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# Measuring the Readiness of Administrative Leaders to Adopt the Servant Leadership Philosophy: Exploratory Study in Karbala University

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## Abstract

The current study aims to discover the willingness of the leaderships in Karbala University to work by the servant leadership philosophy through the (226) employee points of view survey. Through a questionnaire (Dierendonck & Nuijten, 2011), it reached a group of conclusions; one of it was that there is a weakness in the readiness of Administrative Leaders to adopt servant leadership philosophy. The originality of this research is that the findings will help leaders in Karbala University to understand that they need to enhance their readiness to adopt servant leadership so that they can help their followers do their job effectively and efficiently.

**Keywords:** servant leadership, Karbala University

## 1. Introduction

The cornerstone of servant leadership can be traced back to Greenleaf (1970). Greenleaf defined Servant leaders as leaders who want to serve followers and take this as the most important responsibility so that he can achieve the organizational goals (Spears, 2004). The most important characteristics of the servant leadership are both denials of the self and opportunity creation inside the organization to help followers develop themselves; whereas the final aim of servant leadership is the luxury of achieving and taking care about the organization with his employees (Dierendonck, 2011). This positive attitude toward employees will avail strong, safe relations inside, create a hopeful atmosphere among employees to introduce better performance with easy achievement and enhance confidence. In many instances, success or failure of the organization in their own environment is related to the leadership nature. Writers searched the concept of "Leadership," trying to discover its ambiguity and how to invest to be an active tool serving the organization's success. For that reason, many studies concluded that many leadership approaches could realize success while most of them suggested that the leader represents the key element except a new comparative leadership approach called servant leadership. Servant leadership indicates that the real leader is the one who serves first.

## 2. Literature Review and Hypotheses Development

Carroll and Patterson (2014), Dennis and Bocarnea (2005), and Patterson (2003) think that servant leadership introduces a unique perspective about leadership ethics because it focuses on the leader as a servant. This concept exceeds, focusing on organization but turns toward followers needs. It indicated that servant leadership contains seven unique elements, which are love, modesty, preference, vision, confidence, empowerment, and service. Pannhauser and Boshoff (2007) added that servant leadership is when a leader is prepared to be serviceable first, taking followers profits and needs to account and develop them to be leaders in the future. Dierendonck and Patterson (2010) pointed out that the model of servant leadership proceeds toward internationality and redefines leadership whereas it implies the focus on the building of society and represents a source of immortal serving ideology and it is as old as time itself. Anderson (2005) signed that servant leadership is the desire to serve others as giving them their priority and paramount needs, while it is characterized by the trust between the leader and followers to face risks shoulder to shoulder as seeking for perpetuating the organization. The other feature of the servant leader is prediction and sensing indiscernible. Also, he has persuasion and voluntary acceptance in case of change without coercion. Anzalone (2007), Spears (2010), and

Carter (2012), and Spears (2002) added several measures of servant leadership, which are listening, empathy, healing, awareness, persuasion, vision, prediction, commitment to developing collectively and build society. They also added that servant leadership contains influencing others for participating in others' hearts, brains, souls, invention, and distinction and stimulate followers to invent to introduce their best.

Servant leadership contains two features, which are functional features and division features (Krekeler, 2010) and (Russell and Stone, 2002) the first one is to be distinguished through logic kind and leader's characters and features that take into account through some distinction behaviors in the workplace. Job futures are active with the servant leadership; it contains vision, honor, integrity, honesty, service, insistence, leadership empowerment, and respectable. While the division feature is completing and increasing functional features, they contain communication, credibility, efficiency, supervisory, clarity, effect, persuasion, listening, and encouragement. Rimes (2011) pointed out that the servant leaders are the superiors because they can listen, view, and know, as they have a unique axiom vision. Servant leadership has many positive characters of which:

- 1) They have a situation and self-denial.
- 2) Servant leadership focuses on developing and maintaining employees.
- 3) Leaders are responsible for creating a safe, positive work environment, encouraging invention and empowering self-motivation.
- 4) Leaders characterized by humanity when they treat followers as human beings in the workplace.
- 5) Servant leadership acquires confidence when leaders put the legitimate needs of the employees before their self-interest.
- 6) Leaders earn respect when their workers' benefit above the bottom line.
- 7) Leaders understand their employees.
- 8) Leaders develop and maintain good relation through sympathy, kindness, healing, and emotional smartness.
- 9) Leaders earn support and cooperation through evaluating and building the work team and others' participation in making decisions.
- 10) Leaders are seeking to achieve the regulated aims by developing and releasing the creative energies of the human resources.

Whitmore (2004) and Spears (2005) pointed out that the servant leaders do not need to be trained because they are competent persons. They can produce further a vision because Servant leadership requires encouragement and opportunity to be grown. Amadeo (2008) indicated that Servant leadership represents a pattern to create ethical and regulated style. The foundations of servant leadership are originality, mutual trust, and empowerment. Amadeo also added that Servant Leadership contains six aspects which are: people value, development of people, participation in leadership, the finding of leadership, the building of society, and production of originality. Page and Wong (2000) pointed out that servant leader is the person who invests himself/herself in various places, enabling him to work hard, since the core of Servant leadership is serving others for the sake of gaining the public advantages, regardless of self-interest. It should not view the servant leadership as a weak leadership or be lost, and further; the leader's decisions do not distinguish servant leadership from other leadership styles, but how they practice their responsibilities through consultation for these decisions. Dierendonck and Nuijten (2011) indicated that Servant leaders do not use their force to achieve aims but persuade employees to a fulfillment their duties. Sousa and Dierendonck (2015) pointed out that Servant Leadership has three aspects that are accountability, empowerment, and supervision. Supervision is the aspect that is approaching from the vision concept or long-term orientation, which is necessary to the Servant leadership.

Ling et al. (2016) indicated that Servant leadership works to make harmonious relations between a leader and followers, and motivating them to learn. It is based on reciprocity, which produces mutual commitment and leads to positive business behaviors. Jr and Wheeler (2006) added that Servant leadership is characterized by humility, associative, self-independence, and moral development of followers. Mahembe & Engel, 2013 indicated that Servant leadership interacts with the Authentic leadership in two features that are humility and originality, so it is related to the original leadership. Reed (2015) added that servant leadership is a form of ethical leadership. He indicated that there are several similarities between Servant leadership and transformative leadership, spiritual leadership, and original leadership at recent days. He determined some determinants in which: support of individuals, the building of community, altruism, equality, and ethical integrity. Van Kuik (1998) added that Servant leadership is the regular human's feeling to be obliging, combining a common goal with his followers. They are loyal to his employees and interact more with the community without pushing other toward self-interest.



Li (2014) added that Servant leadership has an essential effect on the organizational performance. It helps the organization to win as a dominant of the market, improves organizational performance, thus, it can compete. Servant leadership behaviors can compete and affect the root of the organization.

Austin and Honeycutt (2011) pointed out that one of the issues faced leaders of the organizations at these days is how to make the staff participate and involve an extra effort to achieve the organizational goals; for that reason, the philosophy of the Servant leadership avails a different way to stand the responsibilities of the Servant leadership. Liden et al. (2008) indicated the employees' ability to achieve their potential. This creates a self-motivated formation, for that reason when leaders feed self-motivated activities and involve employees within the local community, they become more committed to the organizational principles and more willing to maintain high levels of performance. Echols (2009) believes that one of the necessary theories of Servant leadership is to be a correlation between people and society, organization, and the success of each other depends on the other. Ding et al. (2012) indicated that Servant leadership represented respecting employees, care of employees, helping subordinators to grow and success, the desire to apply cushy and sympathy concept, to be ready for sacrificing, to be neutral and integrated, possessing the pioneering spirit, providing guidance to employees and responsibility toward society. Barnabas and Clifford (2012) and Sendjaya et al. (2008) added that you have to gain experience in service before being a servant. Researchers restricted six main patterns. Each one branched several sub-branches to be driven from Gandhi that is as follows:

- 1) Voluntary relinquishment (readiness to be a servant, service actions achieving).
- 2) Self-originality (humility, integrity, accountability, safety, and the ability to influence).
- 3) Public Relations (cooperation, equality, availability, and acceptance).
- 4) Change of effect (confidence, guidance, modeling, vision, and empowerment) .
- 5) Highness of the soul (devoutness, interdependence, the feeling of mission, and perfection).
- 6) Ethical responsibility (actions and ethical thinking).

Top et al. (2015) referred to that Servant leadership acquires broad audience formation's organizations. The interest in Servant Leadership feeds from the changes that occur in a workplace and community. It encourages power-sharing for the sake of public interests, focusing on community and teamwork and contributing to making decisions for others. Krkutu and Chafraam (2015) believe that the Servant leader avails opportunity to empower the skills of employees, keeping his promise to prove partisans' adherence to great ethical values and encourages worker to engage outside a workplace in available opportunities of the community's service. Andre and Lantu (2015) referred to the similarity between Servant Leadership and human capital since both of them are developing employees so that organizations acting will improve subjectively, while Servant leadership creates a relationship with partisans. For this reason, employees eventually will feel more comfortable in addition to having a sense of control. Greasley and Bocarnea (2014) said that force had driven from situation and others leaderships' empowerment as a mean to create leaders all over the organization. He adopted (Patterson,2003), whereas Servant leadership appears intimate. Leaders through Servant leadership feels humility and altruism, whereas both are leading to confidence and vision that leading for leader's empowerment achieving to serve.

Rachmawati and Lantu (2014) said that Servant leaders use persuasion toward his/her partisans, rather than using authority in both force order and legal system. They also pointed out that Servant leaders had the influence to a unique spiritual culture creation and focused on stability and development of the organization. They indicated that the most important matter in decision making is acceptance by followers through both fully maturity and the precocity of followers. Varra et al. (2012) believed that Servant leaders can achieve a comparatively sustainable ability through the philosophy of Servant Leadership, which is more than procedure works to guide and lead the common culture for all employees. Spears (2002) said that it is necessary to be sure that Servant Leadership neither an approach nor a matter can be rooted quickly inside the organization because that the core of Servant leadership required a long time to be steadfast, since it is the path of changing life and working through the essence. He added that Servant Leadership is a way of any creator who can create positive change all over our society. Trompehaare and Voerman (2010) added that Servant leadership is representing in giving an enough area for people to develop themselves and gaining them the responsibility to be able to achieve their private ability. Cochrum (2012) said that Servant leadership came to limit the leaders' ego through power sharing and developing all dynamic relations to help in the improvement and growth of followers. Li and Han (2013) added that Servant leadership is the deciding factor of regulated and economic systems' success because Servant leader is the person who can create a vision of the organization, express the foresight of his followers, and build a common vision. Lowder (2007) indicated that Servant Leadership is accepting the idea of participation

responsibility of organizational culture, creating a whole better situation, taking non-conflicted decisions with the followers' attitudes and participating in creating an organizational culture that adds value to members.

Chi and Smith (2006) referred to that unless there is no Servant leader or humility. If there is no humility, there is no service. He defined Servant leader as a person who leads another service above self-interest to achieve public interest of team, organization, and society. Anzalone (2007) pointed out that Greenleaf predicted the leadership's recession at the end of the twentieth century. The sixtieths and the seventieths were a period of turmoil and the questioning of leadership, resulting in the adoption of new critical view in both authority and governance issues, an appearance of making support to the Servant leader as a replacement for using force in the management positions that leads influence ethically through giving them voluntary loyalty. Freese (2004) said that the best and the convoluted experience of the leader is his own striving to develop others. He added that the person who serves is being more healthy, wise, free, and independent. Zentner (2015) said that there are religious values that prevail in the main religions of the world, whereas there are common denominators which are honesty, respect, kindness, the obedience of laws, and service-oriented decision. When comparing Servant leadership with the religious aspects, a man may suppose that there are universal values in line with Servant leaderships' behaviors.

Lowder (2009) indicated that Servant leadership leads to create spiritual education. This will activate in the organization within environmental differences; for that reason, Servant leadership will be the Servant leader's major motive, in addition, to focusing on growth, individual's enhancement, and personal development of his followers. Kantharia (2012) indicated that Servant leadership as a process from the social, organizational or group's effect point of view, whereas an individual mobilizes and supplies with job aids from others within the group at the beginning and accomplishing sharing missions. They wishes for follow up and provides the dangers of failure as success opportunities. Hanif et al. (2013) believe that modernistic subordinates based on knowledge have the best ability to affect the Servant ability. For this reason, Servant leadership can foresee the effect of subordinates and its empowerment by servant leaders who create justice between leaders and subordinates. Kashyap and Rangnekar (2004) believe that Servant leadership has the fundamental role in the employees' stability, the reduction of job turnover, and the employees' contentment enhancement. Dierendonck (2011) said that Servant Leadership combines the desire to serve, which lead to leadership stimulation, or it may be to the country of that, but moves from the stimulation to lead into service combination. Searle and Barbuto (2011) added that one of the requisite concepts of Servant Leadership is the facility of positive change and the ability of a leader to empower spiritual recovery from hardship and trauma. Beck (2014) added that Servant leadership confirms the regulation and application of pragmatism knowledge used in achieving a balance between self-interest and public interest within the environmental context to public interest. He also added that Servant leadership is acquiring evidence from its environment to prove its own decisions and point of view.

Barbuto et al. (2014) said that drawing of mental models involves the leader's unique ability to understand and use these models. These models are used by his subordinators and are converted to directly affect them. He also said that the emotional intelligence is a prerequisite to draw the mental models of servant leadership. Hale et al. (2007) believe that scientists describe Servant leadership as a behavior and characteristic possessed by the leader. Sendjaya and Sarros (2002) referred to one of the reasons at the scarcity of the Studies in the Servant Leadership is the contrast of the language, whereas it may be hard to think and act as a leader and employee at the same time. According to the servant leadership theory, leaders serve, and lead. However, this relation attracted the dynamic conceptual; that is, the complementary roles of slavery, leadership, and scientists' interest. Joseph and Winston (2005) said that when the leader is spiritual, he will desire to serve, so that he will be a servant leader. He also indicated that building of confidence is not limited to the leader and subordinator but also among subordinators themselves.

- A) **HP1:** The Administrative leaders working at the University of Karbala are ready to adopt the servant leadership philosophy from the female employees' point of view.
- B) **HP2:** The Administrative leaders working at the University of Karbala are ready to adopt the servant leadership philosophy from the male employees' point of view.
- C) **HP3:** There is a difference between the average male and female employees responses about the readiness of the administrative leaders to adopt the servant leadership philosophy.

### 3. Research Methodology

#### 3.1 Sampling and Data Collection

Researchers started the search since March 2016, whereas many specialized scientific sources have been seen. After that, the decision of adopting (Dierendonck & Nuijten, 2011) questionnaire form was distributed, because it is the nearest to the environment of the suggested research. They contain eight items: Empowerment, which

contains seven questions. Stand back, which contain three questions. Accountability, which three questions. Forgiveness, which three questions. Courage, which two questions. Authenticity, which contains four questions. Humility, which five questions, and Stewardship, which contains three questions. For carrying out the research, 120 female employees and 140 male employees of Karbala University had been selected to answer the questionnaire, which includes eight main criteria to measure Servant leadership that are (Empowerment, Stand back, Accountability, Forgiveness, Courage, Authenticity, Humility, and Stewardship). The female employees who responded were 107, that means 89%. The male employees who were 119 that means 85%. Researcher's test the reliability of the questionnaire for both female employer's and male responses using Cronbach's alpha, the results was (0.70, 0.78), respectively, the values are statically acceptance.

### 3.2 Measurement

For testing the first hypothesis, researchers used a t-test for one sample by utilizing the statistical program SPSS V23, and the results were as in the table below.

#### Testing first hypothesis:

Results in Table 1 show that there are significant correlation relationships among dimensions of Servant leadership S.L. from the perspective of the female employees. Administrative leaders at the University of Karbala suffer from weakness in some of servant leadership (empowerment Emp., stand back St., and stewardship Stew.) as (t) significant was 0.48, 0.41, or 0.29, respectively. In turn, administrative leaderships adopting dimensions (accountability Act., forgiveness For., courage Cou., authenticity Auth., and humility Hum.) from the female employer's point of view as (t) significant was 0.00. Overall, results showed that the servant leadership from the standpoint of female employees is not adopted, because the mean of the servant leadership was 3.9, and the t value was -1.42 It's significant was 0.16, which is larger than the significance level (0.05). These results inferred researchers to reject the first hypothesis.

Table 1. Table Correlation relationships of the female employees

	Emp.	St.	Act.	For.	Cou.	Auth.	Hum.	Stew.	S.L.
Emp.	1								
St.	0.598**	1							
Act.	0.308**	0.244**	1						
For.	-0.25**	-0.240**	0.248**	1					
Cou.	0.087	0.288**	0.121	-0.089	1				
Auth.	0.359**	0.396**	0.267**	-0.058	0.214*	1			
Hum.	0.690**	0.661**	0.372**	-0.299**	0.131	0.491**	1		
Stew.	0.548**	0.531**	0.376**	-0.102	0.098	0.348**	0.654**	1	
S.L.	0.70**	0.738**	0.647**	0.084	0.405**	0.606**	0.767**	0.731**	1
Mean	3.92	3.89	4.38	4.53	3.36	3.65	3.45	3.87	3.87
S. D	1.15	1.28	1.54	1.70	1.25	0.91	1.05	1.17	1.66
T	-0.70	-0.82	4.49	4.20	-5.24	-3.94	-5.31	-1.06	-1.42
Sig.	0.48	0.41	0.00	0.00	0.00	0.00	0.00	0.29	0.16

df =106, p.v=0-05

#### Testing second hypothesis:

Results in table 2. show that there are significant correlation relationships among dimensions of Servant leadership from the perspective of the male employees. Administrative leaders at the University of Karbala suffer from weakness in some dimensions of servant leadership (empowerment, stand back, and stewardship) as (t) significant was 0.11, 0.15, or 0.25 respectively. In turn, administrative leaders adopting dimensions (accountability, forgiveness, courage, authenticity, and humility) from the male employers point of view, its significant of t was 0.00, respectively .Overall, results showed that the servant leadership from the male employees point of view is not adopted, because the mean of the servant leadership was 4.08, t value was 1.11 and its significant was 0.27, which is greater than the significance level (0.05). These results inferred researchers to reject the first hypothesis.

Table 2. Table Correlation relationships of the male employees

	Emp.	St.	Act.	For.	Cou.	Auth.	Hum.	Stew.	S.L.
Emp.	1								
St.	0.641**	1							
Act.	0.303**	0.348**	1						
For.	-0.016	-0.056**	0.266**	1					
Cou.	0.345**	0.256**	0.217*	-0.272*	1				
Auth.	0.289**	0.488**	0.301**	0.108	0.480**	1			
Hum.	0.640**	0.419**	0.133	-0.10	0.307**	0.448**	1		
Stew.	0.558**	0.458**	0.236**	0.028	0.258**	0.357**	0.632**	1	
S.L.	0.720**	0.717**	0.565**	0.328**	0.631**	0.689**	0.664**	0.68**	1
Mean	4.19	4.29	4.66	4.65	4.61	3.75	3.63	3.99	4.08
S. D	1.81	1.66	1.68	1.76	1.71	1.72	1.77	1.74	1.78
t	1.6	1.45	5.56	5.86	-2.98	-2.28	-2.98	-1.15	1.11
Sig.	0.11	0.15	0.00	0.00	0.03	0.02	0.00	0.25	0.27

d.f=118, p.v=0.05

Third hypothesis Test :

Researchers used independent samples t-tests with results as show in the following table.

Table 3. Table Independent Samples T-Test

Servant leadership	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.						Lower	Upper
	3.846	0.051						1.756	224
		1.773	223.025	0.078	0.1770	0.0998	-0.1978	0.3738	

The preceding table shows that the two communities are approximately equal variances because the Levene Test is significant at 0.051, which is greater than the test level (0.05). So, the value of t=1.756 is at 0.080 with 224 freedom degree. This indicates the rejection of the third hypothesis.

To leave responders free, put forward their ideas. In an attempt to see if the perceptions and visions of workers in the Iraqi environment about the qualities of the Servant leader differ from those and that studied all over the world. The researchers enclosed a specific question within the investigation sheet asking the responded individual to include the most characteristics of the servant leader that they think its importance. The results are declared in the following Table 4.

Table 4. Table Results

Freq.	Property	Frequency	Ratio
1	Accuracy	12	0.053097
2	Courage	30	0.132743
3	integrity	22	0.097345
4	Attention	14	0.061947
5	Equitability	26	0.115044
6	Continuation	6	0.0265459
7	Offer of Assistance	32	0.141593
8	Humility	24	0.106195
9	Respect and Communion	14	0.016947
10	Forgiveness	16	0.070796
11	Accountability	2	0.00885
12	Experience	28	0.123894
	Total	226	100

The above table shows that 14% individuals from the study think that it is necessary for servant leader to be a distinction in the assistance of others. Around 13% said that it is necessary for servant leader to be courageous and able to face difficulties. Approximately 11% think that it is necessary for servant leaders to be courageous, while the less aspect from the individuals' study point of view is accountability, which is %0.88. This is because the current leaders characterized by accountability so that this aspect did not form an urgent requirement for them. The following was in continuation with 2.8%.

#### 4. Conclusions

The research aimed to test the readiness of the leaderships in Karbala University to work with the Servant Leadership Strategy from the employees' point of view. The researchers reached the followings conclusions:

- 1) The male and female employees agreed that the administrative leaders have no readiness to work with the Servant Leadership Strategy.
- 2) The male and female employees almost agree about the range of adopting leadership variables.
  - a) Leaders adopting Accountability, Forgiveness, Courage, Authenticity, and Humility
  - b) Administrative leaders not adopting Empowerment, Stand back, and Stewardship.
- 3) Researchers deduced that the individuals of the study realize that whenever their duty's empowerment is increasing from their point of view, their mistakes forgiveness will be decreasing by the leaderships.
- 4) The two researchers noticed that female employees realized that there is a negative relation between forgiveness and stand back, courage, authenticity, humility, and stewardship.
- 5) The two researchers noticed that male employees realized that there is a negative relation between forgiveness and humility.
- 6) The employees of Karbala University lack for administrative leadership give them real assistant, to defend their ideas and opinions courageously in front of higher authorities and have favoritism and lack of justice.

#### 5. Recommendations

The two researchers suggest the followings to help the University of Karbala and other institutions to move in the right direction:

- 1) Act to empower both genders of employees to do their duties from the way they see is suitable for identifying general, flexible framework not useful detail.
- 2) Higher authorities (The Ministry of Higher Education And Scientific Researches or The University of Karbala) should avail the necessary knowledge to support the employees business and encourage them to be accountable.
- 3) Administrative leaderships in the University of Karbala must have a vision for the future of the university, as they must transfer this vision to the employees' minds to get them to associate with the objective .
- 4) Leaders should learn from past mistakes. It is better to declare subordinators about dangers and in a certain way because one of his missions is to empower the confidence of subordinators by the leader.
- 5) The empowerment of the business of employees in the way they do not mean the leader abandonment. Leaders should take that into consideration so he should interfere whenever bad situation may occur. He should also remember that the big success is his ability makes employees achieve their aims by which result are the target of the university.
- 6) If the leader is courageous, he can change a group of scared employees into an active group, so leaders of a group should be courageous. Through his self-confidence, defense, and decisions, he can transfer his confidence to the employees by making these aims the personal of the employee. Leaders should also act to accept counted risk and not depend on their officer's support.
- 7) If the leader is fair, peace and calm are observed in situation among employees. Their own effort will not steal or transform to other will emerge. Also they will realize that they get punishment or reward according to their own actions. Justice is a public demand by employees. It would motivate most of the employees to act better to achieve greater achievement to gain leadership and organize content.
- 8) Humility is a good human attribute that enables leaders to make subordinators more able to understand what he wants from them, and accepts and applies his ideas leniently. Administrative leaderships should enhance this aspect because this analysis results in the last question that humility is an important and necessary quality employees look forward to in their leader.

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# Reassessing the Impact of the US Fiscal Stimulus: The Role of the Monetary Policy Stance

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## Abstract

Cogan et al. (2009, 2010) claimed that the stimulus package passed by the United States Congress in February 2009 had a multiplier far below one. However, the stimulus' multiplier strongly depends on the assumed monetary policy response. Based on official statements from the Fed chairman, the general economic outlook, past behavior of the FOMC, optimal policy considerations, and from financial market expectations, we find that in February 2009, a reasonable prediction of the period of monetary accommodation would have exceeded 9 quarters. This implies that a plausible real time assessment of the stimulus' effects would have been more optimistic than Cogan et al.'s.

**Keywords:** Obama fiscal stimulus, fiscal multiplier, interest rate forecasts

**JEL Codes:** E58, E62, E37, E47

## 1. Introduction

Shortly after the stimulus package of the Obama administration (labeled American Reconstruction and Reinvestment Act, ARRA) cleared the United States Congress on February 13<sup>th</sup> 2009, Cogan et al. (2009,2010) (henceforth referred to as CCTW) circulated an analysis quantifying the effects of the package on GDP and other variables using the DSGE model estimated by Smets and Wouters (2007), but restricted their simulations to the component of ARRA representing government purchases of goods and services. They found that ARRA caused a very substantial crowding out of private expenditure, implying a multiplier smaller than one, whereas the president's economic team (Bernstein and Romer (2009)) claimed a multiplier of 1.6.

There is a tension between the CCTW ex-ante estimate based on a structural model, and a number of ex-post, reduced form empirical estimates of the effect of ARRA. These studies exploit cross-state variations in ARRA spending to identify employment effects. From their estimate, Chodorow-Reich et al. (2012) derive a fiscal multiplier of 2.1. Feyrer and Sacerdote (2011) find a multiplier of 2.0 if they exclude education related grants to individual states, which they argue did not have an effect on local governments spending. Wilson (2013) estimates an employment effect of 3.4 million by 2010Q1, which is close to the effect derived by Romer and Bernstein (2009) of 3.6 million jobs saved or created, and thus consistent with their assumed spending multiplier of 1.6.<sup>1</sup> Finally, the empirical literature on government expenditure multipliers more generally finds that they tend to be larger than one during downturns (Hughes Hallett et al. (2016) and Gechert and Rannenberg (2014)), which would also suggest more substantial effects of ARRA.

In the light these empirical results it is relevant that, as illustrated by Figure 1, ARRA's effect on GDP in the Smets and Wouters (2007) model is sensitive to the assumed length of monetary accommodation. During this period, the nominal interest rate is fixed exogenously in the CCTW simulations, whereas thereafter it responds to the simulated deviations of inflation and the output gap from their values in the absence of fiscal expansion according to the interest feedback rule suggested by Taylor (1993). Holding the interest rate constant for 4 quarters (monetary accommodation, MA=4q) as assumed in CCTW's baseline simulation of ARRA implies a crowding out of private expenditure. The reason is that

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<sup>1</sup>For a more pessimistic view regarding the jobs effect, see Conley and Dupor (2013).

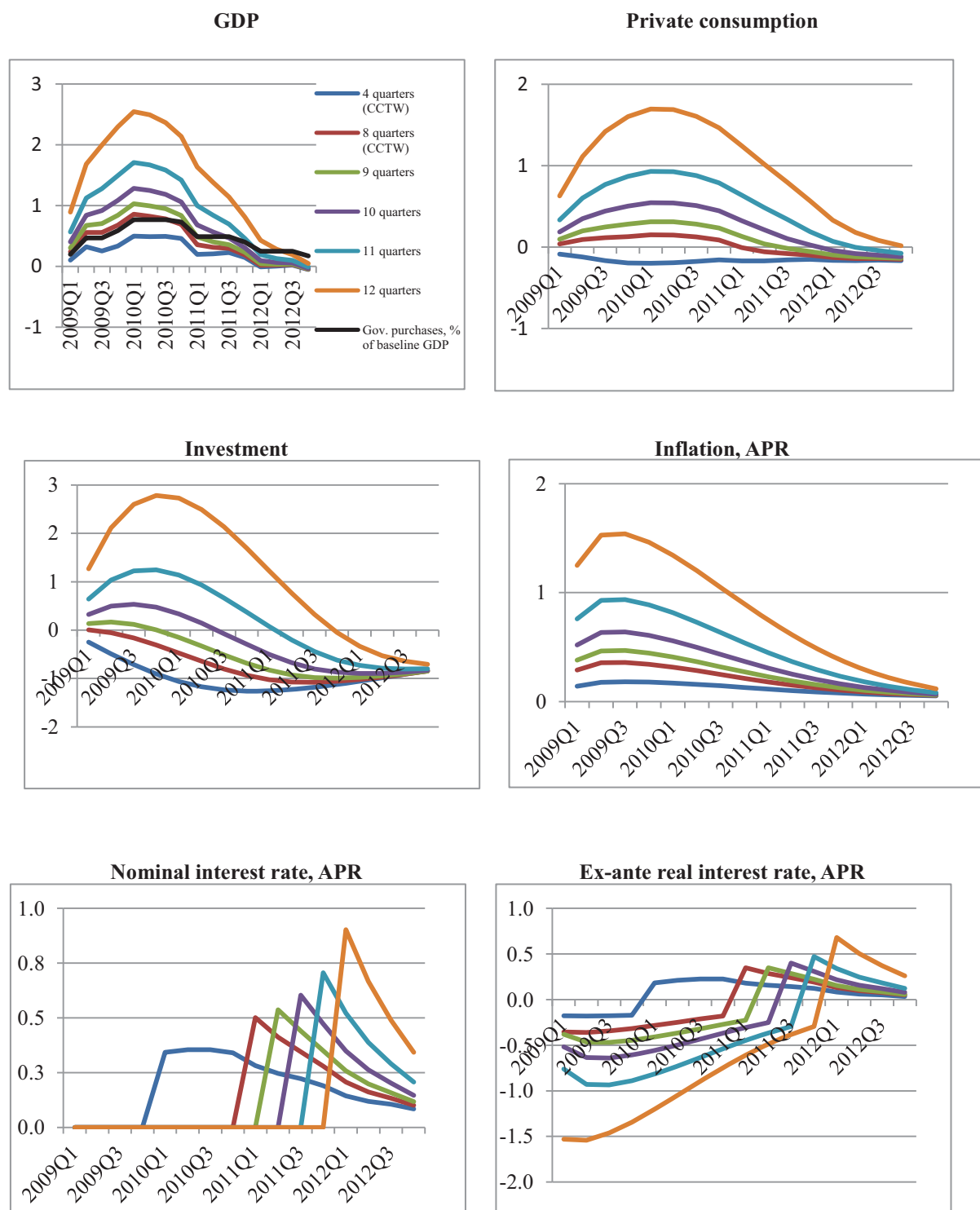


Figure 1. Effect of the increase in government purchases legislated by ARRA on GDP and other variables in the version of the Smets and Wouters (2007) used by CCTW assuming varying lengths of the period of monetary accommodation, APR=Annualized Percentage Rate

87% of the ARRA related government expenditure increase comes online in later years, implying that the increases in inflation and the output gap it generates are met by increases in nominal and real interest rates. That leads to an overall cumulative fiscal multiplier of 0.33 (Table 1). Increasing the period of monetary accommodation to 8 quarters (a case also considered by CCTW), during which 46% of ARRA related spending comes online, lowers the real interest rate path and boosts the trajectory of private expenditure as compared to the 4 quarter case. For periods of monetary accommodation exceeding 9 quarters, the cumulative multiplier of ARRA is larger than one. A very similar argument

concerning CCTWs results has been made by Woodford (2011), Christiano et al. (2011) and Coenen et al. (2012).<sup>2</sup>

Table 1. Cumulative multipliers, varying lengths of monetary accommodation

Number of quarters	Cumulative multiplier
4 (CCTW)	0.3
8 (CCTW)	0.6
9	0.8
<b>10</b>	<b>1.1</b>
<b>11</b>	<b>1.5</b>
<b>12</b>	<b>2.5</b>

*Note.* The table reports the cumulative multiplier  $m(h) = \frac{\sum_{i=1}^h dY_{t+i}}{\sum_{i=1}^h dG_{t+i}}$ , with  $dY_{t+i}$  and  $dG_{t+i}$  denoting the effect of the stimulus on GDP and government spending in period  $t+i$ , respectively.  $h$  was set sufficiently high to ensure that  $dY_{t+h}, dG_{t+h} \approx 0$ .

Both the sensitivity of the effects of ARRA in the Smets and Wouters (2007) model to the length of monetary accommodation and the discrepancy between CCTW's baseline result and the empirical ex-post evaluations cited motivate us to reexamine CCTW's justification of their assumptions regarding monetary policy. CCTW state that assuming a constant interest rate for two years, let alone for more than two years, would not be "realistic", supported by a forecasting exercise based on the model of Smets and Wouters (2007) and data up until 2009 Q1.<sup>3</sup>

As we now know, the FOMC kept the Federal Funds rate at the ZLB for seven years. Furthermore, at the end of January 2009, the Federal Reserve Banks staff's Greenbook baseline forecast predicted that the Federal Funds rate would remain at the ZLB until the end of 2012<sup>4</sup>. While the 2009 Greenbooks have only been made publicly available in 2015, Rudebusch (2009), as early as May 2009 also predicted that the Federal Funds rate would remain at the ZLB for several years. We therefore examine whether, based on information publicly available around the time ARRA was debated in the United States Congress, and with relatively simple methods, a good prediction of the period the Federal Funds rate would remain at the zero lower bound would have exceeded the one or two years assumed by CCTW. This contribution is absent from earlier analyses of CCTWs results (e.g. Woodford (2011), Christiano et al. (2011) and Coenen et al. (2012)).

Specifically, we draw on the following sources to support our argument: testimonies by the Chairman of the Federal Reserve Ben Bernanke in Congress dealing with the desirability of fiscal stimulus as a response to the financial crisis (section 1); predictions from the FOMC and private sector forecasters around the time ARRA was debated in Congress in conjunction with descriptive and econometric evidence on past interest setting behavior of the Fed (section 2, where we also comment on the interest rate forecast generated by CCTW); optimal policy considerations (section 3); and the financial market expectations embedded in implied Federal Funds Futures rates (section 4). Section 5 discusses the relation of our results to those of Swanson and Williams (2014). We conclude that, for the US economy at the beginning of 2009, a reasonable prediction of the period the Federal Funds rate would remain at its ZLB would have exceeded 9 quarters. Hence, based on the Smets and Wouters (2007) model, a less pessimistic real time assessment of the effects of the US fiscal stimulus would have been plausible.

## 2. Bernanke on Fiscal Stimulus

In this section, we evaluate two testimonies of Fed Chairman Ben Bernanke to the committee on the budget of the United States House of Representatives, one from the beginning and one from the end of 2008, to illustrate

<sup>2</sup>The model underlying the simulation results presented in Table and Figure 1 is subject to the caveat that with the exception of the interest feedback rule the, the model equations have been linearized. Therefore the model may over or underestimate the fiscal multiplier in a situation where the economy is far away from the steady state. The same is true for most contributions in this area.

<sup>3</sup>CCTW also argue that a permanent interest rate peg, as assumed by Bernstein and Romer (2009), would create indeterminacy in a rational expectations model. Of course, this property does not automatically imply that the length of the peg must not exceed two years, or any other number up to the medium term.

<sup>4</sup>See the Figure on Board of Governors of the Federal Reserve System (2015) p. I-28, bottom right panel, and the associated text.

the shift in Bernanke's views on the desirability of fiscal stimulus as the economic outlook darkened. In his first testimony on January 17<sup>th</sup> 2008, Bernanke (2008a) was rather skeptical. While acknowledging that fiscal stimulus "could be helpful in principle", he went out of his way to stress that a stimulus package would be desirable only if implemented very quickly, even explicitly specifying over which horizon it should be effective: Any package "should be implemented quickly and structured so that its effects on aggregate spending are felt as much as possible within the next twelve months or so". By contrast, a stimulus that was implemented too late would be "quite counterproductive", "will not help to support economic activity in the near term", "could be actively destabilizing", and thus "any program should be explicitly temporary [...] to avoid unwanted stimulus beyond the near-term horizon".

This assessment was consistent with the economic outlook the FOMC held at the time. In January, the FOMC expected only a temporary slowdown in GDP growth and thus expected the slack in the economy to be small and of limited persistence. As Table 2 shows, the FOMC expected the unemployment gap to peak in 2008Q4 at only 0.3-0.4% and to practically vanish by the end of 2010. Correspondingly, core PCE inflation was expected to remain close to 2%. With the Federal Funds rate still at 4.25%, monetary policy appeared to have ample scope to stimulate the economy. At the same time, any stimulus package would have to be agreed to by a Republican president and a Democratic congress during a presidential election year. This setup was likely to lengthen the legislative process and there was a certain danger of a delayed fiscal policy response stimulating demand when slack in the economy would have vanished, which may explain why Bernanke was wary of policymakers pursuing this option.

Table 2: Unemployment gap and inflation projections of the FOMC, %

FOMC Meeting	Unemployment gap			Core PCE inflation		
	Jan 17th 2008	Oct. 20th 2008	Jan 27th 2009	Jan 17th 2008	Oct. 20th 2008	Jan 27th 2009
2008 Q4	0.3-0.4	1.4-1.6		2.0-2.2	2.3-2.5	
2009 Q4	0.1-0.4	2.2-2.7	3.6-3.9	1.7-2.0	1.5-2.0	0.9-1.1
2010 Q4	0-0.2	1.6-2.4	3.1-3.4	1.7-1.9	1.3-1.8	0.8-1.5
2011 Q4	-	0.5-1.6	1.8-2.6		1.3-1.7	0.7-1.5

Note: The forecasts are based on the central tendency forecasts from the FOMC's Summary of Economic Projections (SEP) published after the respective meetings (FOMC (2008a), (2008b) and FOMC (2009a)). The core-PCE inflation projection is taken directly from respective SEP. The unemployment gap projection is calculated by subtracting midpoint of the central tendency projection of the long-run unemployment rate reported in the January 27-28th 2009 SEP (4.8-5%) from the unemployment rate projection made at the respective meeting, as the FOMC started publishing projections for the longer run unemployment rate only at the January 27-28th 2009 meeting.

By contrast, in his second appearance in the House of Representatives on October 20<sup>th</sup> 2008, the chairman (Bernanke (2008b)) endorsed fiscal stimulus. After first elaborating on how the recent intensification of the financial crisis was strengthening a broad-based economic downturn, he stated that "with the economy likely to be weak for several quarters, and with some risk of a protracted slowdown, consideration of a fiscal package by the Congress at this juncture seems appropriate." In stark contrast to his dire warnings in early 2008 of a scenario where delayed fiscal stimulus would overheat the economy, on the issue of implementation speed Bernanke merely said that "To best achieve its goals, any fiscal package should be structured so that its peak effects on aggregate spending and economic activity are felt when they are most needed, namely, during the period in which economic activity would otherwise be expected to be weak." This lack of emphasis on the timing issue is all the more remarkable as a shift from a Republican to a Democratic administration was looking likely in the presidential election of November 2008, thus implying that the decision lag would be longer than in January 2008, while the overall size of the stimulus was likely to be bigger. However, Bernanke's modified message was consistent with the substantial deterioration of the FOMC's economic outlook over the course of the year. Growth throughout 2008 had strongly undershot the FOMC's expectations, and some members expected the economy to contract over the course of 2009. Therefore the FOMC now expected an unemployment gap of a substantial magnitude over a three-year horizon, with a range between 2.2-2.7% at the end of 2009, and 0.5-1.6% by the end of 2011Q4.<sup>5</sup> At the same time, the FOMC now expected inflation to remain significantly below 2% in 2010 and 2011. In such a scenario, even a drawn-out stimulus could stabilize the economy.

Hence the chairman's recommendations to lawmakers, in conjunction with FOMC's expectation of persistent

<sup>5</sup>As we discuss below, private sector forecasts of unemployment were even more pessimistic.

downturn, are much more in line with Bernanke anticipating monetary accommodation of a stimulus package even if implemented over several years than with an expectation of a Federal Funds rate hike at the beginning of 2010 as in the CCTW baseline case. Note also that by the end of January 2009, when a first draft of ARRA had just passed the House of Representatives, the FOMC expected the unemployment gap to be substantially bigger and inflation to be substantially lower over the forecast horizon than at the time of Bernanke's second testimony (Table 2).

### 3. Pre-2009 Behavior of the Federal Reserve during High Unemployment Periods

In this section we examine how past behavior of the FOMC during periods of high unemployment could be used to forecast the path of the Federal Funds rate for the 2009-2011 period. We first discuss some descriptive evidence regarding the incidence of Federal Funds rate hikes coinciding with high real-time unemployment gaps. We then take a more formal approach and derive Federal Funds rate predictions by combining FOMC and private sector forecasts of economic activity and inflation from the time ARRA was passed with a number of established and estimated interest feedback rules.

#### 3.1 Some Descriptive Evidence

At the time ARRA was making its way through Congress, the FOMC expected an unemployment gap significantly exceeding 2 percentage points at least until the end of 2011 (Table 2). It can be shown that before 2009, such conditions have very rarely been associated with a Federal Funds rate hike. To demonstrate this, we compute an unemployment gap from monthly real-time unemployment data (first releases) and the value of the long-run unemployment rate or NAIRU estimated by the staff of the Federal Reserve board and published in the Greenbook and Bluebook on the occasion of FOMC meetings, from January 1980 to December 2003.<sup>6</sup> Orphanides (2001) notes that Greenbook forecasts are a useful approximation of the forecasts of the FOMC. Figure 2 plots the difference between Federal Funds target rates on the last day of a month and the last day of the previous month and the lagged unemployment gap, in order to account for the one-month publication lag of unemployment data. It turns out that Federal Funds rate hikes coinciding with an unemployment gap exceeding 1 PP are very uncommon. Indeed, they are located *exclusively* in the period of Paul Volcker's chairmanship, lasting from August 1979 to August 1987. Interest rate increases do not occur during the periods of high unemployment gaps in the recessions of 1990/91 or 2001. Moreover, during most of Volcker's tenure inflation was at far higher levels than anticipated for 2009-2011, and the FOMC was thus primarily focused on reestablishing price stability. Furthermore, during this era the FOMC was targeting monetary aggregates rather than directly setting the Federal Funds rate, which made the Federal Funds rate much more volatile than in earlier or later periods (B. Friedman (2005)). Hence this simple analysis of past Fed behavior suggests that the Fed typically does not tighten policy when unemployment is high unless inflation is undesirably high, implying that a Federal Funds rate hike during the 2009-2011 period was unlikely.

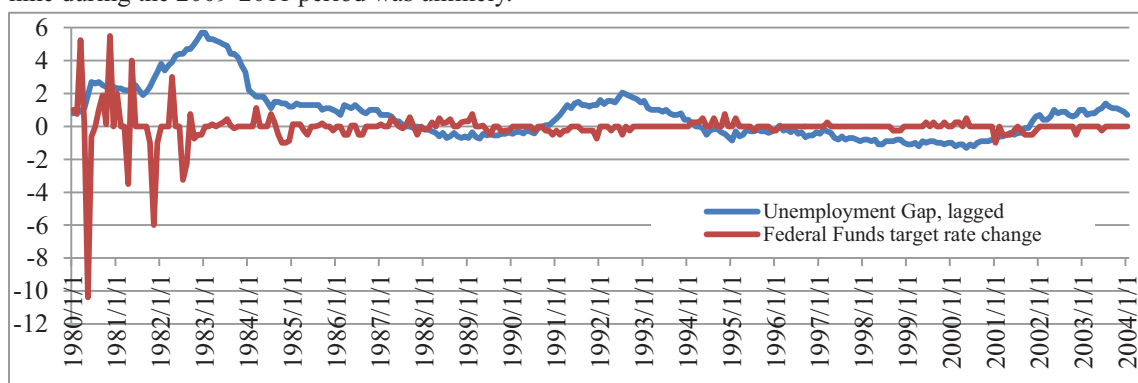


Figure 2. Unemployment gap and change in the Federal Funds target rate, %

#### 3.2 Predictions from Interest Feedback Rules

Since Taylor (1993), researchers have developed interest feedback rules which relate the Federal Funds rate to some measure of (current, lagged, or expected future) inflation and the output gap. We therefore compute the

<sup>6</sup>From 1980-1988, these long run unemployment rates appear in the notes attached to the table reporting the structural (or "high employment") budget deficit, which is published in at least one Greenbook each year except for 1987. From 1989-2003, we use NAIRU estimates from the Bluebook, which are provided by the Federal Reserve Bank of Philadelphia. We consider only the period up to 2003 as at the beginning of 2009 no more recent Bluebooks and Greenbooks were available due to a 5 year publication lag.

interest rate implied by a number of such rules for the 2009-2011 period based on the expectations of the FOMC and the private sector regarding inflation and the output gap. A similar exercise was conducted by Rudebusch (2009) in May 2009, who predicted that the Federal Funds rate would remain at the zero lower bound until 2011 based on a single estimated interest feedback rule and FOMC forecasts.

While obtaining inflation expectations is straightforward, for the output gap we can only calculate expectations implied by expectations of other variables. We follow two approaches. The first uses the “gap version” of Okun’s law, which relates the output gap linearly to the negative of a measure of the unemployment gap. We again define the unemployment gap as the deviation of actual unemployment from the FOMC’s estimate of the long-run sustainable unemployment rate, and use an Okun coefficient of 1.88, as estimated by Lee (2000), slightly smaller than that estimated by Knotek (2007). The second approach calculates expectations of the output gap by combining an assumption concerning the output gap in 2008Q4 with predictions of actual and potential GDP growth over the forecast horizon. For details see the note below Figure 3.

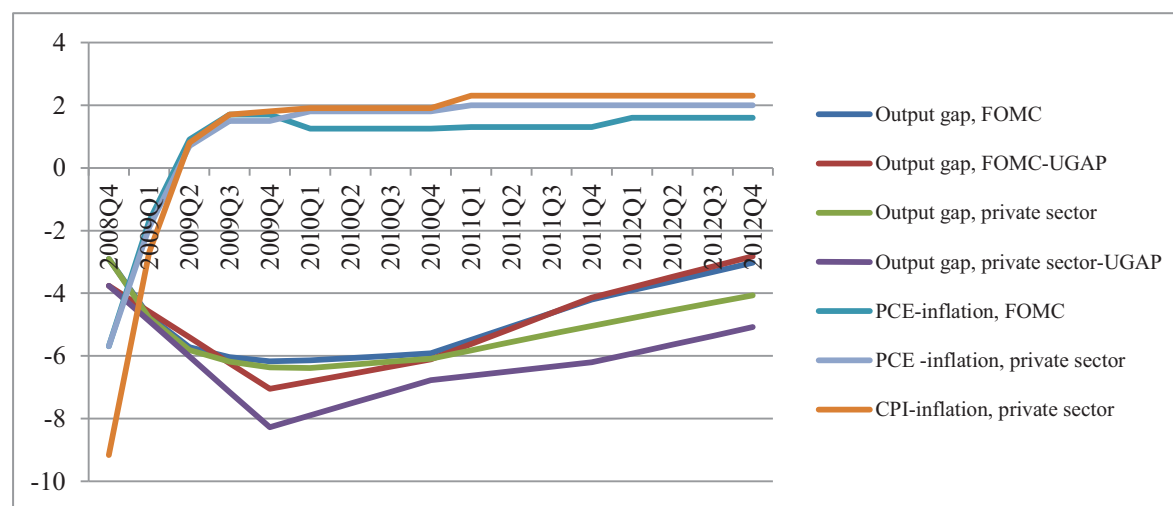


Figure 3. Implied output gap and quarterly annualized inflation expectations, %

*Note.* Output gap paths labeled “-UGAP based” are based on the “gap version” of Okun’s law, i.e.  $Y\_GAP(t) = -b \cdot (U(t) - U_N)$ , where  $Y\_GAP$ ,  $U$  and  $U_N$  denote the output gap, the FOMC’s or the private sector’s forecast of actual unemployment and the FOMC’s estimate of the long-run sustainable unemployment rate, respectively, while  $b = 1.88$ , as estimated by Lee (2000). The remaining output gap paths are calculated as the difference between actual and potential GDP. The path of potential GDP is computed using the potential growth rates reported in Table 3, and by assuming an output gap in 2008Q4 of -2.9%, which is the median of seven estimates reported by Williams and Weidner (2009), and falls short of the Congressional Budget Office’s estimate of January 2009 by about one percentage point (CBO (2009)). The quarterly paths of GDP and unemployment used in these calculations, as well as the quarterly inflation paths plotted are based on the FOMC and private sector forecasts reported in Table 3. Their computation is detailed in appendices A and B.

Predictions from the FOMC and the private sector regarding inflation and unemployment as well as actual and potential GDP growth are based on the Summary of Economic Projections (SEP) produced during the FOMC’s meeting on January 27<sup>th</sup>-28<sup>th</sup> 2009 and on two established surveys of private-sector forecasters conducted over the following two weeks, namely the “Survey of Professional Forecasters” (SPF) and the survey conducted by Consensus Economics (Consensus Forecast (CF)). We then conduct our own calculations based on these sources and our own assumptions: see Table 3. Both FOMC members and the surveyed private-sector forecasters were assuming that a stimulus package would be passed, although its exact size and composition was uncertain at the time the forecasts were recorded. Hence any interest rate prediction generated below includes the expected effect of ARRA on the Federal Funds rate.

The resulting output gap and inflation series are displayed in Figure 3. The output gap series distilled from the expectations of the FOMC and the private sector are at first very similar but then diverge, reflecting to a large extent the more pessimistic predictions of the private sector regarding the speed of the recovery. The FOMCs

outlook for inflation is also a bit more favorable than that of the private sector.<sup>7</sup>

Table 3: Forecasts of actual and potential GDP growth, actual and structural unemployment, and inflation, %

Year	GDP growth				Pot. GDP growth		Unemployment		Structural unemployment, FOMC	Inflation, Q4/Q4		
	Annual average		Q4/Q4							FOMC, PCE		SOP, CPI
	FOMC	CF	FOMC	CF	FOMC	CF	FOMC, Q4	SPF/CF		FOMC, PCE	SOP, CPI	SOP, PCE
2009	<i>0.0</i>	0.0	-0.9	-1.2	2.6	2.5	8.7	8.4	4.9	0.7	0.4	0.4
2010	<i>0.0</i>	0.0	2.9	2.8	2.6	2.5	8.2	8.8	4.9	1.3	1.9	1.8
2011	<i>0.0</i>	0.0	4.4	3.6	2.6	2.5	7.1	<i>10.2</i>	4.9	1.3	2.3	2.0
2012	<i>4.1</i>	3.6	3.8	3.5	2.6	2.5	6.4	9.6	4.9	1.6	2.3	2.0

*Note.* Forecasts labeled "FOMC" are based on the FOMC's Summary of Economic Projections made at the January 27th/28th meeting (FOMC (2009a)). Forecasts labeled CF and SF are based on the Consensus Forecasts survey of February 9<sup>th</sup> (Consensus Economics (2009)) and the Survey of Professional Forecasters of the Federal Reserve Bank of Philadelphia of February 13<sup>th</sup> (Federal Reserve Bank of Philadelphia (2009)), respectively. Numbers in standard print are obtained directly from the respective source, where FOMC numbers are the midpoints of the central tendency projection. Numbers in italics are calculated based on these numbers and our own assumptions. Details can be found in appendices A and B.

Figure 4 plots the Federal Funds rates implied by four different interest feedback rules using the expectations of inflation and the output gap of the FOMC and the private sector plotted in Figure 3. As we follow two approaches to calculate the output gap, each rule generates two predictions based on FOMC expectations and two predictions based on private sector expectations, thus four predictions in total. Under the rule following Taylor (1993), which is also the one used in CCTW's simulations, three of those predictions imply an exit from the ZLB in 2010Q1, as assumed by CCTW. Furthermore, the paths of the interest rate level predicted for 2010Q1 and after are sufficiently high to be consistent with the effect of ARRA on the interest rate simulated by CCTW (Figure 1). In the absence of ARRA, the path of the interest rate could have shifted downwards by the amount simulated by CCTW without hitting zero. By contrast, Orphanides' (2001) preferred interest feedback rule estimated on real-time data predicts a liftoff from the zero lower bound only in 2011Q4, with an increase of a mere 0.1%.

Both the original Taylor rule and the Orphanides (2001) rule are linear in inflation and the output gap. However, there is evidence that Federal Funds rate responses to inflation and the output gap changes depend on the state of the economy. Taylor (2007) himself criticized the FOMC for keeping the Federal Funds rate several percentage points below the level prescribed by his rule for four years after the burst of the dot-com bubble.<sup>8</sup> As the financial crisis of 2007-2009 was of much bigger proportions, an even stronger deviation was to be expected during its aftermath. Furthermore, the relationship between the level of the unemployment gap and the incidence of an interest rate increase or decrease discussed above also suggests that the interest setting behavior of the FOMC depends on the state of the economy. Therefore the other two rules we consider allow for nonlinearities. Bec et al. (2002, labeled BSC) estimate a piecewise-linear rule where the Federal Funds rate responds to one-year-ahead forecasts of inflation and the output gap and coefficients may differ depending on whether the lagged output gap is positive or negative. They find a statistically insignificant response to inflation during periods with negative output gaps. Cukierman and Muscatelli (2008, henceforth CM) allow the coefficients on one-quarter-ahead forecasts of inflation and the output gap to depend on the hyperbolic tangent of the respective target variable, and find that during the Greenspan period, the FOMC's output gap response was

<sup>7</sup>For the private sector, we plot expectations regarding both CPI and PCE-Inflation. Two of the four interest feedback rule estimates considered below, namely the rule of Bec et al. (2002) and Cukierman and Muscatelli (2008) use CPI inflation. The FOMC SEP does not contain CPI projections, so we use this measure instead. By contrast, both the original Taylor (1993) rule and the rule estimated by Orphanides (2001) refer to the GDP deflator. Since we do not have data on private sector expectations regarding this variable, we use the PCE deflator on the grounds that the average share of Personal Consumption expenditure in US GDP is close to 70%.

<sup>8</sup>Bernanke (2010) shows that an inflation-forecast-based Taylor rule using real-time data matches the actual Federal Funds rate much better than the simple Taylor rule. However, even the rule suggested by Bernanke prescribes a path for the Federal Funds rate during the 2002Q1-2006Q1 period exceeding the actual rate by 1 percentage point or more for roughly half of the time.



higher for more negative output gaps.<sup>9</sup> Figure 4 shows that the rule estimated by CM would prescribe a negative Federal Funds rate over the whole 2009-2011 period, regardless of whether expectations are based on the SEP or the two surveys of private-sector forecasters. The BSC rule also predicts a negative rate for this period if applied to private-sector expectations. Only if applied to FOMC expectations, does it predict a liftoff from the ZLB in 2011Q1 and a level of 0.4% in 2011Q4.

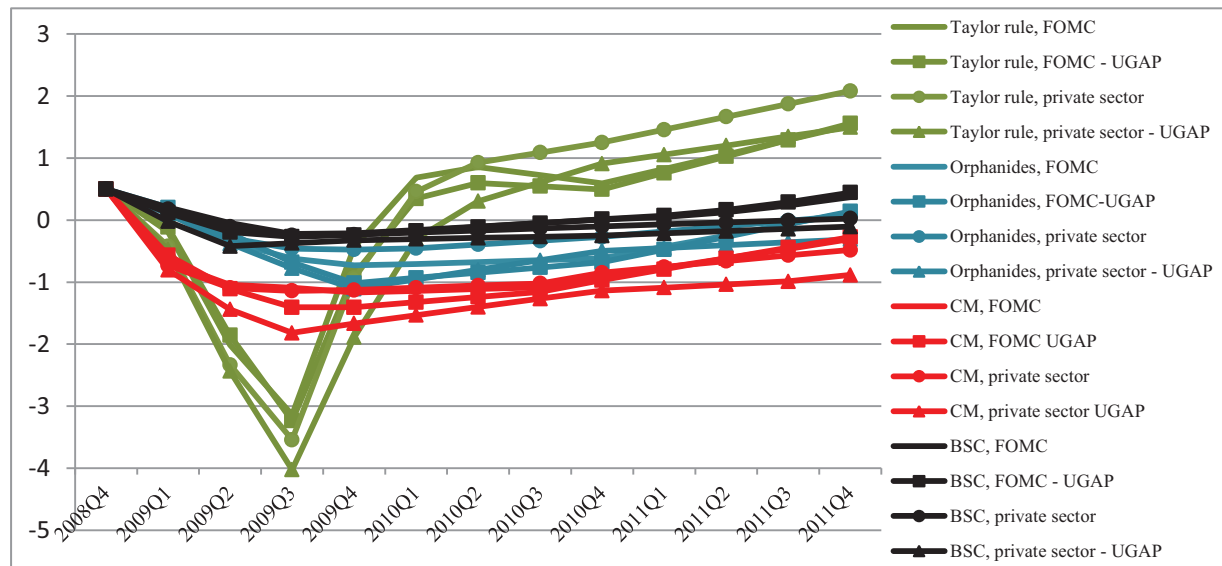


Figure 4. Federal Funds rate predicted by various interest feedback rules, %

*Note.* This figure plots the Federal Funds rate predictions resulting from combining the Taylor (1993) interest feedback rule, one of Orphanides (2001) forward-looking interest feedback rules estimated on real time data, as well as the non-linear rules estimated by Cukierman and Muscatelli (2008) (labeled CM) and Bec et al. (2002) (labeled BSC) with the output gap and inflation expectations plotted in Figure 3. Details of the rules used are reported in Appendix C. As we consider two ways to compute implied output gap expectations for both the FOMC and private sector, we have four interest rate predictions per policy rule. When forming a prediction with rules featuring a lagged interest rate term (i.e. CM and BSC), we set the t-1 interest rate to zero whenever the interest rate predicted for period t-1 is negative.

