and forming calcium oxalate stone in stone formers (Kasem, 2004, Borghi *et al.*, 2002) or drinking water that contain a large amount of organic elements especially calcium concentration is another factor for increasing calcium- containing stone.

The results of this study revealed a significant increase in serum levels of urea, creatinine, and uric acid and a significant decrease in total protein level in kidney stone former patients. Kidney stone by injuring the cells cause dysfunction of the kidney and increasing the accumulation of nitrogenous waste products in the blood (Kasem, 2004; Worcester *et al.*, 2006).

Elevation of urea as a result of the damage of some filtration units leads to a defect in the filtration of urea and this is consistent with results of previous study (Kasem, 2004; Hayder, 2008). Increment in serum uric acid might lead to stone formation via increasing uric acid excretion in urine and it also decreases the solubility of calcium oxalate salts in urine (Mehdi, 2008). Impaired renal function at a minimum is the main reason to increment of serum uric acid, some diseases also causing elevation of serum uric acid like gout, hypertension, cardiac disease, chronic renal failure (Kasem, 2004; Hayder, 2008). Elevation of serum creatinine in the current study confirms previous studies by Kasem (2004), and Hayder (2008). This increase in creatinine level may be due to reduced renal function and increased acidic medium in renal tubules and impaired metabolism as well as kidney complications lead to higher creatinine (Miguel and Lapuz, 1997). These results do not agree with those of Jawalekar *et al.* (2010) for creatinine and uric acid concentration that suggest being remaining normal in stone formers. The results of this study demonstrated a significant increase in serum phosphorus concentration while other electrolytes levels, calcium and sodium were increased non significantly with non significant decrease of potassium in kidney stone former patients. In previous studies, elevation in serum Ca^{+2} concentrations was seen in stone formers. This observation may attribute to increase urinary Ca^{+2} excretions and the urine becomes supersaturated with Ca^{+2} salts rendered less soluble in the urine causing stone formation (Mehdi, 2008).

Elevation of serum MDA was observed in the current study. Ramchandra *et al.* (2012). They reported a rise in serum MDA level in renal stone formers, resulted from oxidative stress caused by free radical mediated peroxidation of lipid component in cell membrane. The mechanism of induction of lipid peroxidation by oxalate may involve inhibition of catalase activity since in vitro studies have revealed progressive inhibition of catalase activity and increase in lipid peroxidation with increasing oxalate concentration (Selvam and Bijikurien, 1987). The results of this study proved that the renal stone formation is age and sex dependent, with a peak level in the adults between (31-40) years, and high prevalence in the male. Also revealed increasing in serum levels

of urea, creatinine, and uric acid due to lowering in kidney clearance ability resulted in oxidative stress state.

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پوختە

ئەم توپۆزىنەوھىيە (106) نەخۆشى بەردى گۆرچىلەى لە خۆ كرت (60 لە رەگەزى نىر و 46 لە رەگەزى مى) كە نشتەرگەريان بۆ ئەنجامرا لە نەخۆشخانەى فيركارى لە پارىزگاي سلېمانى ئەنجام درا لە مانگى نىسان و مانگى كانونى يەكەمى 2012 ز دا ، نەخۆشىيەكانيان لە ھەمان خەستەخانە ديارى كرا لە رپى ميژووى نەخۆشەكە، پشكنينى پزىشكى وەك تيشكى KUB، تيشكى X-ray، ultrasonography، IVU، و پشكنينى ميز. ھەروھەا بۆ ئەم توپۆزىنەوھىيە (30) كەسى ئاسايى و ساغ وەرگيرا (۱۵ لە رەگەزى نىر و 15 لە رەگەزى مى) وەك كۆنترۆل كە بەدەر بوون لە ھەموو نيشانەكانى نەخۆشىيەكانى گورچيلەو چەوريبەكان و شەكرەو پەستانى خوین و دل. نەخۆشەكان گران بە چەند گرووپىك بەپيى تەمەن و رەگەزو جۆرى بەردى گورچيلە. ئامپىرى fully automatic chemical analyzer بەكارھيئرا بۆ پيوانى پاراميتەرەكانى كيميائى ژيانى

ئەنجامەكانى توپۆزىنەوھىيە پيشانى دا كە ئەو نەخۆشانەى بەردى گورچيلەيان ھەيە زۆرتەر لەو كەسانە بىلاوھ كە تەمەنيان لە نيوان (31-40) سالى دايە لە ھەردوو رەگەز، بەلام بە شيوەيەكى ديار لە نيو رەگەزى نىردا زياتر بىلاوھ، بوونى كالىيوم لە پىكھاتەى بەردى گورچيلە لە ھەموو جۆرەكانى تر بەشيوەيەكى بەرچاو بىلاوھ لەو نەخۆشانەى بەردى گەرجيلەيان ھەيە لە پارىزگاي سلېمانى .

لە ئەنجامەكانى ئەم توپۆزىنەوھىيە بەرزبونەوھىيەكى بەرچاو لە ئاستەكانى كرياتينين و يوريا و ترشى يۆريك بۆ ھەردوو رەگەزى نىرو مى دەرکەوت، لەگەل نزمبونەوھىيەكى بەرچاو لە ئاستى پرۆتيني گشتى بۆ ھەردوو رەگەزى نىرو مى لە نەخۆشەكان بە بەراورد لەگەل كەسە ئاساييەكان لە ھەردوو رەگەز. ئەنجامەكان پيشانى دا كە بەرزبونەوھىيەكى بەرچاو لە فوسفورە س (بۆ ھەردوو رەگەزى نىرو مى لەگەل كەمىك بەرزبونەوھە لە كالىيوم و سۆديوم بۆ ھەردوو رەگەزى نىرو مى، و كەمىك نزمبونەوھە لە پۆتاسيوم بۆ ھەردوو رەگەزى نىرو مى لە ناو نەخۆشەكان بە بەراورد لەگەل گروپى كۆنترۆل. ھەروھەا لە ئەنجامى توپۆزىنەوھىيەكى بەرچاو لە رپژەى MDA مالوندايلدېھايد بۆ ھەردوو رەگەزى نىرو مى لە زەرداوى خوینى نەخۆشەكان دەرکەوت بە بەراورد كردن لەگەل كەسە ئاساييەكان لە ھەردوو رەگەز.

الخلاصة

اشتملت الدراسة هذه على مائة وستة مريضا من كلا الجنسين (ستون منهم من الذكور و ست واربعون من الاناث) من الذين اجريت لهم عمليات جراحية لازله حصاة الكلى في المستشفى التعليمي في مدينة السليمانية من نيسان الى كانون الثاني لعام ٢٠١٢ . شخص الحالات المرضية في المستشفى اعلاه بالاعتماد على الفحوصات السريرية وتصوير الكلى بالاشعة السينية و ثم بالفحص بالناظور وتحليل الادرار العام. وكذلك اشتملت الدراسة على ثلاثون شخصا من الاصحاء من كلا الجنسين (خمسة عشر من الذكور وخمسة عشر من الاناث) اعتمدت كمجموعة ضابطة .

استخدم جهاز التحليل الكيمياوي الالي لقياس مستويات اختبارات وظائف الكلى و بيروكسدة الدهون في مصل الدم . اظهرت نتائج الدراسة الحالية زيادة معدل حصول الاصابة بحصاة الكلى عند الاعمار بين ٣١-٤٠ عاما) في كلا الجنسين ، مع ارتفاع معدل الاصابة في الذكور مقارنة بمعدل الاصابة في الاناث، وكذلك اظهرت نتائج تحليل الكيمياوي لنماذج الحصى ان نوع الحصاة الحاوية على الكالسيوم هي الاكثر شيوعا من الانواع الاخرى للحصى في محافظة السليمانية.

بخصوص متغيرات وظائف الكلى ، اظهرت النتائج زيادة معنوية في مستويات الكرياتينين و اليوريا و حامض البوليك مع انخفاض معنوي في مستوى البروتين الكلي لمصل الدم لكلا الجنسين الذكور و الاناث بالتعاقب . وكذلك اوضحت النتائج ارتفاعا معنويا في مستوى الفسفور لكلا الجنسين الذكور و الاناث مع ارتفاع غير معنوي في مستويات الكالسيوم والصوديوم لكلا الجنسين الذكور و الاناث و خفض غير معنوي في مستوى البوتاسيوم في مصل دم المصابين لكلا الجنسين الذكور و الاناث بالمقارنة مع مستوياتها في مصل دم الاصحاء في كلا الجنسين. كما وظهرت النتائج ارتفاعا معنويا في مستوى بيروكسدة الدهن في مصل دم المصابين مقارنة مع الاصحاء في كلا الجنسين.

The impact of Tourism Sector on Iraqi Economy

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Abstract: Iraq has tourism potential that may not be available in other countries. The past civilizations of Iraq demonstrate in the positive image of the country as a land of ancient civilization, thereby resulting in the creation and development of high tourist traffic flow. High financial returns contribute to the development of this archaeological heritage and help increase the national income. **Problem statement:** Since 1980, Iraq passed three wars and economic blockade which had a huge negative impact on tourism development. As a result, the contribution of the tourism sector to economic growth suffered from fluctuation and instability. This paper attempts to examine the impact of the tourism sector on Iraqi economy. **Methodology:** To accomplish this objective the statistical technique and economic analysis (STEAM) approach was applied for annual time series data from 1980 to 2013. **Results:** The result shows that war, economic blockade conditions, as well as its political and security instability had a negative effect on tourism revenue and economic growth in Iraq. **Findings:** This study found that the tourism industry generated the highest revenues in 1980 (4.43%) of GDP, the year that preceded the Iraq-Iran war, but this share was reduced to very low levels reaching 0.003% in 1999 because of the First Gulf War and the economic embargo imposed on Iraq. **Conclusion:** At the end of this study, we conclude that a positive relationship between tourism revenue, GDP and exports still occur, but is very weak. Moreover, tourism activities had a smaller positive effect on employment. The authors also highlight the weak point in the tourism sector in Iraq, which plays a significant role in the prosperity and development of the national economy.

Keyword: Tourism impact, GDP, Exports, Investment, Employment, Economic analysis, Iraq.

I. INTRODUCTION

Tourism has been significant since the beginning of human civilization, and is becoming more vital each passing day. Many countries all over the world continue to attract tourists to destinations in their respective countries since the late 20th century. Ample attention has been given to the role of tourism in the national economy and to the promotion of tourist activities in different areas. For example, Saudi Arabia has raised the economic contribution of tourism to 6% despite the dominance of the oil sector on the state economy. Tunisia has been successful in managing its tourism industry as this industry accounts for more than 14% of the GDP of the country. Egypt has offered hundreds of thousands of jobs in the tourism sector (WTTC 2013; AL-Aoady, 2011).

Tourism has an active and vital function in the economic and political openness of a country to the outside world (Tisdell, 1996). According to World Tourism Organization studies (WTO, 2011), the tourism industry is the key to development in many countries and is influential in economic diversification. This activity supports trade balance, government revenues, and family income. The 21st century is a century of travel and tourism. Estimates in 2004 indicate that more than 11% of GDP and 8% of world export earnings originated from tourism activity (Daher, 2007).

Today, tourism is a global phenomenon in terms of economic, social, political, cultural, and environmental dimensions. Tourism is the most widespread industry in the world and the principal source of revenue and job creation in many countries (Chen and Wei, 2009)

Background of the cause study

The Mesopotamian civilization, as well as the oldest civilizations in the world, dating back to 6000 BC, namely, Sumerian, Akkadian, Babylonian, Assyrian, Balabasiens, and Ottoman Empire, has formed an essential network for tourism in Iraq. The past civilizations of Iraq participate in the positive image of the country as a land of ancient civilization, thereby resulting in the creation and development of high tourist traffic flow. High financial returns contribute to the development of this archaeological heritage and help increase the national income (Abdullah, 2009). Moreover, Iraq has tourism potential that may not be available in other countries.