However, it is worthwhile noting that only part of the interest rate increase above zero observed in the FOMC expectations applied to the BSC rule can be attributed to ARRA. The reason why the BSC rule predicts an interest rate increase starting in 2011Q1 is the increase in the expected output gap in 2012. However, according to the simulation results reported above, in 2012 the output effects of ARRA were already comparatively small, even for long lengths of monetary accommodation (Figure 1). To get a rough idea of the increase in the Federal Funds rate really attributable to ARRA, we subtract the output gap increase simulated under 12 quarters of monetary accommodation from our constructed FOMC output gap expectations to get a path of the output gap with the ARRA effects cleaned out.<sup>10</sup> We then apply this output gap path to the BSC rule to get a prediction for the path of the Federal Funds rate in the absence of ARRA, and subtract this from the path plotted in Figure 4. This procedure yields an estimate of the effect of ARRA on the Federal Funds rate. It turns out that for the 2011Q1-2011Q4 period, ARRA increased the path of the Federal Funds rate by only 0.1%. If we redo the simulation of ARRA effects assuming that in 2011 the nominal interest rate increases exogenously by this amount while remaining constant in 2009-2010, the cumulative multiplier amounts to 2, which is still far higher

<sup>9</sup>Surico (2007) finds no evidence in favor of non-linearities over the Volcker-Greenspan period. According to Cukierman and Muscatelli (2008), pooling the terms of office of the two chairmen may be responsible for this result. Our own descriptive results on the incidence of Federal Funds rate increases presented above also suggest strong differences in the determination of the Federal Funds rate between Volcker disinflation and the period thereafter.

<sup>10</sup>We use the difference between actual and flexible-price output as a percentage of flexible-price output as the Smets and Wouter's model's equivalent to the output gap. Using the deviation of output from its steady state instead yields almost identical results.

than the result of 0.3 under the CCTW baseline with four quarters of monetary accommodation.

Finally, interest rate projections based on the above rules may understate the predictable ZLB duration by disregarding the possibility of a decline of the so called natural rate of interest, i.e. the interest rate consistent with the economy operating at full potential and in the absence of transitory shocks, say as a consequence of household and firm deleveraging or a decline in the growth rate of potential GDP. A response of the Fed to such a decline would be reflected in a downward shift of its policy rule's intercept (Woodford (2001)), assumed to be constant by the authors and estimated over samples where the Federal Funds rate was on average higher than during the pre-ARRA period. Laubach and Williams (2015), using the one-sided Kalman-filter based approach of Laubach and Williams (2003), report a real-time estimate of the PCE adjusted natural interest rate of 0.4% for 2008Q4 (down from about 2.2% two years earlier). By contrast, the (inflation-target adjusted) intercepts in the interest feedback rules used above all equal at least 2.5%

Hence, by and large, applying our constructed output gap and inflation expectations to our choice of estimated policy rules yields predictions more in line with an accommodation of ARRA exceeding 9 quarters than with an accommodation lasting only one to two years.

### 3.3 The Interest Rate Prediction in CCTW

CCTW also generate an interest rate prediction of their own based on the Smets and Wouters (2007) model. More specifically, they simulate the Smets and Wouters model on US data until 2009Q1 using the Kalman filter and holding all coefficients constant. They then forecast the path of the economy with and without ARRA for the subsequent quarters for the Taylor rule and the monetary policy rule from the original version of the Smets and Wouters (2007) model. They find that with a Taylor rule, the economy never hits the ZLB, unlike our own Taylor rule based prediction discussed in the previous section, while if they use the Smets and Wouters (2007) rule, the ZLB is hit in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2009. We will first the reasons for the difference between their Taylor rule based prediction and ours, and then discuss some more fundamental caveats of their approach.

The main reason for the different prediction is that, the intercept in CCTW's Taylor rule, i.e. the "steady-state" Federal Funds rate, is taken from Smets and Wouters (2007) and equals 6.2%. This value is considerably higher than the value of 4.4-4.5% we assume in section 2.2, which is based on Taylor's (1993) own suggestion that the steady-state interest rate should equal the sum of the inflation target and trend GDP growth. The higher steady state interest rate estimated by Smets and Wouters is likely due to the fact that the average Federal Funds rate during their sample period of 1966Q1-2004Q4 is of a similar magnitude. By contrast, the average Federal Funds rate during the 10 years before the outbreak of the financial crisis (1998-2007) equaled 3.8%. If we apply the output gap values and the deviation of inflation from its target, as simulated by CCTW, to a Taylor rule with an intercept of 4.5% and an inflation target of 1.85% as assumed in our Taylor rule, the prescribed Federal Funds rate is negative for 2009Q1-2009Q3. Under the Smets and Wouters rule, it would be zero for all of 2009.

While these modified predictions still imply a liftoff after only one year, in section 2.2 we already discussed why the original Taylor rule is likely to be an unsuitable interest feedback rule for the post-2008 period. Similar criticisms apply to the rule in the Smets and Wouters (2007) model.<sup>11</sup> Furthermore, the sample period on which the Smets and Wouters model is estimated -1966Q1-2004Q4 - is very long and likely to contain structural breaks due to changes in the monetary policy regime. For instance, according to the estimates of Cuckiermann and Muscatelli (2008), monetary policy behavior in the Volcker period differed substantially from that in the Greenspan period (1987Q4-2005Q4).

Finally, CCTW's forecast of the point of exit from the ZLB might also be downward biased as it ignores the interaction between uncertainty regarding future possibly contractionary economic shocks and the ZLB constraint. As shown by Adam and Billi (2006), if the economy is at or even above the ZLB, there is a possibility that unexpected contractionary shocks could keep the economy longer than would be the case under perfect foresight. The non-linearity associated with the ZLB implies that the distribution of future paths of the policy rate is skewed upwards and the distribution of future output and inflation paths is skewed downwards. This downward skewedness lowers the expected path of output and inflation compared to a perfect foresight scenario, and thus current output and inflation. Lower output gap and inflation would also imply a lower Fed Funds rate than simulated by CCTW.

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<sup>11</sup>Like the Taylor rule, it is a linear rule unable to account for the possibility of a higher output gap response during periods of negative output gaps. Indeed, as it prescribes a positive response to the *change* in the output gap, it implies higher interest rates during in the presence of negative output gap levels once the output gap starts to mean-revert. Finally, it does not allow for a decline in the natural rate of interest.

#### 4. Insights from a Simple Loss Function

In this section, we examine how standard assumptions regarding the preferences of monetary policy makers could have been used to forecast the path of the Federal Funds rate for the 2009-2011 period. For that purpose, we assume that the FOMC was aiming to minimize the following quadratic loss function

$$L = \sum_{t=1}^{12} \beta^{t-1} \frac{1}{2} (\hat{\pi}_t^2 + \alpha \hat{y}_t^2), \alpha \geq 0, \beta \leq 1$$

over the 12 quarters starting in 2009Q1, with  $\hat{\pi}_t$  and  $\hat{y}_t$  denoting respectively the annualized deviations of inflation and the output gap from their target values. We set the FOMC's inflation target equal to 1.85%, which is the midpoint of the central tendency forecast for "long-run" PCE-inflation from the January 27th-28th 2009 SEP (FOMC (2009a)). We also assume that the FOMC believed, as CCTW do, the Smets and Wouters (2007) model to be a reasonable framework to assess the effects of fiscal stimulus under varying lengths of monetary accommodation.

We evaluate this loss function for the alternative inflation and output paths associated with alternative lengths of monetary accommodation  $i$ , with  $0 \leq i \leq 12$ , assuming that for  $t > i$ , monetary policy follows the interest feedback rule in the model. For that purpose, we draw on the FOMC's inflation forecasts and the implicit output gap expectations constructed in the previous section, and plotted in Figure 5. We assume that those forecasts did not anticipate any monetary accommodation of ARRA. That means we assume that policymakers planned to respond to the effects of ARRA on inflation and GDP according to the coefficients of the Taylor rule starting in 2009Q1, rather than in 2010Q1 as assumed by CCTW.

We denote those policymaker expectations as  $\hat{\pi}_{t,i=0}$  and  $\hat{y}_{t,i=0}$ , where  $i$  denotes the length of monetary accommodation. Hence for each length of monetary accommodation we can compute the paths of inflation and the output gap as  $\hat{\pi}_{t,i} = \hat{\pi}_{t,i=0} + d\pi_{t,i} - d\pi_{t,0}$  and  $\hat{y}_{t,i} = \hat{y}_{t,i=0} + dy_{t,i} - dy_{t,0}$ , where  $d\pi_{t,i}$  and  $dy_{t,i}$  denote the simulated effects of ARRA on inflation and the output gap for  $i$  quarters of monetary accommodation.<sup>12</sup> So  $d\pi_{t,i} - d\pi_{t,0}$  and  $dy_{t,i} - dy_{t,0}$  denote the effects of increasing the length of monetary accommodation from 0 to  $i$  periods on inflation and the output gap.

Note that the press release issued after the January 27-28<sup>th</sup> 2009 FOMC meeting (FOMC (2009b)) says that "The Committee continues to anticipate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time." Thus, by not being stripped of the likely positive expected effects of the monetary accommodation intended by the FOMC on the path of inflation and output, our assumed values of  $\hat{\pi}_{t,i=0}$  and  $\hat{y}_{t,i=0}$  will be biased upwards, possibly substantially as illustrated by Figure 1. This upward bias implies that the length of monetary accommodation we find to minimize the FOMC's loss will be biased downwards, as, due to the nonlinearity of the objective, the marginal reduction in the loss caused by a given increase in inflation and output due to longer accommodation will be lower if the respective starting value is higher. To put it differently, if we were able to redo the exercise with the "true" but unknown values of  $\hat{\pi}_{t,i=0}$  and  $\hat{y}_{t,i=0}$ , the resulting optimal length of accommodation would be longer.

Regarding  $\hat{\pi}_{t,i=0}$ , we assume that core PCE inflation enters the loss function, as it is the inflation measure the Fed officially uses. But we also consider PCE-inflation figures as a robustness check. Regarding  $\hat{y}_{t,i=0}$ , we consider both our unemployment gap-based output gap measure and the alternative. We assume a discount rate  $\beta=0.99$ , but our results are robust to higher values. We first consider the case where the FOMC has no preferences over output stabilization, i.e.  $\alpha=0$ . With such preferences the length of monetary accommodation minimizing the loss function would equal 11 quarters, rather than four as assumed by CCTW. If we use headline inflation, the optimal length of monetary accommodation would increase to 12 quarters. As can be seen in Figure 5, the FOMC expected inflation to be substantially below target over the 2009-2011 period. Therefore, the higher inflation associated with longer lengths of monetary accommodation actually helps the FOMC to meet its target.

Furthermore, if we relax the assumption that the FOMC does not care about output gap stabilization, the FOMC prefers 12 quarters of monetary accommodation to all shorter periods for any value of  $\alpha > 0.0089$ . This threshold value is lower than what is typically used in the literature on monetary policy analysis. For instance,

<sup>12</sup>We use the difference between actual and flexible price output as a percentage of flexible price output as the Smets and Wouter's model's equivalent to the output gap; using the deviation of output from its steady state yields even stronger results.

Woodford (2003) reports a value of 0.048 for his household utility-based loss function, with the underlying household preference and technology parameter values as estimated by Rotemberg and Woodford (1997). Barro and Broadbent (1997), who allow the output gap weight in the policymaker's loss function to vary freely, estimate a value of 1/3, somewhat higher than the value of 0.25 used by Jensen (2002) or McCallum and Nelson (2000) in their theoretical analysis. More recently, Chen et al. (2013) investigate the preferences of the Fed by estimating a DSGE model for various forms of optimal policy, and allow the relative weight of other objectives to follow a two-regime Markov switching process. The relative output weights equal 0.64 under the less conservative and 1.46 under the more conservative regime. In the aftermath of the dot-com crash, their estimated probability of being in the less conservative regime exceeded 50% for several years. Hence we conclude that, for reasonably parameterized preferences, the FOMC would have preferred a 12-quarter constant interest rate to all shorter lengths. If we assume a minimal degree of success of the central bank at communicating its objectives, these considerations should also have had an impact on the private sector's expectations of the path of the Federal funds rate. In the Smets and Wouters (2007) model, an anticipated length of monetary accommodation of 12 quarters would have implied multiplier comfortably above one (Table 1).

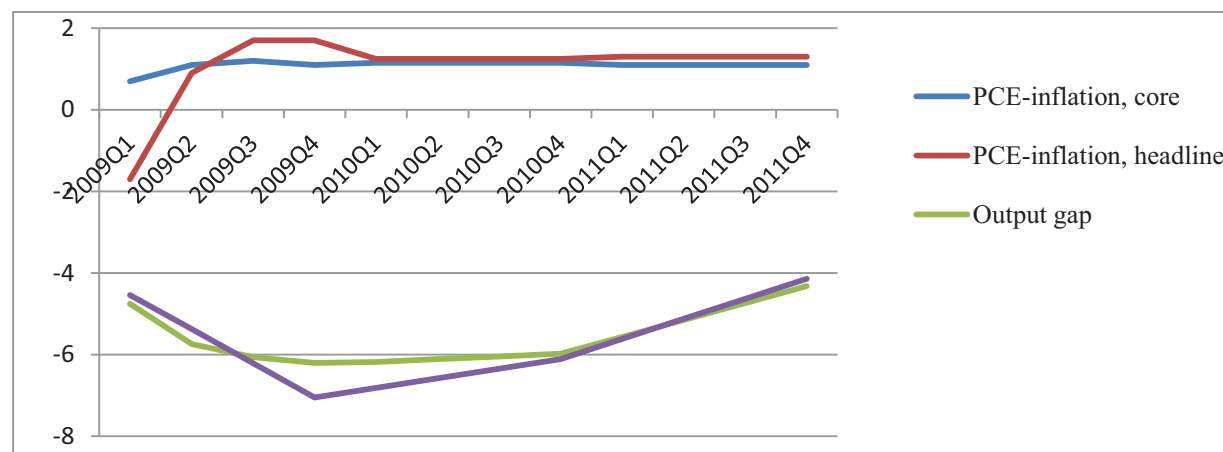


Figure 5. Inflation and implicit output gap expectations of the FOMC

*Note.* The paths of the output gap and PCE inflation are as in Figure 3. The path of PCE core inflation was derived in exactly the same way as the path of PCE inflation: see appendix B.

## 6. Financial Market (Private Sector) Expectations

A natural alternative to trying to predict the Federal Funds rate on the basis of the economic outlook and past systematic monetary policy responses is to derive financial market participants' expectations from Federal Funds futures (FFF). Such futures have been traded at the Chicago Board of Trade since the late 1980s. They are essentially bets on the average Federal Funds rate that prevails during month  $t+n$ , with the payoff given by  $(f_t^n - r_{t+n})$  times the size of the contract, where  $f_t^n$  and  $r_{t+n}$  denote the return fixed in the  $n$ -month FFF and the average of the Federal Funds rate prevailing in month  $t+n$ , respectively. Under the pure expectations hypothesis,  $f_t^n$  would be an unbiased predictor of  $r_{t+n}$ . The maximum horizon of FFFs traded in the market was 24 months in 2009. In early 2009, the value of  $f_t^{24}$  varied between 100 and 200 basis points (Figure 6), which appears to support CCTW's assumption that the Federal Funds rate would remain at zero for less than two years.

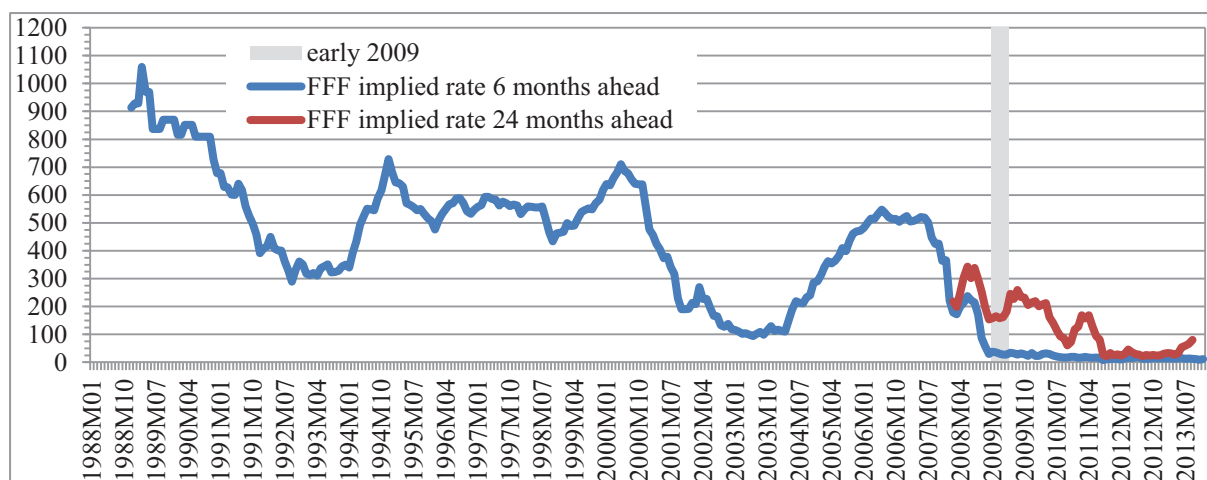


Figure 6. FFF implied rates for 6 months maturity and 24 months maturity, monthly averages of daily data, basis points

Note. The shaded area highlights the first half of 2009. Source: Macrobond.

However, Piazzesi and Swanson (2008, henceforth PS) have provided strong evidence that the failure of the pure expectations hypothesis is also true for the FFF market. They find that the excess return  $(f_t^n - r_{t+n})$  on the FFF contracts is on average positive, time-varying and partly predictable. The standard economic explanation for this phenomenon is that (time-varying) risk premia exist in asset prices. Specifically, they find that the (expected) rate of return on holding FFF contracts is negatively related to year-on-year employment (monthly non-farm payroll) growth. As employment was shrinking extraordinarily fast in the year leading up to January 2009,  $f_t^n$  would be expected to give an especially biased prediction of  $r_{t+n}$ . We therefore follow PS and estimate a forecast equation for  $E_t\{f_t^n - r_{t+n}\}$  using data up to December 2008, and then use the relation  $E_t\{r_{t+n}\} = f_t^n - E_t\{f_t^n - r_{t+n}\}$  to forecast the Federal Funds rate two years ahead.

Due to the fact that 24-month FFFs were established only in 2008, we also have to follow PS and use the 6-months-ahead FFF contract in our estimation. Of course, there is a priori no direct connection with the excess returns for the 24-month horizon. However, we make use of the fact reported by PS, and by Hamilton and Okimoto (2010), that expected excess returns of FFF contracts tend to rise with the contract maturity. Assuming that this positive relationship also holds for longer maturities, our results should constitute an upper bound for the actual 24-months-ahead market expectations for the Fed funds rate.

Just as PS do, we find that lagged real-time non-farm payroll growth over the past 12 months and the implied FFF rate itself are the most important predictors of excess FFF returns, although we also experimented with term spreads, corporate bond spreads, and lagged interest rates.<sup>13</sup> The fact that we estimate an equation suitable for forecasting in real time prevents us from using the first five lags of the dependent variable as regressors since future values of the Federal Funds rate are unknown at the time a forecast is made. We therefore use robust HAC standard errors in order to deal with residual autocorrelation.

The estimation results are reported in Table 4, and the fitted (predicted) values are compared to actual excess returns in Figure 7.

Table 4. Forecast equation for excess returns (6-month ahead horizon)

	<i>coefficient</i>	<i>std. error</i>	<i>t-ratio</i>	<i>p-value</i>
Constant	-29.51	14.11	-2.09	0.038
FFF implied rate 6m	0.170864	0.0439514	3.888	0.000
employment growth (lagged, annualized)	-1728.37	593.320	-2.913	0.004
excess returns 6m (2nd lag)	0.366941	0.123528	2.971	0.003

R-squared 0.33 Adjusted R-squared 0.33

Notes. Sample 1990m1-2008m12 (T = 228), HAC standard errors (bandwidth 4, Bartlett kernel), Durbin-Watson-Stat: 0.29

<sup>13</sup>As in PS, we use lagged employment in order to account for the one-month publication lag.

We can calculate an upper bound for  $E_t\{r_{t+24}\}$  by plugging our estimate of the lower bound of the maturity-adjusted expected excess returns  $E_t\{f_t^n - r_{t+24}\}$  into  $E_t\{r_{t+24}\} = f_t^{24} - E_t\{f_t^{24} - r_{t+24}\}$ .<sup>14</sup> The upper bound of  $E_t\{r_{t+24}\}$  is plotted in Figure 8, where for comparison we also include the 24-months lead of the Federal Funds rate actually realized ex post. It turns out that, after adjusting for time-varying risk premia, the two-year-ahead expectations of the Federal Funds rate hit zero in December 2008 and do not become positive again until November 2009.<sup>15</sup>

Indeed, one may argue that markets expected a zero Federal Funds rate to persist even for some time after January 2011 if the negative predicted rate were interpreted as the markets' view of the desired but practically impossible policy rate. Under this interpretation, the Federal Funds rate predicted in January 2009 to be desired for January 2011 equaled -170 basis points. A predicted negative rate of this magnitude presumably implies that market participants expected economic slack to be very high and inflation to be low by the beginning of 2011. In order to conclude that the actual Federal Funds rate would increase soon after, market participants would have had to expect a dramatic pace of recovery during 2011, which appears a priori implausible. Therefore we interpret the above results to be consistent with a horizon of a binding ZLB of more than two years, although our findings are nominally limited to two years.

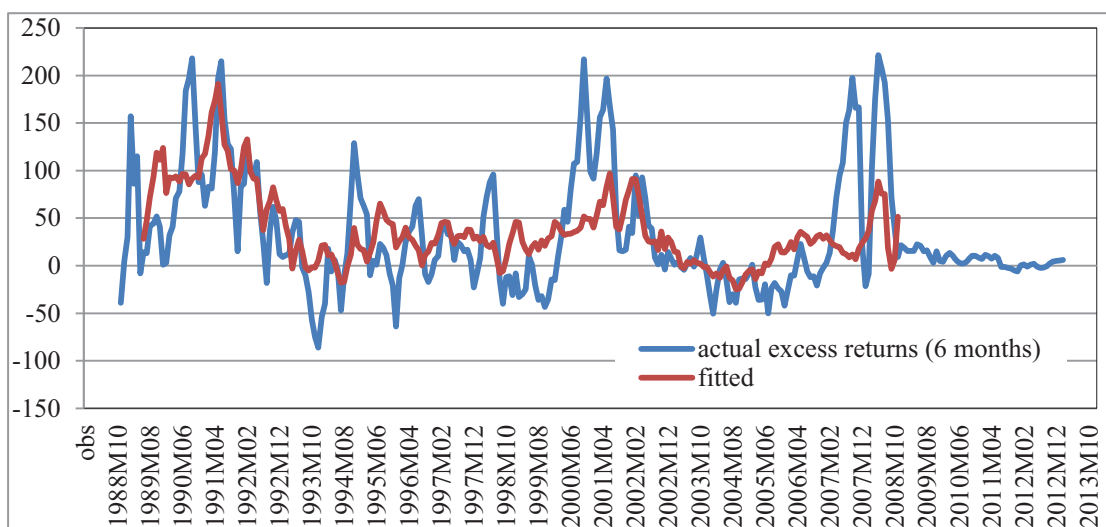


Figure 7. Predicted excess returns for the 6-month FFF contract in-sample

*Note.* Returns are “as is” for the 6-month horizon, i.e. not made comparable with the 24-month horizon. The time axis refers to the period of forecast formation (FFF purchase time).

<sup>14</sup>This statement refers to excess returns multiplied by the ratio of the holding periods; since the excess returns of a FFF contract with a duration of 6 months can be realized four times in a row (ceteris paribus) until the expiry of the 24-month FFF contract, we follow PS's practice and multiply the (expected) excess returns of the 6-month contract by four before subtracting it from the implied rate of the 24-month FFF contract.

<sup>15</sup>The latest available expectation in this sample is for the period August 2013 with a value of 303 basis points. This value appears quite high given the data constellation and monetary policy stance prevailing in real time, but it may be worth repeating that this constitutes just an upper bound, where the true expectation may be lower by an unknown amount.

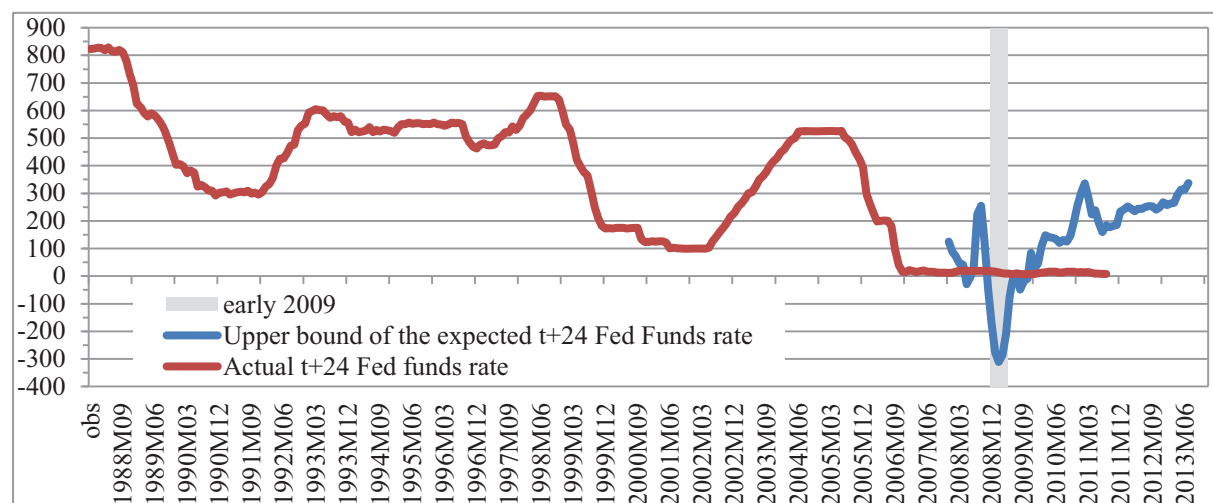


Figure 8. Expected and actual Fed funds rates, 24-months horizon

*Note.* The blue line is an upper bound of the Federal Funds rate expected in period  $t$  for  $t+24$ , i.e.  $E_t\{r_{t+24}\}$  (see the text; except when the ZLB is binding). The shaded area highlights the first half of 2009.

### 7. Relation of Our Results to Swanson and Williams (2014)

In a recent contribution, Swanson and Williams (2014) argue that the ZLB was not really restricting monetary policy during the 2009-2011 period as much as economists would have believed. Indeed, they claim that longer-term interest rates were as sensitive to news (including monetary policy actions or announcements) during much of the great recession as in normal times. This finding would imply that the fiscal policy multiplier would be more or less unaffected by the presence of the ZLB and thus would not be large. However, a closer look at their main empirical results in their Figure 3 reveals that for most of the year 2009, their sensitivity estimate for interest rates of many maturities, even including 5-year and 10-year bond yields, is essentially uninformative. The confidence band includes both the values corresponding to zero as well as to normal sensitivity, implying that neither the null of normal sensitivity (the authors hypotheses) nor the null of zero sensitivity can be rejected. The latter null implies that the ZLB was constraining monetary policy and that therefore the fiscal multiplier was large.

Moreover, the length of the period during which the confidence interval includes zero might be longer if one were to deviate from the author's choice of the period of "normal sensitivity" of bond yields to news, which Swanson and Williams (2014) assume to be 1990-2000. Their normalization choice implies that during 2000-2008, the sensitivity of two, five and ten year yields was considerably above normal (see their Figure 3). This implication appears to be at odds with the evidence that in 2004 and 2005, US long term bond yields remained low in spite of improving macroeconomic conditions and the steep tightening of US monetary policy (see Rudebusch et al. (2006)), a puzzle Alan Greenspan referred to as the "bond yield conundrum" (Greenspan (2005)). Assuming that 2000-2008 represents "normal" sensitivity would likely lengthen the period during which the hypothesis of zero sensitivity cannot be rejected.

Swanson and Williams (2014) also cite the Blue Chip Financial Forecasts survey, which contains predictions of the path of the Federal Funds rate over the current and 6 following quarters. According to the survey published on February 1<sup>st</sup> 2009, the panel on average predicted a Federal Funds rate increase above 0.25% in 2010Q1, which contradicts our own real-time forecast.<sup>16</sup>

The key question is whether the expected increase of the Federal Funds rate and the associated decline of private expenditures were due to ARRA, or whether it was part of the non-stimulus baseline of those forecasters. Throughout this paper, we have argued that based on the anticipated path of the output gap and inflation, which incorporated ARRA, a plausible prediction would have been a constant Federal Funds rate. If the Blue Chip

<sup>16</sup>Twenty-eight of the institutions covered by the panel are also included in the Survey of professional forecasters of the Federal Reserve Bank of Philadelphia, and some are also contained in the Consensus forecast survey. The Blue Chip survey also contains a consensus forecast of quarterly GDP growth until 2010Q2. The predicted GDP path closely matches the consensus of the Survey of Professional Forecasters.

Forecasters expected a hike anyway, then maybe it was unrelated to their inflation and output gap projections, implying that the hike was also unrelated to ARRA. Such a conclusion would also be consistent with the finding of Swanson and Williams of a statistically insignificant response of long-term rates to macroeconomic news throughout 2009.

We have three conjectures why private-sector forecasters predicted a Federal Funds rate increase inconsistent with past Fed responses to inflation and the output gap. Firstly, a sustained period of the Federal Funds rate being at the ZLB had not occurred since the Great Depression. This experience might have made it hard for forecasters to envisage a period at the ZLB exceeding one year.

Secondly, when predicting the Fed Funds rate, private-sector forecasters might place relatively more weight on prospective GDP growth rather than on the level of GDP relative to some unobservable measure of potential output, unlike central bank or academic economists. Private-sector forecasters expected the US economy to stop contracting in 2009 Q3 (+0.9% Annualized Percentage Rate), and expected growth to accelerate to 2.4% in 2010Q1 and 3.6% in 2011Q1. However, as can be obtained from Figure 1, for every length of monetary accommodation considered, the bulk of the effects of ARRA on the level of GDP had already taken place by 2009Q3, with the peak effect located in 2010Q1. Hence the expected increase in the Federal Funds rate coincides with the quarter where the quarter-on-quarter growth effects of ARRA turn negative, suggesting that ARRA did not increase the Federal Funds rate expected by the Blue Chip panel even if they focused on GDP growth.

Finally, possibly being unaware of Piazzesi and Swanson (2008), Blue Chip forecasters may have placed too much weight on the prediction implied by 12-month Federal Funds Futures, which equaled 0.62%. Such reliance would tend to bias their predictions from the beginning of 2009 upwards as the strongly negative employment growth over the past 12 months increased the predictable component of excess returns. However, the size of this bias would be unrelated to ARRA as it likely had no effect on the change of employment from January 2008 to January 2009. If any of these conjectures applies, then the Blue Chip survey's prediction of a relatively early interest rate liftoff would not be attributable to ARRA and thus would not lessen the expected degree of monetary accommodation in reaction of the stimulus.

## 8. Conclusion

In this paper, we critically examine Cogan et al.'s (2010) argument that the government purchases component of the American Recovery and Reinvestment Act (ARRA) passed in February 2009 would have only a small effect on US GDP due to substantial crowding out effects. We show that this result is sensitive to the time at which the Federal Funds rate is expected to leave the ZLB, which they assume to occur in 2010Q1. What is more, drawing on official statements of the Fed chairman, predictions of FOMC members and private sector forecasters, evidence on past interest rate setting behavior of the Fed, optimal policy considerations, and financial market expectations embedded in implied Federal Funds Futures rates, we argue that a plausible prediction of the period the economy would remain at the ZLB would have exceeded nine quarters, implying some crowding-in of private expenditure and a cumulative multiplier of the increase in government consumption exceeding one.

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### **Appendix A: Expectations Data Sources (for Online Publication Only)**

From the FOMC's Summary of Economic Projections made at its January 27-28<sup>th</sup> 2009 meeting (FOMC (2009a)), we obtain the midpoint of members' central tendency forecast for the 2009-2011 period regarding Q4/Q4 real GDP growth, Q4 unemployment, the Q4/Q4 change in the headline PCE deflator and the core PCE deflator. We also use members' estimates of the "longer run" values of GDP growth (2.6%) and unemployment (4.9%) as proxies for potential GDP growth and the NAIRU, respectively.

For private sector forecasts, we draw on the Consensus Forecasts survey (CF) of February 9<sup>th</sup> 2009 (Consensus Economics (2009)) and the Survey of Professional Forecasters (SPF) of the Federal Reserve Bank of Philadelphia of February 13<sup>th</sup> 2009 (Federal Reserve Bank of Philadelphia (2009)). Specifically, for the 2009-2011 period we obtain year-on-year GDP growth from CF because it covers the complete 2009-2011 period, while SPF covers only the years 2009-2010 for these variables. However, year-on-year GDP growth rates projected by the SPF for 2009 and 2010 differ only marginally from those in the Consensus Forecasts (CF). Therefore, we also make use of the quarterly GDP growth forecasts published in the SPF for the 2009Q1-2010Q1 period. We also use the CF for average annual growth over the period 2012-2016 in order to construct an expected year-on-year growth rate for 2012.

Furthermore, we obtain a forecast of average annual unemployment for 2009 and 2010 from SPF, which only marginally differs from the CF, as well as quarterly unemployment rates for 2009Q1-2010Q1. For both PCE-Deflator and the CPI, we obtain quarterly growth rates for the 2009Q1-2010Q1 period as well as the Q4/Q4 change for 2009-2011 from the SPF, as the CF of consumer price inflation covers only 2009-2010. The CF survey only contains predictions regarding average annual CPI inflation and thus cannot be directly compared to the SPF forecast.

As a proxy for potential GDP growth expectations of the private sector we use the CF of average annual GDP growth during the 2017-2021 period, which equals 2.5%. All forecasts cited above refer to seasonally adjusted data.

### **Appendix B: Construction of Expected Quarterly GDP Growth, Unemployment and Inflation Projections for 2009-2012 (for Online Publication Only)**

#### **Inflation**

For the 2009Q1-2012Q4 period, FOMC expectations of quarterly PCE core and headline inflation were set as follows:

1. FOMC members' forecast Q4/Q4 inflation for 2009-2011 is reported in the SEP. For 2012, we assume that members expected Q4/Q4 inflation to equal 1.6%, implying that it converges halfway towards its expected long-run value of 1.85%.
2. We then interpolate quarterly core and headline PCE inflation rates to match these Q4/Q4 inflation rates. For 2009Q1-2010Q1, the quarterly core and headline PCE inflation rates we set closely match the quarterly rates published in the SPF (neither the February 2009 CF survey nor the FOMC's SEP contain predictions of quarterly PCE inflation), while for the remaining period quarterly inflation rates within a given year are assumed to be identical.

We also assume that the FOMC had a good nowcast of the first estimate of the 2008Q4 value of the PCE deflator, released on January 30<sup>th</sup> 2009, which we obtain from the ALFRED Database.<sup>17</sup>

The private sector's expectations of CPI and PCE-deflator inflation are largely analogously calculated based on the SPF. Regarding 1., we assume Q4/Q4 inflation in 2012 to equal its 2011 value. The resulting year-on-year CPI-inflation for 2009 and 2010 differs only marginally from the CF.

Note our assumptions regarding 2012Q2-Q4 inflation matter only for Federal Funds rate predictions of the Orphanides et al. rule. Bec et al. (2002, labeled BSC) find a statistically insignificant and negative response to inflation during periods with a negative output gap, which is why we set the inflation response in this rule equal to zero. Regarding the Cukierman and Muscatelli (2008, labeled CM) rule, only the Federal Funds rate predicted for 2011Q4 depends on inflation expectations for 2012 – specifically the 2012Q1 forecast. The 2011Q4 prediction is very robust to the assumed 2012Q1 expected inflation rate. The interest rate predicted for 2011Q4 would turn positive only if the FOMC and the private sector expectations for 2012Q1 inflation were to exceed 3% and 5%, respectively.

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<sup>17</sup>This matters only for the prediction of the simple Taylor rule for 2009Q1-2009Q3, which says that the interest rate depends on the change in the respective price index over its value in the same quarter of the previous year.

## GDP

FOMC expectations of quarterly GDP growth rates for the 2009Q1-2012Q4 period are constructed as follows:

1. The FOMC members' forecast Q4/Q4 GDP for 2009-2011 is reported in the SEP. For 2012, we assume that members expected the same acceleration in year-on-year GDP growth as the private sector (more on this below). This assumption implies that for 2012 (just as for 2009-2011), the FOMC is more optimistic than the private sector both regarding annual average and quarterly GDP growth.
2. We interpolate quarterly GDP growth rates to match these targets. For 2009Q1-2010Q1, the quarterly GDP growth rates we set closely match the quarterly rates published in the SPF (the FOMC's SEP does not contain predictions of quarterly growth rates), while for the remainder quarterly growth rates within a given year are assumed to be identical.

For the private sector, we proceed analogously. Regarding 1, we use the year-over-year growth rates contained in the CF survey for 2009-2011 as targets, and the first estimate of GDP inclusive of 2008Q4 GDP, released on January 30<sup>th</sup> 2009, which we obtain from the ALFRED Database.

For 2012, the year-on-year GDP growth forecast is based on the CF of average annual growth over the 2012-2016 period, which equals 2.8%. This number translates into the expected 3.5% for 2012 reported in Table 3 by assuming that a) forecasters did not expect GDP growth to undershoot its potential during the 2012-2016 period and b) a convergence of actual growth towards potential growth in equal-sized steps was expected to take place. Quarterly rates are then set as in step two above.

Note that regarding the interest rate rule-based Federal Funds rate predictions reported in 2.2, the expected path for 2012 GDP growth (and unemployment) matters chiefly for our 2011 interest rate prediction made with the BSC rule, which features the one-year-ahead output gap. By contrast, in the CM rule the Federal Funds rate depends on the one-quarter-ahead expected output gap. Hence only the Federal Funds rate predicted for 2011Q4 depends on output gap expectations for 2012, namely the 2012Q1 forecast.

## Unemployment

Expectations of quarterly unemployment for the 2009Q1-2012Q4 period are constructed as follows:

- FOMC: When interpolating quarterly rates, we always impose that the expected unemployment rate moves from the Q4 of one year to the Q4 of the following year in equal-sized steps. FOMC members' expectations of Q4 unemployment for 2009-2011 are reported in the SEP. The Q4 2008 unemployment rate required for our computations is calculated from monthly data released on January 9<sup>th</sup> 2009, obtained from the ALFRED database. For 2012, we first calculate average annual unemployment for 2011 and then use the 2012 year-on-year GDP growth rate and Okun's law to project a 2012 average annual unemployment rate. We then set the Q4 unemployment rate such that the 2012 average annual unemployment rate equals this estimate.
- Private sector: Quarterly unemployment forecasts for the 2009Q1-2010Q1 period as well as average annual unemployment for 2010 are contained in the SPF. We construct annual average unemployment for 2011 and 2012 using Okun's law and the respective year-on-year GDP growth rates. We assume that the expected unemployment rate moves from the Q4 of one year to the Q4 of the following year in equal-sized steps, and then set the Q4 unemployment rate such that the average annual rate equals our estimate.

Whenever we use Okun's law to calculate missing unemployment expectations from the GDP growth rate expectations constructed above, we use an Okun coefficient (i.e. the effect of a percentage point change in unemployment on GDP growth in percentage points) of 1.84 as reported by Lee (2000) for annual data, and the estimates of potential GDP growth of the FOMC (2.6%) or the private sector (2.5%).

## Appendix C: Interest Feedback Rules

In section 2.2, we consider the following four interest feedback rules, where  $\pi_t^{index}$  and  $\hat{y}_t$  denote the annualized quarterly change of the respective price index used to calculate inflation and the output gap, respectively.

The simple Taylor rule is given by

$$i_t = i + 1.5 \left( \frac{\pi_t^{GDP-Defl.} + \pi_{t-1}^{GDP-Defl.} + \pi_{t-2}^{GDP-Defl.} + \pi_{t-3}^{GDP-Defl.}}{4} - 1.85 \right) + 0.5 \hat{y}_t$$

where, following Talyor (1993)  $i$  equals the sum of the inflation target and trend GDP growth. Both the FOMC and the private sector are assumed to believe that the FOMC's implicit inflation target equals 1.85%, the midpoint of the central tendency forecast for "long-run" PCE-inflation from the January 27th-28th 2009 SEP, while the respective potential output growth rate estimates are as reported in section 7.

From Table 6 of Orphanides (2001), we obtain the following rule estimated on real time data:

$$i_t = 0.66i_{t-1} + (1 - 0.66) \left( 1.8 + 1.64E_t \left\{ \frac{\pi_{t+4}^{GDP-Defl.} + \pi_{t+3}^{GDP-Defl.} + \pi_{t+2}^{GDP-Defl.} + \pi_{t+1}^{GDP-Defl.}}{4} \right\} + 0.97\hat{y}_t \right)$$

Orphanides prefers this specification because it is forward-looking and the inflation coefficient is significantly greater than one.

From Table 1 of Bec et al. (2002), we employ the estimates of their piecewise linear rule allowing for interest rate smoothing. As Bec et al. (2002) estimate their rule on monthly data, we used their estimates of the effect of the one-month and two-month lag of the Federal Funds rate on its current level  $\rho_1$  and  $\rho_2$  to compute a lagged interest rate coefficient applicable to quarterly data as  $(\rho_1 + \rho_2)^3$ . Furthermore, we report only the estimate for the case of a negative output gap, and ignore the inflation term as its coefficient was insignificant and negative.

$$i_t = 0.9i_{t-1} + (1 - 0.9)(5.262 + 1.237E_t\hat{y}_{t+4})$$

Finally, from Table 2 of Cukierman and Muscatelli (2008), we employ the coefficient estimates reported for the Greenspan period, ignoring the term involving the hyperbolic tangent on inflation as the associated coefficient is insignificant and negative:

$$i_t = 0.81i_{t-1} + (1 - 0.81)(5.279 + 1.01(E_t\pi_{t+1}^{CPI} - 2.9) + 0.88E_t\hat{y}_{t+1} - 0.84E_t\hat{y}_{t+1}TANHYP(0.2E_t\hat{y}_{t+1}))$$

TANHYP(...) denotes the hyperbolic tangent of the term in brackets.

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# Microcredit in Lebanon: First Data on Its Beneficiaries

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## Abstract

In Lebanon, microfinance is not specially developed. Financial institutions that allocate microcredits are NGOs that are mildly supported by the government. The activity of these institutions affects only 11.5% of the population (IFC, 2008, cited by Mayoukou et al., 2013, p.4). These authors note the lack of empirical data related to microcredit granted by microfinance institutions in Lebanon, particularly regarding the characteristics of their beneficiaries. Our study emphasizes the characteristics of beneficiaries of microcredit allocated by MFIs (microfinance institutions) in Lebanon. As a result of data obtained from MFI heads, the results seem to show that NGOs MFIs give more credit to men than to women, and a low percentage of credit goes to startups. In addition, beneficiaries have a low level of education, poor or moderately poor, and are located in rural areas. Gender discrimination in the allocation of micro-credits was highlighted on the basis of the first data processed in this work. The results of the interviews with MFI's administrative officials seem to show that the men loan officers may distinguish between male and female beneficiaries and prefer to grant microcredit to a man. Women beneficiaries may have less information about the credits offered by them, or do not take initiative because they live in a patriarchal society. Moreover, men go through their wives to get another microcredit.

**Keywords:** characteristics of beneficiaries of microcredits, gender discrimination, microfinance institutions (MFI), microcredit, microfinance

## 1. Introduction

Financial constraints are obstacles to the creation and growth of microenterprises in Lebanon, particularly for rural entrepreneurs. Microcredit is now a political and economic instrument for combating poverty (Bayai and Ikhida, 2016) and unemployment which reached 21% in 2014 in Lebanon (Sawaya, 2014). It is a development tool in the country of the cedars given its bad economic-political situation. Work and empirical data on microcredit are almost absent in Lebanon (Mayoukou et al., 2013). Numbers and studies exist, but they are considered as incomplete. The data available on the microfinance institutions site "Mix Market" are relatively rare and their updating dates from 2011 for some MFIs. In 2011, Lebanon was ranked as 38th «in terms of a business environment conducive to microfinance but remains below the world average» (Lebanon this week, 2011). «Microcredit institutions in Lebanon provide micro and small loans to start-ups, employees and micro-entrepreneurs », according to the report of the Ministry of Economy and Trade (2014, p.7).

According to the same report (2014), the amount of funding allocated amounts to \$ 1,000, \$ 15,000 and reaches a maximum of \$ 50,000 per applicant. According to Najib Choucair, Executive Director and Head of the Banking Department of the Bank of Lebanon (BDL), the maximum amount that could be provided to a beneficiary was 10,000,000 LL or about 7,000 \$ maximum before 2004 ( Circular number 93 – interview conducted in 2016). An experience in the field of work or a feasibility study is sometimes requested for obtaining credit by a microfinance institution (MFI). The credit can then take the form of « working capital, fixed assets and/or real estate investments» (Report of the Ministry of Economy and Trade, 2014, p.7). These MFIs aim to improve social, economic and cultural living conditions, especially in the rural Lebanese zones (Report of the Ministry of Economy and Trade, 2014). Microcredits are ultimately granted by a dozen of financial institutions (Report of the Ministry of Economy and Trade, 2014, p.7).

Given the lack of empirical data on the characteristics of beneficiaries of microcredits coming from MFIs in Lebanon, our work will present first information on this point with their geographical location. Moreover, the activity of microfinance financial institutions in Lebanon «affects only 11.5% of the population» (IFC, 2008,

cited by Mayoukou et al., 2013, p.4), hence the importance of potential development. So, our research question is: "What are the characteristics of the beneficiaries of microcredits granted by microfinance institutions in Lebanon?" In order to answer this question, we will briefly present the definitions chosen first, based on a rapid literature review on microfinance, the Lebanese socio-economic context and an overview on the granting of microcredits by microfinance institutions in Lebanon. As a second step, the descriptive methodology will be presented, including how to obtain the empirical data available within MFIs, and the results will be proposed in a third stage. Finally, we will quickly discuss all the above mentioned and highlight their limitations as well as the proposals we can draw from them.

## 2. Literature Review

In this section, we will discuss microfinance in the literature (2.1), the Lebanese socio-economic context (2.2) and give an overview on the granting of microcredits by microfinance institutions in Lebanon (2.3).

### 2.1 Microfinance in the Literature

A certain unanimity reigns over the definition of microcredit and its peculiarities. Almost all the authors agree that microcredit corresponds to a credit with most interest, a small amount allocated to micro-enterprises, self-entrepreneurs, artisans and even individuals, which are excluded from the traditional credits offered by the classic banks services. It will be understood that the small amount allocated will enable populations not admitted by traditional banks to create, resume or develop an activity capable of generating income, but also to implement life projects such as the purchase of housing, job search, geographical mobility, follow-up training, etc.

So Lelart (2006), cited by Smahi et al., (2012, p.4) defines microfinance as « a little credit, low value, significantly lower than the credit that a company or household can solicit from a bank. This credit is claimed by people with relatively low incomes. It is often asked to develop an activity that generates income, whether it is an old activity that one would like to extend or new that one would like to create».

The origin of this type of credit can be traced back to the mountains of piety, tontines, mutuals of "Credit Agricole", even "Banques Populaires", etc. Contrary to popular belief. Microcredits do not only concern developing countries but also developed and transition countries. Let's remember that the Nobel Peace Prize of 2006 came back to the economist and entrepreneur Muhammad Yunus, Bangladeshi, to reward his role in micro crediting and the bank he created, the GRAMEEN BANK.

The importance of microcredits is estimated to be at more than 12 billion US dollars, and its beneficiaries reach nearly 200 million clients, of whom  $\frac{3}{4}$  are women. One twenty-eight million poor people, of which more than 80% of women are beneficiaries of microcredits. It is understandable why microcredit and microfinance (which includes microcredit, microinsurance, saving, etc.) are considered as privileged instruments for fighting poverty and empowering women in difficulty. More than 10,000 microfinance institutions would be present in more than 90 countries thus, showing the magnitude of the phenomenon.

Several studies have been conducted on the gender of beneficiaries of a microcredit and the results showed that microfinance does improve the empowerment of women and reduced gender discrimination (Bernstein, 2009; Hansen, 2015; Bayai and Khid, 2016). Other studies have been conducted by several types of research on the impact of microfinance on the socio-economic policies of developing countries, to know: Hulme and Mosley (1996); Wright (2000); Morduch and Haley (2002); Khandker (2003); Mosley and Steel (2004); Guérin and Doligez (2006); Duflos et al. (2009) (cited by Smahi et al., 2012, p. 2) and Feuillherade (2013) and Marku and Balili (2016). The aim of these researchers is to show how microcredits contribute to reducing the level of poverty and improve the living standards of households, particularly in developing countries. According to Smahi et al., (2012), few works show that the improvement in household living standards is attributed to microfinancing programs and not to other reasons. They find that the improvement of the living standard of the households is badly appreciated. For Algeria, in the Tlemcen region, it seems difficult to determine the impact of microfinance programs on the standard of living of households even though they cover a large population (Smahi et al., 2012). For Lebanon, the assessment affected the work of two "MFI" microfinance institutions (Al-Majmoua and Vitas) in 2010, but not the impact of their mission on household welfare. No study, to our knowledge, has targeted the effects of the granting of microcredits by MFIs in Lebanon. But before studying the impact of microfinance programs on the welfare of beneficiaries in Lebanon, it seems important to determine their characteristics by highlighting the level of poverty. In 2012, Morocco represents the country that offers the most credits with 674,302 loans, and Lebanon occupied the penultimate rank with 36,726 loans (Feuillherade, 2013). The study also showed that loans granted by MFIs reach only 1.8% of the population, hence the importance of improving what the sector can do, given the needs of the population.

## 2.2 The Lebanese Socio-economic Context

To penetrate the economy, microfinance can be seen as a starting point for people living in low-income countries (Hansen, 2015), especially those located in rural areas. Beneficiaries are more or less excluded from the banking system, which requires bonds or guarantees from family members or solvent friends, administrative fees and insurance. Although Lebanon has a banking system attractive to SMEs, but still loans for VSEs/SMEs are not fully satisfactory. The middle class has almost disappeared, given the weakness of potential revenues to accumulate. The minimum monthly wage reaches 675,000 Lebanese pounds currently or 450 dollars in a country where the house rent ranges are between 500 and 800 dollars per month, and even more in the capital Beirut. Concerning the number of people living below the poverty line in Lebanon, it «has increased by 66% since 2011, and the World Bank estimates that an additional 170,000 Lebanese have become poor between 2011 and 2014» (Kukrety, 2016). The economic growth rate, according to Trading Economics figures (2016), reached 1% in 2015 after 1.6% in 2006, 9.4% in 2007, 9.1% in 2008, 10.3% in 2009, 8% in 2010, 0.9% in 2011, 2.8% in 2012, 2.5% in 2013 and 2% in 2014. This reduction can be explained by the destabilization of Lebanon with the start of the civil war in Syria in 2011, the reception of Syrian refugees and the significant reduction in the touristic sector. These data show the need for an economic growth, especially through micro-loans granted by MFIs to people excluded from the banking system. It should be noted that women, deprived of funding (Hansen, 2015) according to the literature, must be targeted by MFIs (they presented only 24% of the labor force in 2014 in Lebanon - World Bank Report, 2015) because their needs are enormous.

## 2.3 An Overview of the Granting of Microcredits by Microfinance Institutions in Lebanon

Initiated during the civil war (Mayoukou et al., 2013), the majority of microfinance institutions in Lebanon are non-governmental organizations (NGOs) with some Lebanese anonymous companies (sal). Following an interview with Najib Choucair, Executive Director and Head of the Banking Department at the central Bank of Lebanon (BDL), we discovered that the latter encouraged the work of MFIs especially in rural areas and that only 50% of adults have Bank accounts in the country. Similarly, the BDL is in the process of increasing the number of ATMs (Automated Teller Machines) in front of banks, especially in rural areas, to boost the number of depositors in these regions. In Lebanon, Al-Majmoua and Vitas (known as Ameen) and ADR (Rural Capacity Development Association) are considered the largest microfinance institutions (Issa, 2013). On the site of the microfinance institutions "Mix Market", five institutions published limited financial information: ADR in 2011, Al-Majmoua in 2015, Emkan in 2013, Ibdaa in 2014, Makhzoumi in 2011 and Vitas in 2012. Note that the data disseminated is not related to the characteristics of the beneficiaries of the microcredit. In terms of financial data, Issa (2013) says that there is no requirement on the part of the Lebanese central bank or the government to publicly disclose financial information. The author indicates that the Planet Rating and Kiva groups only evaluated the Al-Majmoua and Vitas institutions in 2010. Planet rating found that Al-Majmoua has a «positive social impact» and Vitas «must measure its impact and refine its practices». To our knowledge, no study exists in Lebanon on the gender, the level of education, age, marital status and degree of poverty of beneficiaries of microcredit, and on their sectors of activity that preceded and/or following the obtaining of the loan. In terms of the type of beneficiaries, microfinance programs target women especially (Hansen, 2015).

Some institutions like Al-Majmoua, AEP, Makhzoumi and Tanmiyat Al-Rouwad are interested in women and carry out professional training sessions dedicated to them. On the other hand, some studies exist in terms of gender discrimination in the banking sector. According to Levy-Tadjine and Zouiten (2005) and Chebil and Levy-Tadjine (2010), women suffer from gender discrimination when granting bank credits. However, according to Wahidi and Paturel (2016), bankers do not distinguish between male and female entrepreneurs in Lebanon. Our work focuses on this point by considering whether there is any gender discrimination in obtaining microcredit from MFIs. The statistics which will be presented hereafter will, therefore, constitute first information intended to enrich knowledge in this field. Unlike the banking sector that asks for guarantees from family members or solvent friends, a salary domiciliation, high folder fees and insurance for the loan granted. According to the speech of several MFI managers, the applicant of microcredit needs only one guarantor or two (depending on the amount of the loan) who will present a certificate of their salary for the loan to be granted. It may even offer any other type of guarantee, and in case that the customer is insolvent for a specified period, the MFI will not receive the guarantee and will try to reschedule the debt as much as possible to facilitate the repayment of the borrower.

## 3. Methodology

The nature of the research (3.1), the sample and the data collection (3.2) will now be described very briefly.

### 3.1 The nature of the Research

Our work is descriptive. It aims to present information relating to the characteristics of beneficiaries of



microcredit granted by MFIs in Lebanon. Quantitative information will be provided by analyzing data obtained from statistical officers within MFIs. Based on quantitative data, qualitative data will be presented to highlight the high percentage of male beneficiaries of microcredits detected. In other words, our study aims to present information on the situation of female beneficiaries compared to men beneficiaries in terms of discrimination when granting microcredit. Qualitative information will be provided by analyzing qualitative data from semi-directive interviews conducted with MFI's administrative officials.

### 3.2 Sample and Data Collection

Our research has started by contacting the MFIs in order to have contact details of their statistical responsible. Our sample was composed of the following MFIs: Al-Majmoua, Vitas, Emkan, ADR, AEP, Hariri foundation for sustainable human development, Makhzoumi foundation, CFC, Al-Tamkeen, and ESFD (Report of the Ministry of Economy and Trade, 2014, p.7). The two institutions that no longer exist since 2016 are Alpha and Investa. We add the institution Tanmiyat Al-Rouwad which was established in 1998 and Ibdaa which was found in 2012, but are not included in the report of the Ministry of Economy and Trade of 2014. We do not ignore the existence of the AQAH institution (Al-Quard Al Hassan, 1982), but we excluded it from the study given that this entity does not follow the same loan rules as the other entities registered with the central bank of Lebanon (Issa, 2013).

Our investigation began in June 2016 and ended in October of the same year. The duration of each interview varied from 15 to 20 minutes to explain the nature of our study to those responsible. We obtained the data from seven MFIs in total: Al Tamkeen, ESFD, Al-Majmoua, Makhzoumi, AEP, ADR and Tanmiyat Al-rouwad. AEP and Tanmiyat Al-Rouwad MFIs answered all our questions by phone, providing us with approximate percentages of the points that were useful for our work.