However, the tourism industry in Iraq encounters various obstacles depending on the degree of progress in cultural and economic aspects. The obstacles and problems have led to the failure of government and the private sector to realize the vital role of tourism in economic and social development. Tourism is not the major source of income for Iraq. Additionally, the tourism industry of the country has received a modest amount of attention because of the lack of management, modest quality of facilities and services, low level of qualification of tourism employees, and lack of institutes to promote tourism awareness and training. Moreover, Iraq is one of the most important oil-exporting countries. Therefore, oil revenues dominate the overall economic activity of the country, thereby contributing directly and indirectly to the decreased importance given to other sectors and to the less attention given by the government to the expansion of tourism activities.

During the time period (1980 to 2013) of our study, the tourism sector has experienced many highs and lows in its contribution to the GDP of Iraq. For example, since 1980 the contribution of tourism revenue to GDP was 4.432%, but this percentage declined to only 0.112% in 2002. After 2003, Iraq experienced an increase in the number of visitors. The contribution of the tourism sector increased to 3.088 % of the GDP in 2010. (Ministry of Tourism - Iraq and Ministry of Tourism - Kurdistan region government (KRG), 2012).

This study will be investigated the role and effect of tourism sector on Iraqi economy. The study also evaluates the current and future directions of tourism development in Iraq.

Above presents the principle fundamental of the study, the rest of the paper is organized as follows. Section II discusses the theoretical framework of the study. Section III reviews related case study. Section IV presents the data collection and data analyses of the study. Concludes and summarizes the study provided in the last section.

II. THEORETICAL FRAMEWORK

Accurate estimation and conclusion to support our study would not be possible without defining the theoretical framework. The main issue of theoretical framework is to understanding basis fundamental of the study.

After the Second World War, tourism grew exponentially as individual business owners and governments capitalized on the increased mobility and spending power of tourists. As the demand for tourism grew, supplying the infrastructure and amenities to accommodate tourists became an economic development strategy for many communities. The economic contribution that tourism provides, such as increased growth domestic product (GDP), has benefited communities worldwide. The economic benefits of tourism reach many parties, including residents, members of the industry, developers, and regional governments. These groups are positively influenced by the direct and indirect revenues that tourism generates. Residents may benefit directly through employment in the tourism sector or indirectly through the use of commodities and services supported by the tax revenue that tourism generates (Sirakaya and Choi, 2001; Weaver, 2006).

2.1 Concept of Tourism - Growth Theory

An extensive body of literature has determined the mechanisms that explain growth. Adam Smith's (1776) "An Inquiry into the Nature and Causes of the Wealth of Nations" may be considered a suitable starting point for economic growth theories, in which capital accumulation, technological progress, and institutional and social factors are crucial in the economic growth process of a country

(Kibritcioglu, 1997). Explaining the growth rate of output over a time period usually employs either of two complementary approaches, namely, (i) growth theory, which deals with the interaction among factor supplies, productivity growth, saving, and investment in the process of growth, and (ii) growth accounting, which attempts to quantify the contribution of different determinants of output growth (Balaguer and Cantavella-Jorda, 2000).

In the neoclassical Solow–Cass–Koopmans model, the rate of growth in an economy depends on the initial level of income (GDP). The GDP is one of the most broadly used macroeconomic indicators for measuring economic growth.

Growth domestic product (GDP) is the fundamental measure of the growth output from economic activity. What constitutes an economic activity should be identified because it determines the scope of GDP. Economic growth is the outcome of a complicated interaction among all sectors, specifically the agriculture, industrial, and tourism sectors. Each sector exerts direct and indirect effects on economic growth based on policy work in countries. At present, tourism is the most widespread sector in the world. It is also the principal source of revenue, job creation, and economic growth via tourism revenue and tourism expenditure (Chen and Wei, 2009). Thus, the 21st century is a century of travel and tourism.

Meanwhile, several alternatives can be used to measure the expansion of the tourism sector. One of these alternatives is tourism expenditures, which is the volume of spending by foreign visitors. Likewise, tourism revenue and number of arrivals can also be used to measure tourism growth.

The above discussion explained how the tourism sector affects economic growth, but for estimate the size and direction effects of tourism sector on economic growth better look to econometric techniques. According to the studies of Brau, Lanza, and Pigliaru (2004, 2007), the econometric specification used for the growth regression is simplified as follows:

$$\text{Growth} = \beta_0 + \beta_1 \text{Tourism} + \beta_2 X + \beta_3 \square + \varepsilon \quad \dots\dots (3.11)$$

Where:

X = vector of control variables, which is based on growth theory and the literature on the determinants of economic growth; and

□ = vector that includes a series of dummy variables often used in growth analysis, such as political change, economic reform, and economic freedom.

As discussed in the previous part, several factors influence economic growth at the micro [e.g., labor and capital factors (Solow, 1956)] and macro [e.g., economic, agriculture, industrial, and tourism sectors (Ivanov, 2005; Ivanovo and Webster, 2006)] levels. The current study focuses on the macro level and examines how the tourism sector affects economic growth. Formally, the function of economic growth, which is related to tourism activities, can be written as follows:

2.2 Contribution of tourism to economic growth

Tourism has become a distinctly large and fast-growing industry. However, economic on tourism is limited, probably because it is a single industry and sets up businesses from numerous industrial classifications. Developing improved methods for assessing the economic importance of tourism on an area's economy has become more important than ever. The first-order effects of tourism-led growth can be dramatic and conspicuous. From an aggregate perspective, when the production of goods and services increases, the potential for profit, savings, and further investment are enhanced, and GDP growth is boosted (Tooman, 1997). The growth of international tourism during the past 30 years has exerted effects on GDP, exports, investment, employment, and the global economy in general. The tourism industry is being applied as a key economic growth tool of the 21st century.

The contributions of tourism are generally understood at the macro and micro levels. At the macro level, tourism is expected to accelerate economic growth through foreign earning, an increase in state revenue, and infrastructure development in the area as well as by attracting to outside investors; meanwhile, at the micro level, tourism is expected to contribute to economic growth as it improves the standard of living in the areas by providing increased job opportunities, increasing business activities, improving the income of the residents, and enhancing the balance of regional development (Lea, 1993; Dieke, 2000). Tourism development only becomes significant when it contributes to the development in the quality of life of the local residents, which is only possible

through competitiveness (Rubies, 2001). These benefits arise because tourism can add to economic growth and act as a time-saving device for the domestic population.

The multiple effects of tourism on the entire economic life will be reflected in a positive way and for a long term in a region's development in general, which is a common interest. Therefore, destination management requires successful application that will allow the profitable use of all respectable resources of tourist destinations, which is the basic condition for tourism development in the future (Vukovic et al., 2007).

For many developed and developing countries, tourism represents an influential export industry that contributes to economic growth and development (Briassoulis, 1991). Pearce (1981) identified four ways by which tourism can affect economic growth and economic development.

First: Tourism is a growing industry and is therefore highly desirable for economic development of the countries or regions.

Second: The tourism market comes to the producer and is relatively unprotected.

Third: Tourism can also involve significantly in the national economy by increasing revenue for the area and channeling foreign earnings to the country.

Fourth: Tourism helps diversify the economy.

In spite of acts of terror and regional instability, tourism remains an important source for economic growth. That is, amid shocks from terrorism, war, crisis, and regional instability, visits by tourists remain a trend-reverting series. Additionally, the results imply that policy makers should not neglect the significance of the tourism sector on the premise that detrimental shocks will have permanent effects (Aly and Strazicich, 2000).

III. LITERATURE REVIEW

Tourism statistics are one of the key sources of information for economists, public officials, and tourism decision makers. The purpose of this review is to arrive at a consensus to select a list of studies that would best explain the tourism growth for an area. In addition, various studies have analyzed tourism growth in different areas in the world; no international academic paper on Iraq tourism has been published. However, local academic research is still scarce in this area; Thus, we selected some of these studies as follows:

Hashim (2005) determined the economic role of tourism activity in Iraq. He used annual data for the period of 1990 to 2000. He applied several variables that affect international tourism growth. The result shows the contribution of tourism activity to balance payments was very low for the period (1990-2000). For instance, a total tourism export in 1990 was equal to (1.2%). Therefore, tourism was not an alternative source of growth in the export sector.

Al- E'enzi (2005) studied and measures the domestic tourism activities in Iraq. To achieving this purpose, this study used Ordinary Least Square (OLS) model based on annual data for (1975-2001). He found Iraq has a number of tourist attractions, especially in religious, historical and natural fields, but Tourism Investment was still very low.

Jawda (2005) estimated the determinants of tourism attractions and tourism users in Iraq. He used statistic technique and economic analysis (STEA) to analyze annual data for the period (1991-2001). He reported that the tourism sector of Iraq was faced to marginalization and neglected for over three decades, because Political and security instability. So tourism sector had not made balance between tourist attractions and tourist users.

AL-Quraishi (2006) highlights the factors affecting development of religious tourism for Iraq. He applied statistic technique and economic analysis (STEA) model. He concluded that he found that political stability has an important role to developing tourism activities in Iraq.

Al-Fatlawi (2006) determines and analysis problems and possibilities of sustainable tourism development in Iraq using annual data for period (1980 -2002) through applied (STEA) model. The study concluded that the contribution of tourism revenue to national income and balance of payments were positive for the period (1980 - 1990).

Kadm (2011) studied and analyzed the role of the tourism industry in the economies development for Iraq. This study applied the Ordinary Least Square (OLS) model based on the survey data for period (1990 to 2011). He found the Contribution of tourism activity to the balance of payments was very weak, for example in 1990 was only (0.12%), and then this percentage declined to only (0.001%) in 2000 because of war and economic blockade conditions. The contribution of the tourism sector increased to (3.5%) of the balance of payments in 2009 .

AL-Aoaady (2011) determines the role of tourism development on Iraqi economy. This study applied statistics tools for the period of 2002 to 2009. The study concluded that the tourism sector has a few contributions to the national economy, because of dominate oil sector all over the Iraqi economy.

Previous research shows that tourism sector had not a high contribution to economic growth of Iraq. In addition, war, as well as its economic blockade conditions, political and security instability had a negative effects on tourism revenue and also on economic growth of Iraq.

IV. DATA COLLECTION AND DATA ANALYSIS

The goal of this section is to provide a description and analysis of the reality of the tourism sector in Iraq, determine the effects of war as well as the lack of security and stability on the development of the tourism sector. The section likewise aims to identify clearly the main effect of the tourism sector on some macroeconomic variables such growth domestic product(GDP), exports of goods and services, investment , and employment.

Data collection

This study adopts secondary data for the period (1980 - 2013), and collecting data from more sources (World Bank WDI, WTO, WTCO, WTTC, CBI, IMF, Economist Intelligence Unit, oxford economics, Ministry of tourism of Iraq, Ministry of planning of Iraq) are done to gain access to more detail and logical results.

Data analysis

Political stability and the presence of Homeland Security provide the necessities of the economy and the requirements of development, which is critically needed for the growth and development of the tourism sector. For the entire study period from 1980 to 2013, Iraq underwent various wars, both foreign and domestic. During this time, the regime in Iraq controlled the production and investment in all sectors. Iraq depended primarily on oil exports, which comprise more than 60% of its GDP; the country sourced more than 95% of its budget revenues from oil exports.