Based on the quantitative data, a high percentage of male beneficiaries of microcredits was detected in five MFI, so a qualitative study seemed important. A semi-directive interview was conducted with MFI's administrative officials of these MFIs in January in order to present some information on the situation of female beneficiaries compared to men beneficiaries in terms of discrimination when granting a microcredit. The duration of each interview varied from 15 to 20 minutes.

Table 1. General information about MFIs in Lebanon

<b>General information on beneficiaries / Financial institutions</b>	<b>Al Tamkeen</b>	<b>ESFD</b>	<b>Al-Majmoua</b>	<b>Makhzoumi</b>	<b>AEP</b>	<b>ADR</b>	<b>Tanmiyat Al-rouwad</b>
Periods covered by the study	2003-2015	2003-2015	1994-2015	1997-2015	1984-2015	2013-2015	1998-2015
Year of creation of the MFI	2002	2000	1994	1997	1984	1998	1998
Type	NGO	NGO	NGO	NGO	NGO	NGO	NGO
Total number of loans	1786	8824	not provided	not provided	4460	13434	4000
Total value of loans	5, 193,438 \$	101,354,694 \$	not provided	not provided	18,204, 813 \$	not provided	10, 666,666 \$
Covered areas	<b>Mount Lebanon</b> (Chouf, Aley, Baabda) and <b>Bekaa</b> (Rachaya and Hasbaya)	<b>Mount Lebanon</b> 28.07% ; <b>Nabatieh</b> 23.10% ; <b>North</b> 17.97% ; <b>South</b> 13.37% ; <b>Bekaa</b> 12.62% ; <b>Beirut</b> 4.87%	not provided	<b>Beirut</b> (1997 till 2011), <b>Beirut and other areas</b> (2012 till 2015 with 40% of loans for other regions)	<b>North of Bekaa</b> (35%) North of <b>Tripoli, Saïda and Beirut</b> (65%)	<b>of Nabatieh in south Lebanon</b> (70%), <b>Mount Lebanon</b> (23%), <b>Keserwan in North</b> (3%), <b>Beirut</b> (1%)	<b>Akkar in North, Bekaa and Nabatieh</b> (50%); <b>Other areas</b> (50%)
Average amount per loan	2000 to 7000 \$	Not provided	1000 to 7000\$	50to 10406 \$	1000 \$ to 7500 \$	300 \$ to 7000\$	2000 \$ to 13000 \$

Source: Authors, from statistics compiled by MFIs statisticians in Lebanon.

#### 4. Results

Before presenting the quantitative results compiled by MFIs statisticians, it is important to mention that the responding MFIs did not provide all the necessary information, considering some of them as confidential. Therefore, we used in the tables below the term "not provided".

Other information is noted as "unavailable": this means that the MFI is not interested in this kind of information when compiling its statistics. In addition, the ADR MFI provided only information for the three years 2013, 2014 and 2015.

Table 1 shows the general information related to MFIs and the covered period of the study since their creation till 2015, except for ADR, as mentioned above. All the MFIs that responded to our call are NGOs. The table also shows the total number of loans of certain institutions and their total value. It can be seen that the beneficiaries are mainly located at Bekaa, Nabatieh and at the north such as Akkar and Tripoli. The average loan amount varies depending on the MFI between \$ 50 and \$ 13,000 maximum.

Table 2.Characteristics of MFIs beneficiaries in Lebanon

Characteristics of beneficiaries / Financial institutions	AI Tamkeen	ESFD	Almajmoua	Makhzoumi	AEP	ADR	Tanmiyat Al-rouwad
Average age of beneficiaries	(25-45)= 29.3%; (45-60)= 51.3% ; (60 and >)= 19.4%	Average age = 38 years	Average age = 40 years	Average age = 34 years	Between [25 and 40 years]	(18-35)= 45%; (36-50)=38% (50 and >)= 17%	(18-25)= 15%; (26-34)=37% (35-44)=26% (>45)= 17% (55 and >)= 5%
Gender (Average percentage of the period covered by the study)	Female = 31.4% ; <b>Male = 68.6%</b>	Female = 17% ; <b>Male= 83%</b>	Female = 43% <b>Male=57%</b>	<b>Female= 52%</b> Male = 48%	Female = 50% Male= 50%	Female = 34% <b>Male= 66%</b>	Female = 36% <b>Male=64%</b>
Marital status	Married (the majority)	Married (the majority)	Married : 68% Single : 26% Divorced : 4% widowed : 2%	Married (the majority)	Married (the majority)	Single = 25% Married= 66% Divorced= 9%	Married (the majority)
Average number of children	3 to 4 children	unavailable	unavailable	unavailable	unavailable	unavailable	unavailable
Level of education	University graduates (40%) Secondary level (60%)	unavailable	University graduates (15%) Primary level (17%) preparatory level (44%) Secondary level (15%) Trainees (7%) Analphabet (2%)	Master degree (0.4%), University graduates (13.8%), technical (7.8%), secondarylevel(20.4%), preparatory level (23.6%), primary level (28.3%), alphabet(1.1%), analphabet (3.9%), unavailable (0.7%)	unavailable	University graduates (10%), technical (4%), secondary level (19%), preparatory level (39%), primary level (25%), analphabet (3%), unavailable	University graduates and secondary level (30%), primary and preparatory level (60%), analphabet (10%)
Poverty level	Average poverty	Average poverty	Poor (11%) Non poor (89%)	Poor (81%) Non poor (19% earns more than 50 \$ per day)	Poor (75%) Non poor (25%)	unavailable	Poor (35%), Average poverty (65%)

Source: Authors, from statistics compiled by MFIs statisticians in Lebanon.

The characteristics of the beneficiaries are presented in Table 2, which gives among other things the age groups or the average age of beneficiaries. In 5 institutions out of 7, beneficiaries are men with high percentages compared to women. Most of the beneficiaries are married. The average number of children is not available

except at Al-Tamkeen. The level of education of the beneficiaries varies mainly between the primary (till grade 5) and the preparatory (till grade 9). University graduates overall remain at a low percentage, with some exceptions. Finally, referring to the level of poverty of the beneficiaries of microcredit, the responses vary between "poor" and "average poverty". We note that the level of income that refers to the level of poverty has not been specified by MFI statisticians.

The sectors of activity of the beneficiaries are presented in Table 3, which shows a high ranking for services. For some MFIs, the gap between the service sector and the trade sector is not too high. For other sectors such as industry and agriculture, their percentages are relatively low, except for AEP where agriculture represents 40% of the beneficiaries. This seemed relatively consistent because 35% of the loans goes to beneficiaries located in the Bekaa where agriculture is the main occupation of the people living there (men and women). Also note that the sector of activity preceding the granting of a credit is the same as that which follows it (the focus on the same occupation characterizes those who are allocated a microcredit) and that a small percentage goes to the financing of Start-up, this is not surprising, given the mission of the type of credit that is the subject of our work.

The data of table 2 shows a high percentage of male beneficiaries of microcredit in five MFIs: Al Tamkeen, ESFD, Almajmoua, ADR and Tanmiyat Al-rouwad. Our semi-directive interviews concerned the gender discrimination in the granting of microcredits.

Our questions were:

1. Why do the microcredits granted go more to men than to women?
2. Do you trust a man beneficiary who requests a microcredit more than a woman?
3. Are women beneficiaries familiar with MFIs?
4. Are problems of repayment noticed more in men than in women beneficiaries?

Table 3. The sectors of activity of beneficiaries before and after obtaining a microcredit in Lebanon

Characteristics of beneficiaries / Financial institutions	Al Tamkeen	ESFD	Al-Majmoua	Makhzoumi	AEP	ADR	Tanmiyat Al-Rouwad
Current Sectors of activity	<b>1-Trade</b> 471 loans (26%) <b>2-services</b> 443 (25%) <b>3-personal loan</b> 367 (20.5%) <b>4- Industry</b> 256 (14%) <b>5-Transportation</b> 142 (8%) <b>6-Agriculture</b> 101 (6%) <b>7- Crafts</b> 6 (0.5%)	<b>1-service</b> 3412 loans (38.5%) <b>2-commerce</b> 3199 (36%) <b>3-Industry</b> 1297 (14.5%) <b>4-Agriculture</b> 916 (11%)	<b>1-service</b> (47%) <b>2-Trade</b> (27%) <b>3- Industry</b> (16%) <b>4-Construction</b> (7%) <b>5-Agriculture</b> (3%)	<b>1-service</b> (39%) <b>2-trade</b> (31%) <b>3- Personal loan</b> (24%) <b>4-Agriculture</b> (4%) <b>5-Industry</b> (1%)	<b>1- Service and trade</b> (45%) <b>2-agriculture</b> (40%) <b>3- Crafts</b> (10%) <b>4-Industry</b> (5%)	<b>1-Service</b> (34%) <b>2-trade</b> (29%) <b>3-agriculture</b> (12%) <b>4-house improvement</b> (17%) <b>5- personal loan</b> (8%)	<b>1-Trade</b> (48%) <b>2-Services</b> (42%) <b>3-agriculture</b> (8%) <b>4- Industry</b> (2%)
Sectors of activity before obtaining loans	The same as the current activity	unavailable	unavailable	The same as the current activity	The same as the current activity + low % to start-up	unavailable	The same as the current activity (92%) + low % to start-up (8%)

Source: Authors, from statistics compiled by MFIs statisticians in Lebanon.

The answers to these questions can be summarized in the appendix (see Appendix for complete proofs). In analyzing their speeches, the most important sentences are the following:

We do not distinguish between male and female beneficiaries when granting a microcredit, they remain few in number compared to male beneficiaries; Man officer loans in MFI's do not trust female beneficiaries when granting microcredits and would request for a man as a guaranty (husband, brother or father); women have information about microcredits offered by MFIs, but do not take the initiative; we work on the sensitization of the woman but it remains dominated by men; a lack of information exists and we need more marketing regarding

women's microcredits; repayment problems are almost absent in women unlike men.

The results of the semi-directive interviews with MFI's administrative officials seem to show that men loans officers may distinguish between male and female beneficiaries when granting microcredit, and prefer to grant credits to men.

## 5. First Elements of Discussion

The number of women beneficiaries of loans remains low in the microfinance sector. Only one institution (Makhzoumi) out of seven MFIs who agreed to provide data that reveals a number of women receiving a microcredit that exceeds that of males with 52%. AEP figures show a near equality between male and female beneficiaries. Although Al-Majmoua is one of the MFIs working on the emancipation of women, its figures represent a significant gap, even though it is smaller when compared to the other MFIs, with the exception of two. This gender gap deserves further reflection on a possible discrimination against women.

Indeed, our results seem to highlight that women may be suffering from gender discrimination in terms of granting of loans by MFIs, as is the case of the granting of loans by the traditional bank system (Levy-Tadjine and Zouiten, 2005; Chebil and Levy-Tadjine, 2010). Although bankers do not differentiate between male or female entrepreneurs in Lebanon (Wahidi and Paturel, 2016), our first results seem to question this point at the level of MFIs. They also note the exclusion of microcredits for financing start-ups, which is not a surprise, contrary to the previous trend in relation to women, seen initially intended target of microcredit to its origin.

We can, therefore, suggest that:

MFI's administrative officials do not distinguish between male and female beneficiaries when granting a microcredit, but women remain few in number compared to male beneficiaries;

- Man officer loans in MFI's may not trust female beneficiaries when granting microcredit and request a man guaranty (husband, brother or father);
- Women beneficiaries may not be very familiar with MFIs and are less likely to contact them than males.
- Lebanese women support their husbands by applying for a microcredit when they have no right to apply for a second loan.
- Start-ups are rather excluded from microcredits granted by MFI NGOs in Lebanon if we believe the few cases we have retained;
- The beneficiaries of loans granted by MFIs in Lebanon have a generally low level of education according to the data analyzed;
- Beneficiaries are rather poor or moderately poor, which is not totally unexpected given the nature of the studied credits.

Among the limitations of our investigation, it should be remembered that we were not able to get in touch with the beneficiaries themselves who could have given us their opinions on the gender discrimination when granting a microcredit by The MFIs. This lack of triangulation of data sources is a gap that should be covered in our future work on the subject.

At the methodological level, according to N. Choucair from the Central Bank of Lebanon, Lebanese anonymous companies (sal) are subject to bank secrecy, which explains their refusal to provide us with data that is considered as confidential. Indeed, all MFIs that have agreed to make data available for us are NGOs. It is, therefore, clear that our results could be specific to the NGOs.

## 6. Conclusion

In this work, we considered the characteristics of microfinance beneficiaries granted by MFIs in Lebanon. Based on the data provided by the statisticians of NGOs MFIs, we have identified the main conclusions set out above.

On a practical level, we suggest that MFIs should be more interested in gender equality in the granting of microcredits, which refers to the ethical dimension of the problem, and to take into consideration the important number of women in Lebanon, particularly in rural areas, which can be done through more marketing on the granting of female microcredit. The call is addressed to all MFIs that will be able to strengthen the role of women in Lebanon and perhaps to reach a better social balance.

As for the theoretical level, our results confirm in a certain sense that the literature at the gender level of the beneficiary, since the Lebanese microfinance does not lead to the privilege of women. We were also able to highlight the sex of the loan officer and their attitude towards women asking for a microcredit, which must be seen as a new variable to be taken into consideration.

In terms of research prospects, women's perceptions of the low percentage of microcredits they receive from MFIs, particularly in rural areas, seem important to analyze. The comparisons which are possible at the level of different geographical areas constitute a promising track but difficult to follow for reasons of confidentiality, and a Lebanese context that is not open to research in management, especially among MFIs where opacity reigns. But this should not be overlooked if we want to better understand the equality of treatment of men and women when granting microcredits in the country.

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## Appendix

### 1. Vice-president and General Programs Coordinator: ADR

"Yes, I have time to answer your questions with pleasure. Our society is patriarchal despite the changing role of women. The man did not allow his wife to apply for a credit because he is alive. He sometimes does it when he needs additional credit although he does not have the right for a second one. The majority of loans granted to women in villages go to divorced, widowed and single women. It is not a question of trust, but a patriarchal culture where the man demands more credit. There is no lack of information among women regarding the granting of loans by MFIs, but they are still less numerous than men. At repayment problems, they are almost absent in women, unlike men. "

### 2. Communication and Administrative Officer: ESFD

"With pleasure, you can start. We find that microcredits go more to men because, in my opinion, they take more risks and initiatives. In our society, men are rather obliged to take the risk to guarantee a better life for their families. They are the person in charge of the family. It has nothing to do with it, it is not a question of trust in men more than women. Women have information about microcredits offered by MFIs but do not take the initiative. Concerning women beneficiaries, complaints at the level of letters of guarantee are extremely low compared to men ".

### 3. General Director: Al-Tamkeen

"Microcredits go more to men in general, especially in villages where the woman is at home and does not work. Their husbands refuse the idea of them working or applying for a microcredit to embark on a modest job. Men are not trusted more than women. We are hoping to increase the number of women beneficiaries because the repayment of credit goes without any problems and much better than with men. We work on the sensitization of the woman but it remains dominated by the man, like the husband for the married woman and the father or the brother for the unmarried woman ".

### 4. HR and Social Performance Manager: Al-Majmoua

"I will answer with pleasure. We find that microcredits go more to men because there is a lack of awareness regarding women. They must be more aware by MFIs in Lebanon. The loan officer does not trust a woman who applies for microcredit. He asks her for a guarantee from her husband, her brother or her father. Briefly, the guarantee of a man. We noticed this behavior among loan officers in the villages. So we decided to recruit women loan officers to replace male loan officers. Statistics show that the number of women beneficiaries has increased. So we found that the sex of the loan officer plays a vital role in determining the sex of the beneficiaries. Moreover, we offered women a personal microcredit without a guarantee, in order to increase their number. Yes, a lack of information exists and we need more marketing regarding women's microcredit. Of course, women repay credits with fewer problems than men. "

### 5. Administrative Assistant: Tanmiyat Al-Ruwwad

"Generally, a woman does not have enough courage to ask for a microcredit, especially because she is asked for a guarantee from a government employee. As you know, the majority of government employees are men. Women do not take the initiative in our eastern society. In addition, commercial projects are more related to men than to women. The woman tends to find a job and does not have an entrepreneurial spirit like a man. In some cases, the woman needs a permission from her husband if she applies for a microcredit. I give you an example, we asked the husband for his permission that his wife works at home. She wanted to turn a part of their home to a workplace. It is not related to the trust, women are not enough courageous. Maybe the sex of the loan officer plays a role. Maybe he prefers to grant the loan to a man when he is a man. Usually, women support her husband by applying for microcredit when he has no right to apply for a second loan. Women are informed about our microcredit. We distribute brochures. They do not have any repayment problems because they think 10 times before asking for a microcredit. They are already afraid. For that reason, they repay on time."

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# Implementation of E-Training in Developing Country: Empirical Evidence from Jordan

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## Abstract

This paper is to emphasize the factors that aid e-training adoption in the developing country like Jordan. This paper is based on past review literature databases. The literature recognized the role of computer self-efficacy, availability of resources and perceived support in e-training adoption. This paper using the technology acceptance model (TAM) for modelling framework and explained the importance of these variables in e-training adoption in developing country context. The author found that the combined role of computer self-efficacy, technological infrastructure, Internet facilities and technical support is critical for e-training adoption in developing countries, particularly in Jordan.

Thus, the authors proposed the combination of these variables which would encourage future research on the use of TAM in technology adoption. Research limitations/implications – This paper gives an elaboration of the role of computer self-efficacy, perceived cost, availability of resources and perceived support with TAM as base of the framework. This provides researchers the opportunity to test the proposed framework empirically and further suggest other variables that can aid e-training adoption in the context of developing country.

Practical implications – The result of this paper can serve as a guide to managers and policymakers to have a better understanding of the requirements for e-training adoption, especially in developing countries. This will go a long way towards designing good policies that could maximise e-training results.

**Keywords:** TAM, e-training, human resource development, Jordan

## 1. Introduction

Globally, intellectual workforce is seen as the key for organisations to achieve their goals and objectives. This has made many organisations to invest their resources extensively in ensuring that these work forces are properly trained. Training has evolved over the years with the advent of technology. To have workforce that are abreast with the technological age, there is a need to train technologically as well. With the speedy development of information and communications technology, electronic training has gained popularity in the organisational settings. Remaining to the growing interest in the electronic training adoption practices in recent times, in both developed and developing countries, e-training has transformed into revolutionary way of learning in most organisations (Ramayah *et al.*, 2012). This can be credited to its access flexibility, cost effectiveness and timely content. E-training has played significant roles as a means of skill training and knowledge acquisition by the employees in organisations of developed countries (Lorenzetti, 2005). Developing countries are also trying to follow the e-training trend. However, in spite of these benefits, the adoption of e-training has constituted a challenge in developing countries like Jordan due to factors such as the nature of people, resources, environment and the ease of use of technology (Heeks, 2003).

For instance, it has been stated that some employees usually go to training for the sake of the monetary benefits and not for the actual learning (Dada, 2006). Several studies have been conducted on technology adoption in developed countries. However, their findings may not be applicable to developing countries like Jordan because national culture is likely to have a great influence on the use of technology (Rouibah, 2008). Most studies have explored different motivating factors for institution's adoption of electronic learning. In previous studies, students or individual employees were mostly the main focus. It is known that employees do not have the authority for major



changes in an organization, as decisions on major changes in any organisation are usually for top management.

Therefore, the decisions about such changes are usually in the hands of the top management. Previous studies have not looked at electronic training from the perspective of management. Therefore, the present paper departs from the earlier studies in Jordan by focussing on management level in any organizations in Jordan. In institution manpower requires constant training to carry out their functions. To be current with the rest of the world in issues, particularly training issues, the adoptions of electronic training will be appropriate in the organizations of Jordan. This paper has tried to encourage technology adoption and use by establishing programmes, this raises some concern, as it has been argued that it is easy for large organisations to adopt technology (Ongori, 2009). It is important to note that e-training is not a new thing in Jordan. However, research on the factors influencing the adoption of e-training in most of the organization in Jordan is still scarce. Therefore, this study considers it appropriate and important to examine these factors.

Understanding the adoption and use of e-training by employees in organisations has been linked to some influencing factors. For example, factors such as availability of resources, perceived cost, computer self-efficacy and perceived support have been identified to have an influence on electronic training adoption in organisations (Rym *et al.*, 2013). These factors are also considered in the present paper due to inconsistencies in results. In particular, the dimension of availability of resources (technological infrastructure and Internet facilities) is extended to include power supply. It has been stated that for a successful adoption of e-training programme, organisation should ensure the availability of the necessary resources (Psycharis, 2005).

Furthermore, the variable of perceived support is included in this paper but with the dimension of organisational support, technical support and government support. The present study departs from previous studies (which employed the construct individually) by examining the combination of the three dimensions collectively. This is important because the three dimensions are very relevant to the study in Jordan where the culture, environment and mindset of the people are that in which any new development introduced is looked at with suspicion. Even when potential users believe that a given application is useful, they may at the same time believe that the system is too hard to use. The performance benefits of usage are outweighed by the effort of using the application, in which case, usage is theorised to be influenced by Perceived Ease of Use (PEU) (Agarwal and Prasad, 1999).

The study of e-training in the organizations of Jordan is very important, as it will serve as another good example in the field of e-training study. To the best of our knowledge, no known study has examined the factors influencing the adoption of e-training for employees in the organizations of Jordan. Moreover, in the area of online training that is designed to help employees carry out their task efficiently, not much research work exist (Hardman and Robertson, 2012). Therefore, the present research filled this gap by explaining the role perceived cost, computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisational support, technical support and government support play in influencing the adoption of e-training in the organizations of Jordan, using the Technology Acceptance Model (TAM) as a base.

In line with the aforementioned discussions, the objective of this paper is to examine the relationship between perceived cost, computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisation support, technical support, government support and e-training adoption. Furthermore, to see the mediating effect of TAM constructs of Perceived Usefulness (PU) and Perceived Ease of Use (PEU), this paper explains the relationship between the above-stated variables and e-training adoption.

Therefore, the research questions for this paper are as follows:

- 1) **RQ1.** What is the relationship between perceived cost, computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisation support, technical support, government support and e-training adoption?
- 2) **RQ2.** Does PEU mediate the relationship between, computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisation support, technical support, government support and e-training adoption?
- 3) **RQ3.** Does PU mediate the relationship between PEU and e-training adoption?

## 2. Technology Acceptance Model

TAM, which was developed by Davis (1989), is a model that derived its origin from the theory of reason action. TAM's purpose is to investigate what would make an individual accept or reject the use of technology. PEU and PU are the two main variables in TAM. They are used to predict an individual's intention in the use of technology. Over the years, TAM has been used to conduct several studies in the quest to predict the acceptance of technology (Abbad *et al.*, 2009). This has made TAM to be accepted as the most compelling model to

examine the acceptance of technology (Fonchamnyo, 2013). TAM is argued to be preferred in situations that are considered compulsory (Gazinoory and Afshari-Mofrad, 2011). TAM's parsimonious nature has made it to be accepted and used in several studies conducted on technology acceptance. Furthermore, the model has been proven to be successful in predicting individual's behaviour, especially in technology acceptance (Purnomo and Lee, 2013).

Findings of many studies have concurred with TAM's argument on technology adoption. Studies have argued that TAM can be broadening in various ways in its applicability (Liu *et al.*, 2009; Park, 2009; Venkatesh and Davis, 2000). This has resulted in the TAM instruments being extensively used in research to study issues that has to do with user acceptance of technology (Jebakumar and Govindaraju, 2009).

Since the development and validation of the original TAM by Davis (1989), many studies have replicated it. This has made studies to suggest that TAM can be applicable in various ways (Igarria *et al.*, 1997; Venkatesh and Davis, 2000; Ong *et al.*, 2004). Some studies have opined that TAM can be extended in the quest to further investigate user's behaviour. This has led to TAM being extended by some studies (Chau and Hu, 2001; Lee, 2006). These studies using the concept of TAM have confirmed that the perception of the user on ease of use and usefulness of technology are necessary determinants in the adoption of technology (Hashim, 2008; Purnomo and Lee, 2013). Therefore, to improve on TAM's predictive power, the addition of external variables has been suggested (Fonchamnyo, 2013).

Purnomo and Lee (2013) reported that many studies have extended TAM to examine the intervening effect of external variables on constructs of PU and PEU of technology. Furthermore, it has been suggested that TAM can be extended to include variables such as organisational support and computer background (Chau and Hu, 2001). These variables (organisational support and computer background) were argued to have an immense effect on user's intention to use technology. Gazinoory and Afshari-Mofrad (2011) used extended TAM to examine content, expert, technical support, computer self-efficacy, reliability and cultural variables in Iran.

Fonchamnyo (2013) extended TAM to include the variables of perceived cost. Other studies (Purnomo and Lee, 2013; Gazinoory and Afshari-Mofrad, 2011; Lee, 2006) have extended TAM to include computer self-efficacy. Similarly, Yiong *et al.* (2008) extended TAM to include the variable of infrastructure as technology and system. Jebakumar and Govindaraju (2009) carried out a research using TAM. Availability of Internet facilities was among the variables of their study. Furthermore, Lee *et al.* (2013) extended TAM to include the variable of organisation support. Abbad *et al.* (2009) included technical support as part of their extension of TAM. In another development, government support was included as an extension of TAM by Chong *et al.* (2010). These studies showed how an individual's decision process is affected by external variables. These studies have been carried out mostly in developed countries.

On the other hand, Brown (2002) modified TAM for developing countries. Brown's model was tested in South Africa with external variables such as ease of findings, ease of understanding, self-efficacy and computer anxiety. The role of these variables to web-based technology acceptance was examined through PEU. Brown (2002) argued that for a developing country, usage may not be influenced by PU. This increases the influencing effect of PEU on PU as well as on usage (Anandarajan *et al.*, 2002).

Sabrina (2007) argued that there is a need to test TAM in different cultural setting. Author opined that individual's behaviour may be different between developed and developing countries. Jebakumar and Govindaraju (2009) argued that all the variables of TAM are not correlated, which indicates that TAM varies from culture to culture. Therefore, the testing of behavioural models in different cultural setting is important (Sabrina, 2007). The significance of testing theories was stressed by Hubbard *et al.* (1998). The authors suggested that researchers should not relent on the testing of theories with the hinge sight of understanding factors that can be the success or failure of such theory.

Furthermore, Hunter (2001) agreed with this assertion when he argued that replication of model is also necessary by stating that external validation of theory can be achieved when models are replicated in different countries and populations. Replication was also buttressed with the argument that through replications theories can be tested and interpreted (Kerlinger and Lee, 2000). This can be in situations that are either similar or otherwise. Hubbard *et al.* (1998) had strengthened this point earlier when they argued that in the process of research, the application of the rule of replication is very important.

Hubbard *et al.* (1998) crown this all when they hailed the principles of replication as the hallmark of science. Anandarajan *et al.* (2002) pointed out that there is no universally accepted language, definitions or underpinned theories that can stand as a base for management theory which can be applied worldwide. Therefore, with reference to (Figure 1), this paper is using PEU and PU in TAM to explain the role of perceived cost, computer

self-efficacy, technological infrastructure, Internet facilities, power supply, organisational support, technical support and government support in e-training adoption in the organizations of Jordan.

### 3. Methodology

This paper highlights the important factors that contribute and influence e-training adoption in the organizations of Jordan. To highlight these variables, the researchers have gone through different databases (research papers, conceptual papers, abstracts, newspapers, magazines and books). Furthermore, different reports published in recent years and about 300 papers were reviewed to develop this paper concept. However, all those studies that were not related to e-training adoption were excluded.

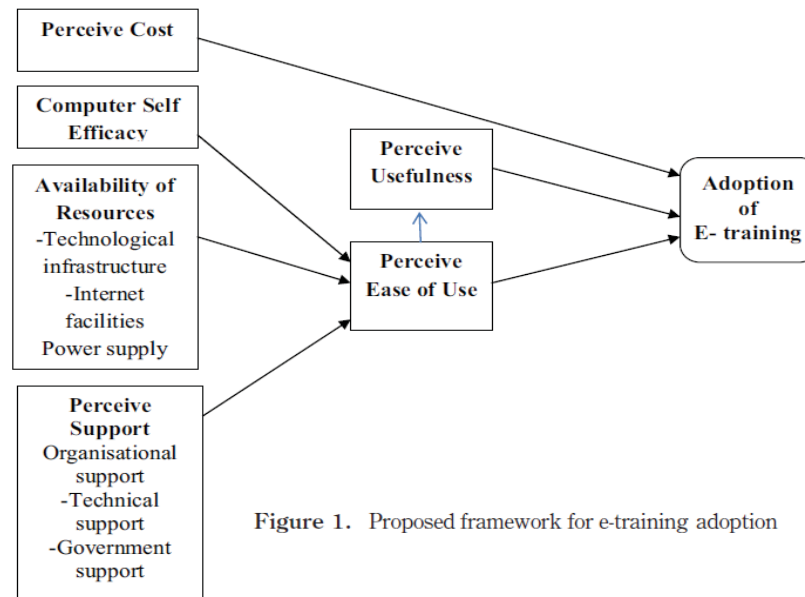


Figure 1. Proposed framework for e-training adoption

This is because this present paper is focussed on e-training adoption in developing countries. This paper is developed based on a review of past literature and, therefore, a review of the literature on e-training in Jordan.

### 4. E-Training

Electronic learning/training is the term that is used when learning/training involves using technology to educate, be it face-to-face, distance-mediated learning or pure online (Kanuka, 2006). E-training has been defined as the process of delivering skills and knowledge with the use of technology that is being mediated by Internet from an instructor to employee (Mohsin and Sulaiman, 2013). It has also been referred to as the use of technology and other educational material to train (Colin, 2003).

Furthermore, e-training has also been said to be training experience that is technologically mediated and carried out to economically improve performance in workplace to achieve personal or organisational goals (Loh *et al.*, 2013). This paper considers e-training an educational system that is web-based and enables trainees' use of network of computers and information technology in training (Hsbollah and Idris, 2009). Since Programmed Logic for Automatic Teaching Operations (PLATO) was developed in the 1960s, more interactions can be done online today (McKay and Vilela, 2011). E-learning and E-training has grown since PLATO. Globally, online learning environment has become a part of organisations (Athey, 2012). The traditional way of learning is nearly phased out with the advancement in information and communications technologies which have made learning and training more flexible. Owing to the proven ineffectiveness of conventional training, organisations now prefer using e-training (Loh *et al.*, 2013). Although e-training has not reached some countries, there is large increase in organisations and individuals using the system (McKay and Vilela, 2011).

In the Middle East, some countries have started using technology to educate and train. However, Middle East is still in the infancy stage of e-learning and training. There are issues faced in the adoption of e-training in Middle East. It was identified that lack of proper training are among the constraints of electronic learning. To successfully implement e-training system in Jordan, there is a need for proper awareness, proper computer literacy and e-training content, adequate connectivity and bandwidth (Phiri *et al.*, 2014). E-learning may not be the solution to all education-related problems in Jordan, but giving the programme consideration is been done by policymakers, as there is a strong willingness on part of stakeholders to try electronic learning and training in the

in developing countries Jordan (Oyerinde, 2014).

Jordan is aware of the impact e-learning and e-training has globally. However, Jordan is behind in the adoption and usage of technologies as seen by the low level in the diffusion of e-learning and e-training. Jordan the financial resources and people with the capability to design and deliver e-training programmes successfully, but the country is still having inadequate financial policies, low level in technological development and engineering. Jordan has not fully complied with the recommendations of United Nations Education, Scientific and Cultural Organisation of allocating to educational process. However, an attention has been given to e-learning and e-training recently, even though is it not a new trend.

Furthermore, employment into some organisations and admission processes into educational institutions are now mostly done using technology. Studies have investigated technology acceptance widely so as to have clear knowledge of factors that would support new technology usage and adoption (Loh *et al.*, 2013). Furthermore, to have successful adoption and effective implementation of e-training programme, it is important to know the factors that could encourage the adoption. Therefore, this paper explains factors that could influence e-training adoption in the organizations of Jordan

#### 4.1 PEU and PU

PEU here is used to discover the ease learners can use technology to train. The premise in TAM is that both PEU and PU have a strong impact on the behaviour of individuals with regards to the use of technology. PEU is said to be the level of confidence a user has that using a certain system would be easy. Therefore, users would accept a system that is easy to use. On the other hand, PU is the level of belief an individual has that his performance would be enhanced with the use of a certain system (Davis, 1989). If reward is linked with improved performance with the use of a system, then individuals will perceive that system to be useful. (Davis, 1989). E-training would be perceived by employees to be useful if it is easy to use and could lead to reward. In technology adoption and usage, the relationship between PEU and PU has been explained by several studies (Venkatesh and Bala, 2008; Lee *et al.*, 2013). PEU has been reported in several studies to have an effect in the usage of technology (Cheng, 2011). On the other hand, it has been argued that PU might not affect the usage of technology (Brown *et al.*, 2006). However, studies have also reported the influential role of PEU in technology usage but on the condition that the technology is found to be useful and attractive by the user (Purnomo and Lee, 2013).

Studies have reported the direct and indirect effect of PU in technology acceptance (Abbad *et al.*, 2009; Park, 2009). The mediating effect of the construct in the relationship between PEU and technology usage has also been argued (Liu *et al.*, 2009). However, it has been shown that PEU might not have a strong influence in technology acceptance (Chong *et al.*, 2010). Furthermore, the relationship between PU and PEU has been reported not to have an effect on technology acceptance (Rose and Fogarty, 2006). This shows the dependency of PEU and PU on the independent variables under examination as well as the study being carried out. Therefore, this paper proposes that: *H1*. PU intervenes the relationship between PEU and e-training adoption

#### 4.2 Perceived Cost

Cost is a very crucial issue when considering technology adoption. Perceived cost could be referred to as expenses that an organisation incurs in the process of technology adoption (Lubega and Mugarura, 2008). It has been argued that cost influences the quality of electronic training programmes that an organisation provides (Folorunso *et al.*, 2006). In broader terms, cost includes the quality of infrastructure, types and quality of e-training services that is provided to employees. Perceived costs are the resources required for e-training adoption, which include cost of hardware resources, the cost of ensuring continuity of the programme, cost of employing and retaining experts in information technology and cost of software (Folorunso *et al.*, 2006). Studies have argued that perceived cost is usually considered to be a barrier to technology usage and acquisition (Machogu and Okiko, 2012).

The cost of technology usage could be direct or indirect. The explanation is that direct cost is as significant as the indirect cost. Cost can arise from the new way of operation which includes organisational cost spent in planning, organising and putting of the new system into practice (Machogu and Okiko, 2012). Furthermore, Machogu and Okiko (2012) stated that perceived cost involves the cost of technology acquisition as well as savings that will be derived from technology usage by both organisations and employees. The attractions of returns on investments will make organisations to invest in new technology adoption (Hall and Khan, 2002). Therefore, if e-training is perceived to be beneficial, it is very likely that organisations will adopt it. Apart from quantifiable cost of technology adoption, there are also ranges of relative cost. For instance, employees have to forfeit their daily and travelling allowance for the benefit of being with their family. These relative costs are likely to

influence employees in the adoption of technology (Wu and Wang, 2005).

Furthermore, the competitiveness of technological products has gradually resulted in the cost of technologies declining over time, making technology adoptions to be easier (Middleton, 2011). This is, however, not the case for developing countries like Jordan (Adika, 2003). The adoption of e-training in the organizations of Jordan is a capital-intensive project that requires a lot of consideration. There are costs that will be recurring, while others will be competing for capital due to insufficient fund that ministries have to use for their daily operations. According to Folorunso *et al.* (2006), the major factors working against electronic learning in the Nigerian setting have to do with cost. Therefore, this paper proposes that: *P2*. Perceived cost has relationship with e-training adoption

#### 4.3 Computer Self-efficacy

Self-efficacy is an individual belief on their ability in using technology to perform certain work as well as being able to deal with any issue that may arise in the course of technology usage. Self-efficacy is defined as the perceived belief of being able to carry out action that is required to handle a particular situation (Bandura, 1982). Self-efficacy theory developed by Bandura determines the factor of behaviour with the view that behaviour is linked to self-efficacy and outcome belief. In the setting of learning and teaching, the concept of self-efficacy has been observed to be an important element (Compeau and Higgins, 1995), and when used, it leads to improved learning outcome (Hasan and Ali, 2004; Yi and Im, 2004).

Therefore, computer self-efficacy is about the confidence an individual has and the comfort they feel in relation to using technology. This goes a long way in the perception of the usefulness and ease of use of new technology (Thompson, 2010). Computer self-efficacy can then be defined as the level in which an individual believes they are able to carry out a certain job by using the computer (Compeau and Higgins, 1995). Cheng (2011) defined the term as an individual assessment of their ability to complete a certain task by applying their computer knowledge.

Mathieson (1991); Venkatesh and Davis (2000) studied the causal relationship between computer self-efficacy and PEU. They suggested that computer self-efficacy has a relationship with PEU. Their argument is that users have a positive belief in the ease of use of technology when their level of computer self-efficacy is high. Furthermore, some studies (Agarwal *et al.*, 2000; Chau and Hu, 2001; Tan, 2008) have also shown computer self-efficacy's effect on e-learning adoption. Lee (2006) in his study of the factors that influence the adoption of e-learning system has computer self-efficacy as one of the study's construct. He showed that mandatory usage of electronic learning system is necessary in technology adoption. Furthermore, he also observed that computer self-efficacy has a significant influence on PEU.

However, in a recent study conducted by Purnomo and Lee (2013), computer self-efficacy was observed not to affect either PEU or PU. It was observed that this was due to the diversity of sample selected and study settings. Some of the respondents for the study were observed to be good in computer and Internet usage. In the organizations of Jordan, computer literacy is an issue. As it has been shown that there are contradicting effects of computer self-efficacy on PEU, this paper proposes that: *P3*. Computer self-efficacy has a relationship with PEU in e-training adoption.

#### 4.4 Technological Infrastructure

Information technological infrastructure could be referred to as the technological backbone of communications, data, computers and basic systems (Earl, 1989). He viewed infrastructure as framework which guides organisations in satisfying their needs. (McKay and Brockway 1989) gave their definition of technological infrastructure as the enabling foundation in which organisation depend on in the sharing of information technology. Technological infrastructure has also been looked at as part of technological architecture (Nchunge *et al.*, 2013). Furthermore, (Duncan, 1995) defined information communication technological infrastructure as that part of technological resources that makes it possible for innovations as well as continuous improvement in technological systems. Bhattacharjee and Hikmet (2008) referred to it as the shared technological system which is required for the implementation of information and technology in organisations. This paper considers technological infrastructure as the physical technological resources that will aid e-training process to take place.

The operations of organisations have been greatly influenced by the developments in technological infrastructure. This can be seen in the strengthening of the world economy which has been transformed into information- and knowledge-based economies (Nchunge *et al.*, 2013). This has made many organisations particularly in the developed countries to use technology to stay in operation. It has been shown that technological infrastructure is an important organisational capability that should be considered an effective source of value (Bharadwaj, 2000).

To have successful e-training in an organisation, there is a need for appropriate technological medium and channels to allow for sharing of information and communications (Selim, 2005; Folorunso *et al.*, 2006). It is necessary to ensure that the infrastructures are reliable, up to date and of good quality. Reliable technological infrastructure will encourage employees to learn and willing to accept e-training (Yiong *et al.*, 2008).

Technological infrastructure has been observed to have relations with technology adoption, acceptance and usage (Bhattacharjee and Hikmet, 2008; Folorunso *et al.*, 2006; Maughan, 2005; Ozgen, 2012; Yiong *et al.*, 2008). However, Thompson (2010) reported a contradicting result in his study of factors that determines technology usage. The results suggested that there was no statistical proof that infrastructure support might have influence on technology usage. Therefore, this paper proposes that: *P4*. Technological infrastructure has a relationship with PEU in e-training adoption.

#### 4.5 Internet Facilities

Researchers (Keeney, 1999; LaRose *et al.*, 1998) have argued that instruction done over the Internet is significant in learning as well as in training. Forsyth (2001) defined Internet in its simplest form as “an electronic mail system and library access facility”. Martin (2003) gave his definition of Internet as a set of systems that enables two or more computers to send and receive information from one another. For this study, Internet facility refers to the availability of open standard network connectivity to aid the adoption of e-training. Availability of Internet facilities as a factor in e-training adoption is a necessity. The availability of Internet facilities will provide greater convenience, thereby enhancing the acceptance of e-training adoption. Passmore (2000) included Internet as one of the resources that aid web-based course delivery. Martins and Kellermanns (2004) argued that in technology acceptance, Internet facility is a critical factor. In electronic training, effective communication between trainers and trainees is done mostly via the Internet. Furthermore, it has been argued that less stress and dissatisfaction on access and connectivity could enhance the acceptance of electronic training as well as its success (Hara and Kling, 2000). The availability of Internet facilities helps in facilitating smooth information exchange (Webster and Hackly, 1997).

It has also been argued that Internet facilities allow learners to receive innovations from trainers in learning that will help in stimulating and enhancing learning (Brown, 2002). Manipulations, creativity and initiatives from both learners and trainers are very much supported with the presence of Internet facilities. Furthermore, Saade and Bahli (2005) argued that for electronic learning to be beneficial Internet facilities should be available and the learning environment should not be perceived to be complex. This perceived complexity may be distracting and discouraging to learners in accepting electronic training.

In recent times, almost every learning activity can be conducted via the Internet. Adika (2003) explained that when people have access to Internet, it will make them use technology more. Studies have shown the usefulness and ease that the availability of Internet facilities has on electronic learning (Jebakumar and Govindaraju, 2009; Martins and Kellermanns, 2004). Therefore, this paper proposes that: *P5*. Internet facilities have a relationship with PEU in e-training.

#### 4.6 Power Supply

Notwithstanding the significance of power supply to technology, there appears to be scarce literature on the effect of power supply on technology adoption. Power is said to be *the generation of electrical energy from power plant system which connects electric networks from the plant to consumer's appliances* (Hamburg and Valdma, 2011). It is an obvious reality that having access to power supply in any economy is a benefit worth having. Nowadays, power supply is required in all part of human living, for survival and development. The way of life and the level of a country's industrialisation can be measured by her power supply and its utilisation. Power supply is so essential for economic advancement of countries, such that an economy can halt without it. Consequently, power supply that is generally accessible, moderate and dependable is required in any economy for significant development.

Unlike developed countries that do not have the issue of inadequate power supply in technology adoption, studies and reports have indicated that insufficient supply of power is regarded as one of the hindrances in using technology to train in developing nations (Clayton, 2014). Several studies agreed to this (Folorunso *et al.*, 2006). This goes to show that when power supply is stable and accessible, technology would be easy to adopt and vice versa. Therefore this paper proposes that: *P6*. Power supply has a relationship with PEU in e-training adoption.

#### 4.7 Organizational Support

Organisational support refers to endorsement, encouragement of employees and positive attitude of the organisation in the provision of training information, system development and operations (Anandarajan *et al.*,

2002). Organisational support theory (OST), advanced by Eisenberger *et al.* (1986), has the premise that organisations give their employees assurance and emotional support by considering the concept and reward principle of social exchange. According to this theory, employees work for and are dedicated to organisations based on that organisation's concern for them. On this premise, Likert (1967) argued that a mutual support relationship based on the need for self-fulfilment should be formed by members and leaders in an organisation. He further argued that followers will respond positively to leader's decision when they perceived that they are valued, cared for and supported and vice versa.

The implication of OST is that employee's expectations of the organisations' concern are improved. This will make employees oblige to help in the achievements of set objectives. OST also offers to enhance the emotional commitment of employees to the organisation as well as reducing turnover and strengthening the cohesion of the organisation (Wu, 2009). Therefore, effective use of technology could be affected by organisational support (Anandarajan *et al.*, 2002). In their studies, Anandarajan *et al.* (2002) suggested that a lack of organisational support is a critical barrier to technology usage. They argue that organisational support and technology usage are associated. It has also been stressed that for electronic learning to be successfully implemented in organisations, there is certainly the need for organisational support (Selim, 2005). This support is to be inclusive of e-training platforms, good policies, incentives, making available information and technical assistance.

In many organisations, e-training has become one of the issues given high priority. This is to make training and development of employees easy without having to relocate them out of the work environments. Many organisations changed from the traditional training method to e-training for the economic factor, as the latter is considered cheaper (Strother, 2002). Even though many organisations are adopting the use of information and communications technology to train employees, some organisations have still not supported the e-training platform. This is evident in the non-expansion of significant resources to support electronic training (Sawang *et al.*, 2013). This leads to problems for users that are new to the system of electronic training (Sawang *et al.*, 2013). However, studies (Anakwe *et al.*, 2000) have greatly highlighted the issues of organisational support in technology adoption literature. With sufficient support, employees are bound to be comfortable with using information and communications technology to train. It has been argued that because electronic learning is often introduced at a very fast pace, employees require extensive support and guide on how the system is to be used. Sawang *et al.* (2013) further stressed this point that the lack of organisational support can affect employee's usage of electronic system negatively.

It is welcoming for employees when organisation shows supporting attitude, concern, acceptance and consideration for their needs (Anandarajan *et al.*, 2002). Organisational support helps to enhance favourable attitudes from employees. This would also help in changing employee's perception towards technology usage, usefulness as well as ease of use (Davis *et al.*, 1989). Employee's trust will be enhanced, enabling them to integrate technology usage into practice when there is organisational support (Lee *et al.*, 2013). Although (Aggorowati *et al.* 2012) showed no relationship between organisational support and PEU, (Fishbein and Ajzen 1975) documented the possible relationship between system usage and organisational support. Likewise, Lee *et al.* (2013) also showed that there could be relationship between organisational support and PEU. Furthermore, (Anakwe *et al.* 2000) and (Kim *et al.* 2006) suggested that organisational support could be associated with PU and PEU. Therefore, organisational support could increase employee's trust of the organisation. This trust is likely to make employees believe that the organisation would provide all that is required for technology adoption. When this happens, employees are likely to believe that using technology to learn would be easy. This might encourage them to try new technology. Given these arguments, this paper proposes that: *P7*. Organisational support has a relationship with PEU in e-training adoption.

#### 4.8 Technical Support

Technical support has been defined as a computer company provision of services to assist customers that are experiencing difficulty in using that particular product. Technical support in this study refers to the availability of personnel that are experts in information technology to assist in e-training adoption. These include answering questions and solving problems that may emerge during usage. These experts are expected to also provide instructions and support to users before and during the usage of information technology system. Furthermore, technical support is seen as a facilitating factor in the acceptance and adoption of technology (Rym *et al.*, 2013). Ngai *et al.* (2007) in their study of adoption of web course tools extended TAM with technical support as an external factor. (Williams 2002) argued that one of the factors that can help in the acceptance of a new technology is technical support. This is because facilitating factors such as technical support give users the sense of safety in technology usage (Venkatesh, 1999).

Furthermore, it has also been suggested that the availability of technical support is very necessary in the technology adoption (Ngai *et al.*, 2007). To them, technical support being a facilitating factor may be a determinant of PEU. Studies have also observed that in system usage, PU and PEU might be influenced by technical support (Gazinoory and Afshari-Mofrad, 2011; Ndubisi and Jantan, 2003). They argued that technical assistance is one of the factors that could help instil positive attitude towards technology acceptance in learning.

Furthermore, a lack of technical support has been suggested to be one of the barriers to electronic learning adoption (Muilenburg and Berge, 2005). The influence of technical support on technology acceptance has varied over the years. Over the course of time, researchers have studied the variable of technical support as either a sub-construct of other variable (Bhattacharjee and Hikmet, 2008; Yiong *et al.*, 2008) or as a construct on its own (Abbad *et al.*, 2009; Gazinoory and Afshari-Mofrad, 2011). Although technical support in the study conducted by Bhattacharjee and Hikmet (2008) was a sub-construct of organisational support, it was explicitly shown to reflect the assistance and support needed for technology acceptance. In whatever form technical support is studied, it is important to note the crucial role that this factor plays in technology adoption.

Therefore, to prevent technology barrier, decision-makers should provide learners with necessary technical support (Kidd, 2010). This is to say that the level of technical support that is provided to employees by specialised staff is important in technology adoption. It is attributed to the fact that technology usage and satisfaction would be promoted when the level of technical support is high (Bhethcherjee and Hikmet, 2008; Thompson, 2010). The reverse effect is what would happen when there is low level of technical support. When this negative effect happens, it shows a lack of commitment from the organisation. Meanwhile, it has been documented that the availability of technical support has a positive effect on electronic learning (Alhomod and Shafi, 2013; Masie, 2001; Selim, 2005). When technical support is available, employees would not be sceptical about the organisation adopting e-training. It is a belief that would make usage easy for them.

Therefore, this paper proposes that: *P8*. Technical support has a relationship with PEU in e-training adoption.

#### 4.9 Government Support

One of the strong influencing factors to be considered in technology adoption is the support of government (Jaruwachirathanakul and Fink, 2005; Tornatzky and Klein, 1982). Government support refers to the regulations, financial backing and encouragement that are received from government in relation to technology adoption and implementation. This support can be in the form of investment in infrastructure (Chong and Ooi, 2008; Chong *et al.*, 2010). In countries like Japan, Malaysia and Singapore, technology adoption rate is high due to government investment in technology (Chong *et al.*, 2010). This has given support to the argument that government support has an influence on technology adoption. When an economy is centrally driven and planned by the government, there is a need for them to play the crucial role of encouraging the citizenry in technology adoption (Chong *et al.*, 2010). This can be achieved by making good policies, providing necessary finance, investment in technology and providing needed infrastructure to ease smooth implementation (Hoang, 2003; Chong *et al.*, 2010).

When the necessary requirement is available, technology adoption is more feasible (Goh, 1995). The Organisation for Economic Co-operation and Development has argued that government support to technology adoption increases returns from investments in research and development, thereby enhancing industrial strength (Macharia, and Nyakwende, 2009). The civil service being the backbone of the public sector in Nigeria, with government investment in the appropriate infrastructure, it will go a long way towards contributing to the economic growth of the country. This gives strength to the argument that government support is an important factor in technology adoption, especially in developing countries (Chong *et al.*, 2010; Daniel and Jonathan, 2013). These studies have shown the significance of having government backing when considering technology adoption. Thus, government support has a strong influence on technology acceptance and usage (Chong *et al.*, 2010). As stated earlier, Internet facilities, technological infrastructure and power supply are facilities that are necessary for smooth adoption and usage of e-training. These facilities require serious attention in Jordan. However, with government support, these issues can be resolved to make e-training adoption easy. *P9*. Government support has a relationship with PEU in e-training adoption.

### 5. Discussion and Future Research Direction

After an extensive review of the literature, this paper framework was developed as shown in (Figure 1). The framework is based on (Davis's (1989) TAM, following Brown's (2002) modification of the model for developing countries. Brown's model was tested in developing country with external variables such as ease of findings, ease of understanding, self-efficacy and computer anxiety. The role of these variables to web-based technology acceptance was examined through PEU. Brown (2002) argued that for a developing country, usage might not be influenced by PU. This increases the influencing effect of PEU on PU as well as on usage



(Anandarajan *et al.*, 2002). The model that is proposed in this paper concentrates on the factors that could influence e-training adoption in the Jordan context.

This paper highlights the role of perceived cost, computer self-efficacy, availability of resources and perceived support on e-training adoption. The suggested framework is for effective adoption of e-training in developing countries, particularly in the organizations of Jordan. It has been argued that TAM varies from culture to culture (Jebakumar and Govindaraju, 2009). Culture has been observed to influence individual behaviour. Therefore, replication and applicability testing of behavioural models in different cultural setting and population is necessary for more empirical validation (Kerlinger and Lee, 2000). Therefore, TAM should be tested and replicated in different cultural settings (Sabrina, 2007).

Adoption of electronic training in public sector has been linked to influencing factors such as availability of resource, perceived cost, computer self-efficacy and perceived support (Abbad *et al.*, 2009; Rym *et al.*, 2013). These factors have been studied separately and also in different combination.

This paper proposes the combination of factors of perceived cost, computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisational support, technical support and government support. This departs from the combined factors of previous studies. It also differs in the sense that these factors have not been tested in the Jordan context.

The proposed model indicates a direct relationship between perceived cost and e-training adoption. The variable of perceived cost is included in this paper due to the fact that e-training adoption involves cost-related issues. For instance, computers are required for e-training to occur. Therefore, it is important to consider the cost implication of providing technological infrastructure as well as the personnel that will aid successful e-training adoption. The quality of electronic training programme has been argued to be influenced by cost (Folorunso *et al.*, 2006).

As discussed earlier that e-training involved the use of computer, this paper included the variable of computer self-efficacy. This is because there is a need:

- for employees to be computer literate before they can be involved in e-training process;
- to assess computer literacy level of employees in the Nigerian civil service as discussed earlier;
- to re-examine the variable due to the inconsistency results found in the previous studies on the relationship between the variable and PEU (Purnomo and Lee, 2013).

Furthermore, availability of resources is chosen as one of the independent variables in this paper, due to the fact that for e-training to be adopted in the organizations of Jordan, there is a need to have technological infrastructure, Internet facilities and power supply. As mentioned previously, these are the dimensions of availability of resources. It has been argued that organisation should ensure the availability of the necessary resources for successful adoption of technological programmes (Psycharis, 2005). The organizations of Jordan are ridden with obsolete technological infrastructure, Internet and power supply are inadequate. These are facilities that are of great necessity to e-training adoption. Therefore, there is a need to assess the effect these variables have on e-training adoption in the organizations of Jordan.

Perceive support is also included as a variable in this study due to the fact that adopting e-training is a major project and as such would require all the necessary support. The variable of organisational support, technical support and government support are included as dimensions of perceive support. Everything involving technology requires the support of experts for smooth and continuous operation.

This paper suggests linking the e-training adoption to influencing factors of computer self-efficacy, technological infrastructure, Internet facilities, power supply, organisational support, technical support and government support. The link is made through the TAM construct of PEU, whereas perceived cost is proposed as having a direct relationship to e-training adoption. Paper suggests that future researchers should test empirically the relationships of these factors to e-training through both constructs of PEU and PU in different settings. This is to further confirm the premise of TAM. Researcher should also highlight other factors which can influence e-training adoption in developing country context and test this model to strengthen the e-training literature.

## 6. Implications

This paper highlights the factors Implementation of E-Training in Developing Country particularly in Jordan. It also serves to provide more understanding regarding e-training in the workplace, what needs to be done to improve the situation and further improve human resource development in the organizations of Jordan. The adoption of e-training plays an important role in increasing awareness of the use technology in the workplace, increasing learning culture, integrating e-training in work activities and understanding in depth the potentialities of communication and information tools.

Moreover, this paper has an effect on organisations in developing countries that e-training is been considered as an alternative to the conventional training of the classroom. This paper shows that with e-training, organisational performance could be much better, making the civil service move forward to another way of engaging as well as delivering knowledge to building a skilful workforce. Furthermore, with the adoption of e-training, facilities such as power supply, Internet and computers can be put in place that can improve the outlook of the civil service, removing it from the category of organisation that is ridden with obsolete infrastructure and conservatism. With e-training adoption, the cost that is usually associated with traditional training can be reduced and invested in other aspects of the organisation. E-training adoption benefits can motivate decision-makers to seek support of higher authority in the provision of finance and infrastructure to the organisation. This can help to improve the workforce, leading to more contribution in the country's growth, thereby making policymakers in the civil service to understand the use and need for e-training in the sector.

The theoretical implication of this study rests on examining the role the constructs of the study play in e-training adoption in the organizations of Jordan. This study proposes the combination of variables with TAM as a base for e-training adoption in the organizations of Jordan, which departs from past studies. This is done empirically to support TAM for developing countries. This study model was developed based on Brown's (2002) TAM for developing countries. It was also developed based on the peculiar nature of the organizations of Jordan of being conservative in their operations. The combination of the constructs of perceived cost, computer self-efficacy, technological infrastructure, internet facilities, power supply, organisational support, technical support and government support has not been tested in the Jordan context.

Furthermore, this paper adds to the body of knowledge on e-training adoption that already exists. This was done by generating the literature on the study variables. This study also helps in testing the ability of TAM in technology adoption in developing countries, particularly in the organizations of Jordan. In addition, this study serves as a point of reference for future researchers in the area of e-training. This paper has contributed to TAM literature by using the combination of the aforementioned factors.

Another significance of this paper is that it could assist managers and policymakers to get better knowledge about the e-training adoption, proposed factors influencing e-training adoption, PEU and PU. This would go a long way towards helping them in designing policies that would maximise e-training results. In view of the importance of technology in any economy, this paper recommends that

Policy-makers should formulate policies that would gear the expenditure of federal government of Jordan towards ensuring adequate support, provision of infrastructure and power supply. If this is done, it would be capable of promoting technology adoption in the country to the extent of enhancing the nation's economic well-being.

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# The Impact of Mobile Device Use on Shopper Behaviour in Store: An Empirical Research on Grocery Retailing

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## Abstract

Over the last decade, retailers and manufacturers alike are increasing their attention to the role of instore mobile technology use with the aim to understand its impact on consumers' decision making process. The rise of the mobile channel, in fact, has produced disruptive changes in shopping habits designed to gradually reduce the effectiveness of in-store marketing levers in influencing shopping behaviour.

This topic is of paramount importance in grocery sector since retailers and manufacturers devote a lot of investments in instore marketing activities with the aim to influence consumers' decisions and stimulate impulse purchases. Nevertheless, there are few contributions about the influence of the mobile technology in a retail setting and its effects on buying behavior inside the store.

Our research intends to explore the impact of in-store mobile technology use on shopper behavior instore in order to understand its effects on planned versus unplanned purchases. According to our preliminary results, consumers using mobile technology instore make less unplanned items and fail to purchase more planned items. Moreover, the use of mobile technology negatively impacts shoppers' ability to recall in-store stimuli. Our findings are interesting for both retailers and manufacturers who are looking for new ways to better address their marketing efforts and increase consumers' engagement instore.

**Keywords:** mobile devices, in-store stimuli, unplanned purchases, shopping behavior, grocery retailing

## 1. Introduction

The growing penetration of mobile devices has significantly altered consumers' behavior and generally the way we live and work. From a simple communication device, developments in smartphone technology have changed consumers' lives, and not always for the better. Smartphone dependence has become a global phenomenon, particularly in Italy. According to a recent research (Global Mobile Consumer Survey, 2015), Italians are the first in Europe for using their mobile phone while spending time with family or friends (74%), when in a business meeting (42%) and while driving (31%). Millions of Italian consumers check their smartphones constantly, day and night. They wake to the sound of their phone alarms, use them to check news and notifications. Indeed, Italians are the first in Europe for doing so even without having heard their phones ring: 68% of Italians admit to check their phone unprompted by a notification. Finally, Italy is the European country with the highest number of users that connect to the internet through their mobile network allowance rather than through Wi-Fi.

Digitalization has significantly impacted the business landscape and managers have become interested in designing new strategies that could improve their profitability by taking advantage of technological innovations (Riasi and Pourmiri, 2015). One of the most appealing targets for marketing managers is the customers' decision making process in the digital world (Ansari and Riasi, 2016).

The widespread mobile connectivity and the gradual development of new technology have not only changed the way we interact and communicate, but have significantly impacted on consumer decision-making process. Consumers in a retail setting use this tool with different purposes: finding information on the web, comparing pricing and purchasing goods and services (Bellini, Cardinali & Grandi, 2016). Therefore it becomes crucial to understand how the mobile influences the decision-making process as well as the buying behavior of shoppers. The growing penetration of mobile devices has provided firms with an unprecedented opportunity to engage consumers but to know how to take advantages from this tool it is important to investigate the impact of mobile



devices on consumer outcomes. Manufacturers and retailers are worried that the mobile could potentially distract the customer from the products and services offered within the store.

The analysis of the factors influencing the consumer's decision making process inside the store has always interested researchers (Kollat & Willet, 1967; Iyer & Ahlawat, 1987; Iyer, 1989; Donovan, Rossiter, Marcolyn & Nesdale, 1994; Inman, Winer & Ferraro, 2009; Mohan, Sivakumaran & Sharma, 2013; Shankar, 2014; Bellini et al., 2016). Nevertheless, the impact and the role of mobile technologies, such as smartphones and other mobile devices, is a subject still little explored. Along with the modernization of the retail system and the increasingly important role played by retailers in terms of consumer choices, the knowledge and analysis of what influences the shopper inside the store and how to increase demand for their product/service and brands are fundamental questions both for retailers and manufactures. The presence or absence of the shopping list and its form are variables that affect further on consumer behavior within the store, determining the amount of planned and impulse purchases (Block & Morwitz, 1999). While the first are products that consumers plan to buy before entering the store, the second type defines unplanned purchases, which arise inside the store, determined by one or more stimuli (Beatty & Ferrell, 1998).

Our research aims to investigate the influence of in-store mobile technology use on consumers' purchase behavior in order to understand its effects on the marketing stimuli produced by the retailer inside the store. Our findings will suggest retailers and manufacturers new ways to capture the attention of consumers and increase the involvement of the consumer inside the store in order to better address their marketing efforts.

The paper is organized as follows. First, a literature review about decision-making process and mobile use in grocery retailing is presented (par. 2). Secondly, we present our hypotheses (par. 3) and the methodology used (par. 4). Then, we present and discuss our findings (par. 5). Finally, the last two sections are devoted to conclusion and managerial implications (par. 6), limitations and future direction (par. 7).

## **2. Theoretical Framework**

### *2.1 Decision-making Process and Mobile Use*

Mobile technologies can reduce search cost and improve the quality of consumer choice (Haubl & Trifts, 2000; Murray & Haubl 2008). Despite the positive expectations, in many cases research acknowledges that these devices can create unintended consequences and damage the lives of individuals in terms of visual and cognitive impairments (Strayer & Johnston, 2001; Strayer, Drews & Johnston, 2003). In particular, previous researches identify the dangerous consequences of mobile technology use while driving, discovering that people simultaneously using or conversing on a smartphone and driving a vehicle miss twice as many traffic signals as people not using a phone. (Brookhuis, Karel, De Vries & De Waard, 1991; Briem and Hedman, 1995; Strayer & Johnston, 2001; Strayer et al., 2003; Drews, Pasupathi & Strayer, 2008).

These results are consistent with psychological theories, that identify the attentional capacity as well as attentional limitations of individuals' mental system dealing with simultaneous tasks (Welford & Traviss, 1952; Broadbent, 1958; Kahneman, 1973; Norman & Bobrow, 1975; Navon & Gophers, 1980; Fagot & Pashler, 1992; Pashler & Johnston, 1998) and the conceptualization of distraction as the act of diverting or directing attentional resources from a focal object to another (source of distraction) or apportioning attentional resources in multiple directions (Strayer & Johnston, 2001; Lavie, Hirst, De Fockert & Viding, 2004; Lavie, 2005; Inman & Sciandra, 2013).

Mobile use has attracted not only the greatest media interest, but also the interest of marketing scholars conscious about the effect of the widespread mobile connectivity on consumer decision-making process. Mobile technologies have been considered a resource for helping consumers make better decisions (Sciandra, 2014).

The decision making process is a complex and long path characterized by different stages which take place both in and out of store (Puccinelli et al., 2009): it starts when consumer's needs emerge, goes on with information seeking and evaluation of different alternatives and ends up with purchase decision and post-purchase considerations.

In a retail environment, mobile devices and new applications for smartphones allow shoppers to scan product barcodes, compare prices across retailers or obtain digital coupons to be redeemed in store. The usage of technologies in pre-shopping phase could help shoppers to make better decision and being less influenced by the environment while expending less effort inside the store (Bellini et al., 2016). Therefore, digital tools may have positive effects on both the quality and the efficiency of purchase decisions inside the store.

## *2.2 Decision-making Process and Mobile Use in Grocery Retailing: How Mobile Influences Pre-shopping Preparation*

Starting from the 90's, several authors have started to investigate the role of the point of sale in consumers' decisions (Hirshman & Holbrook, 1982; Bucklin & Lattin, 1991; Donovan et al., 1994; Beatty & Ferrel, 1998; Bell, Corsten & Knox, 2011) on the belief that it was possible to stimulate purchases not planned before towards profitable products and/or categories (Inman et al., 2009). Shoppers recognize the ability of retailers to generate immediate desires and they try to limit this effect by activating some "self-control strategies", which are strategies oriented to control impulsiveness in order to be less conditioned by instore stimuli (Hoch & Loewenstein, 1991; Cheema & Soman, 2006).

The tendency of self-regulation is emphasized by the growing penetration of digital technology, which enables consumers to prepare the shopping expedition with different tools: digital shopping list, on-line price comparison, consultation of digital flyers and usage of apps. In particular, the diffusion of mobile devices has enabled consumers to search for product and pricing information anywhere at any time, both outside and inside the store (Silveira & Marreiros, 2014). As a consequence, consumers today enter the store much more prepared than in the past, and they are able to shop quickly only looking for products they had planned to buy (Bellini et al., 2016). The degree of grocery shopping preparation is found to influence shopper behaviour inside the store in terms of planned/impulse buying: the higher is the degree of preparation, the greater is the tendency to plan purchases and the lower is the tendency to make impulse purchases (Bellini et al., 2016). To conclude, the usage of technologies during the pre-shopping phase could help shoppers to make better decision and being less influenced by the environment while expending less effort inside the store. Such trends are designed to influence shopping behavior instore in terms of planned vs unplanned purchases (Bellini, Cardinali & Grandi, 2017).

## *2.3 Decision-making Process and Mobile Use in Grocery Retailing: How Mobile Influences Shopping Behavior Instore*

Concerning with the retail setting, the distraction caused by mobile might make invisible some of the products within the store, leading to a less efficient communication and therefore to fewer impulse purchases. The role that mobile devices play in consumer decisions in a retail setting is an extremely interesting area but less unexplored yet.

The role of the mobile may be different depending on the type of use that is done. In particular, we can identify two different categories: a use related to the task you are doing and, conversely, a use that is unrelated to the task (Sciandra & Inman, 2014). According to this classification, we can investigate the effects of the mobile technology in relation to the situation, as well as to the decision that the individual must take. In the perspective of the consumers within a retail setting, the task that the consumers need to do is to complete their shopping expedition, observing a precompiled shopping list, if any. Using this categorization, we can identify when shoppers use mobile in a way connected to shopping and when they use it for other activities and, consequently, to study the effects that occur in either case.

According to Sciandra & Inman (2014), task-unrelated mobile device use occurs when a consumer uses the mobile device in a manner that is not directly related to the focal decision task and includes uses such as engaging in private conversations, sending personal text messages, checking emails, and surfing the Internet. Conversely, task-related mobile device use occurs when a consumer uses the mobile device in a manner that is directly related to the focal decision task. Task-related device use is becoming particularly important in retail environments and includes uses such as comparing prices, accessing digital shopping lists, using mobile shopping applications, and calling someone for help with a decision.

One of the biggest differences between task-related and task-unrelated mobile device use is that consumers' expenditure of cognitive resources during task-related use is directly related to the decision task. Shoppers using devices in a shopping-related manner may better provided to track items or to evaluate spending. The amount remaining in the budget during a shopping expedition influences consumer decision making and spending (Stilley, Karen, Inman & Wakefield, 2010). As a consequence, consumers who perceive a budgetary surplus make more unplanned purchases (Beatty & Ferrell, 1998).

If consumers use mobile technology in a shopping-related manner, they are able to track unplanned purchases and continuously update their budgetary figure to stay within intended spending limits. So the use of mobile phones related to shopping has the potential to help the consumer during the purchase making process. In this way, the shopper is able to identify the best substitute products over products which had planned the purchase and to avoid buying additional products not previously planned. When consumers use the mobile in a way that is not related to the shopping task, they will be more distracted and so the use of mobile will have a negative

impact on individual decision-making process. The mobile distraction can indeed hinder the processing of information and consumer decision-making that might easily fail to purchase planned items, together with the fact that the shopper will be less influenced by the in-store communication of retailers that will therefore be less effective (Inman & Sciandra, 2013).

### 3. Research Aims and Hypotheses

Our study aims to gather more information on the effects of instore mobile technologies use on shopper's purchasing behavior in Italy, which is the European country with the highest penetration of the mobile devices. We suppose that the growing usage of mobile technology during the shopping expedition could distract consumers who risk losing their attention towards marketing stimuli instore. As a consequence, instore marketing activities (promotions, extra displays, communications, extra activities, etc.) might become less effectiveness in stimulating unplanned purchases.

Previous research stated the key role that in-store stimuli and displays play in influencing shoppers (Inman et al., 2009; Stilley et al., 2010; Inman & Sciandra, 2013), acknowledge the impact that technological distraction can have on individuals' visual attention and state the distractive nature of mobile technologies, resulting in shoppers missing in-store cues (Strayer et al., 2003; Hyman et al., 2010; Inman & Sciandra, 2013). According to these findings, we state our first hypotheses:

*H1: Consumers using mobile devices in store will be less able to recall marketing stimuli produced by retailers in the retail setting, compared to consumers not using mobile devices.*

The impact of mobile devices on the effectiveness of instore communication could lead fewer unplanned purchases. These effects, however, could be different depending on the connection between the mobile and the shopping activity. In line with prior research (Sciandra & Inmann, 2014), we made a distinction between consumers using mobile technology in a shopping related manner and consumers using mobile devices for shopping-unrelated use. We argue that shoppers using mobile device, both in a related and unrelated manner, will make fewer unplanned purchases compared to consumers not using mobile devices but for different reasons due to the different purchase and decision making model behind them. When used in a task-unrelated manner, shoppers will make fewer unplanned purchases because they are more distracted and they give less attention towards instore stimuli. When used in a task-related manner, shoppers will make fewer unplanned purchases because they are better equipped to stay on track during the shopping trip. Compared to consumers using mobile in a shopping unrelated manner, we expect that they will make more unplanned purchases due to the fact that they are able to identify more attractive alternatives for shopping. So, the number of unplanned purchases is a result of a conscious decision due to the fact that the mobile device is enriching the decision making process.

These considerations lead to the following hypothesis:

*H2: Consumers using mobile technologies in a shopping-unrelated manner will be more distracted during the shopping trip and they will make fewer unplanned purchases compared to consumers not using mobile devices or using mobile devices in a shopping-related manner.*

*H3: Consumers using mobile technologies in a shopping-related manner will be better equipped to stay on track during the shopping trip and they will make fewer unplanned purchases compared to consumers not using mobile devices.*

Mobile device use will impact unplanned purchases, but in-store mobile technology use may influence planned purchases as well. Specifically, it was stated that shopping-unrelated use may change shoppers' decisions related to planned items altering the number of items planned but not purchased. As a result, the shoppers will fail to purchase more planned items and could spend less than what they expected. On the contrary, shoppers using their devices in a shopping-related manner are in a better position to identify less expensive or more attractive alternatives for planned items because the mobile device is acting as an additional tool to aid in decision making (Sciandra & Inmann, 2014). Hence, these shoppers are more likely to move away from a planned item to a superior alternative and may delay a planned purchase if a more attractive price or item is found through a different channel, for example online or at a different retailer. So, considering shoppers using their device in a shopping-related manner we could state that the number of planned but not purchased items is due simply to the fact that their mobile device is enriching the decision making process. These considerations lead to our final hypotheses.

*H4 - Consumers using mobile technologies in a shopping-unrelated manner, will be more distracted and they will have a great number of planned but not purchased items in their shopping list compared to consumers not using mobile devices or using a mobile device in a shopping-related manner.*

#### 4. Methodology

To test these hypotheses, we used a single-stage mall-intercept survey method to collect data using a process similar to previous studies (Beatty & Ferrell, 1998; Sharma, Sivakumaran & Marshall, 2010; Mohan & Sharma, 2013, Sciandra & Inmann 2014). A leading Italian grocery retailer gave us the permission to conduct our survey in its stores. We selected the hypermarket store format assuming that, given its big sales area, people spend more time inside and there could be a higher probability of using the mobile. Moreover, considering the variety of the range and promotions, we can assume that shoppers are more likely use their smartphone to compare prices and search for information about products or promotions.

Shoppers were intercepted after the checkout and requested to answer to a structured questionnaire. A total of 112 shoppers were interviewed, but 28 individuals were then excluded because they did not have a written or digital shopping list. Consequently, our sample was composed of 84 individuals: 86% of them had a printed list while the remaining 14% had a digital list. Table 1 illustrates the demographics characteristic of the sample.

Table 1. Demographics characteristic of the sample

Statistics			Age group				Total
			18 – 35	36 – 55	56 – 65	Over 65	
Gender	Women	Count	28	22	10	1	61
		% within Gender	45.9%	36.1%	16.4%	1.6%	100%
		% within Age group	77.8%	75.9%	55.6%	100%	72.6%
	Men	Count	8	7	8	0	23
		% within Gender	34.8%	30.4%	34.8%	0%	100%
		% within Age group	22.2%	24.1%	44.4%	0%	27.4%
Total	Count	36	29	18	1	84	
	% within Gender	42.9%	34.5%	21.4%	1.2%	100%	
	% within Age group	100%	100%	100%	100%	100%	

According to previous research (Sciandra & Inmann, 2014) we first classified the mobile technology use. We indicated a shopping-related usage if the respondents indicated they used their phone to compare prices of products, to create or access a shopping list, to compare different retailers for the best price, to look at a retailer's website or at a manufacturer's website, to scan a QR code on a package, and/or to call someone for help with a decision. Mobile technology use, instead, was classified as shopping-unrelated if the respondents indicated they used their phone to make or receive calls, to send and reply to personal messages, to control their social networks, to check or send emails, to look at websites not related to the shopping trip, to listen to music, and/or to play.

As shows in Table 2, 28.6% of the respondents used the phone while shopping, while 71.4% did not used it.

Table 2. Mobile usage during the shopping expedition

		Mobile usage during the Shopping expedition	
		No	Yes
Gender	Women	72.1%	27.9%
	Men	69.6%	30.4%
<b>Total</b>		<b>71.4%</b>	<b>28.6%</b>

In detail, most of the shoppers, 70.8% of the total, uses the mobile device for activities not related to shopping, such as to make or receive personal calls, send or read messages or to check social networks. On the contrary, the remaining 29.2% employs mobile for a use related to the shopping experience, especially to watch the shopping list, to count, to control prices and promotions, or seek alternatives (see Table 3).

Table 3. Mobile usage in store

USE	PERCENT
<b>Shopping-Related</b>	<b>29.2%</b>
To look for information and product recommendations	12.5%
To look for information about promotions	8.3%
To watch the shopping list	4.2%
To make calculations	4.2%
<b>Shopping-Unrelated</b>	<b>70.8%</b>
To answer or make private phone calls	49.9%
To answer or send personal messages	16.7%
To check the social networks	4.2%

The interview focused on the stimuli produced within the store, trying to figure out whether there was a relationship between mobile usage and the memory of product promotions and advertisements displayed in the store, as well as the presence or absence of promoters. So, we investigated the number of products that consumers can call to mind, considering both products in promotion and advertised by the promoters.

Finally, it was required to customers the shopping list, if any, and the ticket, in order to identify which products they had planned to purchase, which ones they had missed and which they had purchases impulsiveness. In this way it was possible to calculate the difference between the number of products that they had planned to purchase but that have not been purchased and the number of excess products present in the basket in relation to the shopping list (unplanned purchases). According to Sciandra & Inmann (2014), we built two variables: the number of unplanned purchases, operationalized as the total number of items that were purchased by the shopper but were not planned prior to beginning the shopping trip; the number of items planned but not purchased, operationalized as the number of items that the shopper planned to purchase prior to beginning the shopping trip but subsequently failed to purchase.

## 5. Findings and Discussion

Hypothesis 1 addresses the impact of in-store mobile technology on the effectiveness of instore communication. Shoppers using the mobile pay less attention to the shopping environment. Therefore they are less prone to marketing stimuli that are produced in store by the retailers. In particular, the number of promoted products that consumers could remember was on average 0.68, greater for those who did not use the mobile while shopping, against 0.33 for shoppers who used the mobile during their shopping expedition (Table 4).

Furthermore, those who did not use mobile phone had a greater memory with regard to the presence of promoters inside the store (0.33 against 0.08 for shoppers who used the mobile, see Table 4), and could therefore be more susceptible to a possible impulse buy. Conversely, those who used the mobile did not remember the presence of promoters and therefore couldn't even recall the brand or product promoted or communicated by the promoters in store with on average 0.54 product remembered against 1.60 products remembered by shoppers who did not use mobile technology in store (see Table 4).

Table 4. Impact of in-store mobile usage on the effectiveness of instore communication

		Mobile usage during the Shopping expedition	N	Mean	Std. Deviation	Std. Error Mean
(a)	Can you remember some of the promotional products on display in store?	No	60	<b>.68</b>	.469	.061
		Yes	24	<b>.33</b>	.482	.098
(b)	How many items do you remember?	No	60	<b>1.60</b>	1.317	.170
		Yes	24	<b>.54</b>	.884	.180
(c)	Have you noticed the presence of Promoters in the store?	No	60	<b>.33</b>	.475	.061
		Yes	24	<b>.08</b>	.282	.058

(a)  $F=9.401$   $P\text{-value}=0.003$ ; (b)  $F=9.401$   $P\text{-value}=0.003$ ; (c)  $F=9.401$   $P\text{-value}=0.003$ .

According to Hypothesis 1, the recall, refer to either the promoters than the products, is much greater for those shoppers who have not used the mobile purchase during their shopping experience, so mobile devices can result in a loss of shoppers' ability to recall in-store marketing stimuli because of mobile distraction. This should be an alarm bell for the retailers, as their efforts may be ineffective. Therefore, it is necessary to seek alternative methods to capture the attention of the consumer in the store environment.

Hypotheses 2 and 3 address the impact of in-store mobile technology use on the number of unplanned purchases. In comparison to shopper not using a mobile device in-store or using a mobile device in a task-related manner, we find that consumers using mobile technology in a shopping-unrelated manner made, on average, fewer unplanned purchases (see Table 5). These results provide support for Hypothesis 2 according to the theory that mobile device use consumes attentional resources and makes in-store communication strategies, made by the retailers, less effective.

Moreover, our findings show that shoppers using a mobile device in a task-related manner made fewer purchases compared to consumers not using mobile devices (Table 5). These results provide support for Hypothesis 3 according to which shoppers using mobile device in a task-related manner make fewer unplanned purchases because they are better equipped to stay on track during the shopping trip. However, compared to consumers using mobile in a shopping unrelated manner, we find that they made more unplanned purchases due to the fact that they are able to identify more attractive alternatives for shopping. Therefore, in this case, the number of unplanned purchases is a result of a conscious decision and not a result of a mobile distraction.

Table 5. Impact of in-store mobile usage on unplanned purchases

	Mobile Use	N	Mean	Std. Deviation
Unplanned Purchases	No mobile use	60	<b>2.22</b>	5.352
	Shopping related	7	<b>1.86</b>	3.185
	Shopping unrelated	17	<b>.94</b>	3.881

F=0.439; P-value=0.646

Compared to shoppers not using mobile devices or using a mobile device in a shopping-related manner, shoppers using their smartphones in a shopping-unrelated manner failed to purchase more planned items. As shows in Table 6, they had, on average, a greater number of planned but not purchased items. These results provide support for Hypothesis 4 and specifically, using mobile technology in a manner that is unrelated to the shopping purpose increased planned but not purchased items. Therefore shopping-unrelated mobile device may contribute to missing or forgetting planned items according to the conceptualization that the distraction of unrelated-devices use can prevent shoppers' ability to recall to their mind items intended for purchases or to read items written in their shopping list. Conversely, shoppers who use the mobile device in a shopping-related manner show a marked improvement in accuracy in shopping, with a number of forgotten purchases on average close to zero. So we could state that items planned but not purchased might be a result of mobile distraction and no longer a result of a conscious decision making process.

Table 6. Impact of in-store mobile usage on planned but not purchased items

	Mobile Use	N	Mean	Std. Deviation
Planned but not purchased items	No mobile use	60	<b>.17</b>	.717
	Shopping related	7	<b>.00</b>	.000
	Shopping unrelated	17	<b>.35</b>	1.057

F=0.619; P-value=0.541

These results are consistent with the conceptualization that the distraction of unrelated-device use can reduce shoppers' ability to recall or read items intended for purchase (Sciandra & Inmann, 2014). Since these shoppers are making fewer unplanned purchases and fewer substitute item purchases, this implies that items not purchased may be a result of distraction rather than a conscious decision. This is a potential negative outcome both for consumers and retailers suggesting that shopping-unrelated mobile device may contribute to missing or forgetting planned items.

## 6. Conclusions and Managerial Implications

The role of in-store stimuli in influencing shoppers' behaviour inside the point of sales is well studied in marketing literature (Inman et al., 2009; Stillely et al., 2010; Inman & Sciandra, 2013). Recently, many authors have increased their attention on the impact that technological distraction can have on individuals' attention towards marketing stimuli, stating the distractive nature of mobile technologies (Strayer et al., 2003; Hyman et al., 2010; Inman & Sciandra, 2013).

Based on this framework, the main goal of our work was to investigate the influence of instore mobile use in consumer's decisions in a retail context. This topic is becoming more and more interesting because of the increasing penetration of mobile technologies. Consumers are becoming increasingly reliant on these technologies in their everyday lives (Global Mobile Consumer Survey, 2015), thus understanding the role that mobile devices play in shaping consumer decision-making in a retail context is interesting for both retailers and manufacturers.

Our findings show that shoppers using the mobile pay less attention to the shopping environment. Therefore they are less prone to instore marketing stimuli, so they make fewer unplanned purchases. The number of promoted products that consumers could remember, in fact, was greater for those who did not use the mobile while shopping comparing to shoppers who used the mobile during their shopping expedition. This could represent a new big treat for retailers and manufactures who devote many resources to the practice of shopper marketing with the aim to influence consumers along and beyond the entire path-to-purchase (Shankar, 2011). The growing penetration of digital technologies has produced significant changes in shopping habits designed to create a new scenario for shopper marketing. Today consumers enter the store much more prepared and they are able to make shopping quickly, only looking for products they had planned to buy, guided by a digital shopping list, digital coupons or printed customized promotions (Bellini et al., 2016).

The increasing penetration of mobile devices has reinforced this phenomenon, since the mobile is not used only during the shopping preparation to collect information, as shown in Bellini et al. (2016), but it could be used during the shopping expedition in store as a guide for the purchases.

Furthermore, as emerged in our research, during the shopping expedition the mobile is frequently used for personal activities: only a small percentage of our sample (29.2%) uses the mobile in a task-related manner. This trend makes the threats for shopper marketing activities bigger as consumers using the mobile in a task-unrelated manner are the more distracted. In-store mobile technology use has significant implications for consumers and retailers including the purchase of fewer unplanned items, failing to purchase planned items, and altering the perception of marketing stimuli produced by the retailers in store.

In line with prior research (Sciandra & Inmann, 2014), the impact on unplanned purchases depends on the type of mobile device use on consumers decisions. We find that shoppers using mobile in a task-unrelated manner make fewer unplanned purchases compared to those using mobile in a task-related manner. While these results could appear somewhat incongruent, we argue that the higher unplanned purchases made by shopper using device in a task-related manner compared to shoppers using device in a task-unrelated manner might be a result of a conscious decision making process. For task-related mobile device use, prior research identify access to information and decision monitoring as critical factors contributing to enhanced decision-making (Sciandra & Inmann, 2014). Therefore, shoppers may pass over a planned item and may decide to buy a product not planned before if they found it more attractive. These unplanned purchases may be attributed to enhanced decision making capabilities afforded by device use. These considerations are consistent with the literature according to which shoppers using mobile device in a task-related manner should be in a better position to manage and track their decisions. Conversely, task-unrelated device use negatively affects consumer decisions.

In line with these results, we find that task-unrelated mobile device use is positively associated with omitted items, confirming that there is a cognitive distraction hampering shoppers' ability to make decisions. Specifically, shoppers using mobile devices appear to be distracted by the mobile technology, especially who use the mobile in a shopping-unrelated manner. As a result, they forget to purchase some products they plan to buy and, above all, end up noticing much less the products displayed in store. For these subjects can be also noticed a reduced effectiveness of promotions and overall stimulus played in store.

Finally, shoppers using their mobile phone instore (regardless of their use related or unrelated to the shopping mission), are less subject to communication and to marketing stimuli produced in the retail environment. While good for consumers, as mobile devices can potentially protect them from unplanned purchases stimulated by in-store promotions, this should be a wake-up alarm for the retailer, since its efforts could also be inefficient.

Along with the reduced effectiveness of the retailers' communication, our results also suggest retailers to be careful because using a mobile device potentially results in consumers failing to purchase items that they intended to purchase and shoppers may leave planned items on the shelf and spend less overall.

The findings we summarized offer significant implications for managers. The effects of mobile device use on purchasing decisions instore are designed to create a new scenario for the practice of shopper marketing. Retailers and manufacturers have to seek for new ways to capture consumers' attention in store, conscious that consumers are becoming increasingly reliant on digital technologies and mobile device usage in the retail context will probably increase in the next years.

Considering that the more negative effects for retailers are coming from a task-unrelated manner device use (associated with the fewest unplanned purchases and the highest omitted products), managers may be able to encourage shoppers to utilize their mobile devices in a task-related ways while shopping. This might be accomplished by creating mobile application useful for reducing the negative implications related to in-store device use such as missed in-store stimuli or missed planned items.

## **7. Limitations and Future Research**

While our research has valuable contributions, it also has some limitations. First, some limitations are associated with the store-intercepted survey research such as measurement error and interviewer effects. Respondents may have been influenced by the presence of interviewers and then distorted in order not to appear impulsive buyers. Another concern is about the generalizability. Our sample is too small to be considered as representative of any larger population. Some of our results sounds not significant, thus we have to extend our research, enlarging the sample and introducing new hypotheses. This study, however, wants to be a first investigation about the influence of mobile device use on shopping decisions instore. It is just a first step which will open considerable opportunity for future research.

We intend to expand our study enlarging the sample of shoppers interviewed and examining in more depth the phenomenon. In particular, we would like to better investigate the differences in shopping behavior between task-related and task-unrelated mobile device use, as Sciandra and Inman did (Sciandra & Inman, 2014).

Moreover, our future research will explore the influence of mobile device use on purchases at the checkout corner. This has always been recognized as the better area where stimulating impulse purchases, catching the attention of shoppers who are waiting for the checkout. The mobile device use, however, could reduce the effectiveness of the checkout in influencing unplanned purchases as consumers use the mobile in order to deceive the wait and pay less attention to the products displayed.

In the retail competitive environment, it seems that both commercial and industrial firms must compete with the mobile in order to capture the attention of consumers who are increasingly distracted. Indeed, retailers need to find new ways to establish a long lasting relationship with their customers, in order to gain a competitive advantage. A collaboration between retailers and manufactures might be the right answer for dealing with the phenomenon turning it from a threat into an opportunity.

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# How Much Am I Selling It for? Approaches and Methods of Patents Valuation in Technology Transfer Processes

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## Abstract

Patent has assumed a protagonism in the transformation of knowledge and technology to allow some kind of economic exploration. However, researchers have some problems to define the correct value of their patent to sell it to industries or governments. The purpose of this paper is to explore the approaches and methods of patents valuation, especially in technology transfer process between universities-industries. It was made the review and examination cost-based, market-based and income-based approaches and their corresponding methods of patents valuation: Incurred-cost, costing, comparison-based and real options. Patent valuation will be presented to researchers, managers and other actors involved with innovation with the aim of creating at the universities their own valuation model focused on a better technology transfer process within industries, and consequently generate additional profits to the university third mission.

**Keywords:** patent, valuation, university, technology transfer, approaches, methods

## 1. Introduction

Universities have always been involved in technology transfer activities (Geuna & Muscio, 2009), which are not something actually new because the university-industry collaboration begin back to the 1.800s (Borrell & Damian, 2010). However, only in early 1.980s, the number of universities that actively created ways for selling their ideas, technologies or products to industries or governments started to grow up (Ranga & Garzik, 2015).

The result has been a reformulation of the researchers-inventors goals (Audretsch et al., 2014) which requires nowadays entrepreneurship and technology transfer competences able to generate, use, apply and explore academic results outside academic environment (Molas-Gallart & Castro-Martínez, 2007). Nevertheless, it is an opportunity to go on with the opening of universities with the intention of starting an exchange outside the scientific environment and finding answers to social issues (Pausits, 2015).

Furthermore, patents or otherwise intellectual property protections to safeguard academic results represents a predisposition to allow some kind of exploration of these intellectual properties by industries or governments (Jensen & Thursby, 1998; Siegel et al., 2003). In this context, patents assume a protagonism into the transformation of knowledge and technology to marketable products (Etzkowitz & Leydesdorff, 2000; Grimaldi & Grandi, 2005).

Thursby et al. (2001) and Frietsch et al. (2014), describes patent as a set of exclusive rights granted normally by a sovereign state according to national laws and international agreements to an inventor or assignee for a limited period of time to make, use and sell it, as well to exclude others from any kind of exploitation. In addition, a patent application must reveal all details of the invention, so that others can use it to further advance technology with new inventions (Jensen & Thursby, 1998).

Definitely, selling products or technologies patents to non-academic institutions is not such a simple task for researchers-inventors, because there are many legal and practical limitations that do not concern daily activities of researchers (Wright et al., 2004; Ambos et al., 2008). However, regardless of the researcher-inventor fieldwork and experiences, the patent valuation is one of the most difficult steps on technology transfer process (Wu & Tseng, 2006; Taheri & Geenhuizen, 2016).

In this context, the purpose of this paper is to analyze the approaches and methods of patents valuation, reference on the technology transfer process between universities-industries. The core argument is that the approaches and methods of patents valuation must be understood as a management tool that allows researchers to conduct a better commercialization process within industries. The methodology of this paper was designed to employ an inductive approach, in which it was made the review and examination of literature with intersections of patents valuation methods, technology transfer and other related themes.

This paper is organized in the following way: a discussion of the literature review in Section 2 about the technology transfer and commercialization. In section 3, it is placed the approaches and methods of patents valuation. The Section 4 is placed by the conclusions with the limitations of the research and directions for further researches.

## 2. Technology Transfer and Commercialization

With the aim of improving the innovation performance and build a competitive advantage for industries as well as universities, technology transfer plays an important role in the interface between basic science and product development (Ranga & Garzik, 2015). Therefore, technology transfer can be defined by the movement of technology via some communication channels from one place to another, for example, from a university to an organization, or from a country to another (Rogers et al., 2001; Guan et al., 2006; Zhao & Reism, 1992).

AUTM (2002) indicate points out the technology transfer as a process of transferring scientific findings from one organization to another. Gervais et al., (2016), on the other hand, point as a combination of activities that requires a multidimensional approach with a long-term process of interaction between organizations. Bukala (2008) also puts the technology transfer as an interaction instrument between two or more organizations during a knowledge or technical producing process to create a new product or service.

Nevertheless, technology transfer is not just a movement or delivery innovation. It is a dynamic, complicated and a multidisciplinary process whose success owes to factors coming from other sources (Jafari et al., 2014). Burhanuddin et al., (2009) argue that it is usually considered as a dissemination of information, harmonizing technology with needs and creative adaptation of items for new applications. In addition, technology transfer involves any kind of activities and processes through the incorporated products, processes, or knowledge which are passed from one user to another (Besant & Rush, 1993).

The dynamic nature of technology transfer has contributed to the existence of many definitions and concepts (Chapple et al., 2005). However, based on literature studies (Etzkowitz & Leydesdorff, 2000; Phan & Siegel, 2006; Ranga & Etzkowitz, 2013; Audretsch et al., 2014), it is evident that technology transfer has a wide conceptualization, because it refers to use, mobilization, application, exchange, development and management related to a product, service, technology and knowledge.

Bozeman (2000) argues that the definition of technology transfer sometimes can create a misunderstanding due to different references involved. However, the point is: it will be successful when the technology will be brought into the market, with a purpose for further use and commercialization (AUTM, 2002; Geuna & Muscio, 2009). It is also important to note that analyzing and understanding technology transfer from universities into marketable ideas thus becomes one of the most important topics in academic research (Audretsch et al., 2014).

The technology transfer in a university-industry interaction perspective is able to produce innumerable benefits to society through promoting industries competitive advance and consequently improving national and regional economic growth (Phan & Siegel, 2006; Perkmann et al., 2013). Although, these benefits in the universities are mainly focused on maximizing social return on public investment in research and effort to improve universities' self-sustenance (Gervais et al., 2016), creating revenue, which is typically reinvested in academic research (Chapple et al., 2005).

Furthermore, Zhao and Reism (1992) argue that the term "transfer" in addition with "technology", is usually involved in a "sale" of such technology. For this reason, the term "commercialization of technology" is found in several studies (Siegel et al., 2003; Chapple et al., 2005; Geisler & Turchetti, 2015; Mattila & Lehtimaki, 2016).

According to Geisler and Turchetti (2015), the main purpose of technology transfer is to generate a commercialization process in which the outcomes from researches play an important role in society. These outcomes are related to introducing a new idea, a technological solution, a product, a service, a process, a policy, an organizational form or a firm to the market (Markmann et al., 2005; Mattila & Lehtimaki, 2016). Consequently, commercialization is related to all universities activities that are involved in achieving a new technology or any finding resulting from academic campus and the attempt to incorporate these results into the market (Geuna &

Muscio, 2009). Audretsch et al. (2014) emphasizes the key of technology transfer process in universities is to make the results marketable.

Perkmann et al. (2013) indicate that one of the universities commercialization goals is to generate intellectual property (invention disclosures and patenting) as well as its commercial exploitation by the creation of spinout companies or the licensing of inventions. It is important to recognize that the university based technology commercialization processes usually include a discovery, assessment for patentability and eventual attempts to transfer and license to the industry (Markmann et al., 2005)

However, this process depends on many factors to be successful, which includes, but are not limited to: inducements, engagement, network, policies, culture, resources and barriers (Siegel et al., 2003; Geisler & Turchetti, 2015). Managing the technology transfer for commercial profit is a huge challenge, it can be painful and difficult to achieve (Wright et al., 2004; Ambos et al., 2008). Therefore, commercialization among universities, industries and other players cannot succeed without boundary-spanning activities in the organizations involved (Taheri & Geenhuizen, 2016).

Patents or otherwise protection to safeguard university's intellectual property represents a disposition to allow some kind of exploration from industries or governments (Jensen & Thursby, 1998; Siegel et al., 2003). Hence, license or otherwise commercialization mechanism represent an exploration of thus outcomes research with the objective to obtain financial rewards (Perkmann et al., 2013).

In this context, patents assume a protagonism into the transformation of knowledge and technology to marketable products (Etzkowitz & Leydesdorff, 2000; Grimaldi & Grandi, 2011). Geisler & Turchetti (2015) mentioned that the number of patents jointly authored by the university and industry is a strong indication about the level of technology transfer between the organizations.

Despite evidence of some improvement in the commercialization process in recent years, there are still many gaps in universities that need to be mitigated or minimized to ensure that innovation will reach the market. One of these gaps is that researchers are having troubles to define the correct value of the patent that is going to be sold to the industries (Markmann et al., 2005) because the financial gains from this commercialization must cover or preferentially generate profits on the investments made by the universities (Mattila & Lehtimäki, 2016)

The problem arises because information on technology cannot be provided like goods in general and, as a result, the role of a technology valuation as a complementary measure becomes very important (Baek et al., 2007; Yu & Azevedo, 2008). Therefore, not all patents are equal and all patents have different economic impact, making careful selection and consideration of valuation procedures necessary (Wu & Tseng, 2006). Next, the main approaches and methods of patent valuation will be presented to aiming researchers, managers and other actors involved with innovation. All these characters are going to design at universities their own valuation model focused on a better technology transfer process between the industries, and consequently generate a financial gain wanted.

### **3. Approaches and Methods of Patents Valuation**

The term valuation refers to the task of determining the monetary value of an asset, object, technology, or entity over its future financial performance (Boer, 1999; Yu & Azevedo, 2008). The task is quite similar to what investors normally hold on stock exchanges (Pitkethly, 1997) since valuation is determined on the basis of economic scenarios and return on investment analyzes (Amaral et al., 2014).

As patents valuation is the main scope of this paper, it must be understood as a task of establishing the monetary value of a new idea, of a new technology or of a new product to be commercialized for those interested in its economic exploitation in the future (Pitkethly, 1997; Geisler & Turchetti, 2015; Mattila & Lehtimäki, 2016).

Usually, patents from universities are valued for future licensing, royalties and acquisitions by industries. However, the main reason for valuing a patent is to maximize its value and, consequently, become an additional source of revenue for universities that reinvest in research (Tukoff-Guimarães et al., 2014).

Several authors (Smith & Parr, 2000; Pitkethly, 1997; Hall, 2004; Wu & Tseng, 2006) define three basic groups of patent valuation methodology: cost-based, market-based and income-based. Universities or inventor-researchers should choose one of three approaches, each one of them will embrace several methods that will determine how patent valuation will be carried out.

#### *3.1 Cost-based Approach*

This type of approach aims to determine the monetary value of the patent in relation to its development cost, in other words, how much was actually spent to create this new technology or product (Carte, 2005). This cost refers to the investments made from the development of the research to the patenting process, and the value of the total

cost will serve as an initial basis to determine the sales value of this patent.

This approach can be used in two distinct marketing situations. The first refers to when the university or researcher-inventor seeks to determine all the amount spent on the development of this new technology or product and it has, as main objective, to recover the investment made. The second situation refers to the industries (potential buyers of the patent), since they can estimate the cost of inputs, equipment, taxes, among other things, to obtain this patent and to estimate the purchase value of it (Smith & Parr, 2000).

For Santos and Santiago (2008), this approach has as its main advantage, to be a simplified process where the costs are determined directly with the information raised by the university or industry. The value of patents for new technologies is very high, since most of them have no similarity in the market, which makes valuation very difficult through market-based and income-based approaches (Martin & Drews, 2006). However, this approach does not allow to determine the monetary benefits that a patent can bring in the future (Pitkethly, 1997), which is why Amaral et al. (2014) recommends that it should only be used only when there is insufficient information about future or market incomes.

Based on this approach, it is possible to use several patent valuation methods according to studies by Pitkethly (1997), Carvalho (2003), Wernke (2004), Hall (2004), Wu and Tseng (2006). However, this paper will only address the two main methods: Sunk cost and Costing.

### 3.1.1 Sunk Cost

For Carvalho (2003), this method is based on the concepts of cost accounting, in which the cost incurred is understood as the expenditure related to the goods or services used in the production of other goods or services. Smith and Parr (2000) adds that cost incurred is any expenditure that is directly or indirectly linked to the production effort of a good or service.

In this way, the cost method includes direct and indirect costs based on the patent produced, that is, all costs that are naturally identified by the cost object. These direct costs are those directly appropriated to the development, and indirect costs are not directly linked to the patent, being appropriate through apportionment parameters in which it comprises the division of several accounting items (Ferreira, 2007). The identification of direct costs during the conduct of research or the innovation process is more easily identified than the identification of indirect costs. Consequently, it is necessary to determine apportionment criteria to appropriate the indirect costs to the total cost of the patent (Amaral et al., 2014).

Wernke (2004) emphasizes that this method aims to clearly define all the financial operations used for the development of a patent, since the costs can be grouped and organized according to their origins in order to produce information that will serve as a basis for defining the value of the patent to be marketed.

### 3.1.2 Costing Approach

According to Souza (2008) the costing method should be understood as a set of technical and accounting elements that can be managed harmonically in order to create a desired financial map. For Leone (2000), this method provides an opportunity for current financial results to be analyzed and also to identify tax liabilities. Crepaldi (2004) understands that the costing method assists the process to determine the value of the patent, since it provides information in which it is possible to create correlations between cost, volume of production and profit.

According to Martin and Drews (2006), the costing method becomes extremely interesting for purposes of patent valuation, considering that fixed costs are understood as the financial efforts of the university or of the researcher to have the operational conditions to carry out the research, as well as identify the costs by grouping direct and indirect costs. It should be noted that these fixed and variable costs are easy to identify since the organization and financial control of them are the responsibility of the university or the responsibility of the researcher.

According to Smith and Parr (2000), there are different ways of classifying the costing method. The first is related to its production activity (cost per order of production or process). The second is related to the form of appropriation (standard, absorption or direct variable). Bruni and Famá (2004) adds that the costing method must be used with extreme care, since it has management purposes and often its theoretical concepts are not applicable to the commercialization of patents.

## 3.2 Market-based Approach

This approach is the most used by researchers-inventors, because it seeks to find the real and present value of a similar patent in the market. Martin and Drews (2006) points out that in this real value, tangible and intangible assets are included and the difference between the market value and the book value is close to the sales value of this patent. In economic terms, Wu and Tseng (2006) emphasize that in this approach, the patent has two values since

the cost of developing the patent becomes the minimum value of commercialization while the demand (quantity of possible buyers) determines the sale value.

For Flignor and Orozco (2006) the market-focused approach usually occurs in two steps. The first is the screening, where the processes of similar commercial transactions of this patent are located. The second is the adjustment stage, when the parameters for the analysis of this valuation are defined by techniques, interpretations and estimates of data in the market. However, to take a market-based approach, it is necessary to have reliable accounting data for an impartial analysis as well as several similar patent statistics (Baek et al., 2007).

This approach has the advantage of defining the value of the patent to be sold closer to those used in the market. On the other hand, a very large amount of business information is required in which the patent is inserted for valuation to succeed (Martin & Drews, 2006; Flignor & Orozco, 2006). Among them, the following stand out: consolidated and reliable bibliography; support from renowned international institutions; as well as a database of the research institution (Tukoff-Guimarães et al, 2014). However, since some information on commercial transactions is kept confidential, this approach may be impaired because the comparison may become impracticable.

### 3.2.1 Comparison-based Method

The comparative-based method is the most intuitive of all valuation methods by comparing the same items in different places. According to Smith and Parr (2000), it is the method used by the researchers-inventors, because when estimating re-creation costs based on previous research and adding an estimated future value of this patent, it is possible to easily and quickly obtain a value that is compatible with the market.

Meanwhile, since most patents have very specific characteristics and their marketing transactions are restricted among the parts involved, this method may become impractical in the brand valuation process. Ross (1997) points out two basic premises for applying this method successfully: own an environment with a great deal of information about the process of buying and selling similar patents, as well as the identification and access of these commercial contracts. Baek et al. (2007) add that this method should only be used when there is similar information on development costs and commercial transactions available in the market for the comparison to be carried out effectively.

### 3.3 *Income-based Approach*

HIPO (2011) conceptualizes the approach with focus on the income as a slope that qualifies the future potential of possible generations of values from the commercial exploitation of the patent. Flignor and Orozco (2006) point out that this approach uses the basic premise of definitions that the value of the patent to be marketed is determined by the ability to generate future income for its owners.

Pitkethly (1997) points out that this approach is more complex than cost or market ones, since it requires a greater volume of data to generate future cash flows. Some factors are essential in this approach to determine patent valuation, such as an estimation of sales revenues, shelf life and market acceptance risk. HIPO (2011) complements that it is essential to know the forecast of discount rates, market, competition and financial returns from the exploitation of this new asset or technology.

Based on this approach, the authors Pitkethly (1997), Hall (2004), Flignor and Orozco (2006), Martin and Drews (2006) and Baek et al. (2007) present several methods. But in this paper, the method will be approached by real options because it is the most used in the valuation of patents.

#### 3.3.1 Real Options Method

The real options method comes from financial options, widely practiced in the real estate securities market. For Cerbasi (2014), this method is a contractual agreement made between the parts, in which one of them pays a price to acquire a right to decide, within a given period, whether or not to negotiate the patent, for a value decided in advance.

The real options method is interesting according to Carter (2005) since it provides opportunities to increase profits or reduce losses according to the intention of the universities. This fluctuation in value can be defined naturally on the basis of costs or as an investment opportunity because the present value of the cost may change at a later date according to the projection of the initial investments (Pitkethly, 1997).

Futures and options markets are a reference for price formation derived from commodities and financial assets. According to Oliveira (2014), this method was designed to protect variation of commodity prices for producers and traders exposed to risks during periods of scarcity and overproduction of the traded product, reducing the risk of price fluctuations.

The valuation method for real options must be understood with one of the methods that allows greater flexibility than the others, since it can be more aligned with the economic view of the market. This flexibility allows the

parties involved to decide on the economic scenario, and whether they wish to invest in a new project or expansion or give up the investment. Cerbasi (2014) adds that the real options method is a natural consequence of the circumstances created by the competitive world of business and that provide characteristics of irreversibility, uncertainty and possibility of postponement.

#### 4. Concluding Remarks

Given the scarcity of research in the area of patent valuation and its interface with technology transfer, this article presented the main approaches and valuation methods, as well as a vast literature review related to those topics.

We are aware that setting the selling price of a patent is extremely complex, as well as not part of the scientific activities of most researchers. However, technology transfer between university-industry will occur with increasing frequency and will require researchers-inventors to be able to value their patents and to realize the marketing process in the best possible way.

It is important to emphasize that although there are three patent valuation approaches that have their respective methods, they must be analyzed by the inventors or managers of the Technology Transfer Office to define which should be used, since each approach and method has very singular specifications that may or may not be in line with the patent being marketed.

In this context, the need to develop research in the area of patent valuation and commercialization, especially in developing countries, in which the process of technology transfer in the universities is still very immature. The approaches and valuation methods presented make it possible to carry out new analyzes and interpretations so that the definition of the value of a patent occurs in a fairer way.

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# Investigation of the Effects of Task Technology Fit, Attitude and Trust on Intention to Adopt Mobile Banking: Placing the Mediating Role of Trialability

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## Abstract

The purpose of this study was to investigate the proposed model in which effect of trust, attitude and task technology fit are taken as independent variables and intention to m-banking adoption as dependent variable. The study also analyzes the mediating role of trialability between the independent and dependent variables. To find out how much variance each of the independent variables contribute in dependent variable, Structural equation modeling (SEM) approach is applied on the data sample of 271 respondents from Pakistan. The confirmatory factor analysis (CFA) suggested a good model fit. The results from SEM analysis revealed a model R-square of 0.55. It suggested the significant effect of attitude and task technology fit on intention to adopt m-banking. The analysis further explained the presence of mediating role of trialability between the relationship of intention to adopt m-banking and trust, attitude and task technology fit. The study also provides implications, limitations and future research suggestions.

**Keywords:** m-banking, mobile banking adoption, Intention, trialability, attitude, task technology fit, trust, Pakistan

## 1. Introduction

The inventions in the field of information and communication technology (ICT) have revolutionized the banking industry in delivering financial services to its customers. The accelerating growth in 3G, 4G communication technologies and increasing usage of portable devices i.e. smart phones and tablets have created viable business opportunities not just for telecommunication industries but financial industries as well (Yu, 2012). The dynamics of banking across the world has gradually become more competitive and turbulent. Therefore, in order to attract more and retain existing customers, banks are always in search of innovative solutions that maintain their competitiveness. The competitive strategy in this quest is to provide mobile banking (m-banking) through the use of mobile communication technologies on portable devices being used by mass population. M-banking is the latest technological development (Dasgupta et al., 2010) and is the use of financial services through the use of portable devices at anywhere and anytime. The changes in technology and customer preferences have significant effect on service delivery (Byers & Lederer, 2001) so the banks are establishing m-banking service channels for their customers in order to gain market share and remain competitive. Due to its utmost importance and the widespread usage of portable devices establishment of m-banking, now a days, has included as key part in the strategic goal of financial institutions (Lin, 2011; Nysveen et al., 2005). Therefore, the understanding, how customers adopt this delivery channel, will have vital implications for the financial institutions (Zhou et al., 2010). Shaikh and Karjaluo (2015) mentioned the rise and importance of the innovative m-banking services in developing countries such as Philippines, Malaysia and Pakistan to meet customers' needs who live in remote areas. Emerging countries have large potential to adopt m-banking because of majority population in these countries has limited ATMs, low banking access, less diffusion rate of Internet broadband services, less education and less money (Ivatury & Mas, 2008). Providing banking services in those countries will help low income markets and may also create new investment opportunities for the banking companies. Therefore, by establishing m-banking services, banks can cover larger population as customers in developing countries

frequently conduct small value transaction. Pakistan is a developing country and there is huge potential for adoption of m-banking. Not only financial institutions but also people are adopting latest mobile banking services and growth in this area is accelerating. For this purpose, the present study sheds light on the literature of mobile banking by providing a comprehensive framework that aims to explore, the practical aspect of technology in executing routine tasks, the attitude towards m-banking, the effect of trialability and the trust as m-banking is mainly rely on the absence of direct relationship with the bank and lack of prior experience may cause uncertainty. Moreover, the present study contributes further to the existing literature to explore the mediating effect of trialability by following future research recommendations of Ha et al. (2012). In their review research, Ha et al. (2012) found that most of the studies, done before, addressed the direct effects on the adoption of m-banking and recommended to include mediating factors as these factors may be significantly influence the relationship to factors affecting m-banking adoption and the adoption itself. The findings from this study will help banks to understand how customers adopt m-banking and improve their services.

### *1.1 Literature Review, Model and Hypotheses Development*

The literature on electronic banking has filled with a pool of studies focusing the internet banking. These studies provide profound understanding of the diffusion pattern of internet banking. While mobile banking (m-banking) is the latest version in this domain and recently has gained considerable attention from the authors. This is evident from the work of Shaikh and Karjaluo (2015) who mentioned that 65% of the studies on m-banking adoption were carried on during 2010 to 2012 emphasizing developing countries. Up till now, the studies conducted are either based on triangulation method or other used extended versions of Technology acceptance models (TAM). In recent literature on m-banking, several studies conducted are based on examining the factors effecting the adoption, application of m-banking. According to the authors, the prominent factor in investigating the antecedents of adoption was trust (Malaquias & Hwang, 2016; Jain, 2013; Lin, 2011; Zhou, 2011). In earlier studies, trust is defined as a belief of a company in the honesty of its business partners and other factors relevant (Hanafizadeh et al., 2014). In any business transaction, trust is a key factor (Wang et al., 2015) and in mobile commerce where sellers and buyers are unknown to each other, it plays vital role to minimize the uncertainty (Li & Yeh, 2010; Wang et al., 2015). Likewise, building trust for m-banking adoption is also essential for banks otherwise customers won't adopt it and there will be no use of establishing this technology (Zhou, 2012a; Zhou, 2012b). In Pakistan, Afshan and Sharif (2016) conducted the study by integrating three frameworks (task technology fit, unified theory of acceptance and use of technology, initial trust model). By applying structural equation modeling (SEM) on a sample of 198 respondents, the findings revealed that initial trust and task technology fit have significant relationship in explaining the adoption of m-banking. In Brazil, Malaquias and Hwang (2016) conducted the study on sample of 1077 respondents to see the impact of trust on mobile banking adoption in developing country. Their work argued that in order to promote m-banking adoption, building trust is necessary because it eliminates the asymmetric information. In China, Lin et al. (2014) undertook longitudinal study to investigate the effect of trust on pre and post usage of m-banking and m-commerce. Their research revealed that pre use trust impacts directly and indirectly the usage of m-banking while post use trust is elevated by satisfaction which ensure future usage of m-banking. Due to the unique characteristics ubiquity (Akturan & Tezcan, 2012; Ha et al., 2012; Zhou, 2012a) customers may face issues which dilute the level of trust as they do not have prior experience of m-banking. In our present study, the inclusion of trust has rationale to see its impact on adoption of m-banking. Therefore it can be hypothesized that customers' trust increase the confidence to adopt m-banking.

**H<sub>1</sub>.** The relationship between trust and intention to adopt m-banking is positive.

Next, Attitude is the desire to use the system after its evaluation (Akturan & Tezcan, 2012). Attitude exhibits person's assessment about behavior. The assessment may be favorable or unfavorable and influences the intention strength (Lee, 2009). In making adoption decision, Nui-Polatoglu and Ekin (2001) describe attitude as individual's beliefs about the entity or object and its perceived weigh of importance. Several authors have found attitude of an individual as key variable in determining the behavioral intention to adopt mobile banking. In their study, Kim et al. (2009) argued that various small transections can be executed using m-banking in order to minimize the cost (increase profit) and stated attitude is crucial in explaining the technology adoption. Additionally, to investigate the intention to use internet banking, Nasri and Charfeddine (2012) found the similar conclusion that attitude positively influences the intention. Puschel et al. (2010) also examined the Brazilian user's intention to m-banking adoption and stated that attitude has a significant impact on intention. Related to m-banking adoption intention, the work of sheikh et al. (2015), Akturan and Tezcan (2012), Lin (2011), Hsu et al. (2011), Wessels and Drennan (2010) and Schierz et al. (2010) suggested the significance of attitude in m-banking adoption intention. Thus, the inclusion of attitude in developing the framework of mobile banking adoption

behavior is concurrent with the previous research studies and a corner stone to develop our second hypothesis is:

**H<sub>2</sub>.** The relationship between Attitude and intention to adopt mobile banking is positive.

Further, task technology fit refers to the degree people will use technology to support their work. Goodhue and Thompson (1995) argues that merely perception about technology will not make customers to accept new technology. Customers will adopt this new technology if it is smart enough to perform daily task. Oliveira et al. (2014) acknowledged the foundations of TTF and calls it rational perspective. According to Oliveira et al. (2014), "TTF is the rational perspective of what a new technology can do to optimize a job". The models for adoption of new technologies in several studies are based on individual's perception (Afshan & Sharif, 2015) where TTF argue individual will adapt certain technology if it has practical implications for his daily routine. Janglas et al. (2008) and Lee et al. (2007) suggested the same that people will not use the technology if the technology brings no progress in execution. They proposed task technology fit as a focus on efficiency and productivity rather behavioral intention. Behavioral characteristics are also important to consider as these impact how easily a person will adapt the technology (Goodhue, 1995). The task technology fit has already been used and significantly proven by several other studies (Lee et al., 2007; Lin & Hunag, 2008; Janglas et al., 2008; Shang et al., 2009; Gebauer & Ginsburg, 2009). In the context of m-banking, the significance of TTF in m-banking adoption can be found in the studies of Zhou et al. (2010), Afshan and Sharif (2015), and Oliveira et al. (2014). Zhou et al. (2010) examined m-banking user adoption in China and found TTF a significant contributor. Afshan and Sharif (2015) stated the significance of TTF in m-banking adoption in Pakistan. Similarly Oliveira et al. (2014) also found TTF a significant construct in intention to m-banking adoption in Portugal. Thus inclusion of TTF is a practical approach regarding m-banking technology usage and TTF is significantly important in the framework of m-banking adoption. Therefore, it is expected that TTF have positive relationship with m-banking adoption.