4.1 Contribution of tourism revenues to GDP

Tourism is an important economic activity for many countries, especially when considering foreign currency flow. Tourism revenue directly and indirectly affects the national economy, and tourism represents a major component in the composition GDP in many countries. The status of tourism in the national income is measured by the contribution of the industry, which is characterized by dynamic activity and productive facilities and infrastructure, because tourism is affected by direct and indirect factors, as opposed to the more predictable growth of other economic sectors. In addition, the positive effects of tourism transcend its own sector, reaching these other economic sectors to improve economic growth, production, and income (Houri, 2000). Therefore, the scientific method, which provides a clear assessment of the national economy and the contribution of tourism to GDP, is also supported in this study.

Iraq is one of the most important oil-producing countries, and oil-exporting oil revenue dominates all economic activity. This leads to a decline in the relative importance of the other economic sectors and activities, and to the lack of interest in the expansion of the tourism sector. From the latter half of the 1970s to the early 1980s, the Iraqi economy encountered no problems with foreign currency because of the strength of the economy and the large returns achieved from the export of oil and considerable investment in tourism. However, during the Iraq-Iran war, Iraq suffered from a budget deficit because of war funding. Tourism investment, as well as the Iraqi economy, encountered many obstacles because they relied primarily (over 75 %) on oil revenue.

During this period, they did not consider tourism an important source of public revenue. Table (1) traces the function and contribution of tourism in general, as well as the effects of tourism revenue to the GDP.

Table 1: GDP and tourism revenue of Iraq from 1980 to 2013

Time Period	Real GDP (million USD)	Tourism Revenue (million USD)	Share of tourism revenue to GDP (includes oil sector) (%)	Share of tourism revenue to GDP (excludes oil sector) (%)
1980-1985	42255.70	613.37	1.45	27.48
1986-1990	48406.33	205.86	0.43	8.04
1991-1995	24267.15	26.76	0.11	10.62
1996-2000	36167.44	9.71	0.03	8.212
2001-2005	35386.13	63.15	0.18	6.907
2006-2010	52349.52	952.00	1.82	11.00
2011-2013	64092.07	1558.00	2.43	n.a

Source:

1. World Bank WDI, 2013.
2. Economist Intelligence Unit, 2013.
3. Statistical Report, Ministry of Tourism, 1980-2011, Iraq.
4. Statistical Report, Ministry of Planning, 1980-2011, Iraq.

Note: n.a – not available.

Table (1) shows the extent of the contribution of tourism revenue in the GDP of Iraq from 1980 to 2013. The figures reflect the state of constant oscillation in levels in both tourism revenue and GDP. The tourism revenue and GDP experienced several dips and spikes because of the wars, the imposition of the blockade, as well as political instability and security issues at the local, regional, and international levels. The average contribution of tourism revenue to GDP (excludes oil sector) for 1980 to 2013 was (12.04 %). A positive relationship exists between tourism revenue and GDP, but when we includes oil sector to GDP this relationship is very weak was only (0.92%), and not commensurate with the potential of Iraq for religious, historical, and cultural tourism.

Table (1) indicates that the tourism industry generated the highest revenues in 1980 (4.43%), the year that preceded the Iraq-Iran war. This ratio was reduced to very low levels. Table (1) indicates a large reduction after 1991 and reached 0.03% in 2000 because of the First Gulf War and the economic embargo imposed on Iraq. After 2006, the figures improved with the increasing number of tourist arrivals in Iraq. Furthermore, the private sector became more active, and a new law in the field of tourism investment was issued. The Iraqi government and responsible parties were also convinced of the necessity to diversify the Iraqi economy. Complete dependence on oil was discouraged because of the increased instability and volatility in global oil prices. This instability has directly affected the deterioration of the economic situation in Iraq because more than 75 % of the budget of Iraq is derived from oil export revenue.

4.2 Contribution of tourism revenue to exports

Tourism promotion in Iraq aims to attract foreign capital, as well as global tourism experts. These elements will contribute to revitalize the foreign demand for all types of tourism in Iraq and increase the contribution of tourism revenue to the exports. Iraq has undergone difficult circumstances, including several wars, an economic blockade, political instability, and security issues. These conditions had a significant negative impact on the export sector. This negative impact can be clearly observed in the tourism sector, which did not indicate a line distribution of stable growth in an export sector, but rather fluctuates.

After 2006, conditions improved to increase export in Iraq. Furthermore, the private sector became more active in the field of export. Moreover, tourism export in the total exports increased from 0.21% in time period (2001-2005) to 4.01% in time period (2010-2013). Table (2) shows the tourism export in Iraq and its role in the development of the export sector.

Table 2: The ratio of tourism export to total and non-oil exports of Iraq from 1980 to 2013

Time period	Tourism exports (million USD)	Total Exports (million USD)	Non-oil exports (million USD)	Share of tourism export to total exports (%)	Share of tourism export to non-oil exports (%)
1980-1985	613.37	54212.60	13553.15	1.13	4.53
1986-1990	205.86	69484.98	17371.25	0.30	1.19
1991-1995	26.76	5385.13	1346.28	0.50	1.99
1996-2000	9.71	32117.51	8029.38	0.03	0.12
2001-2005	63.15	30247.55	7561.89	0.21	0.84
2006-2010	952.00	31882.14	7970.54	2.99	11.9
2011-2013	1558.00	38901.13	9725.28	4.01	16.00

Source:

1. World Bank WDI, 2013.
2. Statistical Report, Ministry of Tourism, 1980-2011, Iraq.
3. Central Bank of Iraq- Statics and Research Department- Statistical Bulletin Special Issue (1991-2003) <http://www.cbi.iq>.

Table (2) shows that the average contribution of tourism export to non-oil export from 1980 to 2013 was 1.31 %. This ratio was very low because of the wars, the economic blockade, and oil-exporting and oil revenue dominated all economic activities. Oil export dominated the total export of Iraq by more than (75%). These conditions lead to a decline in the relative importance of the other economic sectors and activities, and to the lack of interest in the expansion of the tourism sector. However, Table (2) shows that a positive relationship between tourism export and non-oil export occurs, but also this relationship is weak.

4.3 Contribution of tourism investments to the total investments

The tourism sector in Iraq has not been considered as important to the economic structure of the country and did not elicit the required attention from previous governments because of the dependence of the country on oil exports. After the process of nationalization in 1980, the repercussions of the wars, as well as the economic blockade, and the reliance of the country on Iraqi oil exports, have reflected negatively on the tourism sector and other economic activities of the country. Moreover, despite its knowledge on the importance of tourism as a supplier of foreign currency, the Iraqi government has failed to make the correct decisions and provide support to the tourism sector to increase investments.

Tourism investment has remained semi-rigid, and support attempts have been limited to the private sector to build traditionally small hotels that do not meet the intended purpose, as well as the progress that the tourism sector hopes to achieve. The private sector will be active in tourism investment, holding a majority stake, but competition in this field should be encouraged. The government should achieve its official task to identify the required specifications and designs for tourist projects to secure the efficiency of the service and tourism products within the specified measurements of investment laws.

Table 3: Total Investments and tourism Investments in Iraq from 1980 to 2013

Time Period	Total investment (million USD)	Growth rate (%)	Tourism investment (million USD)	Growth rate (%)	Share of tourism in total investment (%)
1980-1985	42771.94	0.068	270.17	-14.20	0.63
1986-1990	28301.78	-33.83	418.53	54.91	1.48
1991-1995	8083.81	-71.44	350.00	-16.40	4.33
1996-2000	3669.45	-54.61	218.80	-37.50	5.96
2001-2005	15035.04	309.74	270.00	23.40	1.80
2006-2010	34659.45	130.52	597.80	121.40	1.72
2011-2013	42505.64	22.64	932.00	55.90	2.19

Source:

1. World Travel and Tourism Council (WTTC), 2013.
2. Statistical Report, Ministry of planning, 1980-2000, Iraq.
3. Statistical Report, Ministry of Tourism, 1980 -2000, Iraq.

Table (3) indicates a decline in the volume of investment at two levels, namely, Total investment and Tourism investment, and the presence of fluctuations in the volume of total investments, which considerably decreased the size of tourism investments. Several reasons caused the decline in tourism investment in Iraq. These reasons include wars and political instability at both local and external levels, which resulted in directing the majority of oil revenues to support military expenditures, as well as the absence of a law to regulate tourism investments and work stoppage under Law No. (353) in 1980.

Table (3) shows that between 1980 and 1990, Iraq allocated less than 2% of the total investment for tourist investments because of the Iraq-Iran war. Few investors from the private sector were willing to invest in the tourism industry because of the lack of security and economic stability. However, despite economic embargo imposed on Iraq between 1992-1996, the recorded share of tourism investment to the total investment between 1991-2000 was higher at 4 to 5 %.

V. CONCLUDES AND SUMMARIZES THE STUDY

In this study, we considered two different points of view. First, we discussed the contribution of tourism industrial to economic growth. Second, we studied the role of tourism sectors in the Iraqi economy under the war years, the economic blockade, and political and security instabilities through the impact of tourism revenue to exports, investment, employment, and GDP. The obstacles and challenges currently facing the tourism industry in Iraq are rooted in history, and can have negative effects in the future if the responsible authorities do not find appropriate solutions for these problems. Despite the high number of potential tourists, these problems, which lower tourist demand, continue to prevent tourists from visiting Iraq. After securing supplies that are supplementary to tourism, Iraq will be home to well-administered hotels with efficient service and infrastructure. Furthermore, basic services and the system of tourism investment will be compatible with international standards to secure various types of tourism (religious, cultural, archeological, leisure, medical, political, and sports tourism) in Iraq. As tourism spreads to various parts of Iraq, areas with limited development in tourism will be able to leverage this aspect of development and its associated activities.

The main objective of this study is to determine and analysis the impact of tourism on the Iraqi economy. The paper achieved the objective of the study by discussion theoretical framework, literature review and economic analyses. The statistical technique and economic analysis (STEA) model was applied in the study, and the data cover the period 1980 to 2013. The empirical result show that Iraq's history of war, economic blockade conditions, as well as its political and security instability had a negative effect on tourism revenue and also shows tourism revenue was instability

source for economic growth for Iraq. In conclusion, this paper shows the impact of international tourism revenue on GDP, Exports, Investment and Employment was positive but in lower level. So in this way the effect of the tourism sector on Iraqi economy was very small.

Based on above discussion, the tourism sector in Iraq could flourish if hotels are included to provide efficient service and its system of tourism investment is compatible with international standards, which would secure various types of tourism. Various parts of Iraq could benefit from these developments to create the foundation for applying the benefits of tourism development to the general areas and provinces of the country. Areas with limited development in other sectors could exploit this aspect of development and related activities (Ministry of Planning, Iraq, 2009).

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The duties of the parties under FOB contracts under different types of FOB contracts in an international transaction and the difficulties in distinguishing the extended FOB contract and CIF contract.

The FOB contract has survived as a contractual model for the sale of goods due to its on major strength, flexibility. However, whilst this has undoubtedly proven useful for merchants, it has nevertheless presented problems in the legal point of view

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Abstract

The Free on Board (FOB) and Cost, Insurance and Freight (CIF) contracts are important contracts for International Trade. One similarity in these two contracts is that sellers and buyers can be protected. In addition, another characteristic that CIF contracts and extended FOB contracts have in common is that the seller holds the responsibility of work. Nevertheless, this does not mean that there are no differences between both. In fact, CIF contracts deal with document delivery instead of logistical delivery of goods while FOB contracts do the latter. Furthermore, flexibility is one more aspect to differentiate between both. FOB contracts are known for having higher levels of flexibility as compared to CIF contracts. The cost of freight and insurance are not included in the extended FOB contract price. On the hand, the cost of freight and insurance are already included in the CIF contract price; indicating no associated risks for buyers in such contracts.

The law has not been able to solve issue relevant to certain uncertainties. In fact, one of these uncertainties is how to differentiate between extended FOB and CIF contracts. In some cases parties might assume they have entered into a FOB contract when, in reality they haven't. Another problem concerns generally who, when does property pass to buyer?