**H<sub>3</sub>.** The relationship between task technology fit and intention to adopt mobile banking is positive.

Additionally, trialability refers the specified period of usage of innovative technology for free trial. According to Rogers and Shoemaker (1971), "It is the degree to which innovation can be tried on a limited basis". Puschel et al. (2010) mentioned that new innovative ideas with trialability feature are adapted more frequently than those who don't offer. They define it as "Perception of individuals about how much banks offer chances for them to try mobile banking services". Furthermore they added individual attitude will be better towards m-banking services if the perception about trialability is clearer. Trialability also leads to the reduction of unknown fear attached to adoption (Tan & Teo, 2000). In several studies trialability has been focused as an integral part of not only the already established theories of technology adoption but also the proposed frameworks related to internet banking. Prior studies suggested its positive influence towards acceptance of internet banking (Tan & Teo, 2000; Md Nor & Pearson, 2007; Wang, 2010; Al-Majali & Mat, 2011). Therefore, it is important to consider trialability in the context of m-banking that it has positive influence on intention to adopt m-banking. From the above discussion, we generated our forth hypothesis;

**H<sub>4</sub>.** The relationship between trialability and intention to adopt mobile banking is positive.

#### *1.2 Trust, Attitude, Task Technology Fit (TTF) and Trialability as Mediator*

It is crucial to observe the impact of trust as utility of m-banking is mostly attached to its feature of ubiquity. In order to earn trust, users' fear of loss of personal and financial information must be safeguarded and banks assurance is required (Kim et al., 2009). In early adoption decision process, trialability can foster the trust. Customers, through their mobiles and tablets, can use banking services to conduct financial transactions during the trial period and experience its usefulness. Through the time of trial period, customer experience with the m-banking increases and causes initial trust to develop gradually. So with trialability, trust issues like fear of financial and personal information loss can be reduced. Thus it can be contended that trust may lead to adoption but with the provision of trialability the adoption of the m-banking will be quicker. This support our argument that trialability intervene initial trust and m-banking adoption relationship. Moreover, trialability may also impact on attitude of customers towards adoption of services. Before to gather knowledge and control over technology usage which later build attitude towards acceptance of innovation. Dash et al. (2014) mentioned that customers do not exhibit early adaptation of innovation rather they exert late adaptation. Their findings show that trialability influence on attitude among Indian consumers. Contrary to findings of Dash et al. (2014), Puschel et al. (2010) mentioned trialability does not affect the attitude that drive the usage of m-banking services in Brazil. Their study also suggested the further investigation needed in this matter. Based on the above debate, it can be reasonably proposed that attitude leads to adoption but when trialability is the added feature then time between the process of attitude and adoption decision can be minimized. In other words trialability intervene between the relationship between attitude and adoption.

Additionally, Zhou et al. (2010) suggested that the m-banking delivery channel is more appropriate to those users who are unbanked or frequent travelers. Inclusion of TTF will give the signals to target users to use the m-banking. Therefore, considering task technology fit is important for financial institutions when designing m-banking delivery channel because users will not use the new technology if they think that the technology is not adequate to carry out their routine tasks (Janglas et al., 2008; Lee et al., 2007). According to Dash et al. (2014), users exert late adaptation of innovative technology. It is quite understood that if customers are provided the chance to trial, they consider to buy or adopt the product and service more quickly than those who are not provided the chance of trail. The provision of trialability can lead to early adoption and when people are given chance to use the m-banking services on their mobiles and tablets for specific period of time. Thus in order to promote m-banking, the trialability feature may attract more users and leads to the adoption. Hence, it can be argued that trialability mediates the relationship between TTF and m-banking. Followings are the hypothesizes are generated on the basis of above arguments;

**H<sub>5</sub>**. The relationship between trust and trialability is positive.

**H<sub>5a</sub>**. Trialability mediates the relationship between trust and intention to m-banking adoption.

**H<sub>6</sub>**. The relationship between attitude and trialability is positive.

**H<sub>6a</sub>**. Trialability mediates the relationship between attitude and intention to m-banking adoption.

**H<sub>7</sub>**. The relationship between task technology fit and trialability is positive.

**H<sub>7a</sub>**. Trialability mediates the relationship between task technology fit and intention to m-banking adoption.

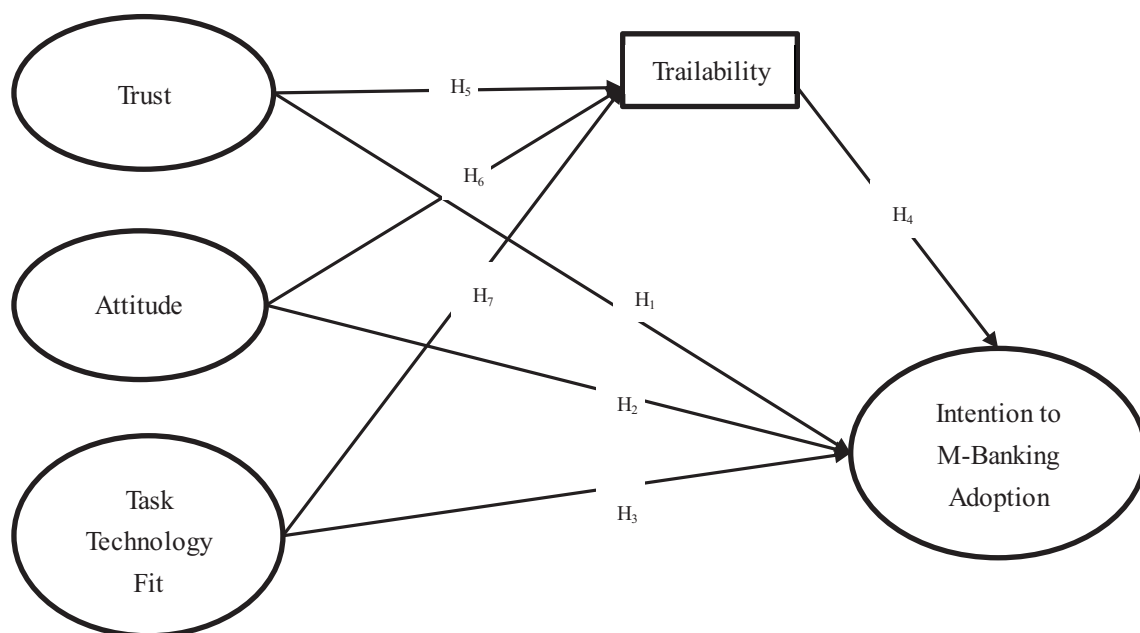


Figure 1. Hypothesized Model

## 2. Methodology

The study is intended to find out the mediating role of trialability between the independent and dependent variables in banking industry of Pakistan. The purpose of using mediation as a research investigation method has methodological reasoning. Mediation provides the better explanation of the impacts of intervening variables between the relationship of independent and dependent variables (Mackinnon, Fairchild & Fritz, 2007). Structural equation modeling (SEM) is applied for the analysis of the collected data. This approach provides greater insights for fostering theory development and hypotheses testing (Anderson & Gerbing, 1988). Thus, for investigating the relationship between independent, mediation and dependent variables of this study, SEM serves the purpose. Amos 21th is used for analysis of the data through SEM technique.

### 2.1 Sample Size

The population for this research study was the users of bank services in Pakistan. Customers of the banks range from the students, businessmen and young salaried persons who are using bank accounts. Including young students

has a rationale (Luo et al., 2010) as they have necessary computer and mobile usage skills required to use m-banking and are early adopters or potential users of new technologies. This may lead to biased results which ultimately be filtered through the inclusion on old age group (Luo et al., 2010). An approximate sample size is 271 bank customers in Pakistan. In order to reduce the biasness in the results, Churchill and Iacobucci (2010) stated that even for a small sample size ranged from 50 to 100 respondents, SEM works well. Thus, the sample size, in this context, is adequate to execute estimations. The rationale behind choosing Pakistan is perfectly in line with the suggestions of Shaikh and Karjaluo (2015) as Pakistan is developing country and there is huge potential for adoption of m-banking. According to Pakistan Telecommunication Authority (PTA) annual report (2014), Pakistan is ranked 8<sup>th</sup> in the world in active mobile usage i.e. 140 Million active mobile users and the annual revenue is growing with a rate of 5.6%. The tremendous growth and demand in the usage of m-banking, according to State Bank of Pakistan, can be viewed as evident from the fact that in 2015, approximately more than 8 million users are conducting m-banking transactions as compared to 1.4 million users in 2009. This led bankers to give significant attention to m-banking. Table 1 shows the summary of m-banking from 2011 to 2015 both in volume and in rupee terms. The m-banking volume has grown more than 100% while the value of m-banking transactions increased more than 12 times. Due to its sterling growth, Pakistan has significant strategic importance and potential growing market (World Bank, 2016). Therefore, m-banking is a new, useful, developing and promising concept in research areas, uses and adoption in Pakistan. Hence, there is a potential gap and margin of improvement in Pakistan's banking industry that provides the grounds to investigate the m-banking adaption in Pakistan.

### 2.2 Sampling Technique

The sample is collected on convenience basis. The complete detail about the customers of the banks was not available as banks normally avoid to reveal information about their customers for privacy reasons. Thus for data collection, researchers applied convenience sampling. This approach of sampling is consistent with several prior and recent studies (Featherman & Pavlou, 2003; Al-Jabri & Sohail, 2012; Afshan & Sharif, 2016). Only those individuals will be contacted who showed their consent to response the request of filling up questionnaire.

### 2.3 Data Collection Procedure and Ethical Issues

In order to ensure the authenticity of this research study, ethical requirements are kept in mind for data collection. Respondents were told about the purpose of this study and their voluntary participation is ensured of anonymity. In order to increase the content validity, participants are asked about short explanation regarding the m-banking services to make sure the awareness with the m-banking concepts. After getting their consent, data is collected through a self-administered questionnaire. More-over, a permission letter from the Donghua University to collect the data is presented to the respondents to make sure that the respondents are more confident and have no doubt that their information will be misused. This study is purely of academic nature and is not sponsored by any private or public institution.

Table 1. 5 years trend of M-Banking in Pakistan

Year	M-Banking Transactions Volume (millions)	M-Banking Transaction amount (Billions Rs.)
2011	3.29	8.00
2012	3.12	12.00
2013	4.15	27.02
2014	6.17	67.44
2015	6.14	106.89

Cumulative Aggregate Growth CAG Volume 21.71%, Value 309.03%

Source: State Bank of Pakistan, Annual Report, FY 2015, Vol. 1, Chap#2

### 2.4 Measurement Scale

To test the hypothesized model shown in figure 1, the measurement scale is developed based on prior studies. The scale to measure task technology fit (TTF) is adapted from the studies conducted by Afshan and Sharif (2016), Oliveira et al. (2014) and Zhou et al. (2010). To measure Attitude (ATT), the scale and items are adopted from Akturan and Tezcan (2012), Lee (2009) and Cheng et al. (2006). The scale and items to measure trust (TRU) are adapted from the study of Malaquias and Hwang (2016), Zhou (2012) and Kim et al. (2008). The scale and items for trialability (TRI) are taken from study of Al-Jabri and Sohail (2012), Puschel et al. (2010) and Tan and Teo (2000). The scale for measurement of intention to adopt m-banking (ITA) is adopted from the study of Baptista and Oliveira (2015) and Venkatesh et al. (2003, 2012). These scales have provided sufficient evidence of validity in previous studies and hence, can be used for current study with a reasonable level of confidence (see table 2). A five-point Likert scale ranged from 1= strongly disagree to 5 = strongly agree values is used to generate the responses on these scales (see appendix).

Table 2. Measurement Scale and Reference Source

Construct	Cronbach Alpha	No. of items	Source
Task Technology Fit (TTF)	0.89, 0.94, 0.912	4	Afshan and Sharif (2016), Oliveira et al. (2014), Zhou et al. (2010)
Attitude (ATT)	0.879, 0.91, 0.902	4	Akturan and Tezcan (2012), Lee (2009), Cheng et al. (2006)
Trust (TRU)	0.778, 0.80, 0.85	3	Malaquias and Hwang (2016), Zhou (2012), Kim et al. (2008)
Trialability (TRI)	0.839, 0.828, 0.856	2	Al-Jabri and Sohail (2012), Puschel et al. (2010), Tan and Teo (2000)
Intention to adopt (ITA)	0.858, 0.84	3	Baptista and Oliveira (2015), Venkatesh et al. (2003, 2012)

Table 3. Total Variance Explained - Common Method Bias

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.888	36.802	36.802	5.244	32.772	32.772
2	1.917	11.984	48.785			
3	1.787	11.167	59.952			
4	1.179	7.370	67.323			
5	.985	6.157	73.480			
6	.600	3.752	77.232			
7	.563	3.517	80.749			
8	.459	2.866	83.615			
9	.450	2.811	86.426			
10	.420	2.622	89.048			
11	.390	2.438	91.486			
12	.330	2.065	93.550			
13	.305	1.905	95.456			
14	.284	1.772	97.228			
15	.238	1.488	98.716			
16	.205	1.284	100.000			

Extraction Method: Principal Axis Factoring.

### 3. Data Analysis and Results

#### 3.1 Common Method Bias

The common method bias (CMB) is the variance “attributed to the measurement method rather than to the construct of interest” (Bagozzi & Yi, 1991). According to several studies, CMB may pose threat to validity of the findings and leads to erroneous results (Craighead et al., 2011; Burton-Jones, 2009). Therefore, Richardson et al. (2009) and Ashkanasy (2008) recommended to deal with it before testing the hypothesis testing. To address CMB in present study, Harman’s single factor test was applied by fixing number of factor 1 and using promax rotation with principal axis factor extraction framework (Padakoff et al., 2003). Table 3 shows the total variance explained and was found less than the cut off value of 50% i.e. 32.7% which suggested that the present study is reasonably free from CMB. Therefore, the data was reasonably free from bias to carry further analysis.

#### 3.2 Exploratory Factor Analysis

In order to reduce the sixteen Likert based items into the fine five proposed factors, the exploratory factor analysis was conducted in SPSS. For this purpose, Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of sphericity was applied along with Maximum likelihood method for factors extraction based on Eigenvalues greater than 1 and promax rotation. The sample is appropriate to go for factor analysis as KMO measure of sampling adequacy resulted the value of 0.849 which is above the recommended value of 0.70 (Barkus et al., 2006, Leech et al., 2005). The Bartlett’s test of sphericity resulted significant (*Approx. Chi-Square = 2097.830, df = 120, p < .000*) which describes that there is dissimilarity between correlation matrix and identity matrix and correlation between variables is non-zero (Leech et al., 2005). In simple words, our sample is adequate for factor analysis. Further, the total variance explained by the five factors resulted 63.103% and all the factor loadings (Table 4) are greater than the threshold value of 0.55 (Tabachnick & Fidell, 2007).

#### 3.3 Convergent and Discriminant Validity

The measurement scale is reliable concerning convergent validity which is evident from the table 4 and table 5 as values of factor loading, Ca, CR and AVE are above the threshold value of 0.55, 0.6, 0.7 and 0.5 (Tabachnick & Fidell, 2007; Nunnally & Bernstein, 1994; Hu & Bentler, 1999). To address the discriminant validity, square root of AVE was checked and found greater than its coefficient of correlation with other factors (Gefen et al.,



2000). This shows that scale does not correlate to other variable to whom it should differ. Table 4 also validated the presence of good discriminate validity.

3.4 Confirmatory Factor Analysis (Measurement Model)

The present study further performs Confirmatory Factor Analysis (CFA) shown in figure 2 which exhibits the relationship between latent and measured variable. CFA result provides multiple indices for analysis of model fit (Crowley & Fan, 1997). Among various model fit indices Kline (2005) suggested combination of indices i.e. CMIN/DF, CFI, RSMEA and SRMR which are not sensitive to sample size and misleading parameter estimates. In Addition, Hu and Bentler (1999) mentioned the threshold values of different model fit indices (Table 6) and also argued to include PCLOSE along with other indices of model fit. Table 7 presents the five indices of model fit along with their threshold values. All the values were found under the recommended threshold which shows good model fit.

Table 4. Cronbach Alpha Reliability, Variance Explained and Factor Loading

Factor Name	C $\alpha$ Reliability	% of Variance	Cumulative % of Variance	Pattern Matrix <sup>a</sup>					
				Factor Loadings					
				1	2	3	4	5	
Attitude	.849	32.884	32.884	ATT1	.991				
				ATT2	.722				
				ATT3	.656				
				ATT4	.640				
TaskTechFit	.813	7.382	40.266	TTF1		.807			
				TTF2		.717			
				TTF3		.707			
				TTF4		.667			
Trust	.843	8.789	49.055	TRU1			.796		
				TRU2			.888		
				TRU3			.722		
Intention	.822	8.802	57.857	ITA1				.771	
				ITA2				.626	
				ITA3				.854	
Triability	.866	5.245	63.103	TR1				.968	
				TR2				.794	

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 5. Convergent validity, Discriminant Validity (Square root of AVE, Italic Diagonally) and Factor Correlation Matrix

	CR	AVE	MSV	MaxR(H)	Factor Correlation Matrix				
					Attitude	TaskTechFit	Trust	Intention	Trailability
Attitude	0.856	0.599	0.395	0.861	<i>0.774</i>				
TaskTechFit	0.813	0.522	0.200	0.816	0.352***	<i>0.723</i>			
Trust	0.846	0.648	0.151	0.856	0.389***	0.335***	<i>0.805</i>		
Intention	0.824	0.610	0.395	0.825	0.628***	0.447***	0.346***	<i>0.781</i>	
Trailability	0.867	0.766	0.307	0.878	0.520***	0.422***	0.381***	0.554***	<i>0.875</i>

Note: \* p < 0.050, \*\* p < 0.010, \*\*\* p < 0.001

Table 6. Cutoff Criteria Of Model Fit Indices

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
PCLOSE	<0.01	<0.05	>0.05

Source: Hu and Bentler (1999)

Table 7. Model Fit Indices

Measure	Measurement Model (CFA)	Structural Model (SEM)	Threshold	Interpretation
CMIN	180.269	182.805	--	--
DF	94	94	--	--
CMIN/DF	1.918	1.945	Between 1 and 3	Excellent
CFI	0.957	0.955	>0.95	Excellent
SRMR	0.051	0.051	<0.08	Excellent
RMSEA	0.058	0.059	<0.06	Excellent
PCLOSE	0.140	0.112	>0.05	Excellent

Note: Authors' estimation

3.5 Structural Equation Modeling (Structural Model)

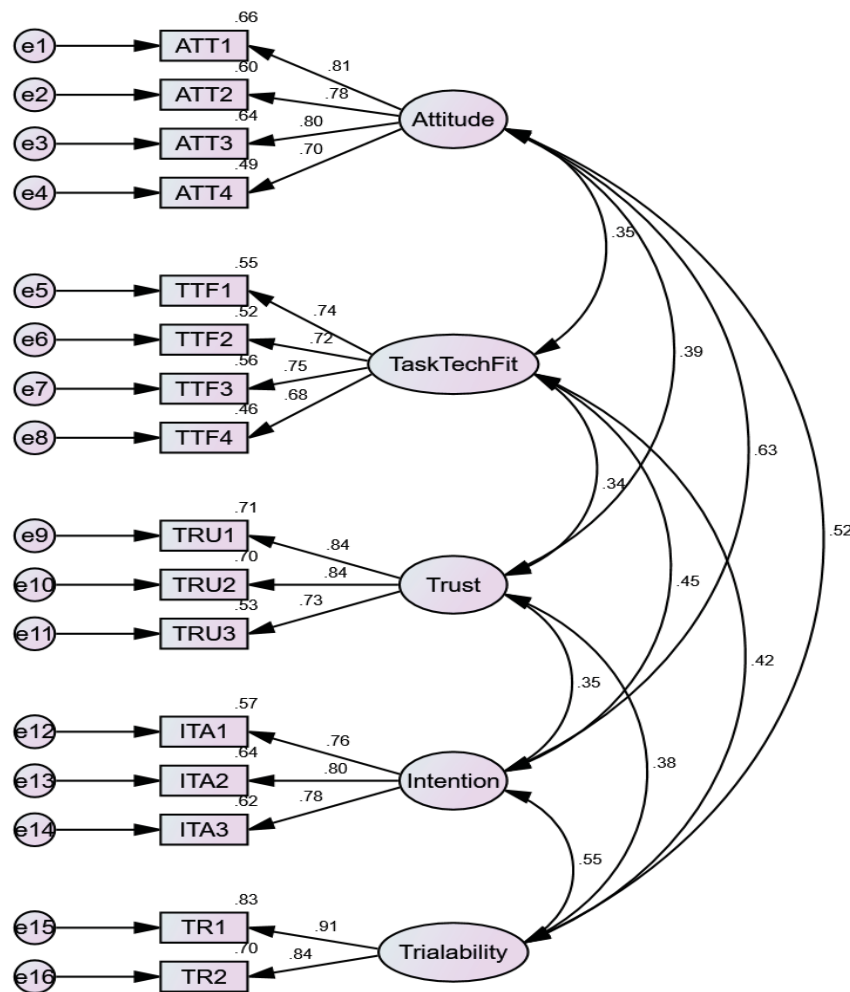


Figure 2. Confirmatory Factor Analysis (Measurement Model)

Table 8 displayed the result of our structural model. Based on the threshold values presented in table 6, the final hypothesized model was found the best fit among all the indices. The final hypothesized model is displayed in figure 3. The mediation analysis is presented in tables 9. The results from our hypothesized model suggested the positive significant impact of attitude ( $B=0.427, p<.001$ ), task technology fit (TaskTechFit) ( $B=0.238, p<.001$ ) and trialability ( $B=0.299, p<.001$ ) thus supported our H<sub>2</sub>, H<sub>3</sub> and H<sub>4</sub>. The path coefficient of Trust ( $B=-0.067, p<.323$ ) found negative and insignificant thus H<sub>1</sub> is rejected. Moreover, trust ( $B=0.183, p<.01$ ), attitude ( $B=0.389, p<.001$ ) and Task technology fit (TaskTechFit) ( $B=0.196, p<.01$ ) were found significantly and positively in relation to trialability. Which further supported our H<sub>5</sub>, H<sub>6</sub> and H<sub>7</sub>.

Concerning the mediation effect of trialability, the analysis is conducted in AMOS 21. The researcher followed Mackinon et al. (2007) and performed the bootstrapping technique on 2000 bootstrap samples with 90% confidence interval. Bootstrapping is “intensive computation method that involves repeatedly sampling from the data set and estimate the indirect effect in each resampled data set” (Preacher & Hayes, 2008). Table 8 displayed the results of mediating effect of trialability. All the p-values of the H<sub>5a</sub>, H<sub>6a</sub> and H<sub>7a</sub> are less than 0.10. The analysis showed that trialability mediates between the relationships of trust and intention, attitude and intention and task technology fit and intention. The values of standardized estimates along with standard error, the lower and upper bound of 90% confidence interval presented in table 9.

Table 8. SEM Hypothesis Testing

Hypothesis	Hypothesized Paths	Standardized Estimate	S.E.	C.R.	p-Value	Remarks
H <sub>1</sub>	Intention ← Trust	-.067	.051	-1.988	.323	Rejected
H <sub>2</sub>	Intention ← Attitude	.427	.074	5.408	.001	Accepted
H <sub>3</sub>	Intention ← TaskTechFit	.238	.064	3.332	.001	Accepted
H <sub>4</sub>	Intention ← Trialability	.299	.084	3.843	.001	Accepted
H <sub>5</sub>	Trialability ← Trust	.183	.050	2.580	.010	Accepted
H <sub>6</sub>	Trialability ← Attitude	.389	.062	5.365	.001	Accepted
H <sub>7</sub>	Trialability ← TaskTechFit	.196	.060	2.718	.007	Accepted

Model R-Square 55%

Authors' Estimation

Table 9. Mediation Analysis

Hypothesis	Hypothesized Paths	Estimate	Lower	Upper	p-Value	SE	Remarks
H5a	Intention ← Trialability ← Trust	.041	.012	.094	.009	.024	Accepted
H6a	Intention ← Trialability ← Attitude	.109	.053	.197	.001	.041	Accepted
H7a	Intention ← Trialability ← TaskTechFit	.053	.015	.126	.016	.032	Accepted

Note: Authors' estimation

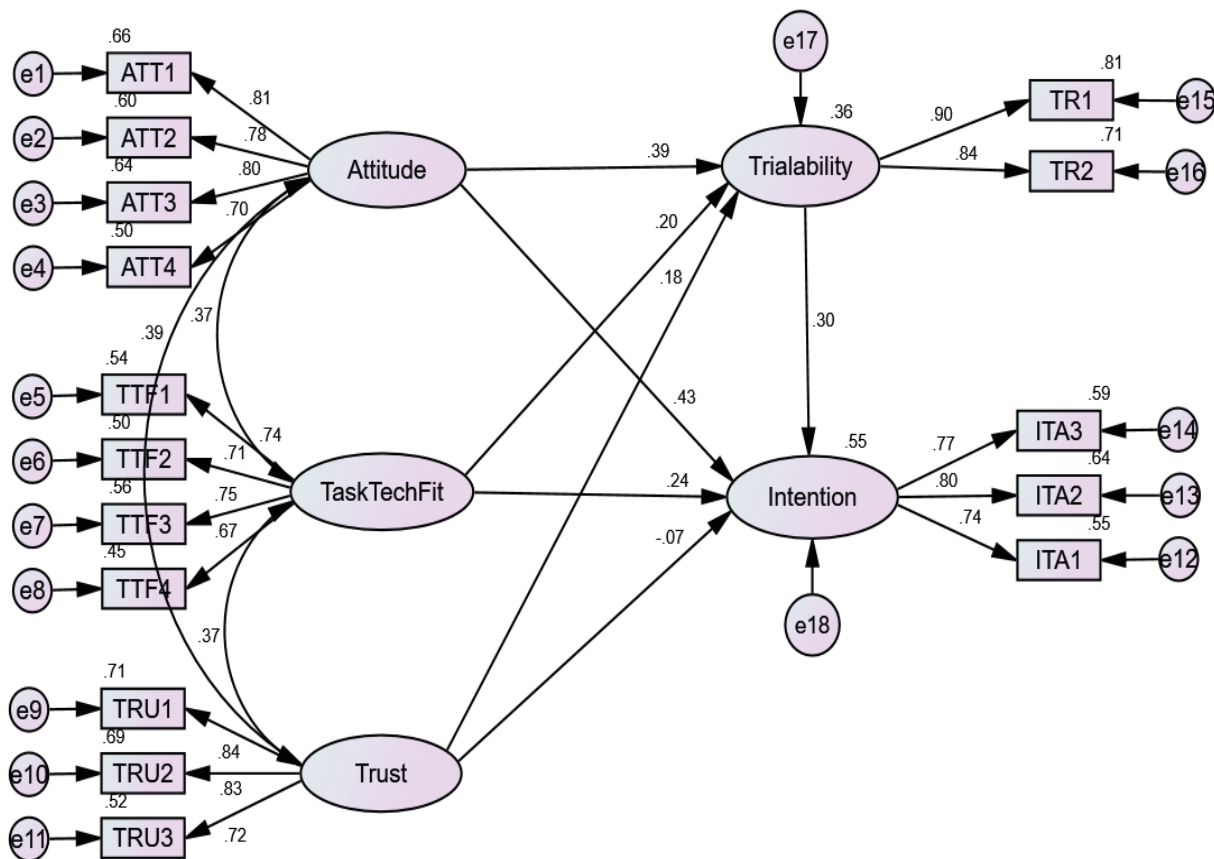


Figure 3. Structural Model

#### 4. Discussion and Conclusion

The aim of the present study was twofold, first, the study was conducted to investigate the factors effecting the intention to adopt m-banking and secondly, to examine the intervening role of trialability. In this regard, the study was carried-out on proposed model using survey questionnaire. The overall model showed good predicted power as  $R\text{-square}=55\%$ . Venkatesh et al. (2003) mentioned in their study that normally the studies conducted for adoption of technology resulted in  $R\text{-square}$  of approximately 40%. In this manner, our model has superior predictability power ( $R\text{-square}=55\%$ ). The results of empirical findings are discussed below.

In our model, trust ( $B=-0.067, p<.323$ ) was found negatively related to intention to adopt m-banking services. Although the effect is insignificant but its importance cannot be diluted. Especially in case of m-banking where service is delivered through third party (Zhou, 2011, 2012; Akturan & Tezcan, 2012). The main concerns in adoption of m-banking are the susceptibility to information interception, presence of malware which enhance the risks associated to its usage (Malaquias & Hwang, 2016). In this manner, the results supported the previous studies of Cruz et al. (2010) and Malaquias and Hwang (2016). Further, the relationship of trust with trialability was found positive and significant ( $B=0.183, p<.01$ ). It explained 18.3% variation in trialability. This suggested that people would take m-banking on trial if they have trust. Further, this relationship between trust and adoption intention becomes positive when the service is offered on trial. This can be observed through the positive mediation effect ( $p<.01$ ) between trust and trialability. Using m-banking services on trial, the associated perceived risk can be minimized which ultimately increase the adoption rate.

Next, attitude ( $B=0.427, p<.001$ ) was found positive and significant ( $H_2$ ) and appeared to be the most influential factor deriving approximately 43% variance in the intention to m-banking adoption. The result from our model supported the previous work of Shaikh et al. (2015), Akturan & Tezcan (2012), Puschel et al. (2010) and Lee (2009). The effect of attitude ( $B=.389, p<.001$ ) was also found the leading contributor towards trialability explaining 38.9% variation ( $H_6$ ). Our findings further takes advance step and tested the effect of intervening role of trialability between attitude and intention adoption. The findings confirmed that trialability ( $p<.001$ ) acted as mediator. Hence supporting our hypothesis  $H_{6a}$ .

Additionally, the effect of task technology fit (TaskTechFit) on intention was found significant ( $B=0.238, p<.001$ ;  $H_3$  Accepted). In our model, task technology fit explained 23.8% variance in intention adoption. Our findings are consistent with the previous works that people will not buy the new technology unless it is capable of performing routine tasks (Afshan & Sharif, 2016; Oliveira et al., 2014). Similarly, Task technology fit ( $B=0.196, p<.01$ ) was also found having positive relationship, explaining 19.6% variance in trialability. In addition, further analysis confirmed ( $p<.10$ ) the presence mediating role thereby supporting our hypothesis  $H_{7a}$  that trialability intervene the relationship between intention to adopt and task technology fit.

Further, trialability ( $B=0.299, p<.001$ ) was found impacting the intention of m-banking adoption both positively and significantly ( $H_4$ ). In our model, trialability was found second most influential factor explaining approximately 30% variance. The possible explanation is that in trial period, banks give special attention to potential consumers and provide full support i.e. detailed services awareness about how to perform tasks. Therefore more customers, when they use the services and see its benefits, are influenced with m-banking services. The finding is inconsistent with the previous studies of Puschel et al. (2010) and Al-Jabri and Sohail (2012) who addressed this issue as limitation. In their studies the trialability was found having negative relationship with intention to adopt m-banking. They failed to provide clear reason and suggested for further investigation. Hence, our study mitigates the limitation of their studies.

To sum up, the aim of this study was to test new model for intention to m-banking adoption and to examine the role of trialability as mediator. The proposed model explored the behavioral (attitude) and rational aspects (task technology fit) in adoption of new technology. In our model, task technology fit, attitude and trialability were found the main factors deriving the intention behavior while trust was found having negative effect. The study also contributed to the literature by including the mediation effect of trialability. The results supported not only the impact of trialability, it also suggested the mediating role of trialability with intention to trust, attitude and task technology fit. Hence, the role of trialability in intention m-banking service adoption should not be neglected.

##### 4.1 Theoretical and Practical Implications

The findings from the present research study have solid theoretical implications. The literature is filled with many framework that are based on perception of technology and discussed very little about its practical aspects i.e. task technology fit. Our findings provide for both academicians and practitioners the significance of task technology fit to include this factor in their models. Further, the exiting literature examined the direct

relationship of factors effecting the m-banking adoption. The present study filled the gap by including the mediating variable, trialability, to see its impact on the relationship between the factors effecting the intention and on intention itself. Moreover, Pakistan is developing country and is among the 8<sup>th</sup> in the world regarding active mobile usage. Due to high growth in m-banking as mentioned in table 1, there is need to have strong understanding of factors effecting intention to m-banking adoption. In doing so, our study has presented the evidence and importance of both behavioral and rational aspects of technology for addressing the m-banking adoption issues.

Additionally, the findings have practical implications to bankers and mobile communication service providers too. For bankers, it is important to consider these factors when designing promotional designs, business frameworks, and technological awareness. For mobile communication service providers, the findings are also helpful to consider the decision factors for adoption intention in developing country level plans for business expansion and to minimize the uncertainty that hurt customer trust. Due to lack of banking facilities, the rural population presents business opportunity for both bankers and communication service providers to cooperate with each other. Through this, bankers can provide financial services and increase their profits from increasing the customer base that are previously unbanked. For both existing and new customers, the banks should introduce software that are user-friendly since task technology fit is among major factor causing the adoption. Moreover, the growth of m-banking is in growing stage, including the trialability feature in marketing campaign may lead to widespread acceptability.

#### 4.2 Study Limitations and Future Recommendation

The present study is not free from some limitations. The study utilizes the convince base sampling which means only those participants included who showed their consent. However, we recommend to include other sampling techniques for sample section i.e. random probability sampling. Second the study is based on urban population; further study needed to utilize rural data in in order to increase generalizability. In our study trust was found negative and insignificant and the reason for not supporting the hypothesis is not clear. It is suggested that further study is needed focusing more on understanding why this factor which is normally important in information technology adoption was not significant and found negative. Moreover, our model explained 55% variance in the dependent variable; hence further study needed to include more variance to increase the predictive power of the model. Thirdly, the study can be further improved by including time lag to compare pre and post adoption pattern. Lastly, our research is based on developing country Pakistan where in its rapid growth phase and the findings can be applicable to the similar countries with similar growth in m-banking. Further research is recommended to implement the proposed model in other developing countries.

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**Appendix - Measurement Scale Items****Trust** (Malaquias & Hwang, 2016; Zhou, 2012; Kim et al., 2008)

TRU1. I believe that m-banking is trustworthy

TRU2. I believe that m-banking keeps its promises

TRU3. I believe that m-banking keeps users' interests in mind

**Attitude** (Akturan & Tezcan, 2012; Lee, 2009; Cheng et al., 2006)

ATT1. I think that using mobile banking is a good idea.

ATT2. I think mobile banking would be a wise idea for conducting financial transactions

ATT3. I think that using mobile banking is pleasant.

ATT4. In my opinion , mobile banking is desirable

**Task Technology Fit** (Afshan & Sharif, 2016; Oliveira et al., 2014; Zhou et al., 2010)

TTF1. Mobile banking payment services are appropriate.

TTF2. Mobile banking account management services are appropriate.

TTF3. Real time mobile banking services are suitable.

TTF4. In general, mobile banking services are enough.

**Trialability** (Al-Jabri & Sohail, 2012; Puschel et al., 2010; Tan & Teo, 2000)

TRI1. I want to try for at least one month

TRI2. I want to use Mobile Banking on a trial basis to see what it can do for me.

**Intention to Adopt** (Baptista and Oliveira, 2015; Venkatesh et al., 2003, 2012)

ITA1. I intend to continue using mobile banking in the future

ITA2. I will always try to use mobile banking in my daily life

ITA3. I plan to continue to use mobile banking frequently

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# Fostering Entrepreneurship, Creativity and Innovation in Cities

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## Abstract

The aim of this study is to develop a new tool to foster entrepreneurship, creativity and innovation in cities. The tool consists of transformative dimensions, able to synthesize, assemble and embrace the notions of entrepreneurial city, creative and innovative. Then it seeks to illustrate the operation of the city model proposed taking into account 51 Cities Master Plans in Brazil. The study is exploratory and adopts a reflexive methodology. The main innovative result is the entrepreneurial city model tool which meets five essential transformative dimensions: value proposition, customers, value configurations, strategic partnerships and revenue model. The entrepreneurial city model tool proposed aims to increase the dynamics understanding of the procedural flow in the city context, from the entrepreneurial activity perspective. This process flows dynamics can be expressed in the city, for example, in the planning, implementation and actions monitoring, programs, projects and public policies directed to notions of entrepreneurial city, creative and innovative. The innovative results of this research have several practical implications, among which are: (1) public management in the city; (2) public policy makers; (3) researchers and scholars; (4) human resource professionals.

**Keywords:** entrepreneurship, creativity, innovation, city model, city management

## 1. Introduction

Although the term city model has been adopted in the international academic literature in order to reference 3D city (Žiūrienė, Mešliūtė and Makutėnienė 2006; Smart, Quinn and Jones 2011; Yasumoto et al 2011; Cappelle et al 2012; Jahnke, Krisp and Kumke 2011; Sahin et al 2012), little attention has been devoted by researchers in order to associate it with the term business model, and to tools which help the design, regeneration, planning, implementation and monitoring of public management of the city, towards an entrepreneurial society (Gibb 2002). Another early finding identified in the international academic literature is how little attention is being paid by the researchers, to associate or connect the city model term with entrepreneurial city, creative and innovative (Chapin 2002; Jessop and Sum 2000; Å. Andersson and D. Andersson 2015; Grodach 2013; Hospers and Pen 2008; Marceau 2008; Fang et al 2014; Inkinen 2015; Evans 2009; Bakici, Almirall and Wareham 2013; Doran and Daniel 2014). The initial review of the international academic literature indicated that the term city model does not provide any information that makes it possible to analyze it as a tool consisting of elements which guide the design and implementation of projects, programs and public policies related to the entrepreneurial city notions, creative and innovative.

Therefore, if the term city model does not provide any information that makes it possible to analyze it as a reference model related to the entrepreneurial city, creative and innovative notions, there would be an incongruity in relation to the conceptual assertions of this tripod (entrepreneurship, creativity and innovation). The incongruity refers to the absence of abstraction instance in the tripod (entrepreneurship, creativity and innovation). The instance would be the composition of cognitive elaborations involving two key issues: (1) reasoning and sensitivity to ensure progress for novelty; (2) the subject actions involving such conditions.

Considering the reality or real, according to conceptual standards, it is thought in the human being, inserted in this living context, taking as reference the preservation of minimal living conditions regarding to respect and the being dignity. Because, by influences, tensions and faced changes in the context of micro to macro society (economic, political-legal, socio-cultural, technological, demographic, environmental), human being life is threatened. In this direction, to overcome, reduce or eliminate incongruity it is necessary to broaden the power of understanding of the term city model. However, if there are considerations that the historic building is made

every time in the disruptions interweaving and reconstructions, it'll be possible to reflect on a representative rapport of a material-symbolic process. The rapport refers the construction of a reference in order to guide the term city model in a dynamic that involves the context of this construction underlying model.

The identified gap in the literature opens a set of questions related to the city management, among which are: (1) Is there any difference or similarity between the entrepreneurial city of notions, creative city and innovative city? (2) What practical implications of the connection between these concepts can provide the design, monitoring and implementation of programs, projects and public policies for cities and the state? (3) In which city design the programs formulators, projects and local or state public policies should pursue to settle the city management from entrepreneurship, creativity and innovation? (4) Which model to be city mapped, aims to increase the understanding of these notions of city, in order to cover its determinant categories? These issues leave the city management field with a lack of tools which can facilitate the understanding of these dynamics in the formulation, monitoring and tracking of these same public policies. It is pointed out in this article that the term city model should encompass the concepts entrepreneurship, creativity and innovation in a single model analysis, helping to broaden the understanding of the cities regeneration processes, enabling the generation of inferences, information and support tools and assistance to the public administration.

The goal of this article is to develop an entrepreneurial city model tool made of transformative dimensions, able to synthesize, assemble and embrace the notions of entrepreneurial city, creative city and innovative city, as an alternative to the existing city model concept in the literature. Then seeks to illustrate the operation of the entrepreneurial city model tool taking into account the Brazilian City Statute (Brazilian Law) and 51 Brazilian Cities Master Plans.

The paper is structured into six sections. The first section is designed to review the city model state of the art, the individual entrepreneur as agent and entrepreneurial, creative and innovative city notions. The second section outlines the key elements governing the research methods and techniques. The following section proposes the city model transformative dimensions. In the fourth section seeks to provide illustrations of the processing dimensions operation. In the fifth section highlights the contributions, impacts and implications of the research. Finally, the last section is dedicated to the final considerations.

## **2. State of the Art**

### *2.1 What does the Literature Mention about City Model?*

Gruen and Wang (1998) have adopted the term city model to designate a type of city as a generator of 3D objects topology of the photogrammetry field. The adoption of the city model term for 3D objects expanded and established close links over the past ten years. The main works analyze city model term in four directions: (1) the 3D city model applied to the registration information (Žiūrienė, Mešliūtė and Makutėnienė 2006); (2) mobile technology with 3D city model (Smart, Quinn and Jones 2011); (3) virtual city model (Yasumoto et al 2011 ; Cappelle et al 2012; Jahnke, Krisp and Kumke 2011); (4) combination of photogrammetry and 3D laser scanner (Sahin et al 2012). Other studies have proposed empirical tools for architects and planners analyze and predict the flow of traffic to the public transport network (Aschwanden et al 2012) and city traffic model in transport (Pastén et al 2012; Dawood et al 2015).

The flag of the term city model linked to the city management tool has been raised from a study by Abbott (1997), proposing the international city hypothesis. The study of Abbott (1997) suggests that the international city is understood as a city model that starts from the interest of the cities in linking marketing operations worldwide. These marketing operations are characterized as complex systems on a global scale (Abbott 1997). In proposing complex marketing operations on a global scale, the international city of Abbott (1997) acquires a competitive advantage in the opportunity to capture attraction and leadership in the business era. This assists in the implementation of competitive actions in the international city (Abbott 1997).

The sustainable city model Egger (2006), on the other hand, raised the sustainability banner within the city, combined with the network society. According to Egger (2006), the city can be considered sustainable if their structures and operations are presented indivisible on the planet. In the Sustainable city, the development of social, environmental, political and cultural, economic and physical are essential and must be promoting key compounds attributes of public services (Egger 2006).

From 2013, in addition to the continuing work on 3D virtual cities, the academic articles city model have expanded in two other directions, namely: (1) development of new concepts that have collaborated for the cities management and competitiveness; (2) General city models that are grouped various models. The combination between the city model and competitiveness was explored in the Singhal, McGrealb and Berry (2013) work,

suggesting regeneration and business strategies as path toward a competitive city. Singhal, McGreal and Berry (2013) also propose a hierarchical methodology for evaluating the cities competitiveness. This proposal, which has been studied in the UK in the beginning is based on regeneration and business strategies for urban competitiveness, and later being expanded in five cities in India (Singhal, McGreal and Berry 2013).

In the field of general city models there are works about city as a nexus, compact city model and multi-city model. The city as a nexus suggests that the development of the city and the region require a transdisciplinary approach (Jacobs 2016). In this approach, there are the situational factors, namely: (1) governmental action; (2) market factors; (3) societal factors; (4) geo-spatial. All these factors connect activities of human life (Jacobs 2016). The notion of compact city is made up by aspects of urban density, from the 2030 plan for the city of Melbourne, Australia (Chhetri et al 2013). Other initiatives refer to the circular city model (Lin and Wu 2015) and gas emission (Liu et al 2013), called multi-city model.

### *2.2 The Creative and Innovative Daring and/or Entrepreneurial Attitude*

The entrepreneur is an individual who has an attitude toward cognitive processes engendered by the creation and innovation (Filion 1993). It follows that creativity and innovation are skills and categories that develop in the sphere of the individual entrepreneur. Filion (1993) points out a set of skills which contribute to overcome the new challenges in the organizations, among which we highlight the entrepreneurial vision, entrepreneurial leadership and energy, considered fundamental to human behavior in postmodern organizations (Filion 1993). Called entrepreneur metamodel, the Filion (1993) proposal points out that one of the fundamental characteristics of the individual is vision, that is, the image projected into the future of a product, service, technology, process or project to be developed (Filion 1993). Other features, such as leadership and energy, are developed by the entrepreneur to implement his vision (Filion 1993).

In other words, there is a vast literature in the entrepreneurship field highlighting the issue of entrepreneurship as the bulwark for the building of a more humane and fair society (Gibb 2002; Mok 2005). What is needed is therefore a decoupage to constitute the entrepreneurship as substantiation of a name and may have a representative in its referent. When Schumpeter (1934, 1961) states that for the innovation construction will be required the destruction of the old and the creation of the new called creative destruction, it would be in such a direction, with respect to technological developments in the border horizon?

At the same time the authors, emphasize, (Hébert and Link 2006; Hisrich and Peters 2004), in order to meet the demand excess for entrepreneurship education, many institutions are recruiting teachers whose training comes often from the business context instead of the academies. Hébert and Link (2006) tend to emphasize specific problems without any conceptual exercise or historical context. Thus, currently the entrepreneurial vision is focal, involving Economics, Sociology and Management areas (Hébert and Link 2006). Thus, it is asked whether these areas would exhaust the problem and the correct use of the term it is as entrepreneurship or entrepreneurial attitude.

The sphere of the human being has been mentioned by Gibb (2002) emphasizing that the globalization whenever it emerges raises a number of questions about the individuals and organizations role in the post-modern society. Pointing the pressure occurrence of various kinds upon the individual (individual, personal and organizational), Gibb (2002) emphasizes the importance of entrepreneurial paradigm to overcome these pressures in postmodern society. The entrepreneurial society proposed by Gibb (2002) is based on the new learning paradigm that is the entrepreneurial education. This overcome occurs from the innovation as one of the entrepreneur essential skills (Gibb 2002). In this field, Schumpeter (1934) was one of the first to associate the entrepreneur and the innovation.

Relying on the prerogative that the processes engendered above are developed in the individual sphere, it appears that the entrepreneurial behavior, creative and innovative also develop in the group ball. This sphere extends through the interactions and own procedural dynamics of the groups, also presented in the organizations. The entrepreneurial skills of Filion (1993) collaborate to foster innovation and entrepreneurship for the organizations growth. Caldas, Fachin and Fischer (1997) present some proposals in the innovation analysis on organizations, namely: (1) construction of organizational activities from innovation; (2) factors analysis that lead to organizations to innovate; (3) seeking ways to work the innovation in complex organizations. These propositions collaborate in order to work the generated tensions by the difficulty of the organizations to innovate as well as seeking to resolve their problems from the innovation (Caldas, Fachin and Fischer 1997; Hatch 1997).

### *2.3 Entrepreneurship, Creativity and Innovation Contributions for a City Model Tool*

Audretsch, Belitski and Desai (2015) state that cities offer possibilities to be studied from the entrepreneurial

perspective. Over time, the implemented actions in the cities management towards entrepreneurship generate an effect that may result in economic growth and cities development (Audretsch, Belitski and Desai 2015). In this direction, Dannestam (2008) states that the formulations of urban competitiveness strategies are fundamental for the creation of an entrepreneurial city. The formulation of these strategies, according to Jessop and Sum (2000), occurs from the entrepreneurial attitude of public policy makers, who begin to act as entrepreneurs in the decision making.

According to Chapin (2002), in the entrepreneurial city the development of the private sector is encouraged from programs promoted by the public sector. The establishment of public-private partnerships and innovation bases are essential for the entrepreneurial city development (Chapin 2002). The integration of urban infrastructure, sustainable development, opening new markets as well as redefining the city position as a global agent also show to be essential for the entrepreneurial cities development (Jessop and Sum 2000; Dannestam 2008; Rahman and Fatima 2011; Hackler 2011).

Another aspect in the development of cities is related to creative and cultural activities. According to Costa et al (2007), cultural activities (creative by nature) are one of the key points of the cities' development strategies. Creativity is an important tool for economic growth and innovation of the cities, as well as the generation of knowledge and the adoption of a culture of knowledge (Grodach 2013; Hospers and Pen 2008).

Thus, the creative city proposes the formulation of urban development strategies aimed at economic growth, local development and urban renewal (Costa et al 2007). According to Costa et al (2007), these strategies are developed from the use of creativity and urban development tool. The creative city focuses its development on attracting highly skilled human resources and creative industries, in addition to the use of creativity as economic growth tool (Costa et al 2007; Grodach 2013; Pratt 2010).

According to Shearmur (2012), innovation is the main way that stimulates economic growth. It is in the cities that occur activities which stimulate the national economy, because they are the center of discussions when innovation is addressed in a regional context (Shearmur 2012). Inkinen (2015) states that the innovative city can be designed both from the creation of a contemporary image and developed of the city (branding), as by the technological profile of public and private services available for the population (public and private technological services). The innovative city construction comes from the public branches, which projects the city development from the generation of innovative and technological knowledge (Marceau 2008; Fang et al 2014; Inkinen 2015; Oh et al 2016).

Table 1. Analysis Categories of Entrepreneurship, Creativity and Innovation in Cities

Analysis Area	Author(s)	Analysis Categories
Entrepreneurship	Jessop and Sum (2000)	Entrepreneurial strategies of public agencies
	Chapin (2002)	Entrepreneurship as a stimulate agent of economic development
	Doucet (2013)	Entrepreneurial strategies of public agencies and partnerships with the private sector
	Glaeser, Rosenthal and Strange (2010)	Entrepreneurship as a comprehension tool of urban activities
	Rahman and Fatima (2011)	Entrepreneurial strategies of public agencies
Creativity	Dannestam (2008)	Innovative strategies to increase the city competitiveness
	Costa et al (2007)	Stimulus to Creative Industries
	Martin et al (2015)	Stimulus to Creative Industries
	Evans (2009)	Investments in S&T and stimulus to Creative Industries
	Waite and Gibson (2009)	Stimulus to Creative Economy
	Å. Andersson and D. Andersson (2015)	Investments in R&D, establishment of an academic environment and transparency of public agencies
	Hospers and Pen (2008)	Diversity and urban instability as conditions which stimulate urban creativity
	Hall (2000)	Stimulus to Creative Industries
	Carter (2013)	Stimulus to Creative Industries
	Grodach (2013)	Stimulus to Creative Economy
Innovation	Hospers (2008)	Establishment of a city brand
	Capello, Caragliu and Lenzi (2012)	Investments in R&D and higher education
	Shearmur (2012)	Innovation as social process in cities
	Marceau (2008)	Stimulus to innovation and knowledge from public agencies to firms and population
	Fang et al (2014)	Science, technology and innovation in urban environment
Inkinen (2015)	Science, technology and the establishment of a city branding in urban environment	

The city innovative image is idealized according to the way its citizens, tourists and governments see it as able to attract investment and foster innovation (Hospers 2008; Hicks et al 2001). According to Hospers (2008), this image called branding, it is related to the city ability to attract investments, technology companies, tourists and make possible the qualified human resources to settle in the city. To make it happen, the public sector of the innovative city must act in some directions, namely: (1) to have a transparent decision, favoring innovation activities (Fang et al 2014; Inkinen 2015); (2) to encourage innovation even in times of economic stability and economic growth (Hospers 2008); (3) to involve the community with the growth objectives towards innovation, regardless of the city population density (Hospers 2008).

As complex organizations, the impacts of understanding the entrepreneurial implications, creative and innovative in cities must pass at first by the categorization of these concepts. Table 1 shows the main categories of the cities three development areas, namely entrepreneurship, creativity and innovation.

### 3. Methods and Techniques

Being an exploratory and qualitative research, we have adopted the reflexive methodology for the study (Alvesson and Sköldeberg 2000). The survey has been conducted in five stages. On the first stage has been developed the city model state of the art review of the individual while entrepreneurial agent, and the creative and innovative city notions. Next, we've performed the main elements analysis that make up each one of these notions. On the third stage have been identified the dimensions that make up the model of the city model. On the fourth stage was made the data collection at the level of cities in Brazil. We collected data on design, programs and entrepreneurial actions, creative and innovative in 51 Master Plans (MP) of 52 Brazilian cities, ranked according to their Municipal Human Development Indexes (IDHM) in 2010, prepared by the United Nations Development Programme (UNDP). On the fifth and final stage was held the city model operation illustration, taking into account the City Statute and the cities data collection.

### 4. The Entrepreneurial City Model Tool

The city model term literature review reveals that the word has no meaning and connection to the entrepreneurship field. Also the entrepreneurial review literature, creative and innovative city provides a scientific knowledge platform in this article that enables to anchor the city model transformative propositions. In the literature reflection it has been found that creativity and innovation are entrepreneurial behavior characteristics and they are closely linked to the individual sphere. Anchored in this prerogative that the processes of enterprise, create and innovate are resulted from the individual sphere, it appears that the entrepreneurial behavior, creative and innovative develops and expands through the interactions and group dynamics procedures, disseminating in the organization and in all contexts of society, whether at the municipal, state or federal level. Supported on these findings, we have adopted and prefer to work with the term entrepreneurial city model tool, due to of synthesizing, assembling and embracing the creative city notions and innovative city and not creative or innovative city model. As it has been noted, creativity and innovation are key features of the individual entrepreneur.

The entrepreneurial city model tool (Table 2) which is proposed has as its starting point the work of Taran et al (2015). The entrepreneurial city model tool meets five essential transformative dimensions: value proposition, customers, value configurations, strategic partnerships and revenue model. These aspects contribute to broaden the understanding and understanding the city new concept (entrepreneurial, creative and innovative) that aims to be achieved in the short, medium or long term and provides information to the cities management process (Baglieri, Cinici and Mangematin 2011).

Table 2. The Entrepreneurial City Model Tool

Dimension	Issue
<b>Value Proposition</b>	What city conception do we wish to build?
<b>Customers</b>	To whom is this city conception?
<b>Value Configuration</b>	What are the resources and activities which enable the build of the city conception?
<b>Strategic Partnerships</b>	What partnerships will be held to build this city conception?
<b>Revenue Model</b>	What revenue structure will be pursue?

The entrepreneurial city model tool proposed and its transformative dimensions (Table 2) seek to synthesize, assemble and embrace the notions of entrepreneurial city, creative city and innovative city, from the postulation of five questions that guide the public policies formulation for city management. These issues are related to the way in which decision-makers and public policy makers in the cities seeking: (1) to identify the concept of city design that will be pursued and the image addressed that will be inserted and created in the value proposition; (2) to establish to whom this city design is inserted to the value proposition; (3) to postulate resources (human,

financial, economic, social and technical) and activities that promote the concept of desired city; (4) to determine the major partnerships that must be performed for the city design construction; (5) to sedimentary the revenues structure that will be implemented in the new city design.

## 5. Operationalization of the Entrepreneurial City Model Tool

The entrepreneurial city model tool (ECM tool) proposed aims to increase the dynamics understanding of the procedural flow in the city context, from the entrepreneurial activity perspective. These process flows dynamics can be expressed in the city, for example, in the planning, implementation and actions monitoring, programs, projects and public policies directed to notions of entrepreneurial city, creative and innovative. The dimensions processing operation that comprise the ECM tool illustrates the understanding of public policies carried out in the city towards an entrepreneurial society. It is wanted, in this article, to illustrate the tool at two levels, namely: (1) Federal, in particular, by the Brazilian Cities Statute Law; (2) Location, i.e., in the city, supported by the Cities Master Plans with the 50 largest Municipal Human Development Index (IDHM) of Brazil.

### 5.1 City Statute

The City Statute (Brazilian Law No. 10,257 of 07/10/2001) is the law that establishes and regulates urban policy and the cities' planning in terms of socioeconomic development in Brazil (Brazil 2001). The Statute lays down the main guidelines by which the policymakers should work towards the Brazilian cities development strategies, for example, Master Plans (MP). The MP is the management plan that posits the city main development guidelines, with its mandatory update every 10 years (Brazil 2001). In a particular way, the City Statute emphasizes that in cities with a population of 20000 inhabitants, is through the MP that ensures citizens the quality of life, social justice and ensuring the development of economic activities in the city (Brazil 2001).

In the analysis of the City Statute was found the lack of entrepreneurial, creative and innovative city notions as drivers of public policies and the cities' planning. However, even being absent the mention of guidelines linked to entrepreneurship, creativity and innovation in the Statute, the ECM tool and its dimensions allow foster and broaden the understanding of the main guidelines and strategies to be developed in relation to the dynamics of the cities. This understanding fostered by the ECM tool aims to collaborate with the planning, implementation and monitoring of public policies sedimented in the entrepreneurship paradigm, and to be able to ensure compliance with the guidelines presented in the Statute.

The ECM tool proposed raises the discussion about the building of a design and the city image aligned with the Statute guidelines, while surrounding it with the entrepreneurial dynamic, creative and innovative. On the other hand, it lists the resource identification dynamics (human, financial, economic, social and technical), the creation of partnerships and the establishment of a revenue structure in the city of design construction. Finally, the ECM tool also raises the reflection on the construction beneficiaries of the design proposed city and to whom the city is designed, inserting it into the value proposition.

### 5.2 Cities Master Plans

The cities survey with the 50 largest Municipal Human Development Indexes (IDHM) in 2010 (52 cities), is presented in Table 3. These cities represent more than 30% of gross domestic product (GDP) in 2013, according with the Brazilian Institute of Geography and Statistics (Brazilian Institute of Geography and Statistics [IBGE], 2013). Preliminary analysis of the data leads us to some conclusions: (1) The Águas de São Pedro town has no Master Plan (MP), depending on which has an estimate population of less than 20000 inhabitants; (2) Of the 52 cities, 28 are not included in their MPs activities or development initiatives related to entrepreneurship and/or creativity and/or innovation. The analyzed cities MPs of six towns (Assis, Rio Claro, São Miguel do Oeste, Botucatu and São José do Rio Preto) entrepreneurial activities have been identified without mentioning innovation activities. In three cities (Ilha Solteira, Jaraguá do Sul, Rio de Janeiro) creative and innovative activities have been identified, not mentioning the entrepreneurial activities.

Table 3. City with the 50 largest Municipal Human Development Indexes (IDHM) in 2010

City	State	IDHM (2010)	Population (2010)	Revenue (R\$ 1 000) (2014)	STPs Initiatives			Master Plans		
					Project	Implementation	Operation	E	C	I
São Caetano do Sul	SP	0,862	149.263	4.274.921	0	0	0			NTI
Águas de São Pedro	SP	0,854	2.707	92.926	0	0	0			NTPD
Florianópolis	SC	0,847	421.240	5.140.297	0	0	2	X		X
Vitória	ES	0,845	327.801	6.261.187	0	1	0			NTI
Balneário Camboriú	SC	0,845	108.089	1.973.150	0	0	0			NTI
Santos	SP	0,840	419.400	7.926.384	0	1	0	X		X
Niterói	RJ	0,837	487.562	7.027.294	0	0	0			NTI
Joaçaba	SC	0,827	27.020	444.000	0	0	0			NTI
Brasília	DF	0,824	2.570.160	65.516.179	1	2	0	X	X	X
Curitiba	PR	0,823	1.751.907	23.290.047	0	0	2	X		
Jundiá	SP	0,822	370.126	6.167.892	0	0	0	X		X
Valinhos	SP	0,819	106.793	1.643.258	0	0	0			NTI
Vinhedo	SP	0,817	63.611	1.566.185	0	0	0			NTI
Araraquara	SP	0,815	208.662	Não Informado	0	0	0	X		X
Santo André	SP	0,815	739.407	7.398.617	1	0	0	X		X
Santana de Parnaíba	SP	0,814	108.813	2.682.961	0	0	0			NTI
Nova Lima	MG	0,813	80.998	2.310.758	0	0	0			NTI
Ilha Solteira	SP	0,812	25.064	471.689	1	0	0			X
Americana	SP	0,811	210.638	2.420.432	0	0	0			NTI
Belo Horizonte	MG	0,810	2.375.151	32.693.412	0	0	1	X		X
Joinville	SC	0,809	512.288	6.248.217	1	0	1	X		X
São José	SC	0,809	209.804	1.971.324	0	0	0			NTI
Maringá	PR	0,808	357.077	4.152.220	1	0	0			NTI
São José dos Campos	SP	0,807	629.921	8.817.953	0	0	2	X		X
Blumenau	SC	0,806	309.011	4.240.927	1	0	1			NTI
Presidente Prudente	SP	0,806	207.610	2.171.777	0	0	0			NTI
Rio Fortuna	SC	0,806	4.446	81.215	0	0	0			NTI
Campinas	SP	0,805	1.080.113	22.280.062	2	2	1	X		X
Porto Alegre	RS	0,805	1.409.351	19.531.223	1	1	0	X		
São Paulo	SP	0,805	11.253.503	157.745.044	2	0	0	X		X
Assis	SP	0,805	95.144	940.000	0	0	0	X		
São Bernardo do Campo	SP	0,805	765.463	13.123.139	0	0	0			NTI
São Carlos	SP	0,805	221.950	2.462.899	0	1	1			NTI
Rio Claro	SP	0,803	186.253	2.496.354	0	0	0	X		
Jaraguá do Sul	SC	0,803	143.123	2.320.316	0	0	0			X
Rio do Sul	SC	0,802	6.198	858.688	0	0	0			NTI
São Miguel do Oeste	SC	0,801	36.306	380.731	0	0	0	X		
Bauru	SP	0,801	343.937	3.417.326	0	0	0			NTI
Pirassununga	SP	0,801	70.081	755.389	0	0	0			NTI
Ribeirão Preto	SP	0,800	604.682	7.438.627	0	1	0	X		X
Botucatu	SP	0,800	127.328	1.315.601	0	1	0	X		
Taubaté	SP	0,800	278.686	3.246.375	0	0	0			NTI
Vila Velha	ES	0,800	414.586	3.157.767	0	0	0			NTI
Concórdia	SC	0,800	68.621	832.057	0	0	0			NTI
Rio de Janeiro	RJ	0,799	6.320.446	81.114.007	3	0	2		X	X
Goiânia	GO	0,799	1.302.001	13.347.102	0	1	0			NTI
Sorocaba	SP	0,798	586.625	8.162.600	0	0	1			NTI
Marília	SP	0,798	216.745	2.507.222	0	0	0			NTI
Guaratinguetá	SP	0,798	112.072	1.024.763	0	0	0			NTI
São João da Boa Vista	SP	0,797	83.639	1.452.081	0	0	0	X	X	X
São José do Rio Preto	SP	0,797	408.258	4.720.461	0	0	0	X		
Fernandópolis	SP	0,797	64.696	600.645	0	0	0			NTI

Notes. STP=Science and Technology Parks, NTI=Master Plan does not provide information about development activities linked to entrepreneurship and/or creativity and/or innovation, NPPD=city does not have a Master Plan, E=development activities linked to entrepreneurship, C=development activities linked to creativity, I=development activities linked to innovation.



The ECM tool synthesizes, assembles and embraces the entrepreneurial activities, creative and innovative in a single conceptual tool as the goal to expand and facilitate the understanding power of the Brazilian cities MPs. This understanding is related to the notion of process flows dynamics that the dimensions of the ECM model offer as an analysis resource of planning, implementation and monitoring of the strategies established in developed countries. First, the tool shows that developed countries may consider as highlight the creative and innovative activities, since they would be carried out in the human sphere and social groups. Second, to mention in the MPs creative and innovative activities without highlighting the entrepreneurial activities, these MPs when analyzed in the light of the tool, they are not properly aligned with the attitude concept and entrepreneurial behavior which are promoted through culture and entrepreneurial education. Third, the MPs analysis were found that the strategies presented include the formulation of public policies for the cities development as it is in the cities that these policies will be implemented. Considering the light of transformative dimensions of the ECM tool, the MPs understanding expands the understanding of how public policy can be held in the city towards the construction of an entrepreneurial society.

In this direction, these activities understanding related to entrepreneurship and innovation mentioned in the developed countries is facilitated by the dimensions proposed regarding to the tool ontological questions. This understanding can be divided into two spheres, namely: (1) cities that do not have development activities related to entrepreneurship and/or creativity and/or innovation in their MPs; (2) cities with development activities related to entrepreneurship and/or creativity and/or innovation in their MPs. In the first level, the ECM tool raises the discussion on the planning of public policies that require alignment and convergence with the terms of the City Statute and the accomplishment of development guidelines, with respect to entrepreneurship, creativity and innovation. The tool is a facilitation for the municipal public policies formulators, to guide the construction of a sedimented city design in the entrepreneurship paradigm.

In the second sphere, the ECM tool allows to establish the correlation between the postulations of development activities presented in the MPs and their effective realization in the cities. The reflections on planning, implementation and monitoring of public policies related to entrepreneurship, creativity and innovation raised by the tool help the municipal public policy formulators on the decision making. Decisions as the city design that will be built and its value proposition, as well as the ability to identify the resources (human, financial, material, social and economic) needed to be taken into account in this building, allows to align the MPs strategies to the search for an entrepreneurial society. In the same way, the inferences accomplished in relation to whom is for the design city for, the major partnerships and revenue structure collaborate with the serviced of development strategies postulated in developed countries, but now under the entrepreneurship paradigm.

## **6. Contributions and Practical Implications**

The final results from this present article have several practical implications. We will highlight four groups of practical implications, namely: (1) public management, to the city level, state and country; (2) policy makers; (3) researchers and scholars from universities; (4) human resource professionals. In the city public administration, the ECM tool can constitute on a planning tool, organization, implementation and projects monitoring, programs and policies towards an entrepreneurial design city, state and country. The tool can be taken to stimulate the entrepreneurial culture and a new practice of entrepreneurial public management.

Policy-makers and executives of cities, states and country can promote culture in entrepreneurship and empowerment of people in the adoption of the tool linked to every sphere of public management. The promotion of culture and training will enable to propose amendments to the City Statute and MPs and other legal frameworks aiming at the inclusion of entrepreneurship, creativity and innovation as key drivers of economic and city social development, state and country. Researchers may develop verticalized and further investigation using the results of this research in light of the entrepreneurship field. Undergraduate courses and other courses related to the given public administration, whether in universities or government schools, may introduce new courses or new contents, from the results generated in this research, stimulating new cultures and practices related to the entrepreneurship field. The human resource professionals may introduce the culture of entrepreneurship, creativity and innovation and training courses in these areas, among professionals of companies that provide services to government agencies.

## **7. Final Considerations**

It will be necessary to strengthen the following position: (1) the absence of a tool in the national and international literature of entrepreneurship field that gathers, synthesizes and embraces the entrepreneurial city notions, creative city and innovative city in a single analysis model; (2) the absence of a tool leaves the field devoid of instrument that can facilitate the understanding of these dynamics in the formulation of the city public

policies, to the detriment of the development and economic growth. The proposition about transformative dimensions is embedded in entrepreneurial city model tool, under the entrepreneurial, creativity and innovation level. The developed city model does not offer guarantee of a ready and closed model and will contribute essentially: (1) In the international academic production field of entrepreneurship; (2) In the preparation, implementation and projects monitoring, of programs and policies in cities; (3) In cities development plans.

At the city level, this paper intended to discuss the creation of a research agenda focused on the formulation, implementation, monitoring and evaluation of city models which encourage the development of cities, supported the notions of entrepreneurship, creativity and innovation. The tool contributes to explore, analyze, compare and learn programs, projects, actions and initiatives aimed at the cities development. The action activities and decisions illustration implemented by the cities from the tool may encourage other cities to develop their public policies towards the entrepreneurial, creative and innovative activities.

The results arising from this study provide elements which collaborate in the understanding of the term city model as a tool that assists the planning, implementation and monitoring the city public management towards an entrepreneurial society and a new conception of entrepreneurial city, creative and innovative. New lines of research can be established from this present study and may result in city models constructs to guide the city based on entrepreneurship paradigm, as well as in the development of tools capable of measuring the entrepreneurial dynamics, creative and innovative in the cities.

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## Appendix A

### Online Access to Cities Master Plans

City	Master Plan
Águas de São Pedro	This city does not have a Master Plan
Americana	<a href="https://leismunicipais.com.br/plano-diretor-americana-sp">https://leismunicipais.com.br/plano-diretor-americana-sp</a>
Araraquara	<a href="http://www.araraquara.sp.gov.br/pagina/Default.aspx?IDPagina=3973">http://www.araraquara.sp.gov.br/pagina/Default.aspx?IDPagina=3973</a>
Assis	<a href="http://www.assis.sp.gov.br/arquivos/11177_texto_integral.pdf">http://www.assis.sp.gov.br/arquivos/11177_texto_integral.pdf</a>
Balneário Camboriú	<a href="http://www.balneariocamboriu.sc.gov.br/sec_planejamento/planos.cfm?codigo=1">http://www.balneariocamboriu.sc.gov.br/sec_planejamento/planos.cfm?codigo=1</a>
Bauru	<a href="http://hotsite.bauru.sp.gov.br/planodiretor/lei.aspx">http://hotsite.bauru.sp.gov.br/planodiretor/lei.aspx</a>
Belo Horizonte	<a href="http://www.cmbh.mg.gov.br/atividade-legislativa/planejamento-orcamento-publico/plano_diretor">http://www.cmbh.mg.gov.br/atividade-legislativa/planejamento-orcamento-publico/plano_diretor</a>
Blumenau	<a href="http://www.blumenau.sc.gov.br/governo/secretaria-de-planejamento/pagina/revisao-plano-diretor-seplan">http://www.blumenau.sc.gov.br/governo/secretaria-de-planejamento/pagina/revisao-plano-diretor-seplan</a>
Brasília	<a href="http://www.segeth.df.gov.br/preservacao-e-planejamento-urbano/pdot.html">http://www.segeth.df.gov.br/preservacao-e-planejamento-urbano/pdot.html</a>
Campinas	<a href="http://www.campinas.sp.gov.br/governo/seplama/plano-diretor-2006/">http://www.campinas.sp.gov.br/governo/seplama/plano-diretor-2006/</a>
Concórdia	<a href="http://www.concordia.sc.gov.br/#!/tipo/pagina/valor/102">http://www.concordia.sc.gov.br/#!/tipo/pagina/valor/102</a>
Curitiba	<a href="http://www.curitiba.pr.gov.br/planodiretor">http://www.curitiba.pr.gov.br/planodiretor</a>
Fernandópolis	<a href="http://www.fernandopolis.sp.gov.br/uploads/conteudo/a41da96308c902410b9d6c773d8fa180lc-51--plano-diretor.pdf">http://www.fernandopolis.sp.gov.br/uploads/conteudo/a41da96308c902410b9d6c773d8fa180lc-51--plano-diretor.pdf</a>
Florianópolis	<a href="http://www.pmf.sc.gov.br/arquivos/arquivos/pdf/04_02_2014_12.01.39.ae8afdb369c91e13ca6efcc14b25e055.pdf">http://www.pmf.sc.gov.br/arquivos/arquivos/pdf/04_02_2014_12.01.39.ae8afdb369c91e13ca6efcc14b25e055.pdf</a>
Goiania	<a href="http://www.goiania.go.gov.br/shtml/seplam/legislacao/legislacao.shtml">http://www.goiania.go.gov.br/shtml/seplam/legislacao/legislacao.shtml</a>
Guaratinguetá	<a href="http://www.splonline.com.br/camaraguaratingueta/Arquivo/Documentos/legislacao/image/C232006.pdf">http://www.splonline.com.br/camaraguaratingueta/Arquivo/Documentos/legislacao/image/C232006.pdf</a>
Ilha Solteira	<a href="http://www.ilhasolteira.sp.gov.br/planodiretor/">http://www.ilhasolteira.sp.gov.br/planodiretor/</a>
Jaraguá do Sul	<a href="http://www.jaraguadosul.sc.gov.br/downloads.php?cat=185">http://www.jaraguadosul.sc.gov.br/downloads.php?cat=185</a>
Joaçaba	<a href="http://www.joacaba.sc.gov.br/portalcidadao/index/detalhes/codMapaItem/12959/codServico/913">http://www.joacaba.sc.gov.br/portalcidadao/index/detalhes/codMapaItem/12959/codServico/913</a>
Joinville	<a href="https://ippuj.joinville.sc.gov.br/arquivo/lista/codigo/9-Plano+Diretor+de+Joinville.html">https://ippuj.joinville.sc.gov.br/arquivo/lista/codigo/9-Plano+Diretor+de+Joinville.html</a>
Jundiá	<a href="http://planodiretor.jundiai.sp.gov.br/legislacao/">http://planodiretor.jundiai.sp.gov.br/legislacao/</a>
Marília	<a href="http://camar.sp.gov.br/index2.php?pag=T1RFPU9HWT1PRFE9T1RNP9UUT1ObUk9T1RBP9XST1PR1U9T1dZPU9XRT1P">http://camar.sp.gov.br/index2.php?pag=T1RFPU9HWT1PRFE9T1RNP9UUT1ObUk9T1RBP9XST1PR1U9T1dZPU9XRT1P</a>
Maringá	<a href="http://www2.maringa.pr.gov.br/sistema/arquivos/geo/leis/lc_632_2006_plano_diretor_lei_consolidada.pdf">http://www2.maringa.pr.gov.br/sistema/arquivos/geo/leis/lc_632_2006_plano_diretor_lei_consolidada.pdf</a>
Niterói	<a href="http://urbanismo.niteroi.rj.gov.br/planodiretor/">http://urbanismo.niteroi.rj.gov.br/planodiretor/</a>
Nova Lima	<a href="http://www.novalima.mg.gov.br/plano-diretor-revisado/">http://www.novalima.mg.gov.br/plano-diretor-revisado/</a>
Pirassununga	<a href="http://www.camarapirassununga.sp.gov.br/ged/lc/2006/69.pdf">http://www.camarapirassununga.sp.gov.br/ged/lc/2006/69.pdf</a>
Porto Alegre	<a href="http://www2.portoalegre.rs.gov.br/spm/default.php?p_secao=205">http://www2.portoalegre.rs.gov.br/spm/default.php?p_secao=205</a>
Presidente Prudente	<a href="http://www.presidenteprudente.sp.gov.br/site/planejamento_urbano.xhtml">http://www.presidenteprudente.sp.gov.br/site/planejamento_urbano.xhtml</a>
Ribeirão Preto	<a href="http://www.ribeiraopreto.sp.gov.br/splan/planod/i28planod.php">http://www.ribeiraopreto.sp.gov.br/splan/planod/i28planod.php</a>
Rio Claro	<a href="http://rioclaro.sp.gov.br/pd/index.php">http://rioclaro.sp.gov.br/pd/index.php</a>
Rio de Janeiro	<a href="http://www.rio.rj.gov.br/web/smu/plano-diretor1">http://www.rio.rj.gov.br/web/smu/plano-diretor1</a>
Rio do Sul	<a href="http://riodosul.sc.gov.br/index.php/prefeitura/a-cidade/plano-diretor">http://riodosul.sc.gov.br/index.php/prefeitura/a-cidade/plano-diretor</a>
Rio Fortuna	<a href="http://www.camararf.sc.gov.br/anexos/plano-diretor.pdf">http://www.camararf.sc.gov.br/anexos/plano-diretor.pdf</a>
Rio Preto	<a href="http://www.riopreto.sp.gov.br/PortalGOV/do/subportais_Show?c=144">http://www.riopreto.sp.gov.br/PortalGOV/do/subportais_Show?c=144</a>
Santana de Parnaíba	<a href="http://www.santanadeparnaiba.sp.gov.br/pdm_2005.html">http://www.santanadeparnaiba.sp.gov.br/pdm_2005.html</a>
Santo André	<a href="http://www.cmsandre.sp.gov.br/index.php?option=com_content&amp;view=article&amp;id=505&amp;Itemid=64">http://www.cmsandre.sp.gov.br/index.php?option=com_content&amp;view=article&amp;id=505&amp;Itemid=64</a>
Santos	<a href="http://www.santos.sp.gov.br/sites/default/files/conteudo/LC%20821_2013_Planos%20Diretor.pdf">http://www.santos.sp.gov.br/sites/default/files/conteudo/LC%20821_2013_Planos%20Diretor.pdf</a>
São Bernardo do Campo	<a href="http://www.saobernardo.sp.gov.br/plano-diretor">http://www.saobernardo.sp.gov.br/plano-diretor</a>
São Caetano do Sul	<a href="http://www.saocaetanodosul.sp.gov.br/pdfs/planos/lei4438planodiretor.pdf">http://www.saocaetanodosul.sp.gov.br/pdfs/planos/lei4438planodiretor.pdf</a>
São Carlos	<a href="http://www.saocarlos.sp.gov.br/index.php/utilidade-publica/plano-diretor.html">http://www.saocarlos.sp.gov.br/index.php/utilidade-publica/plano-diretor.html</a>
São João da Boa Vista	<a href="http://www.saojoao2050.com.br/">http://www.saojoao2050.com.br/</a>
São José	<a href="http://www.saojose.sc.gov.br/index.php/sao-jose/plano-diretor-vigente">http://www.saojose.sc.gov.br/index.php/sao-jose/plano-diretor-vigente</a>
São José do Rio Preto	<a href="http://www.riopreto.sp.gov.br/PortalGOV/do/subportais_Show?c=144">http://www.riopreto.sp.gov.br/PortalGOV/do/subportais_Show?c=144</a>
São José dos Camps	<a href="http://www.sjc.sp.gov.br/secretarias/planejamento_urbano/plano_diretor.aspx">http://www.sjc.sp.gov.br/secretarias/planejamento_urbano/plano_diretor.aspx</a>
São Miguel do Oeste	<a href="http://www.saomiguel.sc.gov.br/noticias/5/plano-diretor-municipal">http://www.saomiguel.sc.gov.br/noticias/5/plano-diretor-municipal</a>
São Paulo	<a href="http://www.prefeitura.sp.gov.br/cidade/secretarias/desenvolvimento_urbano/legislacao/plano_diretor/index.php?p=1386">http://www.prefeitura.sp.gov.br/cidade/secretarias/desenvolvimento_urbano/legislacao/plano_diretor/index.php?p=1386</a>
Sorocaba	<a href="http://www.sorocaba.sp.gov.br/portal/servicos/plano-diretor-de-sorocaba">http://www.sorocaba.sp.gov.br/portal/servicos/plano-diretor-de-sorocaba</a>
Taubaté	<a href="https://leismunicipais.com.br/plano-diretor-taubate-sp">https://leismunicipais.com.br/plano-diretor-taubate-sp</a>
Valinhos	<a href="https://leismunicipais.com.br/plano-diretor-valinhos-sp">https://leismunicipais.com.br/plano-diretor-valinhos-sp</a>
Vila Velha	<a href="http://www.vilavelha.es.gov.br/paginas/desenvolvimento-urbano-plano-diretor-municipal-pdm">http://www.vilavelha.es.gov.br/paginas/desenvolvimento-urbano-plano-diretor-municipal-pdm</a>
Vinhedo	<a href="http://www.vinhedo.sp.gov.br/meio-ambiente-e-urbanismo/revisao-do-plano-diretor-participativo-de-vinhedo-2016-2/">http://www.vinhedo.sp.gov.br/meio-ambiente-e-urbanismo/revisao-do-plano-diretor-participativo-de-vinhedo-2016-2/</a>
Vitória	<a href="http://sistemas.vitoria.es.gov.br/webleis/Arquivos/2006/L6705.PDF">http://sistemas.vitoria.es.gov.br/webleis/Arquivos/2006/L6705.PDF</a>

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# Investigating the Factors Influencing Parent Toy Purchase Decisions: Reasoning and Consequences

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## Abstract

The purpose of this study is to explore and verify the main determinants of parent toy-choice decision-making by using a theoretical model for toy-selection decisions and exploring toy-purchasing behaviour empirically. After reviewing a large number of previous studies, this study's model was developed and designed. A variety of determinants were identified and then categorized into six main broad categories, namely, purpose-of-using related factors, emotional-related factors, educational-related factors, cost-related factors as well as child and parent demographic-related factors. A quantitative methodology was adopted to test the study's model by drawing on six hypotheses, which were then tested statistically. A self-administrative survey was developed to collect the preliminary data from customers (mainly parents) who had been involved in toy purchasing by applying the convenience sampling method. The study hypotheses were tested and the findings were also discussed in-depth.

The study found that parent toy purchase decision is derived by a set of factors which are purposes of using-related factors, emotional-related factors, informational-related factors, cost-related factors, children demographical-related factors and parental demographical-related factors.

**Keywords:** toys, parent choice, toy purchase, emotion, education, cost, children demographical factors, parental demographical factors

## 1. Introduction

Parents are often concerned when deciding which toys to buy for their children and for what use or purpose. There has also not been in-depth research on toy-selection determinants in literature. Buying a toy is rather seen as a simple action in its context, but there are a set of considerations behind toy buying that needs to be explored especially from parental perspectives. In addition, toy markets are a complex and changing industry from an economic perspective. For example, the world toy market has been described as dynamic with its sales estimated to be \$61 billion in 2004 and \$72 billion in 2007, reaching \$84.1 billion in 2012 (NDP Group, 2008). In addition, within the US market and according to the Toy Association's report summation, the toy market had reached \$22 billion in 2012 (Toys Industry Association, Inc., 2013).

Choosing a toy is not as simple as the majority of parents may think. A toy should be chosen initially with respect to many child considerations such as abilities, development, safety, age and gender. However, studies which are related directly to aspects which affect the selecting and purchasing of toys related to educational or emotional aspects are scarce. This finding is evident in spite of some studies referring to the right way of choosing toys for children's use and also recommending careful toy selection by teachers and/or parents. Some of children toy studies have been conducted on toy preferences and toy types as well as toy uniqueness and formation. Thus, this research has been planned to investigate the main factors that determine toy selection in a way to encompass value to the toy purchasing behavioural phenomena, based on new reasoning and consequence classifications, which is seen as important issue today. In addition, providing a practical-based study to practitioners and scholars on how parents usually purchase toys for their children supported by suitable justifications for their decisions, was another considered variable for this study. A further contribution highlighted by this study is that it could help toys producers to explore how parents decide and discern which toy products to purchase for their children in a realistic behavioural setting as well as why these decisions are made.

From a review of studies, it was found that toy selection research has not been pursued by scholars, and, as a result, there has been limited research conducted to identify the factors affecting toy selection from a parent's point of view, especially in the Jordanian market. When toy purchases are made, three contradictory issues involved with toy requisition are identified, namely, child personality, the reason for the purchases and toy costs (Fisher-Thompson et al., 1995). Also, knowing the reasons behind toy purchases is essential and needs more investigation. However, determining the reasons behind buying are important, other purchase reasoning or unfamiliar purchase consequences that emanate from other sources are also important. These reasons may include TV promotional effects, gender-type effect, fun and learning effect, social interaction effect, parent reference groups, cross-infection and peer friend effects (Angier, 1981; Poulin et al., 1997; Al-dmour & AlShurideh, 2008; Merriman et al., 2002; Cherney & London, 2006; Priya et al., 2010; Vail & Elmore, 2011; AL-Dmour et al., 2014). Moreover, taking a closer look at toy-purchasing influences is important especially when some of these influences play a critical role when buying these products, which are often commensurate to family income, parent education levels and knowing the reasons for buying.

## 2. Study Importance

By reviewing many studies related to toy selection, the toy market is usually influenced by many factors and has faced many challenges. The toy market has been influenced by the increased intention to buy online and the use electronic products, distribution channel changes as the majority of organizations rely on Internet use, rapid product turnover, short life-time cycle and seasonal demand (Johnson, 2001; Bae & Lee, 2011; Al-dweeri et al., 2017). Such factors influence the process of toys buying and toys buying behaviour. Thus, to understand the vital role in selecting toys, a careful consideration ought to be exerted to know more about toy-product purchasing behaviour by identifying their selection determinants.

The importance of this study is not merely derived from investigating the importance of parental toy selection, but it also comes from having a closer gaze at purchase reasons to determine the relative importance for these reasons. Identifying the main factors that affect parent-toy selection and to what degree these determinants will affect their decision-making leads towards enhancing these behaviours to better understand and subsequently that can be shaped effectively.

The issue statement includes the key problematic factors addressed in a research project. Sekaran (2009, p.45) defines an issue statement as a "clear precise and succinct statement of the specific issue that a researcher wishes to investigate". Based on the literature, this research attempts to provide an understanding of the toy-selection issue and its role in parent toy-selection decisions. In particular, the problem in this research is "to what extent can toy selection determinants be defined and tested within the Jordanian toys market context?" This study addresses this question in a way to facilitate clearly the process of measuring the selected factors and testing their effect on parent toy selection. This study tends to summarize, initially, the main factors affecting toys selection within the parent-behavioural context. Secondly, the study intends to determine the relative importance for each toy selection and purchase determinant from a customer's perspective. Thirdly, it tests statistically a set of factors that have rarely been investigated before, such as educational and emotional interrelated factors that affect parent toy-purchase decisions with respect to child considerations such as age and gender.

## 3. Literature Review - Factors Affecting Toy Selection

By reviewing many studies that relate to toys selection, it has been noted that there are a variety of reasons for selections made. The majority of toy choice studies have been conducted to differentiate initially between boys and girls and have tried to match gender specification and toy selection. A good early toy study example was of toys given to children admitted to hospitals (Gips, 1950). The study found that among the various toy types, children played most frequently with yank toys, fantasy play-type toys, and toys that had parts for handling. Another study revealed some factors which affect the purchase decision of mothers. Children's age is one of the factors; older children make fewer direct attempts to influence the decision of their parents, but they are also more successful with these attempts than the younger children (McNeal, 1969; Ward, 1972; Ward and Wackman, 1972a; Wells, 1965). Further, parents tend to seek opinions from their older children towards the purchases; it was also discovered that with an increase in age, girls begin to make decisions towards products that are both family oriented and for personal use, while boys tend to only purchase products for their own personal agenda (Mehrotra and Torges, 1977). These results contribute to the overall influence mothers have on their daughters in a traditional female role as mothers are the ones who do most of the shopping (McNeal, 1969).

Much of the research on parent toy choice was made on children's toy preferences, which was related to the gender-typing of toys and gender differences in toy selection. According to Goldberg and Lewis (1963) there was a significant gender difference in how much time children of different genders spend with their toys and the

ways toys were manipulated by young children. Additionally, the effects of the gender of children have on their parents upon toy selection was investigated. The contents of children's rooms as a symbol of parent behaviour was taken into consideration for both genders (Rheingold & Cook, 1975). In a study by Rheingold and Cook (1975) it was discovered that male infants were provided with more vehicles, educational and art materials, sport equipment, machines and military toys, while female infants were provided with more dolls, doll houses and domestic items. Within the same stream, O'Brien and Huston (1985) noted that more domestic same-gender-type toys that had cross-gender-type toys were possessed by both girls and boys.

A study done on the contents that were found in children's rooms by Rheingold and Cook (1975), found that many of the toys in boys' rooms encouraged them to do outdoors activities, such as sports, cars, animals and the military while girls were directed more towards activities at home like housekeeping and caring for children considering the amounts of babies and dolls. They suggested that this is only due to the behavior of parents and not that of the children themselves as their reasoning was guided by what they found their children enjoyed playing with despite their gender and personality. A study by Eisenberg et al.'s (1985) on parental socialization of young children's toys revealed that parents chose more neutral toys than masculine or feminine toys for their daughters. Another similar study by Schwartz and Markha (1985) on children's toy advertising for gender-stereotyping found that although pictures on toy packages were strongly gender-stereotyped, there was no evidence that parents were influenced by such pictures in their toy selection. While Peretti and Sydney (1984) discovered that both parents and children preferred toys of the same sex and that 91% of the boys and 81% of the girls demonstrated a toy preference that related to parental toy choices.

According to O'Brien and Huston (1985), the highest mean ratings to feminine toys for their daughters and to masculine toys for their sons were given by both parents when asked to rate how much they thought their children actually played with a number of toys. When comparing the ratings with the actual proportion of time the children played with their toys, it was revealed that there was a significant positive correlation for boys but not for girls. Unlike boys, girls mostly liked to play with blocks, a pegboard, a toy dog and a toy cat, while the boys were more active in their play than were the girls. Unlike girls, Cameron et al. (1985) discovered that boys liked to play more with masculine toys and less with feminine toys. In one study, O'Brien and Huston (1985) found that both boys and girls were considerably more active when playing with stereotyped masculine toys. In another study, O'Brien and Huston (1985) referred to a preference for toys of same gender, which was established by the age of 14 to 20 months in boys and somewhat later in girls. In addition, Jacklin et al. (1973) also found that gender type toy preferences were observable as early as 13 to 14 months.

Fallon and Harris (2001) found that for toy selection parents consider some reasons to be more significant than others. Mostly, studies concentrated on the gender factor. As a result, it was noted that gender was one of the important factors that needed to be taken into consideration because studies focusing on parental toy selection suggested that the gender of the child affected parental toy choice. Freeman (2007) also found that kindergarten kids were able to build-up an understanding of the concept "gender", and he referred to how pre-schoolers modelled behaviour and beliefs. In particular, when it came to toys and playtime, children applied gender stereotypes (Freeman, 2007). However, children often applied gendered play because of parent gender stereotypes and the approval and disapproval of genders for certain toys. Although most research has identified gender as a factor when choosing toys, some research regards gender as less important in toy selection. However, other studies have intensively focused on it as important in toy selection. In addition, it was noted that safety and teaching new talents were also two important reasons for toy selection. The safety factor was uncommonly not mentioned in studies as an important consideration for parents. However, to develop children physically, socially and emotionally, not just food is needed to be chosen with care (Alshurideh, 2014a), toys also must be chosen properly and carefully (Govind et al., 1998). As a result, the most important consideration when purchasing toys was safety then suitability to avoid unexpected accidents (Taylor et al., 1997). Thus, parents, teachers and other professionals should teach children the best way to use specific toy types. In literature, teaching new skills, such as a quality, is important for parents and it is recommended that it should be considered when selecting and buying toys.

Toys are also accompanied with some information and knowledge to consider. This is because toys include information and learning material (for example, printed materials, catalogues, CDs, brochures) to children, and such data helps to teach them self-awareness, language, communication, knowledge, cognitive ability and social skills (Zimmerman & Caltonini, 1971; Alshurideh et al., 2015). However, for Fallon and Harris (2001), information and pictures on toy packages were the least important factors to consider. Martin et al. (1995) also discussed how children used labelling and pictures that were based on gender to determine their preference of toys for themselves and other children. After conducting three experiments with different children, it was



shown that children used gender-based preferences. For every toy, the children used gender labels and then determined what they preferred and expected what other children would like from it. Therefore, if I were a girl and I liked this particular toy, I would expect that other girls would like it even more than me. While boys, on the other hand, would not like my toy at all. These methods of labelling limited the children's range of learning, creativity and play experience.

Some toy-selection criteria are related to the advertisement factor. Research has found that children's toy advertising and pictures on toy packages were strongly affective on toy selection especially gender-stereotypes (Robertson & Rossiter, 1976; Curri et al., 2003). Schwartz and Markham (1985) investigated these factors but found there was no evidence that parents were influenced by toy package pictures on their toy selection. Regarding the effect of personality on toys selection, Thompson et al. (1995) studied whether college students selected toys according to personality and requests. Two studies were conducted, the first study was based on gender behaviour and traits to assess toy selection. In the second study, child attitudes were assessed. The study showed that the students selection of toys were consistent with the children's description. It also showed that behaviour traits and attitudes in selecting toys affected their decisions. This was why children, according to the study, who did not request toys, selected their toys according to gender labelling, but children who requested their toys selected more cross-gender toys. In addition, it was found that there were many additional factors that affected toy selection such as novelty and toy categories. Mende (1965) studied the novelty factor and found that there was a positive relationship between toys novelty and children ages. Accordingly, older children, boys and low-anxious children preferred more novelty toys than younger children, girls and high-anxious children. In addition, Gips (1950) studied toys category, novelty and structure in a study about hospitalized children. Gips (1950) found that children who referred to toy category, played mostly with pull toys, imaginary play-type toys and toy-containing manipulation.

Although there have not been many studies focusing on toy selection (Fallon & Harris, 2001), the majority of studies concentrated on gender and age effect on toy selection (Lam & Leman, 2003). Both Lam and Leman agreed that either with or without gender labels on toys, children can differentiate between boy and girl toys. Freeman (2007) claimed that children build an understanding of gender during preschools years and they can accurately apply gender stereotypes on toys.

Some scholars such as Caldera et al. (1989) and Campenni (1999) highlighted the effect of parents on children choice and buying behaviour with regard to toy purchases. In addition, there is a vital role for parents in encouraging toy buying that depend on gender when purchasing for their children (Thompson et al., 1995). Based on previous studies, there are about 22 factors influencing toy selection other than gender and these include, safety, teaching skills and creativity, durability and longevity of use, flexibility and different play uses, physical attractiveness to child, length of time the child pays attention, parent age, parent educational levels, gender of child, age of child, recommendations from another, ethnicity, child requested toys, information on toy package, cost, temporal cost, effort cost, I just like it, novelty, physical attractiveness, picture or advertisement, category and type of toy such as doll, stuffed animal or vehicle (Jacklin et al., 1973; Unger, 1979; Covell, 1981; Christensen and Stockdale, 1991; Chase, 1992; Fisher-Thompson, 1993; Stagnitti et al., 1997; Servin et al., 1999; Fallon and Harris, 2001; Malone and Landers, 2001; Wood et al., 2002). To organise these factors efficiently, they are regrouped into main six categories as explained in the study's framework (see section 4).

#### **4. Conceptual Framework**

The proposed framework illustrates how certain variables or concepts are connected and correlated to each other. These variables and concepts that frame the majority of models and/or even theories flow logically from the documentation of research conducted to explore problematic areas. An important developing basis for inspecting the research problem is to simultaneously incorporate logical beliefs with published research, taking into consideration the borders and constraints governing the situation. From the theoretical background, a hypothesis which can be subjected to testing, to prove how far a theory is valid (Sekaran, 2009). Thus, the research hypotheses could be proposed according to the research problem and based on the rational premise within an explanation stated through the theoretical framework as illustrated in Figures 1 and 2.

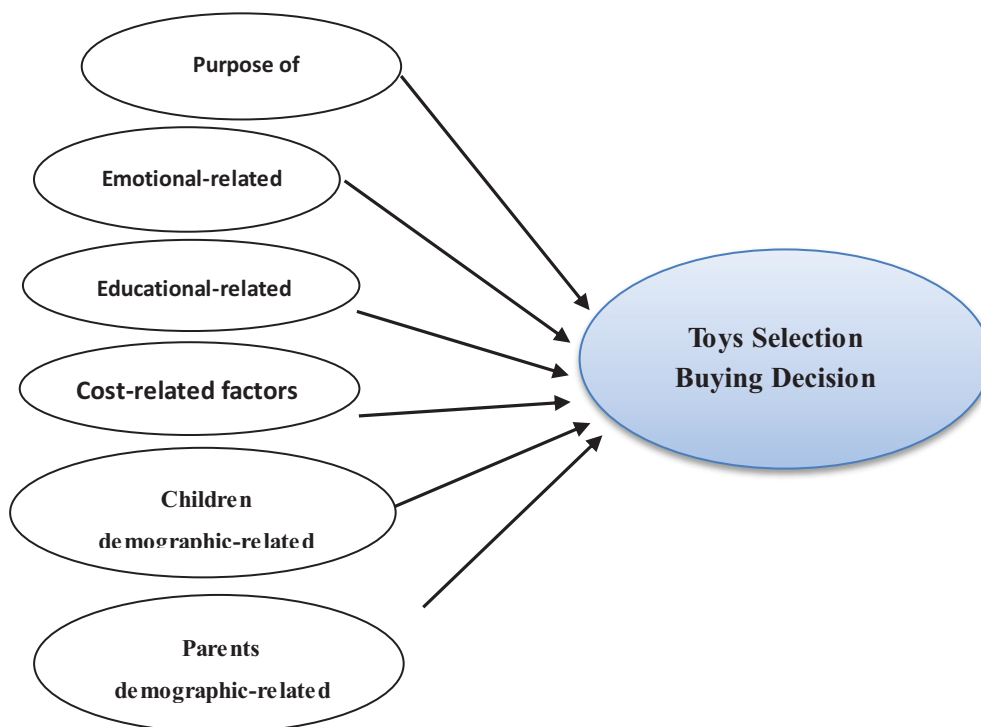


Figure 1. Study Model

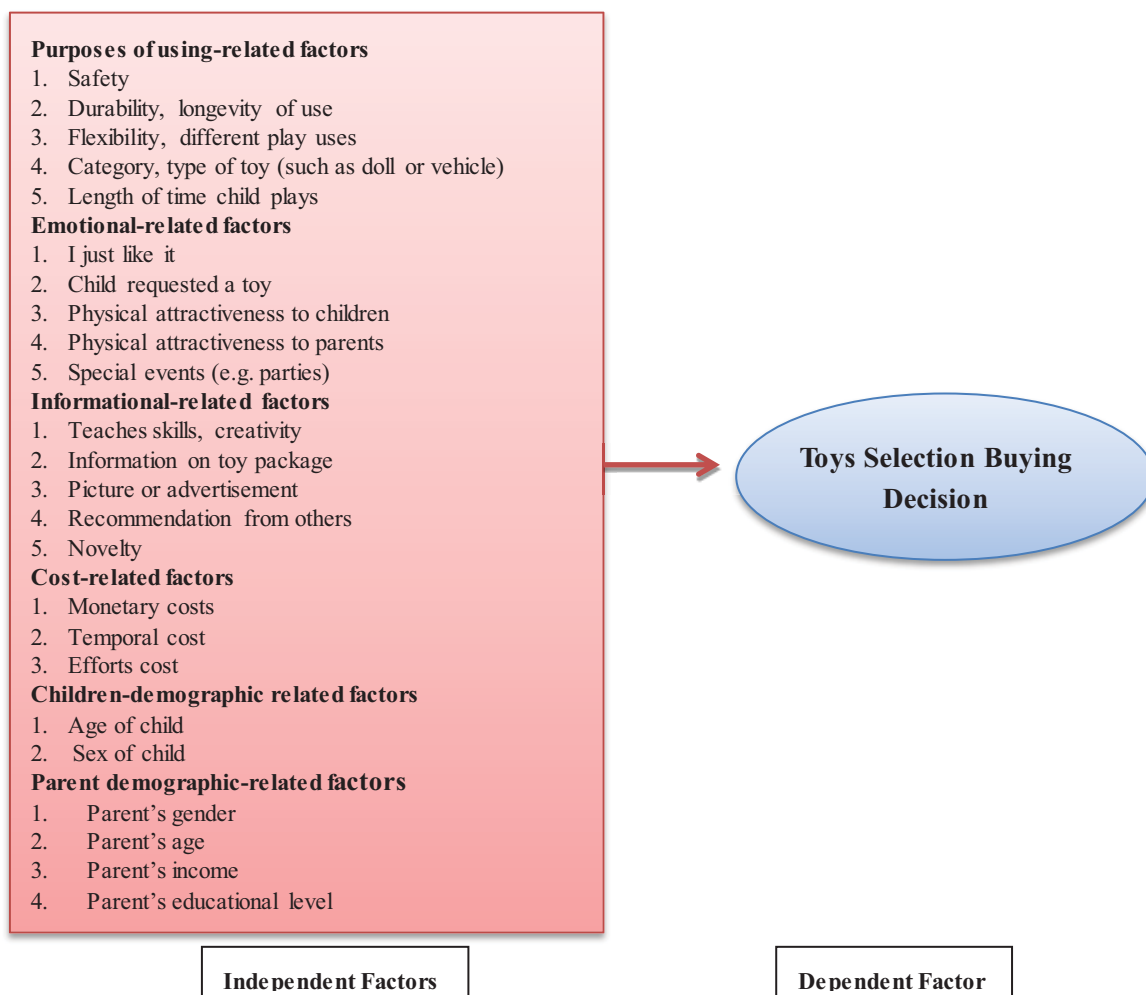


Figure 2. Detailed Study Model

## 5. Study Hypotheses

The study focuses on the effect of toy selection to determine the main toy-choice determinants. The target of this study are parents who take the responsibility of buying these toy products in most cases. By taking a closer look at the study's framework, discussed in section 4, the main hypothesis can be drawn as:

H1: Toy selection decisions differed according to purposes of using-related factors

H2: Toy selection decisions differed according to emotional-related factors

H3: Toy selection decisions differed according to informational-related factors

H4: Toy selection decisions differed according to cost-related factors

H5: Toy selection decisions differed according to children demographical-related factors

H6: Toy selection decisions differed according to parent demographical-related factors

## 6. Study Methodology

This research has been organized systematically, and the data explored parent choice determinants with the aim of finding an appropriate explanation for toy selection within the Jordanian consumer context. Thus, the main data collection stages should be well-organized to collect empirically-usable data required to test the proposed conceptual model. A quantitative method was adapted to collect the primary data. A special questionnaire was designed and validated to be used as a primary data collection to aid the testing of the study's hypotheses. The study also used secondary data and previous literature to build not just the conceptual framework for the study but also to build the data collection survey items that represented the study's toy-choice factors. This study was conducted in a natural behavioural choice setting, and data was collected from the parents who buy toys using a family as a unit of analysis within the Jordanian market.

Determining the study unit is essential in any study and usually refers to the level of aggregation of the data collected from the study target during the subsequent data analysis stage. Although for Sekaran (2009), a study unit can be individuals, groups, organisations and cultures, for this study, it was the parents or parent who usually bought toy products for themselves or others. The study depended on identifying the sample units from families who visited toys shops using the random sampling method as a non-probability sample. Regarding the response rate, the researcher distributed 550 questionnaires in toys shops located in the capital Amman, Jordan. The number of returned questionnaires that were valid to be analysed was 252, with a response rate of 44.8%. A Likert scale was used to measure the tendency of respondent views in toy selection using both independent and dependent variables. The Cronbach's Alpha reliability test output for all the study's independent variables showed that the reliability value for the study construct was 80.2%, which was considered very good value compared to other studies within the same context.

## 7. Study Analysis

Regarding the study's descriptive analysis, four main items were tested to give a clear picture of the study sample, namely, gender, age education and income levels.

### 7.1 Respondents' Profile

The analysis showed that more than half of study sample with 56% of study respondents were males and about 44% were females. The scale was nominal and the study responses were distributed among four groups according to their ages. Group '1' refers to the parents who were under the age of (22) years, group '2' for those who were aged between (22 and 30) years, group '3' for those who were aged between (31 and 40) years, and the last group '4' for those who were more than (40) years. Results found that approximately 47% of parents who bought toys between 22 and 30 years of age and more than 27% of sample were between 31 to 40 years of age.

This indicated that the majority of people who bought toys products were younger and cared about ensuring that their children gained many benefits from using the toy products (for example, entertainment, educational, physical). Regarding the level of education, the results indicated that 78% of the study sample were educated and had university degrees. This illustrated that educated parents were aware of the benefits of buying toy products that helped in building the child's personality. According to the level of income, results also revealed that more than 42% of toys purchasers were those whose income was less than 400JD (Jordanian Dinar) and more than 26% of the study sample's incomes were between 400 JD and 800 JD. A notable figure was that the income of 12% of the study's respondents who bought toy products was more than 1000 JD.

### 7.2 Testing the Study Model

The regression analysis was used to test the study's model, the study constructs relative importance and testing

of the study hypotheses. Regarding testing the study's model, using the Regression Analysis, the outputs revealed that the model explained about 48% of the variance of the independent variables while the R Square was 0.476 and, in total, the independent factors affected parent toy purchase decisions while the Sig value was 0.041% for the F value of 4.208, which was less than 5%.

### 7.3 Study Construct's Relative Importance

The study was planned to find the relative importance of the study factors. The Multiple Regression analysis was employed to measure the relative importance according to Budescu (1993), Johnson (2000) and Alshurideh (2016). As much as the part and partial correlation value(s) increased as much as the construct had more explanatory power than the other independent constructs. This indicated that the higher the part and partial correlation value, the more explanation within the variance of the independent variable. As seen in Table 1, the main factor that affected toys selection was the purposes of using-related factors that ranked first, followed by the educational-related factor as second. However, the demographical-related factors came into the third ranked category followed by the emotional-related factors. One of the notable issues was that the cost-related factors were ranked last which indicated that the toy unit cost was not important compared to the other essential factors such as the educational considerations.

Table 1. Toys selection determinants relative importance and ranks

Independent Variables	Mean/ Average	Correlation		Relative importance/Ranks
		Partial	Part	
Using-related factors	4.19	0.223	0.209	First
Emotional-related factors	3.58	0.063	0.053	Sixth
Educational-related factors	4.01	0.131	0.111	Forth
Cost-related factors	3.57	0.101	0.089	Fifth
Child demographical-related factors	4.06	0.190	0.167	Second
Parents demographical-related factors	3.82	0.145	0.139	Third

As seen in Table 1, the purposes of using-related factor was very important and ranked first and indicated what parents prioritised when choosing and buying toys for their children. This was because the partial correlation value explained of 22.3% of the variance of parents' choice. This issue was notable as the majority of the parents cared about what consequences could be gained when buying these products, and which included both benefits and even punishments inclusive of the expected risk associated with buying and/or using such products (Al Kurdi, 2016; Alshurideh, 2010). Moreover, while the purchasing power for children increased, it was important to match what to buy with the benefits of the purchasing objects (Acuff & Reiher, 2008).

In the second tier, children related to demographic-interrelated factors were seen as important from the purchasers' point of view. This was because for the children of the demographical-related factor, the partial correlation value was 19.0% of the variance in parent choices. This indicated that the purchased object was connected directly to consumer needs and directly to the users' age and gender. Otherwise, no potential benefits might have been gained based on such purchasing. Consequently, parent demographic-related factors were importance and ranked third. This was because for the parents of the demographical-related factor, the partial correlation value was explained at a value of 14.5% of the variance for parental choice. This indicated that the parent differences were essential when deciding what to buy from the array of toy products and such purchasing might have been different according to the main characteristics such as parent income and level of education. Moreover, the educational-related factors were ranked forth, while the partial correlation value was 13.9% of the variance in parental choice. This indicated that some parents focused on teaching and learning outcomes that their children were expected to grasp or gain from the purchased object (toys). A large number of parents usually procured toys that aided their children in providing educating benefits for different topics such as mathematics, science and even medicine.

The cost-related factors were seen as important for parents and ranked fifth. That was because the cost-related factors partial correlation value was explained at 10.1% of the variance in parental choice. Prices usually determined what to buy from products/services and even the quality of purchased ones (Girard et al., 2003; Alshurideh, 2014c) especially for economically-minded shoppers (Chen & Dubinsky, 2003). Having illustrated this, the toy costs were considered essential when determining what to buy for infants and children alike. However, the last factor that was deemed important for parents was the emotional determinants with a low relative importance while such construct explained at a values of 6.3% of the variance of the parental choice as seen in Table 1. This factor was related mainly to the social events that usually pushed parents to buy specific toys for special occasions such as birthday parties.

## 7.4 Hypotheses Testing

### 7.4.1 Factor Number One: Purposes of Using-related Factors and Toys Selection

The purposes of using hypothesis was drawn as:

H1: Toy selection decisions differed according to the purposes of using-related factors

Using the Hierarchical Multiple Regression (HMR) analysis test, the coefficient Sig value was 0.033, which was less than 5%. Based on this, it could be noted that there was a statistical significant value proof that toy selection differed according to the purposes of using-related factors. Therefore, the aims of toy purchase varied according to the different purchasing objectives. Some parents expressed special interest in checking if the purchased toy items were not harmful and a child could be safe when using it. On the other hand, toy durability was essential while some high quality toys items were used for a long time and some cheap ones were destroyed after a short time of using. In some cases, some parents care of buying high-quality items to be used by more than one child and for a longer period of time (durability). Keeping in mind that the purpose of toys and their selection process could be considered one of the toy-purchase determinants while some toys were purchased just for entertainment value, while others were chosen to develop skills such as the surgery tool kit toys.

### 7.4.2 Factor Number Two: Emotional-related Factors and Toys Selection

The emotional hypothesis was drawn as:

H2: Toys selection decision differed according to emotional-related factors

Using the Hierarchical Multiple Regression (HMR) analysis test, the coefficient Sig value was 0.006, which was less than 5%. Based on this, it was found that there was a statistical significant value proof that toy selection differed according to the emotional-related factors. The emotional factors denoted that parents tended to buy those toy items that the children usually liked and requested. The effect of toy attractiveness was essential while some toys attracted children more than others. Some of children were attracted by toy colour, design, shape and even size. A social pressure (such as a social event) was seen as one of the toy selection determinants. Birthdays, for example, represented the core of toy choices and determined their types such as peers and toy cars.

### 7.4.3 Factor Number Three: Informational-related Factors and Toy Selection

The informational hypothesis was drawn as:

H3: Toys selection decision differed according to informational-related factors

Using the Hierarchical Multiple Regression (HMR) analysis test, the coefficient Sig value was 0.041, which was less than 5%. Based on this, it was found that there was a statistical significant value proof that toy selection differed according to the informational and educational-related factors.

Some parents chose toys for the educational purposes and to build child creativity such as buying engineering tools. Other parents exerted effort in reading toy labels and usage information. This was because reading such information helped in determining what to choose and buy from a variety of toy types and even assisted in approving the suitability of the toy's use. Some parents also tended to explore the effect of advertisement power on toy selection. This was because the advertisement usually provided a variety of information that supported toy selection such as their usage, price and even availability. Parents tended to read toy package information and user guidance. In addition, it was found that some toys were chosen based on the recommendations of others such as neighbours or a child's peer, friends or relatives. Some toys were chosen because they were new on the market and children had not seen them before. Creativity in toys is a matter of concern for large number of organizations as new and innovative toy types are launched to the market continuously.

### 7.4.4 Factor Number Four: Cost-related Factors and Toys Selection

The cost hypothesis was drawn as:

H4: Toys selection decision differed according to cost-related factors

Using the Hierarchical Multiple Regression (HMR) analysis test, the coefficient Sig value was 0.032, which was less than 5%. Based on that, it was found that there was statistical significant value proof that toy selection differed according to the cost-related factors. Cost has been classified by many scholars into many cost factors such as monetary cost, efforts cost and temporal cost. Therefore, cost was important and determined what to buy and choose from the toy market. Some parents allocated a specific amount of money to buy a toy from a local store because of convenience and ease of use.

#### 7.4.5 Factor Number Five: Children Demographical-related Factors and Toys Selection

The children demographical hypothesis was drawn as:

H5: Toys selection decision differed according to children demographical-related factors

Using the HMR analysis test, the coefficient Sig value was 0.033, which was less than 5%. Based on that, it was found that there was a statistical significant value proof that toys selection differed according to the children's demographical factors. The main demographical aspects that were taken into consideration in this study were children's age and gender. Most research identifies a relationship between the gender of a child and toy selection, which was supported by this study. The analysis showed that the number of respondents that considered gender to be a very important factor was about 40.0% of the study sample. On the other hand, the number of respondents who considered gender an unimportant factor was 9.2%, which was in agreement with the findings of Freeman (2007), Okita (2004) as well as Lam and Leman (2003). Thus, toys selection decisions differed according to the children's demographical-related factors.

#### 7.4.6 Factor Number Six: Parental Demographical-related Factors and Toys Selection

The parental demographical hypothesis was drawn as:

H6: Toys selection decision differed according to parents demographical-related factors

Using the Hierarchical Multiple Regression (HMR) analysis test, the coefficient Sig value was 0.013, which was less than 5%. Based on this, it was found that there was a statistical significant value proof that toy selection differed according to parent demographical factors. This result supported the findings of studies, which found that toy selection was determined by parent gender, age as well as education and income levels. Also, type of toys might not differ but the quality of the toys might. This means that a three-year-old girl a girl might choose a doll but the quality of the doll might differed based on parental income. However, may products' quality or variety be affected (Zu'bi et al., 2012), toy selection would also be influenced by children ages. Toys that would suit a three-year-old girl could differ from that which would suit a five-year-old girl.

### 8. Conclusion Remarks

Based on the study analysis, the results showed that all proposed hypotheses were tested and confirmed that parent selection of toy products differed according to the set of the study's predetermined constructs. These results support the findings of various studies (Fallon & Harris, 2001; Freeman, 2007; Martin et al., 1995; Lam & Leman, 2003; Okita, 2004). Also, after researching the relative importance of toy selection determinants and ranking the study's factors, it was noted that the respondents rated two factors as extremely important for toy selection, namely, purposes of using-related factors and children demographical-related considerations. These findings have also been supported by many studies such as Fallon and Harris (2001). Many other elements were found to be important according to the parent perspectives in this study, namely, the safety dimension which needs to be considered and explored in more detail in future research. However, to support children physically, socially and emotionally, toys preferably need to be chosen properly. The most important consideration when purchasing toys is safety, followed by suitability to avoid unexpected accidents (Taylor et al., 1997). In addition, all parties such as parents, teachers and other professionals should cooperate to teach children the best way to use specific types of toys and provide reasons for toy treatment. In addition, teaching new skills using toys was important and recommended by parents when selecting and buying toys. This is because toys, according to Zimmerman and Calonini (1971), could be considered as one of the learning tool materials that help children to teach themselves and enhance different capabilities such as awareness, language, communication, cognitive ability, and even enhances some social skills. Thus, Fallon and Harris (2001) concentrated on the importance of the information and pictures on toy packages as important factors to be considered when teaching children how to operate certain toys to enhance their learnability process.