I. Introduction

Many important common sale contracts used in international trade assume that the goods will be carried by sea.¹ International sale contracts often use standard contract terminology. An example is INCOTERMS². These are contracts sponsored by the International Chamber of Commerce under the title "INCOTERMS 2000".³ Of these, the Free on Board (FOB) and Cost, Insurance and Freight (CIF) terms are the most popular.⁴ FOB contracts have developed and varied over time. Reasons for this variation are not purely legal: economic, political, and technological factors have influenced practice, too.⁵

FOB contracts were influenced by the conditions of international trade during the 19th century.⁶ The merchants of that time were personally more involved in all of the stages of the sale transaction⁷ than they are now. Today, international trade is much easier. The reasons this include improvements in many facilities, especially communication, the formation of regular shipping lines and services, better postal services, better insurance services, and a more formal status of shipping documents.⁸

Because of communication and other difficulties during the 19th century, the seller would not usually undertake any services for the buyer. Thus buyers, or their agents, had to personally arrange everything, and had to stay on the ship during the whole voyage.⁹ This made the position of buyers fragile—events could occur when they were at sea about which they could know or do anything. The situation was unsatisfactory and could not last.¹⁰

FOB and CIF contracts evolved to improve the situation. Each type of contract defines the obligations of the seller and buyer in performance aspects of contracts. These include delivery, payment, and risk of loss. They divide some of the costs between the parties, including delivery costs and the risk of increased costs of insurance and freight.¹¹ FOB and CIF contracts differ from each other in small ways; however, they are broadly similar. This similarity can be a source of confusion and misunderstanding between parties. Such confusion can be to the detriment of each party.

¹ J Chuah, *Law of the International Trade: Cross-border Commercial Transactions*, (Fourth Edition, Thomson Reuters, London, 2009)35

² Mean International Commercial Terms see Dr. Anita Szabó 'INCOTERMS': Incoterms 2000 in light of its practice' (Balázs & Holló Law Firm, Budapest 2008) http://www.consulegis.com/fileadmin/downloads/thomas_marx_08/anita_szabo_paper.pdf > Accessed 2/4/2010

³ H Gabriel, *Contracts for the Sale of Goods: A Comparison of Domestic and International Law*, (Oceana Publications, Inc., New York, 2004), at 241

⁴ The Law Of International Trade And Carriage Of Goods 2004 Contract Part III Vitiating Factors 13 Nationwide Mediation Academy for NADR UK Ltd <<http://www.nadr.co.uk/articles/published/shipping/005CHAPTERFIVETRADE1.pdf>> Accessed 16/3/2010

⁵ *Sassoon makes the point that '...the terms are not the product of legislation but are rather the outgrowth of the customs and usages of merchants to whose evolution the courts have contributed mainly by way of enforcement'*.

D Sassoon, 'The origin of f.o.b. and c.i.f. terms and the factors influencing their choice', (1967) JBL 32

⁶ R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York, 2005)769

⁷ *International sale transactions involves a network of interlocking contracts made between a number of different parties, including for the carriage of the goods to their destination, their insurance in transit and the financing of the transaction. We are therefore concerned with the legal relationships, primarily, but not solely, contractual, between these parties. There has in recent years been a general trend to the harmonisation of the national law applicable to international transaction but most part the law remains essentially national. We are here primarily concerned with the English law applicable to international transactions.*

R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York, 2005)719

⁸ David M. Sassoon 'The origin of FOB and CIF terms and the factors influencing their choice', (1967) JBL 32 'Documents as symbols of goods afloat were only beginning to gain recognition

⁹ Elis Tarelli, 'C.I.F. or F.O.B.: That is the Question! Main Features of the Two Contracts for the International Sale of Goods', September 3, 2009 <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1467820> Accessed 30/3/2010

¹⁰ *For the purposes of this paper the word "buyer" in its meaning includes also the buyer's agent.*

¹¹ John Shijian Mo, *International Commercial Law*, (2nd Edition, Sydney: Butterworth, New South Wales 2000)11

This confusion continues today. The present paper therefore discusses the duties of the seller and buyer under different types of FOB contracts. In this, it examines legal aspects of FOB and CIF contracts, especially as regards problems that arise from distinguishing between so-called extended FOB contracts and CIF contracts.

The paper comprises four sections. First, discuss overview about the nature of FOB contract. Second, it examines the duties of the parties under three types FOB contracts and reasons for using. Third, it examines the duties of the parties under a classic FOB contracts. Fourth, it examines the main differences between CIF and FOB contracts.

II. THE Nature of FOB Contracts

A FOB contract is an international sales contract that states that the seller delivers the goods to a ship nominated by the buyer. The property and the risk associated with them pass to the buyer at the time that the goods pass the ship's rail at a port specified in the contract.¹² The buyer is therefore responsible for making the arrangements for insuring and shipping the goods to their final destination.¹³ The seller is not under a duty to ship the goods until he has received instructions from the buyer as to the name of ship and port of destination.¹⁴ Thus once the contract has been signed, the seller is responsible for aspects of care and shipping of the goods up to, but only up to, the time when the goods pass the ship's rail and the buyer is responsible for bear all costs of the goods and risks from of loss of or damage to the goods from¹⁵, but only from, the time they pass the ship's rail.¹⁶ Notice from this that it is the seller's responsibility under a FOB contract to obtain clearance for export.¹⁷

Prima facie a FOB contract therefore specifies the manner of delivery of goods, how expenses shall be divided between buyer and seller, and when risks pass to the buyer. However, because of the uncertainties of shipping, it does not necessarily specify exactly when goods shall pass from seller to buyer.¹⁸

The seller's obligations extend to all charges incurred before shipment, including loading charges, but not freight or insurance. This is illustrated by *Cowasjee v Thompson*, in which Lord Brougham provided: "It is proved beyond all doubt, indeed it is not denied that when goods are sold in London¹⁹ 'free on board' the cost of shipping them falls on the seller, but the buyer is considered the shipper."²⁰ It is also illustrated by *Stock v Inglis*²¹, in which Brett ruled that, under a FOB contract, the seller put the goods on board his expense; but that the buyer would take on the risk of loss of the goods so put on board from the time of delivery of the goods at the destination port specified in the FOB contract, regardless of whether they were lost or not on the voyage. These cases established the basic principles of the FOB contract, namely:

¹² P Atiyah, J Adams & H Macqueen, *The Sale of Goods*, (11th Edition, Person Education Limited, England 2005) 420

¹³ *Olbert Metal Sales Ltd. v. Cerescorp Inc* [1997] 1 F.C. 899 at pp. 904-906

¹⁴ See, the definitions of FAS, FOB, CFR and CIF in Incoterms 2000.

¹⁵ Krisztina Otília Kiss, MLA: "International Carriage of Goods by Sea under the Documentary Aspect- Including the Recent Challenges of Electronic Commerce, Eötvös Loránd University of Sciences December 2007"

< <http://www.soc.uoc.gr/econ/Seminars/seminars/otilia.pdf> > Accessed 14 May 2010

¹⁶ E Tarelli, 'C.I.F. or F.O.B.: That is the Question! Main Features of the Two Contracts for the International Sale of Goods' (September 3, 2009). Available at SSRN < <http://ssrn.com/abstract=1467820> > Accessed 16/3/2010

¹⁷ *Pagnan S.p.A. v. Tradax Ocean Transportation S.A.* [1987] 1 Lloyd's Rep 342; where the FOB seller was unable to clear the goods for export because of national regulations of the country of export.

¹⁸ *Mitsui & Co Ltd v Flota Mercante Grancolumbiana SA* [1989] 1 All ER 951 per Staughton LJ

¹⁹ Me. Neil Gary Oberman, *Transfer of risk from seller to buyer in international commercial contracts: A comparative analysis of risk allocation under the CISG, UCC and Incoterms*, Maître en droit (LL.M.)

Jun 1997 < <http://www.cisg.law.pace.edu/cisg/thesis/Oberman.html> > Accessed 14 May 2010

²⁰ *Cowasjee v Thompson* [1845] 5 Moore PC 165

²¹ *Stock v Inglis* (1884) 12 Q.B.D. 573 and see also *Raymond Wilson v Scratchard* [1944] 77 Lloyd's Rep 373.

1. The seller's duty is to deliver the goods over the rails of the ship, the issue of a bill of landing or mate's receipt is irrelevant to the issue of property and risk;
2. The buyer's duty is to ensure that the seller is properly notified as to the vessel to ship the goods;
3. The buyer remains the legal shipper of the goods; he is the main contracting party in the contract of carriage;
4. Property and risk pass when the goods are taken over the rails of the ship;
5. When the risk passes, the buyer has an insurable interest in the goods and be entitled to insure them.

A FOB contract may nonetheless not specify everything. Each party may have "incidental" obligations and these may vary from contract to contract. Any ambiguity must therefore be resolved by reference to intentions of the buyer and the seller. These may be explicit or implicit.²²

III. Types of FOB Contracts

There are many variations of FOB contract, and this makes defining a FOB contract difficult. Here, one may make four observations. First, unlike CIF contracts where definitions abound, there are no definitions concerning FOB contracts. Second, this lack of definitions could be a source of FOB contracts' strength, namely their "flexibility"²³. Third, although the incidentals of the contract may, as indicated, be varied, they may be determined by the expressed and implied terms in the contract (that the gist of a FOB contract can be gathered from some cases such as *Stock v Inglis*²⁴, *Wimble v Rosenberg*²⁵ and *Pyrene v Scindia* in *Carlos Federspiel v Charles Twigg*²⁶). Fourth, the fact that parties have described their contract as FOB is not necessarily be conclusive (a court might decide that what the parties thought was a FOB contract was not in fact a FOB contract).

Devlin²⁷ described the situation thus. A FOB contract, he said, has become a very flexible instrument contract and, perhaps because of its flexibility,²⁸ the FOB term is still in use and popular today.²⁹

The flexibility of FOB contracts implies that they differ, and that there are varieties of them. The differences between the main varieties of FOB contract revolve around who nominates the vessel and who is responsible for making the contract of carriage and insurance³⁰. One may therefore concentrate on that form of the FOB contract under which it is the buyer's duty to nominate the ship depending on the terms of the contract,³¹ (it may also be the buyer's responsibility to procure space on the ship). Under this form of FOB, it is the seller's duty to place the goods on board the nominated ship, and to do so within a

²² *The different type of FOB clauses and the incidents of the FOB contract in general are analysed in David M Sassoon, CIF and FOB contracts (4th edition, Sweet & Maxwell, British shipping Law, London, 1995)*

²³ *Nv Handel NyJ. Smits Import-Export v English Exporters (London) Ltd* [1957] Lloyd's Rep .517 ; *Ian Stach Ltd v Baker Bosely Ltd* [1958] Lloyd's Rep.127 ; *Pyrene Co. Ltd. v. Scindia Navigation Co. Ltd* [1954] 2 Q.B. 402 at 424

²⁴ *Stock v Inglis* [1884] 12 Q.B.D .573 and see also *Raymond Wilson v Scratchard* [1944] 77 Lloyd's Rep 373.

²⁵ *Wimble v Rosenberg* [1913] 3 K.B. 743

²⁶ *Carlos Federspiel v Charles Twigg* [1957] 1 Lloyd's Rep 240

²⁷ *Pyrene Co. Ltd. v. Scindia Navigation Co. Ltd.* [1954] 2 Q.B. 402 at 424

²⁸ *Bunge Corpn v Tradax SA* [1981]2All ER 513

²⁹ R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York, 2005) 770

³⁰ Todd, *Cases and Materials on International Trade Law*, (First Edition, London: Sweet & Maxwell, 2003) 95

³¹ *D'Arcy L, Murray C, Cleave B Schmitthoff*, (n12) 7-8

reasonable time of the date indicated by the buyer's instruction to ship,³² and, assuming the buyer's instruction leaves time for this, within the contractual period for shipment.³³ Nonetheless, as indicated, there are several types of FOB contract today are analysed in *Pyrene v Scindia*³⁴ and *Sassoon*³⁵.