Most of the previous research that investigated toy purchases concentrated mainly on the influence of child gender on toy selection. However, this study was broader and took into account more diversified factors and variable considerations such as emotional-related factors and purposes of using-related factors. The results of this study were also related to gender considerations, which is supported by other research findings, such as Lam and Leman (2003), Freeman (2007) and Okita (2004). Generally, the parental respondents considered gender in the toy selection process a very important factor, with a value of 40.0%. On the other hand, the parent respondents who considered gender as an unimportant factor was 9.2%.

One of the limitations in conducting this study was the previous lack of research exploring this phenomenon theoretically or practically especially within the Jordanian market. This study might, therefore, provide the chance to study various toy types in relation to family structures and lifestyles in Jordan or to analyse the

comparative study with different consumer segments within different cultures. Moreover, this study suggests a set of future research avenues. For example, the educational benefits were discussed in-depth and found to affect the parental decision-making process. There is a possibility of these benefits being brought more in line with supported details such as studying toy enhancing specific or specialized skills such as math or knitting skills.

Another issue that could be considered a good avenue to be approached by scholars could be if the purchaser decision were to become voluntary or obligatory and impulsive or planned. Voluntary means that parents purchase a specific toy for their offspring within their own choice-set or to fulfil some of the requirements provisions or criteria such as birthdays or school occasions. Another issue to be considered as a diligent research avenue is the buying of toys based on imitating or copying others. This issue is important owing to some products (for example, toys and sport shows) are usually bought based on the purchase behaviour of others. Thus, copying others or the peer-friend effect is a further research avenue. Children versus parental income is another factor to be researched to investigate if children affect parent toy-purchasing behaviour and vice versa. As brand name and equity are often essential considerations these days, it would be good to explore parental choice for toy products with regard to a set of issues such as brand name, brand choice, parents' experience, marketing ethics, perceived usefulness and perceived enjoyment (Alshurideh et al., 2012; Al Dmour et al., 2014; Alshurideh et al., 2015; Alshurideh, 2016c). This study provides important findings for marketers and practitioners to develop new marketing strategies for selling toy products to consumers and for repeat buying (Alshurideh, 2009; Alshurideh, 2010; Alshurideh et al., 2012; Alshurideh, 2014b; Alshurideh, 2016a, 2016b) by the diversification of the selling of objects especially that relate to different consequences obtained.

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# The Role of Customer Innovativeness in the New Products Adoption Intentions: An Empirical Study on Mobile Phone Customers of the Egyptian Universities Students

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## Abstract

This research aims to investigate the relationship between customers' innovativeness and their intentions to adopt new mobile phones from the standpoint of Egyptian university students. The research studies the direct effects of the five dimensions of customers' innovativeness on their intentions of new products adoption, which are measured through the mediating effect of two factors: the risks to mobile phones perceived by the customers and customer involvement. The research also aims to identify the so-called "initiators" segment; customers who have the highest probability for purchase the product early. A quantitative method with deductive approach is chosen in this research. Four hypotheses have been designed to determine: whether there is a significant difference in customers' perception of risks to new mobile phones, innovativeness, involvement, and adoption intentions according to demographic variables (gender, place of residence, income); whether there is a significant positive effect of customers' innovativeness on customers involvements with new mobile phones; whether there is a significant negative effect of customers' innovativeness on the perceived risks to new mobile phones; and whether there is a significant positive effect of customers' innovativeness on their intentions to adopt new mobile phones. A significant impact of the five dimensions of customers' innovativeness is found on the adoption intentions of new mobile phones. Also a significant effect of the five dimensions of customers' innovativeness is found on the perceived risks and customer involvement factors. The research develops a new model of the relationship between the customers' innovativeness and their intentions to adopt new products. In practice, the research results contribute to help marketing managers for better market fragmentation and identify customer segments with high innovativeness; which helps organizations prepare appropriate marketing campaigns and thus leads to the success of new products deployment.

**Keywords:** customer innovativeness, customer involvement, perceived risk, new products adoption intentions

## 1. Introduction

As a result of the tremendous technological progress, products life cycle-has become very short, especially in the technological products. The organizations became obliged to create new products at frequent intervals to meet the requirements of its customers (Hoffmann and Katja 2010). Constant development of new products is a big necessity for the success of any organization and its long-term growth (Shimp, 2000). The introduction of new products to the market also leads to sales growth, market share expansion, increased profitability and stronger competitiveness (Vandecasteele and Maggie, 2009).

Despite the ongoing developments in the design and development of new products, most new products fail in an increasing rate (Bartels and Machiel, 2011) noted that the rate of new product failure reached up to 35% -45%, while (Wilk and Sorvillo, 2003) pointed that the failure rate in these products may increase up to 80%. Given these high rates, organizations must exploit possible opportunities to maximize potential success, and to avoid losses that may be incurred as a result of the failure (Hoffmann and Katja 2010). Among the opportunities the organizations should exploit is the identification of customers with high potential to buy products early (initiator customers segment). They play an important role in the success of new products. Initiator customers are not price sensitive, always seek information about new products, and have a strong tendencies to modern temptations (Jordaan and Simpson, 2006).

Unfortunately, initiator customers represent only 2.5% of the potential market (Hoffmann and Katja, 2010). Thus, the determination of this segment is very difficult, yet important. It represents the most important target group in the deployment of new products, since the use of the new product stimulates other customers to imitate them and buy new products. They also contribute to passing positive word of mouth to other customers.

Based on the above, and given the importance of the role of the customer innovativeness in the success of the deployment of new products, the research proposes a model for the use of the customer innovativeness in the development of the adoption intentions of new products through the mediating effect the two variables, namely: customer - product involvement, and the risks perceived by the customer to the new product.

## 2. Exploratory Study

To clearly articulate the research problem an exploratory study was conducted. It aimed to identify the contemporary intellectual trends in the research relevant fields: customer innovativeness, customer involvement for the product, and the product risks perceived by the customer. The study also aimed to identifying the extent of benefit from these trends in the improvement of the adoption intentions of new products, and to identifying high and low innovative customers and their characteristics. The study was conducted in two phases as follows:

### 2.1 Phase 1: Literature Review

In this stage a number of studies have been reviewed in the research relevant topics: customer innovativeness, customer involvement for the product, the product risks perceived by the customer, and adoption of new products.

#### 2.1.1 Customer Innovativeness

Customer innovativeness is considered one of the most important concepts in customer behaviour area. (Dobre et al., 2009). Studies suggests two types of customer innovativeness, namely: general innovativeness, domain specific innovativeness. (Bartels and Machiel, 2011; Fowler and Eileen, 2010; Im et al., 2007).

General Innovativeness: is a set of personal characteristics of individuals which represent the degree to which the individual can be the first adopters of innovation compared to other members in his social scale (Chao and Mike, 2010). This illustrates that the innovativeness is based on the idea of creativity, which is perceived as an idea or a practice. Innovativeness also represents the degree to which the individual can be more receptive and adoptive to new ideas regardless of the experience of others. From this point of view, general innovativeness affects the adoption intentions of new product from different five characteristics:

1. The need for uniqueness: focuses on the customer early purchase of new products and/or unfamiliar products in his social circle.
2. The need for novelty: focuses on the customer affinity for all that is new of goods and services in order to avoid similarity with others.
3. The need for recognition: focuses on the desire to gain new experiences in line with the mind stimulating objectives.
4. The need for decision making independence: focuses on customer decisions to purchase new products without relying on purchasing experiences of others.
5. The need for functional benefit: focusses on the performance of new products, and product features such as: efficiency, convenience, quality, ease, reliability, more than emotional gratification.

Domain Specific Innovativeness: Narrowing the concerns of customer behaviour in a particular area, which reflect the individual tendencies toward learning and adoption of products within a particular area according to his interests. Studies emphasises that domain specific innovativeness affects the purchase behaviour and the actual use of new products more than the general innovativeness. Also, domain specific innovativeness is used as a measure to recognise the initiator customers who tend to adopt new products (Handa and Gupta, 2009; Klink and Athaide, 2010). All studies use a single scale to measure customer domain specific innovativeness, namely: Goldsmith and Hofacker (1991) scale. It is a validated multi-dimensional scale which consists of six items.

The potential innovators not do foster innovation at the same time. They differ according to their degree of readiness and willingness to try out new innovations (Rogers, 2003). In general, there are five categories of innovators: innovators, early adopters, early majority, late majority, and laggards:

1) Innovators: They account for only 2.5% of any community. They are willing to take risks, have the highest social status, have financial liquidity, are social and have closest contact to scientific sources and interaction with other innovators. Their risk tolerance allows them to adopt technologies that may ultimately fail. Financial

resources help absorb these failures.

2) Early Adopters: They account for 13.5% of the community. They are more integrated into the society. This category includes the vast majority of opinion leaders. They are more discreet in adoption choices than innovators.

3) Early Majority: They represent 34% of the community; rarely hold positions of opinion leadership in a system. They prefer to wait and adopt an innovation after a varying degree of time that is significantly longer than the innovators and early adopters. Early Majority have above average social status.

4) Late Majority: They represent 34% of the community. This category is characterized as being sceptic. They approach an innovation after the majority of society has adopted it. They adopt innovation because of an economic motive or a social pressure. They deal with innovations with extreme caution.

5) Laggards: Representing 16% of the community, this category is characterized as being a traditional. They are the last to adopt an innovation. , and typically tend to be focused on "traditions".

### 2.1.2 Customer Involvement

Over the past five decades, customer involvement has received high attention from both scholars and practitioners. It can be considered one of the critical concepts related to purchase decision making process (Jordan and Michelle, 2006) . Involvement can be defined as “a state of motivation, arousal or interest, evoked by a particular stimulus or situation, displaying drive properties” (Ghafelehbash et al., 2011; Hanzaee et al., 2011) . Customer product involvement is important in understanding consumer attitudes and behaviour because involvement is a central motivating factor that shapes the purchase decision-making process. Involved consumers exhibit feelings of interest, pleasure and enthusiasm towards relevant product categories. Consumers will thus become involved when the object of interest is perceived as important in meeting needs, goals and values (Kim, 2003; Choubtarash, et al., 2013).

Many classifications for customer involvement have been proposed in previous studies. first classification suggested by (Dholakia, 2001, Michaelidou and Dibb, 2008; Huang, 2010) classified involvement into three types: enduring, situational, and response. Enduring Involvement represents the long-term attachment of an individual with a specific product class, which is likely to be manifested through extensive information search, brand knowledge and, eventually through brand commitment. Situational Involvement, however, represents a short-term phenomenon where an individual becomes involved with a ‘situation’, usually a purchase decision. Response Involvement takes a behavioural view reflecting the extent to which individuals are involved in a situation. This form of involvement refers to a behavioural orientation which involves information acquisition and decision processes. In this context, involvement is seen as behaviour rather than as a mediator of behaviour. The extent of information search and product acquisition time have both been used to conceptualise and measure response involvement. Second classification suggested by (Lin and Chun, 2006 ; Lee, 2005; Ghafelehbash et al., 2011) grouped involvement into: advertising, purchasing, and product. Advertising Involvement is the customer response after being subjected to the advertisement. This response is based on the customer’s interest in the advertisement information. The involvement level ranges from the total focus to the total disregard. Purchasing Involvement refers to the customer’s interest in the purchasing process itself. As a result, product information collected during the purchase process increase, as well as the time and effort spent effort and time spent to carry out the purchase. This type of involvement depends on factors related to purchasing situation per se. in other words, purchasing involvement is a situational involvement. Product Involvement is related to the level of a customer’s interest in purchasing a certain product type and how committed they are to purchasing a given brand. Product involvement tends to be greater for goods that have a higher cost and are bought after considerable research and thought. Final classification adopted by Lee (2005) grouped involvement into high and low involvement. In general, customers are more involved with high price product with high importance and risk, where customers will be more willing to spend more time and effort to buy these high-involvement products. Vice versa, in case of low-containment products, customers spend less time and effort because of the repeat purchase of these products and low prices and associated risks.

### 2.1.3 Perceived Risk

Perceived risk is a major concept in customer behaviour area. The concept was historically introduced in 1960 and suggested that the customer behaviour include the perceived risk, in the sense that the customer may face a lot of unexpected results after buying the product because some products may not be satisfactory. The concept of perceived risk was applied in order to examine certain behaviours and concepts such as searching for information, brand loyalty, leadership opinion, reference groups, and repurchase deliberations in the decision-making process

(Kim, 2003). Perceived risks definition can vary depending on the context (Carroll, 2009). They can be viewed objectively through a quantitative assessment (such as the risk of death resulting from a car accident expressed as a percentage). On the other hand, perceived risks can be viewed personally through customers self-judgment according to their personality and their experience with the product (Slovic and Weber, 2002). Studied have suggested that there are eight effective ways to reduce the perceived risk by customers (Leon et.al 2004), (Ward, 2008), these are: products information search from official and non-official sources, reference groups' endorsement, brand loyalty, major brand image, store image, seeking reassurance through methods such as money back guarantee and free samples, shopping around and comparing products characteristics in different brands, and finally, buying the expensive model that is usually linked to better quality.

#### Perceived Risks Dimensions:

Perceived risk is categorized under six dimensions in the previous studies, namely: perceived functional risk; perceived financial risk; perceived physical risk; perceived psychological risk; perceived social risk, and perceived time risks (Bhukya and Singh, 2015). Functional Risk is described in the previous studies (Agarwal and Teas, 2001; Beneke et al., 2012) as the uncertainty that the outcome of a product purchase will not meet consumer expectations. It is also expressed as a performance risk as it demonstrates the consumer's fear that a product will not perform to its promised abilities. Zielke and Dobbelstein (2007) defined Financial Risk as the possibility of a monetary loss from a poor purchase choice/decision. In other words, it is the state of losing money by purchasing an inadequate or unfamiliar brand. This definition can, however, be extended to include the risk that the product's quality does not match its price (Leon et. al, 2004). Physical Risk is defined as the state of the consumer's fear that purchasing certain products may damage their health or physically injure their person. For the instance, it is concerned with purchasing the unfamiliar product that could potentially hurt the consumers (Leon et. al, 2004; Xu, J. et al, 2003). Thus it is concerned with consumer health issues like food poisoning and other food-related diseases. Ueltschy et al. (2004) defined Psychological Risk as the state of consumer's disappointment in making a poor product or service selection and it is related to consumer's discontent with owning or using the product. While switching from national brands to private labels, naturally it causes some form of emotional and psychological pressure due to the uncertainties associated with the new product. Social Risk refers to the possibility that buying a product or using a service can reduce a person's status with friends, family or neighbours. The increasing pace of contemporary life means more customers worry about Time Risks, in particular time lost when a product turns out to need replacement or fails to deliver as promised. It can also include pragmatic concerns about how much time you might spend waiting in line at a crowded retail outlet.

#### 2.1.4 New Product Innovation

Innovation is defined as goods, services, ideas or processes perceived by the customer as new things in life. Innovation is concerned with the process of commercialising or extracting value from ideas. This is in contrast with 'invention' which need not be directly associated with commercialisation. (Rogers, 2003). Five features of the new product have been determined. They influence customers to accept or reject new products. These are: relative advantage, compatibility, simplicity/complexity, observability, and trial ability. Relative Advantage refers to the degree to which the customer perceive the difference characteristics of the new product compared to familiar products. Compatibility refers to the appropriateness, consistency and compatibility of the new product and its uses with values, beliefs, habits, and needs of the customer. Simplicity/Complexity refers to the degree of customer perception of the simplicity and ease of use of new product. It is claimed that the customer, who has no previous experience and expertise in the use of some of the innovations of technology, will oppose and resist the adoption of new innovation and will find it difficult to adopt them. Observability refers to the ability to preview innovation by the customer. Trialability refers to the possibility to try new products and verify benefits and evaluate these benefits. Studies such as (Chau and Hu, 2001) indicated that there is a positive relationship between the possibility of trying a new product by the customer and its adoption.

Classification of new products is very important when testing the adoption behaviour of customers. The reason is that the type of innovation affects the level of customer or community adoption, and the type of knowledge to be learned for new goods and services. In this view, studies identifies three types of innovation, namely: Continuous Innovation, which refers to slight modification on an existing product instead of creating completely new product; Dynamically Continuous Innovation, and it refers to introducing radical changes to the existing product through re-delivering with innovative and important elements; and finally Discontinuous Innovation, which refers to the introduction of a new product in general, which significantly alter consumption patterns and lifestyles. This type of innovation requires a great deal of new learning.

### 2.1.5 New Product Adoption

New products adoption is one of the important topics for both marketing managers and researchers. It plays an important role in the process of deploying innovations. This urges marketers and researchers need to understand the key determinants of new products adoption, which helps organizations in identifying target market, position their products accurately, and design strategies more effectively (Wang et al., 2008).

The adoption process is complementary to the innovation process. It is called in some studies Actualised Innovativeness. It is defined as “the client's decision to use the product and service systematically and repeatedly”. The adoption process for new products varies from one individual to another according to socio - economic and demographic characteristics. Five stages have been presented for describing the adoption process:

1. Awareness: customer learns of the idea or practice but has little knowledge about it.
2. Interest: customer develops interest in the idea, seeks more information about it, and consider its general merits.
3. Evaluation: customer makes mental application of the idea, weighs its merits for his own situation,
4. Trial: customer actually applies the idea or practice- usually on a small scale.
5. Adoption: stage of acceptance leading to continued use.

Im et al., (2007) explained that there are three basic ways to determine the new products adoption behaviour. The first method is to determine the relative time the adoptive customers take to own a particular new product compared to others customers. The second method is to identify how many new products owned by the customer from a list prepared in advance of new products.

The final method is to use purchase intentions to predict the adoption behaviour. Several studies has used purchase intentions instead of the actual buying behaviour because the actual purchase behaviour is the inevitable result of the purchase intentions. In the study of Lee (2005), it has been found that 75% of respondents who purchased the product indicated the possibility and intention of buying it within three to six months. After reviewing several previous studies, it has been found that behavioural intentions are used to measure the new products adoption intentions and therefore, customer innovativeness (Alsaleh, 2010; Hanzae et al., 2010; huang et al., 2011; Klerck and Sweeney, 2007). Therefore, this method is adopted in this research.

### 2.2 Phase 2: Pilot Study

The pilot study has conducted through an initial survey of a purposive convenient sample of 50 students of the University of Mansoura, to solicit their views on their innovativeness, their perceived risks, and their adoption intentions of the new mobile phones. The sample has been classified into three categories according to innovativeness levels, namely: high innovative customers, medium innovative customers and low innovative customers. Classification was based on the arithmetic mean  $(5 + 1) / 2 = 3$ , and the response format was a 5- Likert point scale ranging from 1 (extremely disagree) to 5 (extremely agree). If the innovativeness degree is higher than the arithmetic mean so it is a high innovative customer. If the innovativeness degree is less than the arithmetic mean, it is low innovative customer, and if the innovativeness degree is equal to the mean, it is a medium innovative customer. The data analysis collected revealed that the number of high innovative customers represented 16% of the sample, the number of medium innovative customers represented 30% of the sample, and the number of low innovative customers represented 54% of the sample. Table (1) below displays average degrees for customer involvement, perceived risks, and the adoption intentions for each category of the three categories of the innovativeness levels.

Table 1. Degrees of customer involvement, perceived risks, and the adoption intentions of new mobile phones for each of the three categories of customer innovativeness

<i>Dependant variables</i>	<i>High Innovative Customers (%16)</i>	<i>Medium Innovative Customers (%30)</i>	<i>Low Innovative Customers (%54)</i>
<i>Customer Involvement</i>	3.6	2.8	2.2
<i>Perceived Risks</i>	2.3	2.6	3.8
<i>Adoption Intentions</i>	3.7	3.2	1.2

The results above shows a presence of high level of customer involvement and adoption intentions in addition to low level of perceived risk to new mobile phones for customers with a high level of innovativeness. While there is an average level of customer involvement and adoption intentions in addition to low level of perceived risk to the new mobile phones for customers with the average level of innovativeness. Finally, there is a low level of customer involvement and adoption intentions in addition to the high level of perceived risk to new mobile

phones for customers with low level of innovativeness.

### 3. Research Gap

In view of the exploratory study outcomes and reviewing literature, the following research gap have been revealed:

- The absence of studies examining all the variables combined (customer innovativeness, the perceived risk, the customer involvement, and the adoption intentions of new products).
- The absence of studies using customer involvement, and the customer perceived risk as mediating factors in testing the role of the customer's innovativeness in adopting new products.
- The lack of agreement about the nature of the relationship between the variables of the study. This emphasizes that these relations require further study and analysis.

Consequently, the research problem can formulated as follows: The existence of limited adoption intentions of new products by customers with low level of innovativeness and involvement and a high level of perceived risk toward these products, while there is a rise in adoption intentions of new products by customers with a high level of innovativeness and involvement and the low level of risk perceived to have towards these products. Therefore, the purpose of this paper is to examine whether there is a significant difference in customers' perception of risks to new mobile phones, innovativeness, involvement, and adoption intentions according to demographic variables (gender, place of residence, income); whether there is a significant positive effect of customers' innovativeness on customers involvements with new mobile phones; whether there is a significant negative effect of customers' innovativeness on the perceived risks to new mobile phones; and whether there is a significant positive effect of customers' innovativeness on their intentions to adopt new mobile phones. The literature review helped to propose a model for the research, shown in Figure 1, which can overcome the research gap found.

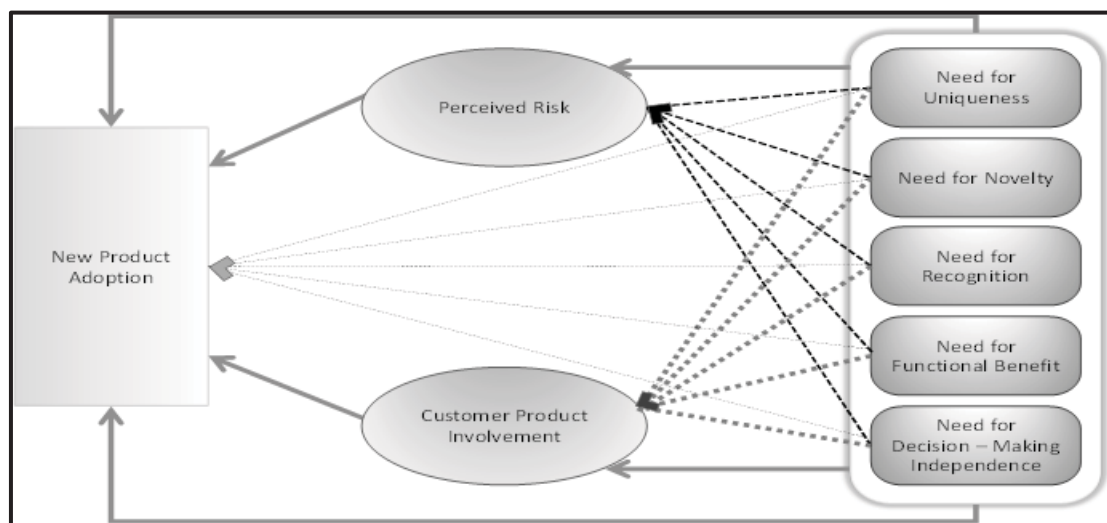


Figure 1. Research proposed model

Four hypotheses have been proposed:

H1: There is a significant difference in customers' perception of risks to new mobile phones, innovativeness, involvement, and adoption intentions according to demographic variables.

H2: There is a significant positive effect of customers' innovativeness on customers' involvements with new mobile phones.

H3: There is a significant negative effect of customers' innovativeness on the perceived risks to new mobile phones.

H4: There is a significant positive effect of customers' innovativeness on their intentions to adopt new mobile phones.

## 4. Methodology

### 4.1 Sample

The population of the study has been determined to be among the students of the public universities in Egypt to examine the above hypotheses. Due to the geographical and economic variation of mobile phone customers and



the difficulty of covering all Egyptian universities, research sample has been chosen from five governmental universities, by selecting the major university in every main region of the Arab Republic of Egypt. Cairo University has been chosen to represent the Greater Cairo; Alexandria University to represent North coast region, Mansoura University to represent the Delta region, the University of the Suez Canal to represent the Suez Canal region, and the University of Assiut to represent Upper Egypt region. Questionnaires were distributed to 384 students using the stratified sampling technique among the five universities. A total of 318 correct questionnaire were received with a response rate of (83%), as shown in table 2.

Table 2. Sample distribution and response rate

University	Sample Size	Response	Response rate
Cairo	130	110	%85
Alexandria	98	80	%82
Mansoura	85	74	%87
Assiut	50	36	%72
Suez Canal	21	18	%86
Total	384	318	%83

#### 4.2 The Instrument

A single questionnaire has been designed and directed to mobile phones' customers among public universities' students. The questionnaire consists of four main variables, namely: customer innovativeness, customer involvement, perceived risks, and new product adoption intentions. Each variable has been measured using a number of statements. The response format was a 5- likert point scale ranging from 1 (extremely disagree) to 5 (extremely agree). With a total of 49 statements (items), 21 items have been proposed to measure the five dimensions of customer innovativeness: the need for uniqueness, the need for novelty, the need for recognition, the need for decision making independence, and the need for functional benefit. In addition, 15 items have been used to measure the six dimensions of customer perceived risks to new products: functional risk, financial risk, physical risk, psychological risk, social risk, and time risks. Six items have been used to measure customer involvement, and seven items for customer adoption intentions for buying new mobile phones. The questionnaire has been formed using different scales of (Knight and Eun, 2007; Vandecasteele and Maggie, 2010; Kim, 2008; Carroll, 2009; Alsaleh, 2010; Hanzaae et al., 2010; Huang et al., 2011; Klerck and Sweeney, 2007).

#### 4.3 Reliability and Validity

After completing the initial questionnaire design, validity test has been conducted to ensure the questionnaire items measures what they are supposed to measure, and they give respondents the meanings intended. For this purpose, the initial questionnaire has been revised by some colleagues, who had some remarks, which have been taken into consideration. Afterwards, the questionnaire has been checked by some university students to verify the phrases wording. Accordingly, some items have been modified, some have been entirely deleted. The reliability of the data has been verified using Cronbach's alpha. Coefficients for this research were all above 0.79 and were concluded to be reliable (Hair et al., 2006). Table 3 below shows reliability test results for research variables using Cronbach's alpha.

Table 3. Cronbach's alpha coefficient for research variables

Research variables	Number of scale items	Alpha coefficient
Customer Innovativeness	21	82 %
Customer Involvement	6	79 %
Perceived Risks	15	83 %
Adoption Intensions	7	81 %

## 5. Discussion and Results

### 5.1 Descriptive Data Analysis

The Arithmetic Average method is used to identify customer innovativeness categories. This is done by calculating the composite mean score for Likert- scale items. Because there are 5 categories in the scale, intervals length equals  $4/5=0.8$ . Therefore, the mean score for each category is as follows:

- A) (1 to 1.80) extremely disagree. This average represents Laggards category.
- B) (1.81 to 2.60) disagree. This average represents customers the Late Majority category.
- C) (2.61 to 3.40) neutral. This average represents clients The Early Majority category.
- D) (3.41 to 4.20) agree. This average represents Early Adopters category.
- E) (4.21 to 5) extremely agree. This average represents Innovators category.

A total of 318 customers responded to research questionnaire with a response rate of (83%). Those customers have been classified according to their levels of innovativeness into: innovators, early adopters, early majority, late majority, and laggards. Unlike the results of (Roger, 2005), the five categories of customer innovativeness are represented differently in mobile phone customers among the Egyptian universities students. Table 4 explains customer innovativeness levels in research sample.

Table 4. Customer innovativeness levels in research population

	<i>Customer innovativeness Level</i>					<i>Total</i>
	<i>Innovators</i>	<i>Early Adopters</i>	<i>Early Majority</i>	<i>Late majority</i>	<i>Laggards</i>	
<i>Total</i>	68	135	86	24	5	318
<i>Percentage</i>	%21	%42	%27	%8	%2	%100

According to the demographic variables, shown in table 5 below, there were 178 male customer (56%) and 140 female customer (44%). Male innovators represented 26% of the research sample, whereas female innovators represented only 16%. This result is consistent with other studies' results that male customer are more innovative than female customers are (Wang et al., 2008). Also, laggards' percentage in male (8%) are higher than in female (7%).

In addition, table 5 shows that there was 262 urban areas customers (82%) compared to only (18%) of rural areas customers; and innovativeness level is much higher in urban area customer compared to rural area customers.

The research sample has been classified into five categories according to income level. The first category is (less than 2000 pounds), the second category is (from 2,000 pounds to less than 4,000 pounds), the third category is (from 4,000 pounds to less than 6,000 pounds), the fourth category is (from 6000 pounds to less than 8,000 pounds), and the fifth category is (more than 8,000 pounds). The classification of the research sample according to their level of income shows that the student customers in the second category represents the majority (40% of the sample), but represent 21% of innovator customers. Whereas only 12% of the sample are in the fifth category and they represent 31% of innovator customers.

According to university distribution, table 6 below shows Cairo University comes first where with 35% of total respondents of the research, followed by Alexandria University with 25% of total respondents, then Mansoura University with 23%, and Assiut University with 11%, and finally the Suez Canal University with only 6% of total respondents.

Most innovators come from Mansoura University with 36% of total respondents, while most early adopters and early majority are from Cairo University with 48% and 35% respectively. Suez Canal University and Assiut University turn to have most of late majority and laggards with 17% and 3% respectively.

Table 5. Customer innovativeness levels according to demographic variables

<i>Demographic Variables</i>	<i>Customer Innovativeness Level</i>					<i>Total</i>	
	<i>Innovators</i>	<i>Early Adopters</i>	<i>Early Majority</i>	<i>Late majority</i>	<i>Laggards</i>		
<i>Gender</i>	<i>male</i>	46	75	39	14	4	178
	%	%26	%42	%22	%8	%2	%100
	<i>female</i>	22	60	47	10	1	140
<i>Residence</i>	%	%16	%43	%33.3	%7	%0.7	%100
	<i>urban</i>	58	113	72	15	4	262
	%	%22	%43	%27	%6	%2	%100
	<i>rural</i>	10	22	14	9	1	56
	%	%18	%39	%25	%16	%2	%100
<i>Income Level</i>	<i>first</i>	23	40	30	7	2	102
	%	%23	%39	%29	%7	%2	%100
	<i>second</i>	27	52	36	10	1	126
	%	%21	%41	%29	%8	%1	%100
	<i>third</i>	3	21	9	4	1	37
<i>Income Level</i>	%	%8	%57	%24	%11	%3	%100
	<i>fourth</i>	3	9	2	0	0	14
	%	%22	%64	%14	0	0	%100
	<i>fifth</i>	12	13	9	3	2	39
	%	%31	%33	%23	%8	%5	%100

Table 6. Customer innovativeness levels according to university sample distribution

University	Customer Innovativeness Level					Total
	Innovators	Early Adopters	Early Majority	Late Majority	Laggards	
Cairo University	10	53	38	7	2	110
%	%9	%48	%35	%6	%2	%100
Alexandria University	17	33	24	5	1	80
%	%21	%41	%30	%6	%2	%100
Mansoura University	27	31	10	5	1	74
%	%36	%42	%14	%7	%1	%100
Suez Canal University	2	8	5	3	0	18
%	%11	%44	%28	%17	0	%100
Assiut University	12	10	9	4	1	36
%	%33	%28	%25	%11	%3	%100

### 5.2 The Research Variables Averages According to Customer Innovativeness Levels

The results has shown that the overall level of general innovativeness for all customers in the research sample is (3.50), meaning that the overall research sample fall into the early adopters category, as is evident in table 7 that all dimensions of customer innovativeness falls in this (3.41 to 4.20) except only one dimension that is the need for uniqueness dimension. This dimension falls in the early majority category (2.61 To 3.40). This result is noticed reasonably normal. The research sample have better educational level than other groups in society and they are young (average age 18 to 28 years old). So, their tendency to try new mobile devices is higher than others (Wang et al., 2008). Table 7 also has shown a correlation between the average of customer involvement, perceived risks, and new mobile phones adoption intentions from one side, and customer innovativeness levels from the other side. It is found that the greater the level of customer innovativeness, the more involved is the customer to mobile phones, the more the adoption intention, and the less is the perceived risks. The level of customer involvement decrease as customer innovativeness decrease (the customer involvement average for each innovativeness level is, 4.57, 3.81, 3.03, 2.22, and 1.40). In addition, it turns out that adoption intentions to new mobile phones gradually decrease with the decrease of customer innovativeness (the average adoption intentions for each innovativeness level is: 3.90, 3.49, 3.17, 3.14, and 2.8). In contrast, the perceived risk level increases gradually with the decrease of customer innovativeness (the average perceived risks for each innovativeness level is: 2.51, 2.71, 2.75, 2.78, and 3.4).

Table 7. The research variables averages according to customer innovativeness levels

Variables	Total customers (N = 318)	Innovators (N = 68)	Early Adopters (N = 135)	Early Majority (N = 86)	Late Majority (N = 24)	Laggards (N = 5)
Need for Uniqueness	3.18	3.18	3.21	2.73	2.91	2.350
Need for Novelty	3.44	4.08	3.49	3.05	2.81	2.86
Need for Recognition	3.61	4.32	3.63	3.16	3.17	3.25
Need for Functional Benefit	3.65	4.14	3.70	3.31	3.26	3.1
Need for Decision Making Independence	3.63	3.93	3.64	3.51	3.43	3.06
General Innovativeness	3.50	4.06	3.54	3.16	3.14	2.93
Customer Involvement	3.60	4.57	3.81	3.03	2.22	1.40
Perceived Risk	2.70	2.51	2.71	2.75	2.78	3.4
Adoption Intentions of New Mobile Phones	3.45	3.90	3.49	3.17	3.14	2.8

### 5.3 Hypotheses testing

Hypotheses 1 was tested using Mann Whitney test to clarify the differences between customers perceptions of risks to new mobile phones, innovativeness, involvement, and adoption intentions according to demographic variables as shown in table 8 and 9:

Table 8. Differences between customers perceptions of research variables according to gender and place of residence

Variables	Gender				Place of Residence			
	Males N = 178	Females. N = 140	Z value	Significance level	urban N = 262	rural N = 56	Z value	Significance level
Need for Uniqueness	3.25	3.08	1.57	0.117	3.40	3.13	1.81	0.07
Need for Novelty	3.51	3.36	1.83	0.067	3.50	3.43	0.32	0.75
Need for Recognition	3.62	3.60	0.23	0.816	3.88	3.55	2.72	0.006
Need for Functional Benefit	3.65	3.65	0.579	0.563	3.74	3.63	0.615	0.54
Need for Decision Making Independence	3.70	3.53	2.05	0.040	3.60	3.63	0.134	0.89
General Innovativeness	3.55	3.45	1.63	0.10	3.62	3.47	1.60	0.11
Customer Involvement	3.67	3.53	2.04	0.041	3.63	3.49	0.90	0.365
Perceived Risk	2.68	2.72	0.547	0.58	2.68	2.76	0.38	0.70
Adoption Intentions of New Mobile Phones	3.47	3.44	1.02	0.31	3.48	3.36	1.22	0.22

Table 9. Differences between customers perceptions of research variables according to income level

Variables	< 2000 (N = 102)	2000 - <4000 (N = 126)	4000 - <6000 (N = 37)	6000 - < 8000 (N = 14)	> 8000 (N = 39)	$\chi^2$	Significance level
Need for Uniqueness	3.18	3.25	3.08	3.13	3.40	13.93	0.008
Need for Novelty	3.44	3.51	3.36	3.43	3.50	14.67	0.005
Need for Recognition	3.61	3.62	3.60	3.55	3.88	3.83	0.429
Need for Functional Benefit	3.65	3.65	3.65	3.63	3.74	3.33	0.504
Need for Decision Making Independence	3.63	3.70	3.53	3.63	3.60	0.585	0.965
General Innovativeness	3.45	3.47	3.50	3.55	3.62	8.96	0.062
Customer Involvement	3.60	3.67	3.53	3.63	3.49	5.76	0.218
Perceived Risk	2.70	2.68	2.72	2.68	2.76	5.07	0.281
Adoption Intentions of New Mobile Phones	2.45	3.47	3.44	3.48	3.36	3.05	0.550

Based on the above, it can be concluded that:

1) According to gender: there is significant difference between mobile customers perceptions of the customer involvement variable only. The average involvement of male customers is larger than for female customers, (3.67 and 3.53) with (Z) value of (2.04) at 0.05 significance level. The cause of the significant differences is that males are more interested in modern technology in general and mobile phones in particular. Especially at such age and study, male students usually care about new devices, more female customers. There is no significant differences between customers' perceptions of innovativeness variable except for perception of the Need for Decision Making Independence dimension where the average for male customer is (3.70), while the average for female customer is (3.53) and value of (Z) is significant 2.05 at 0.05 level. There is no significant differences between customers' perception of the perceived risk variable, or of the adoption intention variable.

2) According to place of residence: no significant difference is found between mobile customers perceptions of customer innovativeness variable where the value of (Z) 1.60 is non-significant at 0.11 level, except for perception of the Need for Recognition dimension where the average for urban customer is (3.88), while the average for rural customer is (3.55) and value of (Z) is significant 2.72 at 0.01 level. There is no significant differences between customers' perception of the involvement variable, perceived risk variable, or the adoption intention variable

3) According to level of income: there is significant difference between mobile customers perceptions of customer innovativeness variable only, where the value (Z) 8.96 is significant at 0.05 level. Significant differences also emerged in two dimensions at 0.01 level: the need for uniqueness and the need for novelty, where the value of (Z) were 13.93, 14.67 respectively, the level of significance of both dimensions respectively 0.008, 0.005. While there is no significant differences between customers perceptions of involvement variable, perceived risk variable, or the adoption intention variable.

The model that has been proposed to test the role of the customer innovativeness on the adoption intentions of new mobile phones was analysed for suitability using Analysis of Structures Moment Tool (AMOS v22).

Emphasis was given to six indicators: Residual Root Mean Square RMR, Goodness-of-Fit Index GFI, Incremental Fit Index IFI, Comparative Fit Index CFI, and Chi-square/degrees of freedom ( $\chi^2/df$ ). Results are presented in table 10. Fit indices determine how well the proposed model fits the sample data.

Table 10. Research Model Significance Test

	<i>RMR</i>	<i>GFI</i>	<i>IFI</i>	<i>CFI</i>	$\chi^2$	<i>df</i>
Innovativeness/ Adoption Intentions	Zero	1.	1.	1.	0.000	0

Hypotheses 2, 3, and 4 are tested using Path analysis method. As for Hypotheses 2, it is revealed from table (7) that the level of customer involvement has a direct positive relationship with the level of customer innovativeness. From the path analysis results (table 11 below), it is shown that general customer innovativeness dimensions have a significant positive effect on customers' involvements with new mobile phones except for the need for uniqueness dimension. It can be concluded that customer innovativeness five dimensions explain 61.7% of the customers' involvements with new mobile phones.

Table 11. Path analysis: general customer innovativeness dimensions and customers' involvements

Variables	$\beta$	SE	Path coefficient	significance
General innovativeness	0.567	0.06	0.564	***
Need for Uniqueness	0.098	0.05	0.416	0.107
Need for Novelty	0.265	0.06	0.510	***
Need for Recognition	0.156	0.06	0.476	0.017
Need for Functional Benefit	0.138	0.05	0.372	0.008
Need for Decision Making Independence	0.129	0.05	0.259	0.008

These results are due to the fact that high initiative customers tend to involve more in new products, as they are better able to devote the effort, time and money to be different from the others.

As for Hypotheses 3, table 7 shows that the perceived risks level increase with the decrease of customer innovativeness level. However, from the path analysis results (Table 12), it is shown that only two of customer innovativeness dimensions have a significant negative effect on customers' perceived risks towards mobile phones, namely: the need for uniqueness and the need for decision making independence. While the other three dimensions (the need for novelty, the need for recognition, and the need for functional benefit) do not have a significant negative effect on customers' perceived risks. It is concluded that customer innovativeness dimensions explain 51.1% of the customers' perceived risks towards mobile phones.

Table 12. Path analysis: general customer innovativeness dimensions and customers' perceived risks

Variables	$\beta$	SE	Path coefficient	Significance
General innovativeness	-0.265	0.066	-0.265	***
Need for Uniqueness	-0.180	0.054	-0.238	0.010
Need for Novelty	0.018	0.072	-0.171	0.818
Need for Recognition	-0.012	0.067	0.183.	0.877
Need for Functional Benefit	-0.098	0.054	-0.190	0.104
Need for Decision Making Independence	-0.167	0.058	-0.220	0.003

A possible reason for such results is the fact that high initiative customers differ from others in many economic and social characteristics (education, social status), communication behaviours (social participation, knowledge innovation, continuous exposure to various media), as well as personal characteristics (desire to change, self-confidence). They are less sensitive to threats, which maximise the tendency to accept the risks.

As for Hypotheses 4, table 7 shows that the customers intentions to adopt new mobile phones increase with the increase of customer innovativeness level. However, from the path analysis results (Table 13), it is shown that only two of customer innovativeness dimensions have a significant positive effect on customers' adoption intentions, namely: the need for functional benefit and the need for uniqueness. While the other three dimensions (the need for novelty, the need for recognition, and the need for decision making independence) do not have a significant positive effect on customers' adoption intentions. It is concluded that customer innovativeness dimensions explain 51.1% of the customers' perceived risks towards mobile phones.

Table 13. Path analysis: general customer innovativeness dimensions and customers' adoption intentions

Variables	$\beta$	SE	Path coefficient	Significance
General innovativeness	0.376	0.077	0.505	***
Need for Uniqueness	0.175	0.046	0.427	0.005
Need for Novelty	0.065	0.061	0.422	0.362
Need for Recognition	0.068	0.056	0.406	0.310
Need for Functional Benefit	0.201	0.046	0.411	***
Need for Decision Making Independence	0.060	0.050	0.230	0.229

## 6. Conclusions and Contributions

Generally, the previous section determines a set of results that can summarise the role of customer innovativeness in new products adoption intentions. The conclusions of the research deepen the comprehension of customers' perception of modern concepts regarding the adoption experience. In view of that, a set of recommendations are put forward to optimise the use of the results. First, marketing managers at Egyptian organizations should clearly identify customer groups in society according to the level of innovativeness. This should help to identify the target market easily, and consequently, succeed in the new product diffusion and adoption. Second, the research finds 21% of the sample as innovative customers, in contrast with only 2.5 % innovative customers in the society in general. Hence, particular attention should be paid to young people generally, and university students particularly when introducing a new product to the market, as their innovativeness are higher than other groups' in the society. Third, marketing managers need to work to reduce the risks perceived by customers by providing sufficient guarantees and customer service when purchasing a new product such as maintenance services. Also they need to increase customer new product involvement, through expanded promotions for the new product to grab their attention. Fourth, focus must be placed on functional benefits when introducing a new product, more than other benefits, as the research proved that functional benefit is the main reason to adopt new mobile phones, followed by customer's need for uniqueness.

Some limitation of this research should be acknowledged. The major limitation is spatial. Data collection of this research has been confined to only five governmental universities, by selecting the major university in every main region of the Arab Republic of Egypt. Another limitation is that the research sample was limited to public universities students. Private universities students were excluded from the sample. Also, the research proposed the innovativeness-adoption model applied on a tangible product.

Future researches can consider applying the model on services and identify the nature of the relationships between the research variables in the service sector. Also, it might be interesting applying the same model on other age segments, and/ or other functional segments. Finally, as this research is studying the role of customer innovativeness in developing adoption intentions, it could be significant if a future researches examine the role of customer innovativeness in adoption behaviour for new products.

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# The Moderating Role of Employees' Humor Styles on the Relationship between Job Stress and Emotional Exhaustion

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## Abstract

In today's work conditions, job stress and emotional exhaustion are serious threats for the health of employees. Previous research suggests a relationship between job stress and emotional exhaustion. The way individuals use humor has been associated with different coping strategies. The aim of this study is to investigate the moderating role of employees' humor styles on the relationship between job stress and emotional exhaustion. 116 participants completed self-reported measures assessing their job stress, emotional exhaustion and humor styles. For data analyses a series of hierarchical moderated regression analyses were conducted. The findings show that self-enhancing and self-defeating humor styles have moderating effects on the relationship between job stress and emotional exhaustion. As the level of self-enhancing humor increases, the effect of job stress on emotional exhaustion is attenuated, on the other hand, as the level of self-defeating humor increases, the effect of job stress on emotional exhaustion is intensified. Findings regarding the effects of employees' humor styles are discussed.

**Keywords:** humor styles, job stress, emotional exhaustion

## 1. Introduction

Humor is a double-edged sword, which can help in difficult situations to smooth things, but also can hurt by offending people in another situation. In workplace, if it's relevant to motivation or facilitation, it can be used by employees in order to enrich the environment. Early humor theories can be categorized under three topics: Incongruity, superiority and relief theories. Incongruity theories suggest that people laugh at contradictory things, which normally do not come together. (Kant, 1951). Superiority theories suggest that people laugh at things, situations or people, over which they feel superior (Hobbes, 1968). Relief theories, on the other hand, suggest that people laugh at topics affecting areas in which they have bottled up feelings, like sex or aggression (Freud, 1960). More recent studies focus on people's humorous styles rather than at what they laugh. Martin and friends (2003) distinguished between four different humor styles, namely, self-enhancing, affiliative, self-defeating and aggressive humor styles, which have different effects on what people experience.

The interest people show in humor has been increasing in recent years. The most important reason for this is the positive effects of humor on physical and mental health. People who have a good sense of humor are better in coping with different problems, because they have a positive approach to difficulties (Kuiper et al., 1995). They use reframing and problem solving methods more frequently, which makes them experience less stress in the face of daily challenges (Abel, 2002). Humor can help to diminish the negative effects of stress. In this context, it is important to investigate the effects of humor at work, because the adverse effects of stress are common in workplace. High pressure and demands at work causes emotional exhaustion, which is the beginning of the exhaustion process.

This study seeks to contribute the emerging literature on the effects of humor in workplace. For this purpose, the moderating role of employees' humor styles on the relationship between job stress and emotional exhaustion is examined.

### 1.1 Humor Styles

According to Martin and friends (2003) humor styles are gathered around two axis. The first axis comprises the reason of using humor and the second axis comprises the healthiness of peoples' using styles. The reason why people use humor can either be the effort to provide own or others' contribution and the using style of humor can either be in a benign or injurious form. About these two axis, Martin and friends (2003) defined four humor

styles: Affiliative humor, self-enhancing humor, aggressive humor and self-defeating humor (See Figure 1). Affiliative humor is often used to facilitate relationships and reduce interpersonal tensions. People can say funny things or tell jokes in order to solve problems more easily. Self-enhancing humor is often used to be able to see the positive side of things. One can develop a different perspective in order to see the acceptable side of something that happened. Aggressive humor on the other hand, is often used to humiliate others. One can tell sexist or racist jokes. Self-defeating humor is often used to defeat oneself for being able to gain others' approval. One can say bad things about self and accepts being a victim, because of the lack of self-respect. In this context, the use of humor can either be in a positive or negative way. Benign or injurious humor styles can have different consequences (Vrabel et al., 2017). Affiliative and self-enhancing humor styles are positively correlated with life satisfaction and negatively correlated with depressive symptoms (Dyck and Holtzman, 2013). Aggressive and self-defeating humor on the other hand, are negatively correlated with happiness (Ford et al., 2014) and positively correlated with depressive symptoms (Tucker et al., 2013).

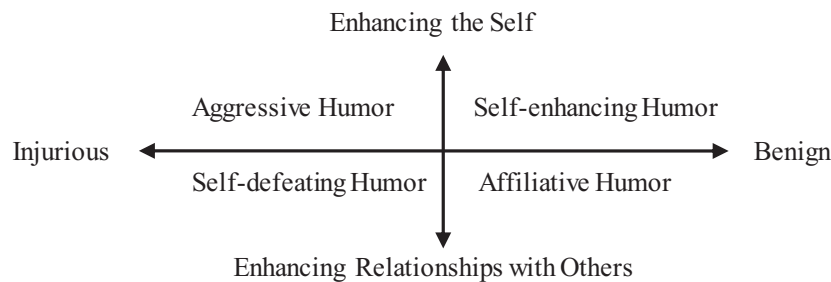


Figure 1. Humor Styles (Martin et al., 2003)

1.2 Job Stress and Emotional Exhaustion

Stress is the most explored phenomenon in organizational psychology because of its complicated nature which relates to many other significant facts in organization. Job stress is a state of strain which creates tension by the worker (Clegg, 2001). This tension causes unfavorable results in organizations, like an increase in absenteeism and employee turnover (Williams & Cooper, 1998). Job stress has a negative effect on employees' health. In developed and developing countries, it is one of the most important health-risk factors (Rehman et al., 2012). Negative experiences in workplace deplete emotional resources of employees, which leads them to emotional exhaustion (Yi et al., 2016). High levels of job stress will bring in turn high levels of emotional exhaustion, which can be regarded as an abrasion. Emotional exhaustion is one of the three sub-dimensions of burnout (Maslach and Jackson, 1981). The other two sub-dimensions, namely depersonalization and reduced personal accomplishment, follow emotional exhaustion, which is the most determining dimension of burnout (Bakker and Schaufeli, 2000). It causes a cognitive and emotional alienation of work and accepted in general as a result of excessive work load (Maslach, Schaufeli & Leiter, 2001). Emotional exhaustion has also serious consequences for the organizations. It relates negatively to the total performance of employees (Parker & Kulik, 1995); and positively to turnover and absenteeism (Cropanzano et al., 2003)

Workplace is generally a chaotic environment with many complicated issues which have to be solved quickly. The employees usually have to struggle with these circumstances by using their own resources. Humor can be one of these resources which can be used to cope with stress and its consequences. The model of the study is hypothesized in order to examine the moderating role of employees' humor styles on the relationship between job stress and emotional exhaustion (Figure 2).

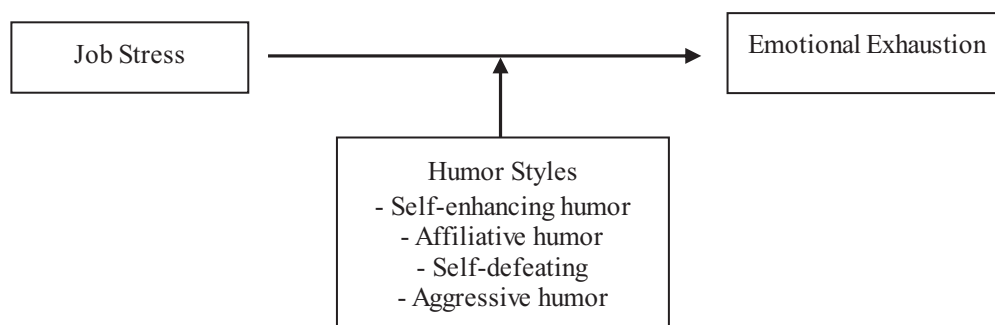


Figure 2. Hypothesized Model for the Study

The following hypotheses are developed:

H1: Self-enhancing humor has a moderating effect on the relationship between job stress and emotional exhaustion.

H2: Affiliative humor has a moderating effect on the relationship between job stress and emotional exhaustion.

H3: Self-defeating humor has a moderating effect on the relationship between job stress and emotional exhaustion.

H4: Aggressive humor has a moderating effect on the relationship between job stress and emotional exhaustion.

## 2. Method

### 2.1 Participants

The sample consisted of 116 participants (61 males, 55 females). Data were collected using a self-administered questionnaire, based on a convenience sample method. 51% of the participants were graduated from a University. The mean age was 35.68 (SD=6.80) and the mean of job tenure was 10.89 (SD=6.41). %41.38 of the participants were working in education sector. %31.03 were working in finance, %20.69 were working in marketing sector and %6.90 were working in the healthcare industry.

### 2.2 Measures

Humor Style Questionnaire (Martin et al. 2003) was used to measure participants' humor styles. It consists of 32 items. It is a 6 point Likert scale (1= totally disagree, 6= totally agree) and measures the four humor styles: Affiliative humor ( $\alpha = .83$ ), self-enhancing humor ( $\alpha = .78$ ), aggressive humor ( $\alpha = .73$ ) and self-defeating humor ( $\alpha = .81$ ). There are 8 items for each style.

In order to measure participants' job stress, Occupational Stress Scale was used, which was developed by House and Rizzo (1972) and consists of seven items that measure employees' perceptions of pressure and frustrations stemming from their work. Cronbach's alpha values of the scale ranges between .71 and .89 (Netemeyer et al., 1990; Cropanzo et al., 1997; Grandney & Cropanzano, 1998). It is a 5 point Likert scale (1= totally disagree, 5= totally agree).

In order to measure participants' emotional exhaustion, the first subscale of Maslach Burnout Inventory (Maslach & Jackson, 1981) was used. It is a 5 point Likert scale (1= totally disagree, 5= totally agree) and consists of 9 items ( $\alpha = .90$ ).

## 3. Results

According to the correlation analysis results, there is a positive relationship between job stress and emotional exhaustion ( $r=.43$ ,  $p<.01$ ). There is a negative relationship between emotional exhaustion and self-enhancing humor ( $r= -.36$ ,  $p<.01$ ) and affiliative humor ( $r= -.26$ ,  $p<.01$ ). There is a positive relationship between emotional exhaustion and self-defeating humor ( $r=.37$ ,  $p<.01$ ). Table 1 provides means, standard deviations and correlations between variables.

Table 1. Descriptive Statistics and Correlations between Variables

	Mean	SS	2	3	4	5	6
1.Job Stress	4.02	.81	.43**	.15	-.09	-.03	-.16
2.Emotional Exhaustion	3.31	.83		-.36**	-.26**	.37**	.07
3.Self-enhancing Humor	3.58	.72			.25**	-.24*	-.09
4.Affiliative Humor	3.63	.71				-.29**	.08
5.Self-defeating Humor	3.00	.59					.33**
6.Aggressive Humor	2.68	.78					

\* $p<.05$  \*\* $p<.01$

According to the results of hierarchical regression analysis, self-enhancing humor has a moderating effect ( $\beta = -.251$ ,  $p<.01$ ) on the relationship between job stress and emotional exhaustion. (See Table 2). In model 3 there is a significant increase in the variance explained for emotional exhaustion ( $\Delta R^2 = .415$ ,  $p<.01$ ). The interaction of job stress and self-enhancing humor on emotional exhaustion can be seen at Figure 3. As the level of self-enhancing humor increases, the effect of job stress on emotional exhaustion is attenuated.

Table 2. Regression Analysis for the Moderator Role of Self-enhancing Humor between Job Stress and Emotional Exhaustion

Model	R <sup>2</sup>	ΔR <sup>2</sup>	F		β	t
1	.189	.181	26.485	JS	.434	5.146**
2	.375	.364	33.890	JS	.500	6.651**
3	.430	.415	28.210	SEH	-.437	-5.805**
				JS	.458	6.246**
				SEH	-.354	-4.635**
				JS*SEH	-.251	-3.303**

\*\*p<.01

JS: Job Stress; SEH: Self-enhancing Humor

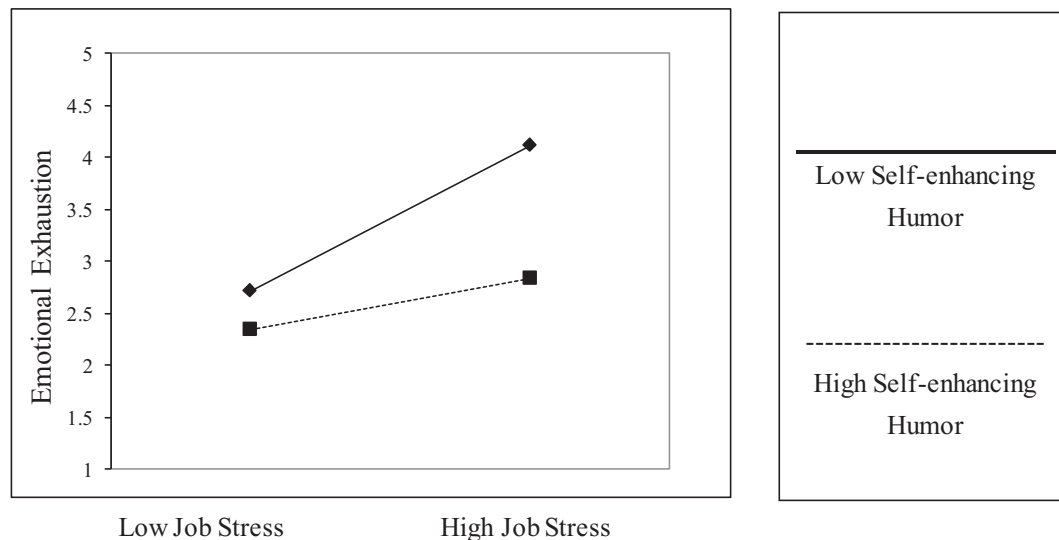


Figure 3. Interaction of Job Stress and Self-Enhancing Humor on Emotional Exhaustion

According to the results of hierarchical regression analysis, affiliative humor doesn't have a moderating effect on the relationship between job stress and emotional exhaustion. (See Table 3).