Devlin in the High Court discussed three commonly recognised variations of the FOB export sales contract. He stated in *Pyrene v Scindia*³⁶:

"In the first or classic type, the buyer nominated the ship and the seller put the goods on board for the account of the buyer, procuring a bill of lading. The seller was a party to the contract of carriage to which the buyer could become a party was that contained in or evidenced by the bill of lading which was endorsed to him by the seller. The second is a variant of the first, in that the seller arranges for the ship to come on berth, but the legal incidents are the same. The third is where the seller puts the goods on board, takes a mate's receipt and gives this to the buyer or his agent who then takes a bill of lading. In this latter type the buyer is a party to the contract of carriage ab initio."

The three types of FOB contract

One may follow Devlin's suggestion of three broad types of FOB contract.³⁷ One may broadly define them as follows.

1. Strict or classic FOB sales contract

Under this agreement the seller puts goods on board a suitable ship nominated by the buyer and transports them to the port of shipment. The buyer gives sufficient notice to the seller of the time and location of the delivery, having, presumably, paid any costs incidental to the delivery of the goods³⁸. The seller, acting as agent of the buyer, signs the contract of sea carriage. Because the seller is acting as agent of the buyer, the contract is payable by the buyer.³⁹ In terms of ultimate financial liability, seller is treated by the courts as a party to the contract of carriage. The bill of lading is presented to the seller, and the seller presents it to the buyer, who pays it. The buyer usually arranges marine insurance, but in some instances the buyer asks the seller to arrange it. In either event, the buyer pays for the insurance. The buyer only becomes a party to the contract of carriage through

³² *Nordisk v. Eriksen & Christensen* (1920) 5 Lloyd's Law Rep 71

³³ *All Russian Co-operative Society Ltd. v. Benjamin Smith & Sons* (1923) 14 Lloyd's Law Rep. 351; *Tradax Export v. Italgrani di Francisco Ambrosio* [1986] 1 Lloyd's Rep. 112, 117

³⁴ *PyreneCo Ltd v Scindia Navigation Co Ltd* [1954] 2 Q.B. 402;

The three different type of FOB contract are described by Devlin J. in Pyrene Co Ltd v. Scindia Navigation Co Ltd as follows: "The FOB contract has become a flexible instrument. In ... the classic type ... for example, In Wimble ,Sons & Co Ltd v. Rosenberg & Sons [1913]3K.B.743 the buyer's duty is to nominate the ship, and the seller's to put the goods on board for account of the buyer and procure a bill of lading in terms usual in the trade. In such a case the seller is directly a party to the contract of carriage at least until he takes out the bill of lading in the buyer's name .Probably the classic type is based on the assumption that the ship nominated will be willing to load any goods brought down to the berth or at least those of which she is notified. Under present condition ,when space often has to be booked well in advance, the contract of carriage come into existence at an earlier point of time. Sometimes the seller the seller asked to make the necessary arrangements; and the contract may then provide for his taking the bill of lading in his own name and obtaining payment against the transfer, as in a CIF contract. Sometimes the buyer engages his own forwarding agent at the port of loading to book space and to procure the bill of loading; if freight has to be paid in advance this method may be most convenient .in such a case the seller discharges his duty by putting the goods on board, getting the mate's receipt and handing it to the forwarding agent to enable him to obtain the bill of lading."

³⁵ D Sassoon, *CIF and FOB contracts* (4th Edition , Sweet & Maxwell, London, 1995)pp6-36

³⁶ *The El Amira and The El Minia* [1982] 2 Lloyd's Rep 28

³⁷ D'Arcy L, C Murray, B Cleave *The Law and Practice of International Trade*, (10th edition, Sweet & Maxwell, London , October 2000)18 and

R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York ,2005) 770

³⁸ *Buckley L.J. in Wimble Sons v. Rosenberg & Sons* [1913] 3 K.B. 743

³⁹ *Glencore Grain Rotterdam BV v Lebanese Organisation for International Commerce* [1997]4 All ER514, CA

the implied contract based on the bill of lading by virtue of *Brandt v Liverpool*⁴⁰ or the Carriage of Goods by Sea Act 1992.

The above duties may be summarised as follows:

1. The buyer nominates the ship.
2. The buyer usually arranges the insurance for the goods, but he may ask the seller to do so for him.
3. The seller makes the contract of carriage of goods with the carrier and is a party to it.
4. The seller is required to load the goods and put them on board ship.
5. The seller receives a bill of lading and transfers it to the buyer.

2. Extended FOB or FOB with additional services

In this type the seller undertakes additional duties, for which he charges the buyer more. These may include arranging the contract of carriage, nominating the vessel, and insuring the vessel, cargo, or both. However, as before, the account is payable by the buyer. The seller procures the bill of lading in his name and forwards it to the buyer for payment. Thus in this type of FOB contract the buyer is not obliged to find a ship, for this done by the seller. Again, as in the first type, the seller enters into a contract with the carrier by sea, places the goods on board the ship, and transfers the bill of lading to the buyer.

This type of FOB occurs where the seller has better local knowledge than the buyer. The seller may even hire the vessel at times. This contract may provide that the seller takes the bill of lading in his name and receive payment against the transfer in the same manner as in a CIF contract (see below).

The above duties may be summarised as follows:

1. The seller nominates the ship and arranges shipping
2. The seller arranges insurance for the goods
3. The seller undertakes to arrange contract of carriage of goods with the carrier.
4. The bill of lading bill is in the seller's name, but the seller forwards it to the buyer.
5. The buyer pays extra money to the seller for the extra services the seller provides; this is in addition to paying the price of the goods.

The FOB contract has survived as a contractual model for the sale of goods due to its major strength—flexibility. It has proven useful and convenient for merchants. However, the flexibility inherent in a FOB contract can also be a disadvantage from a legal point of view. An extended FOB contract, for example, requires the seller to arrange shipping space and to prepay insurance on the goods to be carried; therefore an extended FOB contract is difficult to differentiate from a CIF contract (see below P20).

To this one may make two points:

1. The use of the FOB label by traders does not signify their intention to be governed by the legal obligations relating to FOB contracts. It denotes their calculation of the price of the goods.
2. It could be said that the distinction between the CIF sale and the extended FOB contract is that, for a sale to be on FOB, services that are connected with the provision of the vessel and prepayment of freight and insurance must be treated as having been provided on account of the buyer.

⁴⁰ *Brandt v Liverpool, Brazil and River Plate Steam Navigation Co Ltd* [1924] 1 KB 575

3. Simple FOB contract

Under a simple FOB contract, it is the seller's duty to get conforming goods to the carrying vessel notified to him by the buyer, and to procure a mate's receipt and hand it over to a forwarding agent to send to the buyer. Thus the buyer is the original party to the contract of carriage, by sea directly or through an agent, since he is the original holder of the bill of lading as the principal of the seller. The buyer's duties comprise booking shipping space in advance, nominating the vessel (usually through a forwarding agent), insuring cargo, selecting the port of shipment (and, if there is a range of ports to choose from, giving written notice of that selection), and to give notice to seller of the vessel's estimated and actual time of arrival.⁴¹ The above duties may be summarised as follows:

1. The buyer nominates the ship
2. The buyer makes contract of carriage in advance (or through his agent)
3. The buyer gets the bill of lading from the carrier (usually through his agent directly)
4. The buyer arranges the insurance for the goods
5. The seller puts the goods on board ship
6. The seller receives only a mate's receipt. However, the name on the receipt may well be an indicator of the parties' intentions as to the passing of property.⁴²

Reasons for using FOB contracts:

The reasons for using FOB contracts may be summarised as follows:

1. In cases in which there are foreign currency restrictions, FOB tends to be cheaper than CIF; this is especially so when the carrier and buyer are the same nationality;
2. Freight is payable in advance; this makes matters easier for the carrier;
3. FOB enables buyers to lower their liabilities in respect of import duties calculated on the price of the goods; this is because the FOB price is not all-inclusive;
4. The nature of certain goods is such that it is best for the buyer to hire a specific type of vessel (e.g., an oil tanker or a refrigerated ship)⁴³;
5. The buyer may charter a vessel when purchasing a whole cargo;
6. It can be used for domestic supply to the loading port, even where the international sale contract is CIF; and,
7. The seller, when quoting FOB, will ask for a lower price than when quoting CIF.⁴⁴

IV. General Duties of the parties under FOB contracts

A) Duties of the seller under Classic FOB contract

1) Supply and ship goods of contract description at port of shipment

The seller is to supply and ship goods that conforming to the sale contract⁴⁵, deliver the goods to the buyer by placing them on board the ship nominated (nomination of a suitable vessel) by him, and pay any cost incidental to the delivery of the goods⁴⁶

- I. Goods of contract description: The goods themselves must comply with the express and implied terms as to quality, fitness for purpose, and compliance with

⁴¹ *East West Corporation v DKBS 1912* [2003] 1 Lloyd's Rep 239; [2003]QB 1509

⁴² Clive M Schmitthoff, *Legal Aspects of Export Sales* (Institute of Export, London, 1953) 43

⁴³ D'Arcy L, C Murray, B Cleave, (n37) 22

⁴⁴ D'Arcy L, C Murray, B Cleave, (n37) 8

⁴⁵ Simone Schnitzer, *Understanding International Law*, (Law Matters Limited, Exeter 2006) 34

⁴⁶ *Buckley L.J. in Wimble Sons v. Rosenberg & Sons* [1913] 3 K.B. 743

description.⁴⁷ The goods must be of satisfactory quality and reasonably fit for the buyer's purpose, in accordance with section 14 of Sale of Goods Act 1979.⁴⁸ The seller must ship goods that answer in all respects to the contract description. The parties may have agreed on "pre-shipment inspection" (this is increasingly common), In cases in which there is no such agreement, and in which common custom of trade does not provide for it, the buyer is under no obligation to inspect the goods prior to shipment. If there is no pre-shipment inspection agreement, and if it is not common custom of trade to inspect, if the buyer fails to examine goods, he will not lose his right of rejection if they do not conform to the contract.

- II. At the named port of shipment: The due delivery point is the port shipment designated in the contract of sale. If the seller fails to ship goods at the agreed, named port of shipment, he commits a breach of condition. The named port of shipment in a FOB contract is a condition of the contract. See, for example, *Peter Trurnbul v Mundas Trading*⁴⁹
- III. To pay all costs for loading the goods on board the ship: The seller is responsible for loading the goods on board the ship and for paying the cost of this. However, it may be otherwise depending on the custom of the port.⁵⁰

2) Pay handling and transportation costs

The seller is responsible for handling and transportation costs *up to the moment* that the goods cross the ship's rail. This would include the costs of loading and stevedoring, unless port custom indicates otherwise.

3) To ship goods on time at port of shipment

The seller must deliver the goods to the buyer by loading them on board the nominated ship at the agreed time and give the buyer notice of loading (i.e., over the rail of the vessel that has been notified by the buyer).⁵¹ Since time is of essence in the commerce, a seller's failure to do so may be treated as a repudiator breach entitled the buyer to reject the goods. See, for example, *All Russian Cooperative Society Ltd. v Benjamin Smith*.⁵²

4) Deliver goods on specified date

Date of delivery is related to the date of shipment. The seller is deemed to have delivered the goods to the buyer when the goods pass the ship's rail on the date of shipment. The time of arrival at the port of destination is irrelevant.⁵³

⁴⁷ *Reardon Smith Line v Ynguar Hansen Tangent* [1976] 3 All ER 570 at 576

⁴⁸ *Mash & Murrell Ltd v J Emmanuel* [1962] 1 All ER 77n, [1982] 1 WLR 16n

⁴⁹ *Peter Trurnbul & Co. v Mundas Trading Co (Australasia) Pty Ltd* [1954] 2 Lloyd's Rep. 198 (Goods were sold FOB Sidney. The sellers then alleged that they could not deliver at Sidney and asked to be allowed to deliver at Melbourne. The Buyers refused. In an action for non-delivery of the goods at Sidney, the seller were held liable. The port of shipment is of the essence of the contract.)

⁵⁰ *Pyrene Co Ltd v Scindia Navigation Co Ltd* [1954] 2 All ER 158 at 167

Devlin J: "It is the practice in the port of London for all loading to be done by the port authority at the ship's expense. The whole charge, therefore, for loading from alongside is paid by the ship and covered by the freight".

⁵¹ P Atiyah, J Adams & H Macqueen, *The Sale of Goods* (11th Edition, Person Education Limited, England 2005) 420

⁵² *Cooperative Society Ltd. v Benjamin Smith* (1923) 14 Lloyd's L.Rep. 351

(The seller was only able to get the goods to ship 15 minutes before expiry of the shipment period. It was held that the seller was in breach for failing to ensure sufficient time for loading.)

⁵³ *Frebald and sturznickel (trading as panda OHG) v Circle products Ltd* [1970] 1 Lloyd's Rep 499.

5) To deliver the necessary documents

Unless otherwise agreed, the seller must, at port of destination, provide the buyer all documents necessary for the buyer to obtain possession of the goods. This will be achieved by the seller first obtaining the mate's receipt from the ship's master. The seller will then pass the receipt to the buyer. Possession of the receipt will then enable the buyer to exchange the receipt for the bill of lading. This last entitles the buyer to possession of the goods. Unless otherwise agreed, the seller can demand payment in exchange for the documents; delivery obligation in Section 28 of the Sales of Goods Act 1979 is deemed satisfied by the furnishing of the documents.⁵⁴

6) To obtain an export license, if so required or any other document necessary for exportation of the goods and clear the goods through customs.

Normally, the seller is required to procure the necessary export license. *Buyers v Granadex*⁵⁵ established the general rule is that the seller needs merely to use the best of endeavours to do procure the export license. It is only an absolute duty in cases in which it is pellucid from the contractual terms and circumstances that the seller had indeed assumed an undertaking of that magnitude.⁵⁶ Although it is unclear as to which party is responsible for obtaining export licences under common law, it is clear that the seller has the duty to obtain any export licence under INCOTERMS.⁵⁷ However, the legal situation remains unclear. The contrast of *Brandt & Morris* with *Pound v Hardy*⁵⁸ illustrate that the courts are reluctant to lay down any general rules regarding this issue.

7) Provide proof of delivery in the manner agreed, provide any assistance requested by the buyer in respect of obtaining documents facilitating export, and provide information to enable the goods to be insured.

The seller is obliged to do all the above.

Passing the property and risk

Risk passes on shipment as soon as the goods "cross the ship's rail", and, if it should be material, the risk in each part of the cargo will pass as it crosses the ship's rail.⁵⁹ This is because the seller's duties to deliver the goods FOB: once they are off board, the seller has delivered them to the buyer and it is natural that they should thereafter be at the buyer's risk. This rule applies even if goods remain quasi-specific.⁶⁰

As to the exact point at which risk passes, two views are possible:⁶¹ (a) risk literally passes as the goods cross the ship's rail⁶²; alternatively (b) risk passes when the goods are safely loaded on board the vessel.⁶³ As to the passing of property, two interpretations are possible: (1) property does not pass before shipment and (2), property passes on shipment, unless the seller has reserved a right of disposal over the goods. Under an FOB contract, the risk will usually pass to the buyer on shipment, and this will not be affected by

⁵⁴ See also *Concorida Trading V Richco international Ltd.* [1991] 1 Lloyd's L.R. 475

⁵⁵ *Overseas Buyers Ltd v Granadex SA* [1980] 2 Lloyd's Rep 608

⁵⁶ *AV Pound & Co Ltd v MW Hardy & Co* [1956] AC 588

⁵⁷ *H.O. Brandt & Co v. HN Morris & Co Ltd* [1917] 2 KB 784

Contrast with AV Pound & Co Ltd v MW Hardy & Co [1956] 1 Lloyd's Rep 255

⁵⁸ *A V Pound v Hardy & Co. Ltd V Mw Hardy* [1956] AC 588

⁵⁹ *Colonial Insurance Co of New Zealand v Adelaide Marine Insurance Co* (1886) 12 App Cas 128

⁶⁰ *Sterns v Vickers* [1923] 1 KB 78

⁶¹ *Barney Reynolds*, "Stowing, trimming and their effects on delivery, risk and property in sales 'f.o.b.s.', 'f.o.b.t.' and 'f.o.b.s.t.'" [1994] *LMCLQR* 119

⁶² *Pyrene Co Ltd v Scandia Navigation Co Ltd* [1954] 2 QB 402, 414

⁶³ *Obestain Inc v. national Development Corporation Ltd ;The Sanix Ace* [1987] 1 Lloyd's Rep. 465 at 467 see also L. D'Arcy, C. Murray and B. Cleave, *Schmitthoff's Export Trade* (10th Ed ,Sweet & Maxwell ,London, 2000) Para 2-013

the fact that the property does not pass at that time. This is illustrated by *Stock v Inglis*.⁶⁴ This involved a shipment of sugar (FOB Hamburg) in which sugar was sold and carried under different contracts. Different bags of sugar were not appropriated. The shipment was lost. The court decided that, although property had not passed to the buyers, the cargo had been at buyers' risk.

The question arises whether title to the goods passes on shipment or on transfer of the bill of lading. The answer depends on the intention of the parties. Normally their intention will be that the passing of title is postponed until the seller makes available the bill of lading to the buyer or his agent, but the facts may disclose a different intention.⁶⁵

B) Duties of the Buyer under Classic FOB contract

1. To nominate the port of shipment the vessel's name and procure the necessary shipping space.

I: Nomination of the port of shipment

The buyer's duty to nominate a ship to carry the good in the time and ship for shipment is central to his undertaking as the shipper of the goods. The centrality of his undertaking was discussed in *Bunge v Tradax Export SA*⁶⁶. It was held that the notice of shipment was a condition.⁶⁷

Where the buyer fails to nominate an effective vessel or to provide shipping instructions to the seller on time so as to enable the seller to fulfil his or her obligations under the contract, then the buyer will be *liable in damages* for non-acceptance.⁶⁸

The port of shipment is usually designated in the contract of sale. The contract will often state this precisely (e.g. FOB Liverpool); but it may give alternatives (e.g. FOB London, Bristol⁶⁹ or Dover) or a range of ports (e.g. FOB Danish ports). In this last example, unless later told otherwise by the buyer, the seller may select any good port (providing it is Danish).⁷⁰ However, in cases of such multi-port contracts, the buyer usually chooses the port. In such circumstances, the buyer is required to notify the seller in good time.

⁶⁴ *Stock v Inglis* (1884) 12 Q.B.D. 564

⁶⁵ *Mitsui & Co Ltd v Flota Mercante Grancolumbiana SA* [1989] 2 Lloyd's Rep. 208 "it was made clear that if the bills of lading were deliverable to the order of the seller, the presumption would be raised that the passing of the property could be postponed until, for example, payment in full of the purchase price. when the has not, by express stipulation or implication of law, retained the property in the goods sold after delivery to the carrier, he may in certain circumstances be entitled to claim the rights of unpaid seller, and in particular alien on the goods or the right of stoppage in transit."

⁶⁶ *Bunge Corporation v Tradax Export SA* [1981] 2 All ER 513

(The contracts of sale required for the delivery of 15,000 tons of soya bean meal FOB an American port in the Gulf of Mexico. The buyer is to nominate an effective ship to take delivery of the goods and to give the seller at least 15 days notice of readiness of the vessel to load. The notice was late for four days. The seller selected to treat the contract as terminated. The court gave judgment for the sellers and held that the notice was a 'condition'. It stated that "in contract for the sale of Goods a stipulated time of delivery is of the essence.")

⁶⁷ *Gill & Duffus SA v. Societe pour L'Exportation des Sucres SA* [1985] 1 Lloyd's Rep. 621

"Where in an Fob contract with additional services the duty to nominate the load port within a specified time fell on the seller and his failure to do so was held to be a breach of a condition relieving the buyer from his obligation to perform."

⁶⁸ *Bunge Corporation v Tradax England* [1975] 2 Lloyd's Rep 235

⁶⁹ *Colley v Overseas Exporters* [1921] 3 KB 302

"The buyer under a contract 'FOB Liverpool' was unfortunate in that five ships successively nominated failed to arrive. The seller, who had delivered the goods at Liverpool, claimed the contract price and failed to recover it. Since there had been no shipment; there had been no delivery to the buyer and the seller could not demand the price but merely damages for non-acceptance of the goods".

⁷⁰ *David Boyd v Louis Louca* [1973] 1 Lloyd's LR209

The seller must transport the goods to the port of destination within the agreed time.⁷¹ This is illustrated by a number of cases. *Yello v Machado*⁷² established the principle that is the seller does not complete the contract within time the buyer can repudiate the contract unless the delay was the buyer's fault.⁷³ *Tradax Export v Italgrani F.A.*⁷⁴ established the principle that is the seller occasions frustrating delay the buyer can withdraw the vessel, claim demurrage, or both. In the case of *Wertheim v Chicoutimi Pulp*,⁷⁵ the court ruled that in cases in which it is obvious that the seller is going to deliver late or is not going to deliver, the seller is in breach of contract.⁷⁶ In such cases, the buyer is relieved of his or her contractual obligations.⁷⁷ The seller gives notice to the buyer for insurance purpose.⁷⁸

II: Nominate of an effective⁷⁹ vessel or suitable ship

The port of loading may be specified by the contract; if not, the buyer may nominate both port and vessel⁸⁰. Alternatively, the contract may allow the seller to nominate the port; in that case the seller must notify the buyer of his nomination in time for the buyer to perform his obligation and nominate a ship.⁸¹

Again, case law is relevant. *Bunge v Tradax*⁸² established the principle that the buyer must not only nominate an effective vessel, he or she must also inform the seller in time for the seller to get the goods to dock in time for loading. *Thomas Borthwick v Buge*⁸³ established the principle that, in cases in which the contract does not specify the time of reasonable notice, the seller may withdraw from the contract if no suitable notice is given. *Compagnie de Renflouement v Seymour Plant Sales*.⁸⁴ Established the principle that the vessel must be fit for purpose *Bowes v Shand*⁸⁵ established that if the vessel does not sail within the specified time, or is in other ways unfit for purpose, the buyer is in breach of contract.

In *Ian Stach Ltd v Baker Bosley Ltd*⁸⁶ Diplock ruled that, under a classic FOB contract, the buyer "has the right and responsibility of selecting the port [and] of making arrangements for shipping". This appears to fit more easily in to Devlin's third category than his first, and some writer's use the term "classic FOB" to describe that type of contract.⁸⁷ Where no notice of readiness has been given by the buyer, that seller who takes his goods to port before time does so at his or her own peril.⁸⁸

⁷¹ Note that a buyer could waive the port nomination if it suited him, but is not obliged to do so.

⁷² *Yello v Machado* [1952] Lloyd's Rep 183

⁷³ *Petro Trade v Stinnes Handel* [1993] 1 Lloyd's Rep 142 As confirmed where the buyer was permitted to repudiate

⁷⁴ *Tradax Export v Italgrani F.A.* [1983] 2 Lloyd's Rep 109

⁷⁵ *Wertheim v Chicoutimi Pulp* [1911] AC 301

⁷⁶ *Gill & Duffus v Societ pour l'Exportation* [1985] 1 Lloyd's L.R. 621

⁷⁷ *Semble Tumbull v Mundas* [1954] 2 Lloyd's Rep 198

⁷⁸ Section 32(3) of the Sale of Goods Act 1979 "where goods are sent by the seller to the buyer by a route involving sea transit, under circumstances in which it is usual to insure, the seller must give such notice to the buyer as may enable him to insure them during their sea transit and, if the seller fails to do so, the goods are at his risk during such sea transit".

⁷⁹ An "effective vessel" is sometimes referred to, as a "suitable ship"

⁸⁰ *David t. Boyd & Co. Ltd. v Louis Louca* [1973] 1 Lloyd's Rep. 209

⁸¹ *Compagnie de Renflouement de Recuperation et de Travaux Sous- Marins VS Baroukh et Ciev.W. Seymour plant Sales and Hire Ltd* [1981] 2 Lloyd's Rep. 466, HL at 482

⁸² *Bunge Corp v Tradax Export SA* [1981] 2 All .E.R 540 : 1 Lloyd's Rep 294

⁸³ *Thomas Borthwick v Buge* [1969] 1 Lloyd's Rep 17

⁸⁴ *Compagnie de Renflouement v Seymour Plant Sales* [1981] 2 Lloyd's Rep 466

⁸⁵ *Bowes v Shand* (1877) 2 App Cas 455.

⁸⁶ *Ian stach Ltd v Baker Bosley Ltd* [1958] 2QB130 at 139

⁸⁷ P Atiyah, J Adams and H Macqueen, *The Sale of Goods* (10th Edition, Longman, 2000);

DM Day and B Griffin, *The Law of international Trade* (Second edition, Butterworth, London, 1993)

⁸⁸ *J&J Cunningham Ltd v R A Munro & Co Ltd* (1922) 28 Com Cas 42

The FOB buyer has the right, unless the contract provides otherwise, to make a second nomination to substitute a vessel which for one reason or another is rendered unsuitable. Besides undertaking to pay the additional costs and expense in making a second nomination, the buyer should act with the least possible delay to allow the seller sufficient time to load and perform other duties within the shipment period.⁸⁹ Where the seller incurs extra expenses as a result of a re-nomination, these will be added to the account of the buyer.⁹⁰

III: To secure shipping space

In the absence of contractual stipulation to the contrary, it is the buyer's duty to procure space on the nominated vessel.

2) The Buyer arranges the insurance for the goods; he may also ask the seller to do so for him.

3) To pay any costs incidental to the importation of the goods, bear the risk in those goods from the time of shipment and bear the costs of the provision of assistance by the seller at the request of the buyer.⁹¹

4) To pay the price for the goods in accordance with the contract.

The buyer's duty to pay is usually prescribed by contract. Where no specific provision has been made by the parties on when the payment should be effected, the general rule is that the price will be due as soon as the contract is concluded, provided that the seller is ready and willing to deliver the goods according to the contract.

5) To obtain any appropriate licence, authorizations for the import of the goods, and comply with customs formalities for importation whether in the country of destination or in a country of transit. The buyer must obtain any import license for importation of goods.⁹²

V. The nature of CIF contracts

A CIF (cost, insurance, and freight) contract is one in which “[T]he seller delivers when the goods pass the ship's rail in the port⁹³ of shipment. The seller must pay the costs and freight necessary to bring the goods to the named port of destination, but the risk of loss of or damage to the goods, as well as any other costs due to events occurring after the time of delivery, are transferred from the seller to the buyer. However, in CIF contracts the seller also must procure marine insurance against the buyer's risk of loss of or damage to the goods during carriage. Consequently, the seller contracts for insurance and pays the insurance premium. The buyer should note that under the CIF term, the seller is required to obtain insurance only on minimum cover. Should the buyer wish to have the protection of greater cover, he would need either to agree to as much expressly with the seller or to make his own extra insurance arrangements”.⁹⁴ Porter provided a similar definition of CIF in *Comptoir d'Achat v. Luis de Ridder*.⁹⁵

The contract was for the sale of barn under a contract FOB Rotterdam and the shipment period was specified as October. The seller moved his grain to port on 14 October. The buyer did not make an effective nomination until 28 October, by which time the grain had deteriorated, the buyer rejected the defective grain and it was held that they were entitled to do so.

⁸⁹ *Agricultores Federados Argentinos v Ampro SA* [1965] 2 Lloyd's LR 290

⁹⁰ *J&J Cunningham Ltd v R A Munro & Co Ltd* (1922) 28 Com Cas 42

⁹¹ Simone Schnitzer, *Understanding International Law*, (Law Matters Limited, Exeter 2006) 34

⁹² *Brandt & co. v Morris & co. Ltd.* [1917] 2 K.B. 784 According to *Brandt & co. case* is that, “...both seller and buyer were British traders albeit that the buyer was securing goods from an overseas merchant so he has to apply for the export licence, because he alone knows full facts regarding the destination of the goods.”

⁹³ Port = anticipated port of destination.

⁹⁴ Powles, ‘The CIF buyer and the carrier's fraud’, (1986) JBL 149

⁹⁵ *Comptoir d'Achat v. Luis de Ridder; The Julia* [1949] A.C.293 at 309

Normally, under a CIF contract, the seller has a legal duty to arrange adequate insurance and the contract of carriage.⁹⁶ The seller, therefore, must provide the carriage of goods and the insurance in transit. Conversely, the buyer pays the cost of the goods, and the cost of insuring them during transit to port of destination. The cost of these arrangements is included in the calculation of the CIF contract price. The CIF buyer has the right to know the accurate price from the date of contract without worrying about possible fluctuations in freight rates and insurance premiums. In the CIF contract, the seller must tender to the buyer the "shipping documents"; these comprise an insurance policy to cover the goods, an invoice listing the particulars of the goods, and a bill of lading representing the cost, insurance, and freight.⁹⁷ CIF contracts require that the seller provides an export licence.⁹⁸ They also require that the seller obtain export contract.

As indicated, this is very similar to FOB. The "cost" part of the definition of CIF translates to FOB, so one may say that CIF amounts to FOB plus insurance and freight charges.

VI. The Essential Differences between the extended FOB and the CIF Contracts

As indicated, there are three types of FOB contract. In extended FOB contracts, seller is required to provide freight and insurance, similar to the seller's obligations under a CIF contract. This similarity has the potential to confuse both seller and buyer regarding the allocation of their respective duties. The possible confusion between the extended FOB and CIF contracts is illustrated in the case of a FOB contract with additional services, in which the seller must arrange shipping and procure insurance (i.e., be very similar to the simple CIF contract), and where the seller must arrange a contract of carriage and insurance. This similarity may cause confusion concerning the duties and responsibilities of the parties. There are, nonetheless, a number of important differences between the extended FOB and the CIF contract. These can help to alleviate the parties' possible confusion. The main features of CIF contract have been summarized by Lord Wright in *Smyth v Bailey Son*⁹⁹ and by Bradgate.¹⁰⁰

"The obligations imposed on a seller under a CIF contract are well known, and in the ordinary case, include the tender of a bill of lading covering the goods contracted to be sold and no others, coupled with an insurance policy in the normal form and accompanied by an invoice which shows the price and, as in this case, usually contains a deduction of the freight which the buyer pays before delivery at the port of discharge. Against tender of these documents the purchaser must pay the price. In such a case the property may pass either on shipment or on tender the risk generally passes on shipment or as from shipment, but possession does not pass until the documents which represent the goods are handed over in exchange for the price. In the result, the buyer, after receipt of the documents, can claim against the ship for breach of the contract of carriage and against the underwriters for any loss covered by the policy. The strict form of CIF contract may, however, be modified. A provision that a delivery order may be substituted for a bill of lading or a certificate of insurance for a policy would not, I think, make the contract be concluded on something other than CIF terms"

⁹⁶ INCOTERMS 2000 CIF Para A3(a) requires the seller to contract on "usual terms" at his own expense for the carriage of goods to the named port of destination by the usual route.

⁹⁷ *Manbre S. Co. Ltd. v Corn p. Co. Ltd* [1915] 1 KB 198

⁹⁸ INCOTERMS 2000 CIF Para A6 "The seller must obtain export licences or other official authorization required for exporting the goods." Para A2 "The buyer is responsible for import duties, by virtue of Para. B6 and for obtaining import licences and related official authorizations" (Para. B2)

⁹⁹ *Smyth & CO Ltd v Bailey Son & Co Ltd* [1940] 3 All ER 60, 67-8

"The contract in question here is of a type familiar in commerce, and is described as a CIF contract. The initials indicate that the price is to include cost, insurance and freight. It is a type of contract which is more widely and more frequently in use than any other contract used for the purposes of sea-borne commerce. An enormous number of transactions, in value amounting to untold sums, are carried out every year under CIF contracts. The essential characteristics of this contract have often been described. The seller has to ship or acquire after that shipment the contract goods, as it which, if unascertained, he is generally required to give a notice of appropriation. On or after shipment, he has to obtain proper bills of lading and proper policies of insurance. He fulfils his contract by transferring the bills of lading and the policies to the buyer. As a general rule, he does so only against payment of the

The incidents in this type of contract are comparable to that of a CIF contract.¹⁰¹ The freight and insurance costs in an FOB with additional services contract are to the buyer's account. Freight charges and insurance premiums are not included in the price quoted by the seller, as in a CIF contract and any increases in freight or insurance will have to be borne by the buyer, not the seller. By contrast, in a CIF contract, it is the seller who bears the costs. The seller may also charge a commission for the services he has rendered the buyer in obtaining the contract of carriage and the contract of insurance in a FOB with additional services contract. Such additional services are likely to be required in cases in which the buyer finds it difficult or impossible to obtain them in the seller's country. It is also possible that the buyer may prefer extended FOB to lower his or her liability in respect of import duties calculated on the price of goods (recall that the CIF price is all inclusive).¹⁰² These differences between CIF and FOB contracts were summarized by the House of Lords in *Scottish* [2008]¹⁰³

A. Duties of the parties

There are five main duties of the parties, as follows:

In an extended FOB contract, the seller arranges the carriage contract and procures insurance, but the seller does so in the account of the buyer. In effect, the seller acts as an agent for the buyer¹⁰⁴ In contrast, in a CIF contract the seller is legally obliged to perform these duties (i.e., to arrange the contract of carriage and insurance). The cost of such services is included in the price.

1. The cost of freight and insurance are not included in the extended FOB contract price. Therefore, the buyer under a FOB contract must take the risk of price fluctuations in the cost, freight rates and insurance premiums. On the hand, the cost of freight and insurance are already included in the CIF contract price; thus, the buyer under a CIF contract does not assume these risks. In other words, the local CIF seller has to buy insurance and pay premiums, but the FOB buyer has to buy insurance cover to avoid losses in the process of transport, and, in this case, the premium is also volatile. If they foresee the premium may drop during the time of contract, they will gain more profits from this premium difference. If the trader wins the right of buying insurance regularly for exports and imports, he or she can sign long term insurance contracts with local firms for lower premium, thereby increasing profits.
2. An extended FOB contract normally requires the seller to nominate a suitable vessel. Should the seller fail to do this,¹⁰⁵ the seller is in breach of contract and the buyer may refuse the contract and claim damages. Under an extended FOB contract, the buyer may, if the first nominated vessel is unfit for purpose and if time

price, less the freight which the buyer has to pay. ... In this course of business, the general property remains in the seller until he transfers the bill of lading ...

By mercantile law, the bills of lading are the symbols of the goods. The general property in the goods must be in the seller if he is to be able to pledge them. The whole system of commercial credits depends upon the seller's ability to give a charge on the goods and the policies of insurance”.

¹⁰⁰ R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York, 2005) 779

¹⁰¹ D Sassoon, *CIF and FOB contracts* (4th Edition, Sweet & Maxwell, London, 1995) pp6-36

¹⁰² Indira Carr, *International Trade Law*, (3rd Edition, Cavendish Publishing Ltd, New York, 2007) 46

¹⁰³ *Scottish & Newcastle International Ltd v Othon Ghalanos Ltd* [2008] 1 Lloyd's Rep 462

¹⁰⁴ *Glencore Grain Rotterdam BV v Lebanese Organisation for International Commerce* [1997] 2 Lloyd's Rep. 386, CA

“It was made clear that the seller under an FOB contract is free of any obligation to pay freight and any requirement to do so under the term would, in the absence of special terms otherwise, be contrary to the underlying concept of the Fob contract.”

¹⁰⁵ *Bunse Corporation v Tradax Export SA* [1918] 2 ALL ER

allows, make a second nomination.¹⁰⁶ In contrast, under a CIF contract, the seller is under no obligation to ship the goods except when the contract states explicitly that he or she does so. All that the seller need do is deliver the goods to the appropriate port for shipment and ensure that they are taken on board the correct ship. Here there is another difference between extended FOB and CIF contracts. In an extended FOB contract, the named port is the port of shipment (the port is a condition¹⁰⁷), but in a CIF contract the named port is the port of destination. A third difference is that, under a CIF contract but not under an extended FOB contract, the seller can procure the goods when they are already afloat.

3. An extended FOB contract requires the seller to bear all costs, including handling costs, transferring goods costs, and loading costs. The seller also has to arrange a contract of carriage by sea and insure the goods, but all this is under the buyer's account. In a CIF contract, the seller similarly has to bear such costs. However, these are not in the buyer's account (the seller does not act as the buyer's agent¹⁰⁸; it is the seller's duty)¹⁰⁹. Moreover, the insurance policy has to protect to the buyer. Otherwise, the seller is in breach of the contract.¹¹⁰
4. Extended FOB contracts require that any changes in export duties, taxes, and so forth that arise between signing and completion of the contract apply to the buyer's account. In the event of such changes, it is the seller's responsibility to provide evidence of the changes. The seller should not be held in breach of contract in the event of any such changes. By contrast, under CIF the buyer is not responsible for any such changes.

B. The Importance of documentation

Extended FOB and CIF contracts differ as regards performance. Under a CIF contract, the seller must deliver to the buyer the requisite shipping documents; these comprise an insurance policy, an invoice, and a bill of lading. The documents play an important role to any examination of the performance of the CIF transaction. Under CIF contracts, the seller receives payment only when he or she provides a commercial invoice¹¹¹ in order to get a payment. Documentation must be extensive. It must include a description of the goods, details of the parties, price, ports of loading and of discharging, shipping mark, details of the route, certificate of origin of vessel, and certificate of inspection of vessel.¹¹² Failure to provide these will have the same consequences as a failure to provide the appropriate principle document.¹¹³

The situation is simpler under extended FOB contracts. In these unless otherwise agreed, the seller is required only to provide such documents (e.g., bills of lading, invoice or invoices)¹¹⁴ that allow the buyer to obtain a possession of the goods. As indicated, the seller provides these documents on payment.

C. Extended FOB and CIF price terms

There are three considerations as regards pricing.

¹⁰⁶ *Petrograde Inc. v Stinnes G* [1995] 1 Lloyd's Rep.142

¹⁰⁷ *David t. Boyd & Co. ltd. v Louis Louca* [1973]1 Llyod's Rep. 209

¹⁰⁸ INCOTERMS 2000 CIF Para A4 and A6

¹⁰⁹ *Wimble, Sons & Co Ltd v Rosenberg & Sons* [1913] 3 K.B. 743

¹¹⁰ *Hickox v Adams* [1876] 34 L.T.404

¹¹¹ Or "its equivalent electronic message" (*INCOTERMS 2000 CIF Para A1*)

¹¹² *Gill & Duffus SA v Berger & Co Inc (No 2)*[1984] A.C.382 at389

¹¹³ *Re Reinhold & Co and Hansloh* (1869)12 T.L.R 422

¹¹⁴ *The seller may make out two invoices, one showing the FOB values of the goods including all expenses up to the delivery of the goods over the ships' rail, and another invoice showing the additional service which he performed by request of the buyer, and in particular the costs of prepaid freight and marine insurance and any commission which might be due to him.*

1. As indicated, FOB contracts tend to be less expensive. This is mainly because, in extend FOB contracts, the buyer bears a larger proportion of costs (e.g., insurance and carriage). In CIF contracts, such costs are borne by the seller. Also, the documentation (and therefore bureaucracy) involved in CIF contracts is greater.
2. In a extend FOB contract, the buyer's duty is paid only on determined by the contract. However, if you not in the contract, when the buyer takes possession of the goods. However, in a CIF contract, the buyer is paid on providing the documents and accepted¹¹⁵, as described above. In addition, in a CIF contract, the buyer must pay all unloading (e.g., stevedoring) costs at the port of destination.
3. In a extend FOB contract, the buyer pays all costs as regards the goods after they have passed the ship's rail. In a CIF contract, the buyer pays any customs or other duties that pertain to the contract.

D. Passing of title and passing of risk

I: Passing of title

Ownership of the goods (passing of title) may occur in FOB and CIF contracts will pass to the buyer when buyer and seller intend it to pass. However, in extended FOB, there is a general rule that the buyer has title to the goods as soon as they are on board the vessel; the buyer has, because property in goods passes at the same time.¹¹⁶ Another reason for this is that the buyer has a contractual relationship with the carrier.¹¹⁷ However, this raises the theoretical possibility that the seller will not be paid, because title to the goods has been exchanged before the seller has received, or has been guaranteed, any payment for them. So, in practice, property in goods does not pass to the buyer until the buyer receives bill of lading and the seller receives the full price.¹¹⁸

A CIF buyer has title to the goods after receiving the documents¹¹⁹ (either directly to him or her, or to the buyer's bank).¹²⁰ However, receipt of the documents is not the same as receipt of the goods. They may still require delivery. After receipt of the documents, the buyer may demand their delivery to their port of destination. If the seller does not comply or if the goods are damaged in other ways in breach of contract the buyer may then sue the seller. Thus a key feature of CIF contracts is that they define passing of title, not in terms of physical receipt of goods, but in terms of receipt of appropriate documentation.¹²¹

II. Passing of risk:

In an extended FOB contract, the buyer bears the risk of fluctuations in freight rates and insurance premiums during shipment.¹²² After the goods have passed the ship's rail at arrival, the seller will not be responsible of any damages or loses to them.¹²³ It is presumed that property in goods passed at the same time. Therefore the passing of goods is unaffected by any delay of the parties; this will not affect the passing of risk.¹²⁴

¹¹⁵ *Gill & Duffus S.A. v. Rionda Futures Ltd.* [1994] 2 Lloyd's Rep. 67 at p 80

¹¹⁶ *Carlos Federspiel v Twigg* [1957] 1 Lloyd's Rep 240

¹¹⁷ *The ciudad de Pasto* [1988] 2 Lloyd's Rep 208

¹¹⁸ *Mitsui & Co. Ltd v Flota Mercante Grancolumbiana SA* [1989] 1 ALL ER 951

¹¹⁹ *The buyer takes responsibilities from the seller which is the whole rights and liabilities in the commercial contract. However, his responsibility occurs if only tendered documents such as the bill of lading, policy insurance, and the commercial invoice, are in conformity with the contract.*

¹²⁰ *Concordia Trading B.V. v. Richco International Ltd.* [1991] 1 Lloyd's Rep. 475 at p. 479 and *Ginz v Barrow Haemetite Steel Co.* [1966] 1 Lloyd's Rep 343

¹²¹ *Manbre Sacchrie Co. Ltd. v Corn Products Co. Ltd.* [1919] 1KB 198

¹²² R Bradgate, *Commercial Law*, (Third Edition, Oxford University Press, New York, 2005) 779

¹²³ P Atiyah, J Adams & H Macqueen, *The Sale of Goods*, (11th Edition, Person Education Limited, England 2005) 423

¹²⁴ *Inglis v Stock* [1885] 10 App. Cas 263

A CIF contract, risk transfers on shipment to the buyer while goods were not passed.¹²⁵ This rule shows two dissimilar methods of passing of risk under the CIF contract. Firstly, when the seller completed his contractual duty on CIF contract and transported the good on board the shipment and then risk transfer to the buyer. Secondly, the CIF seller bought the properties which are afloat; he there upon can create the goods topic of the contract with the buyer, then the risk transfers as from the point of shipment. In this case, the risk passed before the shipment, because of the intention of the parties.¹²⁶ An additional significant thing of the passing of risk is that when the seller transported the goods on board the ship, he has to give notice to the buyer, which the buyer may insure the goods during the sea transit. If the seller fails to notify him, the goods will be at his own risk during the sea transit.¹²⁷

E. Other differences

There are two other differences, as follows:

1. All CIF contracts are export contracts. In contrast, extended FOB contracts may be export contracts, but may also be between buyer and seller in the same country. Thus all contracts that are not export contracts are FOB contracts.
2. A CIF seller can complete the contract "by providing the buyer with goods that are already afloat. This means that CIF contract can circumvent export bans. In contrast, a FOB seller must use the departure port and route specified in the contract. This makes FOB contracts more vulnerable to export bans.

VII. Conclusion

CIF and FOB contracts are important contracts for International Trade. Both form of contract are similar in that they try to protect buyers and sellers. CIF contracts and extended FOB contracts are highly similar in that the onus of "work" lies with the seller. However, there remain differences. CIF contracts concern delivery of documents, not physical delivery of goods, whereas FOB contracts concern delivery of goods. Another difference lies in flexibility, with FOB contracts being more flexible. The cost of freight and insurance are not included in the extended FOB contract price. Therefore, the buyer under a FOB contract must take the risk of price fluctuations relating to the contracts of the cost and freight (in case insurance is not required). On the hand, the cost of freight and insurance are already included in the CIF contract price; thus, the buyer under a CIF contract does not assume these risks. When costs need to be kept down, and when buyers know conditions in the seller's country FOB (classic or simple) contracts may be superior. Conversely, when buyers are unfamiliar with conditions in the seller's country, or when there is risk of export ban, CIF contracts may be better.

There are areas of uncertainty, and, as regards the law, some have yet to be resolved. One problem lies in distinguishing between extended FOB contracts and CIF contracts. Parties may think they have entered into a FOB contract when, in reality they haven't. A useful distinction here is that, in a CIF contract, the seller is legally obligated to procure insurance for goods and freight, whereas in an extended FOB contract, the seller need only procure such insurance on behalf or as an agent for the buyer. Another problem concerns generally who, when does property pass to buyer? In Extended FOB, the property pass to buyer on shipment, unless other intention of parties, e.g. on tender of documents. In contrast the property passes to buyer on tender of transport documents.

¹²⁵ *Tregelles v Sewell* [1862] 7 H. & N 575 ER 600

¹²⁶ *Wiebe v Dennis Bros* [1913] 29 TLR. 250

¹²⁷ Section 32(3) of the Sale of Goods Act 1979

The present study research has described the main differences between the duties of the parties under each type of contract, such as those relating to the nomination of the ship, the contract of carriage, the insurance policy, including the price terms, and named port or arrival. These distinctions may help ensure that the parties understand the differences between extended FOB contracts and CIF contracts. If so, it may help them to decide on the form of contract that is most appropriate to their specific needs, and thus bring them the highest benefit.

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