Table 3. Regression Analysis for the Moderator Role of Affiliative Humor between Job Stress and Emotional Exhaustion

Model	R <sup>2</sup>	ΔR <sup>2</sup>	F		β	t
1	.189	.181	26.485	JS	.434	5.146**
2	.236	.223	17.465	JS	.414	5.011**
3	.243	.222	11.960	AFH	-.219	-2.653**
				JS	.421	5.080**
				AFH	-.219	-2.647**
				JS*AFH	-.081	-.981

\*\*p<.01

JS: Job Stress; AFH: Affiliative Humor

According to the results of hierarchical regression analysis, self-defeating humor has a moderating effect (β= .226, p<.01) on the relationship between job stress and emotional exhaustion. (See Table 4). In model 3 there is a significant increase in the variance explained for emotional exhaustion (ΔR<sup>2</sup>= .363, p<.01). The interaction of job stress and self-defeating humor on emotional exhaustion can be seen at Figure 4. As the level of self-defeating humor increases, the effect of job stress on emotional exhaustion is intensified.

Table 4. Regression Analysis for the Moderator Role of Self-defeating Humor between Job Stress and Emotional Exhaustion

Model	R <sup>2</sup>	ΔR <sup>2</sup>	F		β	t
1	.189	.181	26.485	JS	.434	5.146**
2	.333	.321	28.212	JS	.445	5.785**
3	.379	.363	22.813	SDH	.380	4.948**
				JS	.514	6.570**
				SDH	.392	5.253**
				JS*SDH	.226	2.889**

\*\*p<.01

JS: Job Stress; SDH: Self-defeating Humor

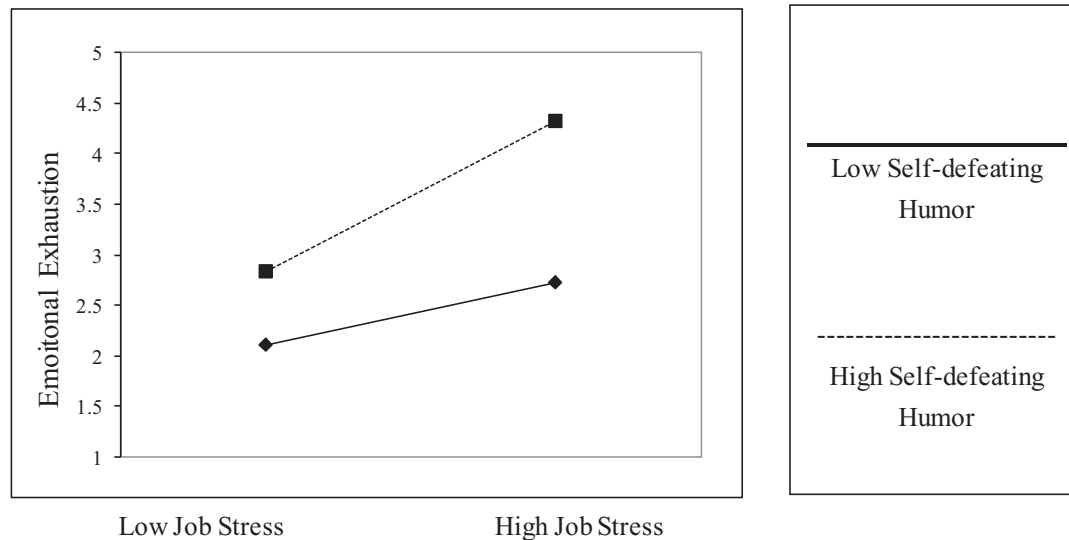


Figure 4. Interaction of Job Stress and Self-Defeating Humor on Emotional Exhaustion

According to the results of hierarchical regression analysis, aggressive humor doesn't have a moderating effect on the relationship between job stress and emotional exhaustion. (See Table 5).

Table 5. Regression Analysis for the Moderator Role of Aggressive Humor between Job Stress and Emotional Exhaustion

Model	R <sup>2</sup>	ΔR <sup>2</sup>	F		β	t
1	.189	.181	26.485	JS	.434	5.146**
2	.208	.194	14.845	JS	.457	5.385**
				AGH	.142	1.670
3	.216	.195	10.259	JS	.454	5.358**
				AGH	.138	1.628
				JS*AGH	.087	1.034

\*\*p<.01

JS: Job Stress; AGH: Aggressive Humor

#### 4. Discussion

Job stress and emotional exhaustion are undesirable factors in workplace that have negative effects not only on organizational results but also on employees' health. The results of this study revealed that some types of humor styles have the potential to make some changes on the relationship between these two variables. It seems that self-enhancing humor creates some kind of power to cope with the effects of job stress and emotional exhaustion. According to the results, self-enhancing humor reduces the strength of the relationship between job stress and emotional exhaustion. Self-defeating humor on the other hand, seems to have an adverse effect. It enhances the strength of the relationship between job stress and emotional exhaustion. In other words, as the level of self-enhancing humor increases, the effect of job stress on emotional exhaustion is decreased, on the other hand, as the level of self-defeating humor increases, the effect of job stress on emotional exhaustion is increased.

Earlier studies showed that adaptive components of humor, namely, affiliative and self-enhancing humor, are negatively correlated with anxiety and depression (Labbot ve Martin, 1987; Overholser, 1992; Nezu et al., 1988); while maladaptive components, namely, aggressive and self-defeating humor are positively correlated with anxiety and depression (Martin et al., 2003; Kuiper et al., 2004; Frewen et al., 2008). Tucker et al. (2013), stated that affiliative humor weakens the relationship between social anxiety and depression, while self-defeating humor strengthen this relationship. They suggested that adaptive humor components, like affiliative humor, can protect people with social anxiety against depression. In this study, it was found that another adaptive component of humor, namely self-enhancing humor, can be protective against emotional exhaustion among employees with high job stress. Self-defeating humor on the other hand, causes harm in terms of emotional exhaustion for employees with high job stress. These humor styles are related to personality (Martin et al., 2003). From this point of view, it is difficult to change these characteristics of employees, but it can be helpful to make them aware of this phenomenon. Self-enhancing humor is related to optimism, self-esteem, and positive affect (Karou-ei, Doosti, Dehshiri, & Heidari, 2009). These characteristics help employees to cope with stressful events in workplace, so that they experience less emotional exhaustion compared to employees who do not possess these characteristics. Wellenzohn, Proyer and Ruch (2016) used humor as a positive psychology intervention and

they make the subjects to write down three funny things that happened during the day. They revealed that in one week depressive symptoms of the subjects were decreased. The use of positive humor styles (affiliative and self-enhancing humor) helps to overcome the discomfort caused by the stressful events in life (Martin et al., 2003). Stockton et al. (2016) found that there is a positive correlation between self-enhancing humor and reasons for living. According to Conservation of Resources (COR) theory, individuals have resources like personal characteristics, conditions, energy resources, objects, and they have a natural tendency to obtain, retain and enhance these resources (Hobfoll, 1989). Hobfoll (2001) put forward a list of 74 resources which are valued elements for individuals and "sense of humor" was one of them. If people lose or not able to retain these resources they are stressed. And if they believe that they do not have adequate emotional resources to cope with stressors around them they are emotionally exhausted (Lee & Ashforth, 1996). Humor can also be thought as a resource which helps to maintain this emotional balance. It can be regarded as a personal resource in life and also in workplace.

This study makes contributions to the understanding of the functions of humor styles in work life. The scope of the study is limited to the effects of humor styles on job stress and emotional exhaustion. Affiliative and aggressive humor styles didn't have any moderating effects on the relationship between job stress and emotional exhaustion in this study. Future studies could examine the effects of affiliative and aggressive humor styles on other variables which are related to job stress. Affiliative humor is also a benign humor style like self-enhancing humor. It is important to understand the ways how benign humor styles can help to reduce job stress and create an opportunity to improve the workplace environment.

In conclusion, if someone, who has a stressful job, does have a self-enhancing humor style, he/she will be less emotionally exhausted than someone, who doesn't have this type of humor style. On the other hand, if someone has a stressful job and also a self-defeating humor style, he/she will be more emotionally exhausted than someone, who doesn't have this type of humor style. Today's work conditions generally do not offer an environment without job stress therefore it is important to have resources which can reduce the negative effects of stress. Humor seems to be a useful tool to cope with the difficult circumstances in workplace, especially when they are unavoidable.

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# The Role of the Jordanian Banking Sector in Economic Development

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## Abstract

The aim of this study is to investigate the impact of the Jordanian banking sector on economic development that was measured by the Gross Domestic Product (GDP). It aims to identify the role of the Jordanian banking sector in the support of economic development through the study of the size of the credit facilities offered by banks.

The study relied on descriptive and analytic method, as well as on field study. The population of this study represents the working banks in Jordan, which offers various banking services to the customers. The tool of the study include data of credit facilities, banking deposits for Jordanian banking sector, and gross domestic product that were collected from the annual financial status of Jordanian Central Bank for the period (2000- 2015).

The study found that there is a significant statistical impact of the factors (the deposits of the banking sector, Credit facilities) on Gross Domestic Product (GDP). The study rejected the null hypothesis and accepted the alternative hypothesis for the two hypotheses. Also, the study recommended that the Jordanian banking sector should expand in the granting of credit facilities to all economic sectors.

**JEL Classification:** G21, G29, E51, A10, E58

**Keywords:** Jordanian banking sector, banking deposits, credit facilities, economic development, central bank

## 1. Introduction

Subsequently, the banking sector play important role in the economic resource allocation of countries. The banking system is a major factor that affects the organization of social and economic life cycle in the economies of the world. It is considered as an indicator of economic and social development .Also, developed economic system should be characterized by the existence of a modern and sophisticated banking system which contributes to achieving economic balance. It also encourages domestic and foreign investment through the banking system's ability to states. The aim of the banking system is to attract savings locally and abroad, and direct those savings into Productive investment. As a result, this contributes to the achievement of economic and social development process, and also facilitates investment activity.

Basically, banks have an important role in advancing development in the economy. They perform the role of collecting savings (units of surplus) and directing those savings into units of the deficit. This can be accomplished through its role in financing the different economic sectors and the development of economic activity.

The banks' role in the financing of small and medium projects has a major effect in supporting the poor and the middle layer. Banks perform a function of reducing the rate of unemployment. Thus, they provide medium and long-term financing for projects production and services. Infrastructure construction has a big role in attracting domestic and foreign investments, export promotion, geographic expansion of banks, opening new bank branches, and staff training in banks. Consequently, this helps to stimulate the economy and reduce the size of unemployment and the support of new projects.

## 2. Research Problem and Research Questions

Banks play a significant role in the economy and they are considered to be the heart of the economy of any country. The problem of the study shows that Jordan is suffering from an increase in public debt, where public debt amounted to 25 850 million in 1st of October, 2016. Also, there was a decline in the rate of economic growth, as well as a permanent deficit in the trade balance.

The banks are the main player in any economy by being able to mediate between the units of the deficit and the surplus units. Thus, this leads to the provision of credit facilities that contribute to economic development in terms of attracting new investment, reducing the rate of unemployment, and increasing the volume of exports and the Gross Domestic Product (GDP). The problem of the study is in studying the effect of the Jordanian banking sector on economic development that was measured by the Gross Domestic Product (GDP). Therefore, the research questions of this study are as follows:

1. What is the size of financing the productive projects by banks in Jordan?
2. Is there any significant statistical impact of the credit facilities granted by the banking sector on the different sectors of the economy's Gross Domestic Product (GDP)?
3. Is there any significant statistical impact of the deposits of the banking sector on Gross Domestic Product (GDP)?

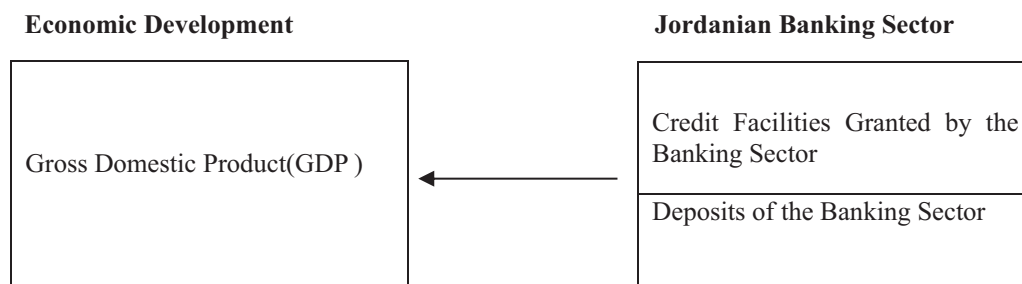
**3. Study Objectives**

Therefore, the objectives of the study are as follows:

1. Identify the role of the Jordanian banking sector in support of Economic Development through the study of the size of the credit facilities offered by banks.
2. Identify the development of the banking system in Jordan.
3. Identify the impact of the credit facilities granted by the banking sector to the different sectors of the economy's Gross Domestic Product (GDP).
4. Identify the impact of the deposits of the banking sector on Gross Domestic Product (GDP).
5. Making the appropriate recommendations

**4. Study Framework and Hypotheses**

To study the role of the Jordanian Banking Sector in economic development, the following model was constructed as follows:



Furthermore, to study the role of the Jordanian Banking Sector in economic development, the following hypotheses were built. These hypotheses, however, are directly related to the research questions:

Ho1 - There is no significant statistical impact of the Credit facilities Granted by the banking sector in the Gross Domestic Product (GDP) at  $p \leq 0.05$ .

Ho2 - There is no significant statistical impact of the Deposits of the banking sector in the Gross Domestic Product (GDP) at  $p \leq 0.05$ .

**5. The Theoretical Framework**

*5.1 Concept*

The emergence of banks in Jordan began back in 1925 when a branch of the Bank in Ottoman was opened. In 1934, the Arab Bank in Amman was opened. However, in 1960, the number of banks amounted to eight banks. In 1980, there was a large spread of the banks and their branches have now become 26 commercial and Islamic banks. The Central Bank of Jordan was established in 1964. It considers the fiscal authority in Jordan and performs the functions of central banks such as supporting monetary stability and fostering economic and social development (Alruiibat, 2014).

The number of banks in Jordan is twenty-six, and they are distributed as follows: 13 Jordanian commercial banks (9 foreign commercial banks and three Jordanian Islamic banks which are Islamic International Arab Bank, Jordanian Dubai Islamic Bank, Jordanian Islamic bank) and a foreign Islamic bank known as AL-Rajhi Bank (Annual Report of the Association of Banks in Jordan in 2015).

The commercial banks provide the customer with various services (modern and traditional services) such as accepting deposits and granting credit to various economic sectors and facilities. Other functions are credit card provision, the provision of economic and financial consulting and bill collection, and contributing to development and economic plans.

Subsequently, the deposits are the most important sources of funds for banks and facilities. Investments are considered to be the most important and most profitable for the banks. Also, the difference between the debt interest and credit interest is the spread, and it considers the profit of the bank in achieving profit (Ramadan & Goda, 2013).

**Credit Facilities:** The bank provide a sum of money to the customer with the right of repayment with interest and with any other penalties, guarantees, or commitments issued by the Bank.

Additionally, there are different types of direct credit whereby the Bank provides money to the client. Examples include loans and debt current and credit card. On the other hand, the second type of credit facilities does not include provision of money. However, the bank offers Bail and Commitment to the customer. Examples include letters of credit which guarantees Banking (Al-abedallat, 2016) Table 1 below shows the size of the credit facilities granted by the Jordanian banks.

Table 1. Granted credit facilities

Credit Facilities	Year
4546.5	2000
4948.9	2001
5130.0	2002
5262.400	2003
6189.200	2004
7744.300	2005
9761.900	2006
11295.600	2007
13044.300	2008
13317.200	2009
14451.400	2010
15851.200	2011
17829.800	2012
18939.700	2013
19274.500	2014
21103.500	2015

(Annual Report of the Central Bank of Jordan, 2015)

**Banking Deposits:** This is the process whereby the customer deposited a sum of money in his/her account at the bank. Thus, he/she have access to the money in the banking investment. Also, the bank pays interest to the customer. Basically, some types of deposits include: current or demand deposits, savings deposits, and time deposits.

However, both local and foreign currency, majorly in US dollars, can be deposited in banks in Jordan. Also, the Jordanian Dinar has a fixed exchange rate with the US dollar (Shabib, 2015). Table 2 below shows the size of the deposits of working banks in Jordan.

Table 2. Banking deposits

Banking Deposits(m)	Year
8224.5	2000
8721.3	2001
9367.7	2002
9969.4	2003
11564.1	2004
13119.3	2005
14591.9	2006
15988.1	2007
18102.6	2008
20298.4	2009
22504.8	2010
24377.9	2011
24969.7	2012
27593.2	2013
30261.000	2014
32598.5	2015

(Annual Report of the Central Bank of Jordan 2015)

**Economic Development:** This is the process of increasing the real national income and the continuation of this increase for a long period of time. This is done so that this increase will be greater than the rate of increase in population such that there is a change in the restructuring of the economy in the state.

In another definition, economic development can be defined as the increase in the national output of goods and services for the period of time (one year), but with the need for a technological, technical, and organizational productivity changes in the existing institutions.

### Importance of Economic Development

1. It is a tool to reduce the economic gap between the developing countries and the developed countries. Thus, there are two groups of factors.

#### A. Group-economic factors

- Economic dependency
- Sovereignty single mode of production
- Widespread unemployment

#### B. Group non-economic factors: Examples are:

- Great increase of population
- Low level of health
- Low level of education

2. It is a development tool for economic independence.

However, the access of developing countries to political independence is not a basis for economic development, but it is a must for it to be economic independent (Jmon, 2004).

**Gross Domestic Product (GDP):** It is defined as the monetary value of all kinds of final products (goods and services) that was produced during a certain period of time, usually a year (Al-Shammari, Shrouf, 2007). Thus, Table 3 below shows the size of the GDP.

Table 3. Gross domestic product

GDP at Current Market Prices	Year
5998.6	2000
6363.7	2001
6794.0	2002
7228.8	2003
8090.7	2004
8925.4	2005
10675.4	2006
12131.4	2007
15593.4	2008
16912.2	2009
18762.0	2010
20476.6	2011
21965.5	2012
23851.6	2013
25437.1	2014
26637.4	2015

(Annual Report of the Central Bank of Jordan 2016).

### 5.2 Previous Study

Consequently, there are many studies that address The Role of the Jordanian Banking Sector in Economic Development. Therefore, the most important of these studies are:

1. The Study of Yusuf (2010) entitled "The Role of the Banking System to Finance Economic Development in Syria."

The study problem was represented in answering a series of questions, including: Is there alignment between the Syrian regime and economic trends and the banking system in Syria? Is there any specify way through which the banking system funded Economic Development in Syria? The importance of this research is to identify the

reality of the Syrian banking system and the reasons for its inability to respond to economic developments in Syria, as well as to identify the bank credit size in Syria.

Furthermore, the study concluded that there is a strong relationship between bank deposits and semi cash local and GDP .In addition, the study recommended the development of credit facilities as a percentage of deposits so as to be able to finance the Economic Development.

2. The Study of (Sarwer, Ramzan, Ahmad, 2013) entitled "Does Islamic Banking System Contribute to Economy Development."

This study, with the aid of a group of economic experts, aims to study the impact of Islamic banks in the Economic Development of Pakistan. The study used eight questions attached to the role of Islamic banks in human resource mobilization. Also, it urged customers to deal with Islamic banks and the allocation of the financial resource and financial crises, internal and external inflation and recruitment of human resources, and domestic and external trade and GDP. The study concluded on the opinions of experts on the existence of a significant role for Islamic banks in economic development. Therefore, the development of the provided services should aim to support economic development.

3. The Study of (Al-oqool, okab,bashayera, 2014) entitled "Financial Banking Development and Economic Growth: A Case Study of Jordan."

The study aimed to test the relationship between the growth of financial services offered by Islamic banks and economic growth in Jordan during the period from 1980-2012. In addition, the researcher studied the relationship between the total funding and total savings, and their impact on the economic growth was measured by GDP.

The study showed the presence of a bi-directional relationship between the total funding and GDP. However, this reflects the contribution of the Islamic banks towards Economic Development. There is an existence of a one-way relationship between savings deposits for Islamic Banks and GDP .Thus, this reflects the liquidity problem in Jordanian banks in general and Islamic banks in particular.

4. The Study of Rashed (2011) entitled "The Role of Commercial Banks in the Economic Development: An Empirical Study of the Banking Experience in Kurdistan Province - Iraq for the Period (2007-2010)."

The research importance shows the great role of commercial banks in supporting economic development. This study places emphasis on the important interest of Iraq's Kurdistan Regional Government and commercial banks to activate its role in financing economic sectors. Additionally, the problem of the region has much national resources

Nevertheless, the government doesn't benefit from these resources, but they depend on the export of goods .Therefore, the government should study the obstacles of banks in fostering economic development.

5. The Study of Naji (2016) entitled "The Role of Commercial Banks in the Financing of Economic development – An Empirical Study of the Bank of Agriculture and Rural Development."

The problem of the study is in identifying the role of banks in Economic Development, and the role played by the commercial banks, in particular, in terms of development. This is because commercial banks have a pivotal role in terms of funding for productivity projects. Also, they help to identify the role of the Agriculture Bank and Rural Development in economic development.

Therefore, the objective of the study is to identify the role of the loans provided by commercial banks in the financing of Economic Development. It helps to determine what aspects of the funding that is required for economic development .Thus, this is because the Bank – Biskra Branch – provides a variety of financial products to economic projects. In addition, this includes several other types of loans that results to development of the Algerian economy. Furthermore, the study recommended the encouragement of individuals to set up productive projects that can serve Economic Development.

6. The study of Wesam (2013) entitled "The Role of Commercial Banks in Financing the Small and Medium Enterprises: An Empirical Study of Agriculture and Rural Development Bank in the State of Biskra."

The study shows that small and medium enterprises sector in Algeria are suffering from drastic problems. Also, their contribution towards the growth of the Algerian economy is weak .Subsequently; the problem of finance is a major problem plaguing this sector. As a result, the study supports the banking sector and other vital sectors of the economy.

The most important study shows the fact that small and medium enterprises are of considerable importance to the economy. The sector has been given much attention in the Algerian economy most recently, but it needs more

support. Thus, the study aimed to identify the reality of small and medium enterprise in Algeria and its role in the development of the economic institutions sector. Furthermore, the most important modes of financing were provided by the Agriculture Bank and Rural Development in supporting small and medium projects.

The study concluded on several results such as the importance that the bank offers to all kinds of finance for the small and medium enterprises. Also, this study should think about alternatives to financing for these projects in order to contribute well to the economic development of Algeria.

7. The study of Albkai (2013) entitled "The Role of Islamic Banks in the Achievement of Economic Development: A Case Study Syrian Arab Republic."

The aim of the study is to indicate the role of the Islamic banks in financing the development and the importance of better distribution of wealth to achieve economic balance. The study problem is aimed at answering a series of questions such as: Is there any alignment between the Syrian regime, the economic trends, and the banking system? Is there any specific way in which the Islamic banks funded Economic Development in Syria?

Therefore, the important of the research is in understanding the reality of the Syrian banking system and to identify the reasons for its inability in responding to economic developments in Syria. The study concluded on the existence of a strong impact and relationship of bank deposits and semi cash in the composition of GDP. The researcher recommended the need to change the structure of the banking system to be able to finance Economic Development.

## 6. Study Method

### 6.1 Methodology of the Study

For the purposes of testing the hypotheses of the study and to address the research question of the study, the study relied on descriptive and analytic method, as well as field study. With regard to siding the descriptive, the study gave an accurate picture of the effect of the Jordanian banking sector on Economic Development that was measured by the Gross Domestic Product (GDP). Through previous studies, as for the side of the field; the study collected the necessary data from the sites of the central bank of Jordan.

### 6.2 The Population of the Study (Scope of the Study)

The population of the study represents the working banks in the Jordan which offers various banking services to customers. The study made use of the data of the GDP, data of credit facilities, and banking deposits for the working banks in Jordan for the period (2000 -2015).

### 6.3 Tools of the Study

The tool of the study was the data of credit facilities, banking deposits for Jordanian banking sector, and gross domestic product that were collected from the annual financial statement of Jordanian Central Bank for the period (2000- 2015).

## 7. The Results of Hypotheses Testing

### 7.1 Descriptive Statistics

This section contains the results of the study aimed to ascertain the effect of the Jordanian banking sector on Economic Development that was measured by the Gross Domestic Product (GDP). The study used the Statistical Package for Social Sciences (SPSS) software to extract the averages, arithmetic mean, and standard deviations of the variables. Thus, the result of the descriptive statistics test is shown in Table 4.

Table 4. Descriptive statistics of the variables

Std .Deviation	Mean	Maximum	Minimum	
5751.3282	11793.150	21103.5	4546.5	Credit facilities
8044.6881	18265.775	32598.5	8224.5	Banking deposits( m)
7363.0475	14740.238	26637.4	5998.6	GDP

### 7.2 Test of the Study's Appropriate Model

#### Normal Distribution Test

To check how close is the data from normal distribution, the study used Kolmogorov-Smirnov test where the decision rule is to accept the null hypothesis (data followed a normal distribution) if the probability of a test (k-s) is more than 5%.

In Table 5, the result of normal distribution test showed that the probability (k-s) for all variables is greater than 5%. This means that all the variables follow a normal distribution.

Table 5. Normal distribution table

Kolmogorov-Smirnov Test		
Sig	(k-s)	Variable
.877	.590	Credit facilities
.986	.455	Banking deposits( m)
.806	.641	GDP

**Pearson Correlation of Independent Variables**

Table 6 shows that there is a high correlation between Credit facilities and Banking deposits where the R value is 99%. Thus, this result shows a linear correlation subscribe problem that requires a VIF test.

Table 6. Pearson correlation of independent variables

		Credit Facilities	Banking Deposits( m)
Credit Facilities	Pearson Correlation	1	
	Sig. (2-tailed)		
Banking Deposits( m)	Pearson Correlation	.99**	1
	Sig. (2-tailed)	.000	

**Collinearity Test**

To achieve this, Collinearity Statistics scale was used .It calculates the coefficient (Tolerance) for each variable of the independent variables .In addition, it founded another coefficient (Variance Inflation Factor VIF). This test is a measure of the impact of the correlation between the independent variables. Table 7 shows the value of VIF for all the independent variables which is the largest (5). This means that the study model contains the interference and subscription problem .Therefore the study studied the independent variables using a separate model.

Table 7. The linear overlap of the independent variables

VIF	Variables
56.330	Credit facilities
56.330	Banking deposits( m)

**7.3 Results of Testing the Hypotheses**

**7.3.1 Test of the First Hypothesis**

To test the first hypothesis been used, linear regression test and the result in Table 8 show that there is a significant impact of independent variables on the dependent variable .This, however, shows that there is a good relation between Credit facilities and the Gross Domestic Product (GDP), the value of Sig. less than 0.005, and the value of Pearson correlation ( $R^2$  ) = 98%. This results to the rejection of the null hypotheses and the acceptance of the alternative hypotheses.

Ho1: There is significant statistical impact of the Credit facilities granted by the banking sector in the Gross Domestic Product (GDP) at  $p \leq 0.05$ .

Table 8. Linear regression test

First model		symbol	Credit facilities
SIG.	Coefficient		(Constant)
.005	-523.410	$\alpha$	
.0000	.457		Credit facilities
	10.26		F- Statistic
	0.000		SIG.
	.98		$R^2$

**7.3.2 Test of the Second Hypothesis**

To test the second hypothesis been used, linear regression test and the result of Table 9 shows that there is a significant impact of independent variables on dependent variable .This refers to a good relation between **the** Deposits of the banking sector and the Gross Domestic Product (GDP), the value of Sig. less than 0.005, and the value of Pearson correlation ( $R^2$  ) = 96%. In addition, this leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis:

Ho2: There is significant statistical impact of the Deposits of the banking sector on the Gross Domestic Product (GDP) at  $p \leq 0.05$ .

Table 9. Linear regression test

Second model		Symbol	Banking deposit
$GDP = \alpha + \beta_1 \text{Banking deposits}(m) + e$		$\alpha$	(Constant)
SIG.	Coefficient		Banking deposit
.010	-1382.435		F-Statistic
.0000	.588		SIG.
	9.187		$R^2$
	.000		
	.96		

## 8. Summary and Concluding Remarks

This study attempts to investigate the impact of the Jordanian banking sector on Economic Development that was measured by the Gross Domestic Product (GDP). Thus, the findings of the study can be summarized below:

1. There is a significant statistical impact of the factors (the Deposits of the banking sector, Credit facilities) on the Gross Domestic Product (GDP).
2. The study rejected the null hypothesis and accepted the alternative hypothesis for the two hypotheses.
3. There is a good statistical relationship between the factors (the Deposits of the banking sector, Credit facilities) and the Gross Domestic Product (GDP).
- 4-The Jordanian banking sector has a major role to play in Economic Development.

## 9. Recommendations

However, the study recommended the following:

1. The Jordanian banking sector should expand in the granting of credit facilities to all economic sectors.
2. The Jordanian central bank should encourage and provide incentives for the banks to finance the small and medium enterprises.
3. The Jordanian central bank should increase banking awareness among customers to increase the volume of bank deposits because it is the main source of the bank's money.

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# Corporate Culture in Russia: History, Progress, Problems and Prospects

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## Abstract

Research on corporate culture is a trend that in essence reflects the problems and risks that exist in Russian society as well as corporations. Authors have three goals: first goal is to make a short analysis after investigations, that are dedicated to the condition of Russian culture; the second goal is an analysis of risks and problems of facing the Russian state and corporations caused by the world community's transition to a new technological environment; and the third goal is the explication of development prospects of Russian corporate culture. There are many possible differentiated approaches and methods possible for a study of a cultural phenomena. The practical aspects of the corporate culture formation are considered on the example of the finance-bank structure "Sberbank". The most productive approach is interdisciplinary research method. The research result is that the Russian scientific community has two main approaches (related to the corporate culture theme): rational and value approach and the term "corporate culture" used in the scientific literature as adequate for definitions "organizational" and "business" culture. This is identical to western research tradition, in general. The "industrial" development level of Russian corporate culture does not correspond to the meanings and values of the sixth technological paradigm, which is the main problem and the original "risk field" for optimization of corporate culture in Russia. The authors consider the organizational forms in which corporate culture develops and the wide historic experience of professional education had been accumulated earlier and corresponded to the pragmatism as the megatrend of education development that is the positive factor.

**Keywords:** culture, corporate culture, corporate education, management, professional education

## 1. Introduction

The problems of corporate culture development begin to be discussed with the appearance of corporate units. Most researchers consider the first stage of corporate culture formation in Middle Ages when craft and merchant guilds appeared. These were the first professional unions that left agricultural labor and concentrated their activity on other specializations. Professional organization have the task to regulate the communicative interactions among guild members the external conditions of its function and personal member activity gave rise to the appearance of the corporate culture. Research revealed that "the guild administration watches over the good behavior, especially – journeymen, demand of unblemished reputation and watch the relations, appearances, their wives and their assistants". There were special signs-kleinod which means the iconic marks of the saint protectors of the trade in workshops or guilds that where turning the communities of its followers into a brotherhood. Their main tasks were the veneration of the saints – patrons of workshops or guilds in all possible canons throughout the Middle Ages (funerals, celebrations, religious service, building of the church etc.) Such precedents took place not only in European history but in Russian too. Thus, the first Novgorod merchant guild known as "Ivan's hundred" was formed by the Temple of Saint Joan Predtechi na Opokah. These merchants had a "common stick" for the insurance of their capitals and mutual crediting. There is a control weight that was public for the customers and was the guarantee of honest trade.

Makeev V.A., a researcher of Russian national culture formulates the hypothesis that, in Russia, there is not as on the European stage, the development of workshop trade because in towns there was no independent and stable ownership of property. The cult, saint relation to prosperity, within the Russian mentality, was replaced by

collectivity, “sociality” and the institute of private property by confluence of property and power. The classic example of such confluence is serfdom. Dichotomy of western individualism and eastern collectivity dominates in all further cultural research in general and corporate culture, in particular.

Currently the actuality of the theme connected with corporate culture increases rapidly. It is connected with not only the increased role of corporate cultures on different levels in modern world community and its economic sphere but with change in technological and scientific-education paradigms. This is noticed in many studies. (Thornburg, 1977; Naisbitt, 1988; Meadows, 2004; Martin 2007 et cetera). In Russia, the interest in this problem has increased abruptly because its practical researches have a great economic and ethic significance. Especially, during the last 30 years, socio-economic shocks have determined a crisis in the traditional communarists morality, generating interest in individual cultural programs and changed the format and status of personal vectors. All these processes deformed the educational system by depriving it of its values and meanings for seeking new paradigm foundations and organizational forms of cultural status of corporate and educational interactions.

All of the above determined the article goals:

- (1) to make an overview of Russian research that dedicated to corporate culture;
- (2) to analyze the risks and problems of the corporate culture formation in the conditions of transition to the sixth technological paradigm;
- (3) to explicate the author’s vision of the corporate culture prospectives development based on the present Russian reality.

## **2. Literature Review**

The term “corporate culture” often means some people’s union that have general goals, carry out joining activity for achievement of these goals and formation of an independent legal entity. However, corporate culture is the localized (systemized or unsystemized) compendium of rules, principles, impositions, norms, communications, material and mental meanings and values that interact with each other for this union or legal subject. Every culture in its predicative specification is a culture invariant of system formation and original “landscape” in the society, where this society is presented.

### *2.1 Culture*

Therefore, every research on corporate culture is a predicative culture condition, a defined conceptual view of the culture. In fact, culture is a complicated and many-sided phenomenon that integrates and universalizes a society. Therefore, the culture studies by all of the sciences, has great number of definitions. At present the actuality of corporate culture theme has developed abruptly. According to A. Kreber’s and K. Klackhon’s point of view “all of these definitions can be classified into 6 classes as: describing (that interpret the culture as the sum of all kinds of people activity, habits, beliefs); historic (that connected culture with traditions and social heritage); normative (that consider culture as the total of norms and rules organizing human behavior); psychological (that define culture as total forms of acquired behavior, appearing as a result of human cultural adaptation to surrounding life’s conditions); structural (that present culture in the kind of different models or unit system of interacted phenomena); genetic (that define culture as a result of human groups adaptation to new habitat)” (Lurie, 1997). N.V. Isakova offered another approach in her work. She formulates the idea about ordering of many definitions of culture by explication the most general definitions. Thus, she chosen two main approaches: functionalistic (“the culture is an out of biological way of activity”, that was offered by E.S. Makaryan in 1983) and axiological (“the essence of the culture is the human development as a sentient being”) that has such supporters, in her opinion, as A.I. Arnoldov, E.A. Baller, J.N. Davydov, N.S. Zlobin, L.N. Kogan, V.M. Mezhev, V.S. Semenov and other (Isakova, 2001). Nowadays these two approaches dominate over domestic and foreign studies and develop in value, communicative and semiotic aspects.

### *2.2 Corporate Culture*

These aspects will be interesting for us in further discussion. Therefore, we give emphasized definitions of culture, that specified for understanding the corporate culture as culture invariant in general. These accents belong to Y.M. Lotman and V.S. Bibler. From Lotman’s point of view, “...culture is the complicated in organization symbolic mechanism that provides the existence of one or another group of people as collective personality with some superpersonal intellect, general memory, unit behavior, unit modeling of the outward things for itself and unit relation to its world” (Lotman, 1998). Y.M. Lotman in his work “Semiosphere” emphasized one more moment in the consideration of the culture. He noticed that “...the culture is a communication form between people and it appears in groups where people have communication” (Lotman,

2004). V.S. Bibler emphasizes the timeless character of culture reproduction and states that "...the culture is a form of simultaneous people existence and communication in different – previous, present, future cultures, the form of a dialog and intergenerating of these cultures" (Bibler, 1990).

The Russian tradition of studying the corporate nature began in the 70s but intensified in the 80s. It was connected with the analysis of the western business or organizational culture formation's experience. It was determined by the policy of increased openness, weakening of "The Cold War" and the beginning liberalization of economic relations in USSR. The later processes of drastic turning points and transformational shifts in the economy, policy, education and mental sphere determine the increase of the corporations's role in these processes and, correspondingly, the new formats of culture reproduction as such. Corporate culture took one of the leading places among these new formats. The appearance of translated works of R. Gallagher, P. Drucker, M. Castels, V. Kellerman, J. Kunde, A. Maslou, E. Toffler, A. Tompson, A. Strickland, F. Fukuyama, E. Shein, M. Hammer and others initiated the great shifts in management research and corporate culture which have been forming in Russian reality at the end of the 20st and the beginning of the 21st century. The first results of these researches were presented in the work of N.N. Mogutnova "The first steps. The corporate culture: definitions, approaches" (Mogutnova, 2005).

The further developments of the corporate culture problems were connected with two approaches: rational and value-oriented. N.N. Mogutnova marks that the specificity of rational approach is meaningful role of the leading structure (Mogutnova, 2005). Value-oriented approach is based on the phenomenon analysis that emphasized by F. Fukuyama. Fukuyama state: "...The culture is the inherited ethic skill or habit. Ethic skill can be consisting of certain idea or value..." (Fukuyama F., 2004). The distinctive feature of rationalists is the consideration of administration as managers develop the culture, meanings and values of corporate tendency and being in the discussion of the corporate culture problems (Alvesson, 1987; Rudnitsky, 1991). Following the value-oriented approach the corporate culture in its formation and development is the way of existence and appearance (realization) of basic values that share as chiefs and employees (Gallagher, 2006; Kogdenko, 2015). In this variant the corporation is looking not only through the prism of services and commodity but in such form that state M. Hammer and he means the human community that create a specific kind of the culture – the corporate culture (Hammer & Champy, 2005).

### *2.3 The Corporate Culture in Russia*

The development of the corporate culture in Russia was determined by some moments that were documented in researches in its historic aspect (Chernykh, Parshikov & Vyshegurov, 2016). Corporatism is the distinctive feature of general and additional professional education till the first days of creation of this system. This is explained by the fact that the professional education was advanced on the basis of branches. By 1967 there was created the whole net of Central institutes of advanced training. It coordinated the corporate education with principle of hierarchy in the organization: educational-course industrial complexes – educational centers – branch institutes of advanced training – central institutes of advanced training. The correlation and interdependence of the corporate education and culture appeared in the creation of corporate universities (Gilev, 2010).

However, the interdependence of corporate education and culture is not a key feature of the corporate culture in Russia at present. The researchers notice that the key feature is its "lack of development" as a system phenomenon. Therefore, the historic principle of corporatism (by means of craft and merchant guilds, informal unions of graduates of educational establishments, for instance, in College of Mines) is not so stable as in the West. This fact was marked in the studies of O. Dugina, S.G. Zarjevsky, B.F. Lomov, L.V. Kartoshova, T.V. Nikonova, V.A. Makeev, T.O. Solomandina and other (Kartoshova, Nikonova, & Solomandina, 2009; Makeev, 2014). In the most of them we can state the significant interest to the three aspects of the corporate culture:

- the western experience is acquired and implemented during the formation of the corporate culture and possibilities in Russia;
- it is noted that the corporate culture can be the power regulator of relations and communications in and outside corporations;
- it is understood that not only processes and technology are important for the development of the corporate tendency and image but employees and their development as well as education and self-improvement. These works emphasize that the corporate values are the core factor for the employee as an innovative and entrepreneurial subject.

Such changes as catastrophic shortage of skilled-personnel caused by the disintegration of professional education

system, transformation of the economic relations, rising importance of nongovernmental sector in most spheres and change in life's values, complicated by the demographical situation and other factors forced contemporary Russian corporations to make the preparation and advanced training on their own. In accordance with these changes personnel professionalism became the key factor. Professionalism meant the formation of the "new culture" and the origin for production, consumption and distribution relations. There appeared different business schools and organizations. They were specialized in training personnel of highly-focused profiles. However, this is just the beginning of the long process occurred in the USA and Western Europe in 1920th-1930th.

### 3. Methods and Materials

Changes in economic, social and mental situations regenerate the dichotomy of individualism and collectivism that seems disappeared in history. If earlier we consider the axiom that "collectivity is the distinct feature of socialistic living", individualism becomes one of the purposes defining the culture of human "being". But the important thing is that collectivism didn't disappear as a mental phenomenon initiating the social activity of individuals together along with individualism. Collectivism acquires other-mediated features. The main feature is its original elimination from the society culture to separate social institutes and, accordingly, the society formation on a new basis. This is the way of appearance the transformed "family culture", "individual culture", "internet culture" etc. as compared with previous artifacts. And in this aspect previous specifications are actualized of J.M. Lotman and V.S. Bibler (Lotman, 2004; Bibler, 1990).

All further discourses will concern the corporate culture by abstracting from the other transformed and transforming forms of new "collectivizing". For the problem concretization is needed to present the structure of its phenomenon in its present condition. Based on the research analysis that dedicated to the corporate culture, its structure is enough complicated and expressed by two "geographical" variants: western (euro-American and Western European) and eastern (Japanese, Chinese, Islamic countries). If the calculation of the features of its business cultures is the subject of special research, the determination of the features that its combine can be the foundation for explication the phenomenological presentation of the corporate culture.

Lapina T.A. made the general conception of the corporate culture structure in her research. She related to the most meaningful elements of corporate culture: the type of joint activity, norms of behavior, communication culture, communication system, business culture, company's tradition, the features of interpretation privileges and responsibility, work ethic (Lapina, 2005). Usually it states that the key factor in corporate culture formation is the corporate philosophy. These are the principles that a corporation uses and express as symbols (objects, actions, events), legends (mythologemes reflecting the previous real events and expressing main values of the corporate culture in implicit form), heroes (people-icons), mottos (proposals-slogans in that the main values of the corporate culture have expressed), ceremonies (as the samples-patterns of public meaningful or other event or human). The corporate tendency, corporation image and corporation ethic are presented in the researches as phenomena formalizing a corporation's activity (Kravtsova & Tarelkina, 2006; Spivak, 2001).

However, in last decade, corporate education often includes corporation culture structure as a core element. This is based on the business and management needs because of its dissatisfaction of the graduates' quality of higher education system. This situation is general as for Russian and for foreign corporations. David Price in his beautiful book "Open: How we'll work, live and learn in the future", that was recently translated on the Russian language, formulated original features compendium of the future corporate culture. He relates to such features the Share, Open, Free and Trust. "It is important that these words can be as nouns and verbs, as values and actions" (Price, 2015). This is the characteristic of the transition process from "corporation-machine" with main features as wide bureaucratic stratum of managers, accurate separation of the functions, obedience to the orders, authority centralization, dehumanization, control and fiscal apparatus to "corporation-community" that noticed Bill Gates in 1999 in its almost biographic book "Business at the Speed of Thought" (Gates, 2001). What type of the culture B. Gates advocates in «Microsoft»? "Our management culture is made for creation the welfare atmosphere for the creativity and the whole realization of every employee potential. By determining that Microsoft is a huge company that uses actively their enormous resources, it keeps the structure of small dynamic groups where everyone feels that many things are depend on him. Ideas generates by certain people and Microsoft does everything to give these creative people the possibility to gets things real done" (Gates, 2001).

## 4. Results

### 4.1 Problems and Risks of the Russian Corporate Culture

Even partial analysis of the management culture in Russian corporations on different levels that conducted regularly by company RBC ("RosBusinessConsulting") shows that order to form appropriate corporation culture it is necessary for Russian corporations to conduct some quantity of action that long time ago had been

conducted in world community in positive way. The important thing is the development of the corporate education as a system beginning the reorganization of a new corporate culture formation process.

The main problem zones which occur in the transformation of Russian corporate culture are:

- Association and systematization of the disjointed education systems of regional structures in various companies;
- Development of the top-management with the goal to form a new image and appropriate to this image the corporate tendency and values;
- Creation of a personnel development system;
- Optimization of the company brand as an employer on the external market in the conditions of regional and global competition;
- The growth of internal status of intracorporate education and communications (<http://marketing.rbc.ru/reviews/business-education-2008/chapter6-corporative.shtml>).

The key role in these processes belongs to corporate universities. At present there are more than 100 corporate universities in Russia that belong to huge corporations. Nowadays the corporate education is the main element of the official philosophy in the leading company. The correlation is obvious because the formation of management culture determines the organizational culture for which the main development factor is the process of continual education and the advanced training for personnel that promotes the improvement of motivation mechanisms of labour personnel activity. In this case, the experience formation of corporate culture and corporate education in one of the hugest financial-industrial corporations in Russia as Sberbank of Russia is very significant. The corporate university of Sberbank was officially confirmed in March of 2012 and began official work from December of 2012. Now the corporate university of Sberbank represents Russia at four global associations KO – EFMD, CorpU, ATD, ECLF and uses its experience successfully for its own development and formation of its corporate culture. Total value of the corporate university during the period of its building was more than 10 billion rubles, (more than 170 million dollars USA). The official opening ceremony of the corporate university campus took place at 12<sup>th</sup> of December in 2014. Campus was designed by taking into account the best world experience of the corporate university and it fit organically in the nature landscape by the Istra River near the Moscow. Multifunctional structure of the corporate university gives the wide possibilities for development of the corporate culture for this corporation. Thirty-eight campus rooms contain about 1300 students, including conference hall with 500 seats, big room with 120 seats, 4 rooms for lectures (60 and 70 seats) and 26 rooms for group work (6-8 seats). The corporate university has its own sports facility. The key educational programs directed to the comprehensive development of the personnel corporate culture developed and implemented are:

**-Sberbank 500** is the module program developed by the corporate university of Sberbank together with business-school INSEAD. The program started in 2011 and is directed to the training of mid-level supervisors Sberbank Group;

**-The program for the top-management development** – the modular program, realizing from 2011 in collaboration with London Business School (LBS). The program is directed to the top-management Sberbank Group;

**-The program for the staff reserve development** – is the modular program directed to skill formation, needed for the effective promotion and formation the continuity in Sberbank Group;

**-The workshop of supervisors** – modular program, initiated by The Corporate University of Sberbank from 2014. The program consists of 6 modules and is directed to the formation of the culture of management, the holding of the new Strategy Bank development during the period till 2018 and adherence to Sberbank values.

#### **- Distant learning**

Distant learning and development of the Sberbank chiefs becomes possible because of the Virtual School of the Corporate University. Portal presents for the Bank top-management the access to the knowledge base and the possibility of team interaction in the regime of real time 24 hours within the whole week. In 2013 the access in Virtual school had gotten 36 000 chiefs of Sberbank. This innovative project was admitted as the best introduction of IT - platform Saba Software in the world in 2012.

The Bank uses the platform for specialist training in the distant and electronic format. At present about 200 courses worked out that promote to train on the workplaces;

#### **-Adaptation of the new personnel**

The programs of the new personnel training on the basis of the adaptation plans conduct for the specialist-beginners. The adaptation plan is the complex development process including 5 stages: induction, full-time and distant learning, probation period, adaptation on the workplace, summing-up of the adaptation. The adaptation process of the new specialists proposes 3 months (probation period). Adaptation plans help the personnel to more quality and quickly get to work.

The program “Training all-Russian specialized points” has been conducting in the Bank since 2013 is directed to the efficient and “painless” induction of new personnel. This program presents the probation period in special Bank division that begin immediately after the finishing the full-time training in the Sberbank training center. During two weeks in the training all-Russian specialized point under control of the tutor the new employee works getting in the training process knowledge and skills in real conditions. Two hundreds and ninety-eight the training all-Russian specialized points opened in 137 towns of Russia and its quantity increases constantly;

#### - **Professional development**

Complex programs as “Sales workshop”, “Service workshop”, “Tutorship workshop”, “Communication workshop”, “Personal efficiency workshop” and programs directed to professional knowledge development implement for the professional development of the specialists. The conception of the workshops is based on the Sberbank values that are directed to the personal leadership’s skills development and proactivity, efficient work with internal and external clients, team constructive relations and follows such principles as:

##### 1. **System**

Each program offers training exercises complex in the context of each position and includes some stages from preparation till post-training support, specialized modules on the treatment of individual skills.

##### 2. **Formats multitude**

The training program is presented in compound formats and includes the decision of individual business-cases according to specificity of every business-division, exercises, trainings, personnel development at the workplace with maximum supervisors’ involvement, distant formats, business games, performance of business-speakers.

##### 3. **Continuity**

All programs have multilevel structure where each level has various specification and development depth of knowledge and skills (from simple to complicated)

##### 4. **The control of the practical efficiency**

Each program has the efficiency value and permit to estimate the progress in knowledge and skills, satisfaction degree of internal and external clients and the program influence degree on the business-result;

#### -**The books series “Sberbank library”**

The books series “Sberbank library” help to motivate yourself for self-perfection and opening internal potential by personnel. The collection “Sberbank library” proposes the books on various themes: leadership and personal development, the best management practices, economy, policy, history. From 2009 more than 50 books on the Russian language were published. The collection “Sberbank library” continues to add new editions;

#### -**Learning foreign languages**

The bank provides for specialists and their relatives the possibility of learning foreign languages in distant format. In the context of this unique format and scope project personnel get the twenty-four-hour access to the virtual classes from any electronic device in Internet, practice the spoken language with the native speakers as teachers, and meet with students from different countries.

In 2013, the Corporate university of Sberbank became the first certified platform of Cambridge English Language Assessment in the corporate sector in Russia for training and conducting international English exams.

In 2015 Sberbank spent more than 2 billion rubles for personnel training (more than 340 million dollars). The teachers on staff, invited lecturers and company top-management deliver lectures for Sberbank personnel. The company “Euroset”, giant in retail trade is on the second place in Russian corporate universities ranking that emphasized the training of the line personnel. “Gazprom Neft” is in third place. The center of SP in this raw materials giant is the formation of the staff reserve (<http://marketing.rbc.ru/reviews/business-education-2008/chapter6-corporative.shtml>). Undoubtedly, that Sberbank, “Euroset” and “Gazprom Neft” are the exception this is t in the general field of the corporate universities, corporate education and corporate culture. However, the tendency is strong and supported on the governmental level that permit to minimize foregoing problems and risks.

#### 4.2 Prospects

Pavel Luksha, professor at practice in Moscow management school “Skolkovo”, the author of the New professions atlas and the report “Global notice of the future education” presented the results of the project “Global education future” on 13<sup>th</sup> of September of 2015. The project has been developed over 5 years and has a goal the possible image of the global international education ecosystem of the future and strategies for its formation. According to presented programs in report the beginning convergence of business-schools, training and consulting companies in 2015 should turn into a stable tendency. By the 2025-2030, it should happen almost whole convergence of business-education and personal education. The education corporatization proclaimed in the report as a general trend in post-institute of higher education development. This is determined by an approximate time-table that defined forecast: the first stage is the growth of the corporate universities and domination of transnational corporations on the global markets of the corporate education in 2010ty; the second stage is that the corporate universities become active players on the education market; third stage is that the ICT-companies become the leaders on the global market of the corporate education (Luksha, 2015). This tendency is confirmed in Russia and abroad. At present the corporate university is an innovative model of business-education, having in the center the combination of business interests, education and certain individuals whose motivation has pragmatic character. The quantity of the corporate universities increases progressively almost in the all business spheres.

However, the main problem is connected with the interaction of national and international component of the corporate culture in the modern world. This conflict line was determined in 1994 by Richard Hall - English researcher and proved by domestic researcher N. Tesakova in her work “Mission and the corporate codex” (Tesakova, 2003). The essence of the conflict concludes in the divergence of two positions. The followers of the first way state that transnational companies have the possibility for formation the corporation culture by means “its own” imagination of business ethic and the national differences should consider as the “minor factors”. Other position is that by the globalization conditions the lack of approaches and values convergence in the processes of national and international (business) cultures formation is that the national business culture will dominate as a result.

Nowadays the prospects of this conflict resolution are not distinct because the main foundation (in the context of its corporation education modern condition), that was excellent formulated by Igor Kachalov, the specialist in the sphere of the Russian management, is not abolished. His states that “if we talk about some integrating human from these 6-7 million (he means the number of management personnel – author’s comment) or about all of them, however, the key and most dramatic feature of the Russian manager connected with his low productivity in management is the absolute absence of the professionalism...if the minimum required level of professionalism in the European, Eastern or American market is the 100%, the Russian managers will have the level about 35-45%” (Kachalov, 2008). This position is maintaining now but the education corporatization equalizes the positions by convergence of the business and personal education.

#### 4.3 Discussion

At present we should consider the general picture of the Russian corporate culture formation as addition its real model to the global normative culture. The destruction of the pre-revolutionary norms, values and organizational forms, as merchant guild, aggravated social risks dispositions (wars, dissolution of the Soviet Union etc.), leded to the destruction and late exist of the new Russian corporations, corporate education and global corporate culture development. Nowadays the global corporate culture can be considered as the phenomenological and stable system formation – the abstract formulary that integrates the world management experience. The Russian business culture in its development is the partial approaching of national model in the theory and practice by implementing its abstract formulary to formation its own national model of the corporate culture. The national Russian corporate culture gradually goes away from the domination of the quantitate indexes and tries to be implemented as total sum of the four kinds practices: rationalization of the intracompanies processes is based on the corporate education; intereconomic relations and cooperation with formation of net constructions; production-share-consumption-distribution; coping the experience of market in the interactions system West-East; understanding its own historic economic management experience. In its structure the national corporate culture does not formally differs from the West. However, the foresaid dilettantism often deforms the hypernorms of the world business ethos to the distinct disturbance as well as business ethic and classic canons of morality.

It is necessary to state that visible part of the corporate culture such as office, interior, ceremony, communication style, myths and stories dominate basic elements of the corporate culture as values, norms, work principles and company philosophy. However, it is obvious that a great number of the companies in its corporate culture begin



to use the criteria meaning the strong, formed in general corporate culture. This corporate culture is appropriated to the following principles: community of interests; adequacy of the chosen strategy; adaptation of the corporate culture; efficiency of the human capital usage etc. Though, the corporate culture phenomenon still considers with alertness. The formation of the corporate values occurs mostly by means of old methods: punishment for disturbance. In most parts of corporations, two cultures “co-exist”: “entrepreneur-corporatist” on the management level and “collectivity-pragmatist” on the personnel level. But the main problem is that just 20% of the companies has result-oriented introduction of the corporate culture elements. It is determined by a recent history of the private practice and entrepreneurship and ignorance of the corporate culture and corporate education development as objective necessities.

#### 4.4 Conclusion

This study presents only a theoretical essay of Russian corporate culture conditions with the accent on some problems and expresses the authors point of view. This brief analysis shows that formation of a Russian national corporation culture was historically “launched” and will develop progressively. The number of studies on this theme has increased and it confirms its meaning. In spite of the many barriers to this phenomenon as “orientation to authority” and “translation” of the “top” relations to the “masses”, the horizontal peer corporate culture develops very intensively. Written and executed mission and values are present in many companies. In the nearest prospect can be implement the successful synthesis of highly-organized corporate culture of the western corporations and meanwhile “closed” corporate culture of the huge Russian companies. The second development line is the remarkable difference of the corporate cultures in big and small companies. This can liquidate not only the noticed differences but promotes to push the task of the corporate culture formation to a high level in the sphere of the modern business tasks and the corporate education development to the level of the governmental priorities.

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# Program and Performance Budgeting System in Public Sector Organizations: An Analytical Study in Saudi Arabian Context

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## Abstract

In order to improve the budget system, a number of approaches and techniques have been adopted in public sector organizations such as Program and Performance Budgeting System (PPBS), Performance Based Budgeting System (PBBS) and Zero-Based Budgeting (ZBB). The present study is an extension in the line of very few researches which had been conducted in developing countries in regard to implementation of “One Budgetary Approach” which is known as “Program and Performance Budgeting System PPBS”. The study concentrates its focus on the support which it may find in case of “budgetary format” is adopted by the “Public Sector Organizations” in the kingdom of Saudi Arabia. The study explores several dimensions such as familiarity, acceptability and adoptability of PPBS, “degree of contribution of Accounting System followed by “public sector organizations” to adopt PPBS”, the benefits that might be realized and the obstacles that probably might be faced if this approach of budgeting is adopted by Public Sector Organizations” in Al-Kharj region. The study came up with the following main findings; there is a fair familiarity and understanding of PPBS by financial managers and accountants working in the “public sector organizations”, the accounting system followed by “public sector organizations” contributes to adopt PPBS successfully, there are certain benefits could be obtained while adopting PPBS by public sector organizations, and finally certain obstacles have been discovered which are standing as stumbling-stone to adopt PPBS in “public sector organizations” in Al-Kharj region effectively.

**Keywords:** performance, budgeting, public sector, resources

## 1. Introduction

For many years, the budgetary systems adopted in both developed and developing countries were criticized by well-known experts and writers within and outside the government institutions. Real intention of such criticism was nothing but to look for better mechanisms which can manage and control the financial resources of the country in a better and efficient way. The current traditional “line-item budget”, which not only adopted in the Kingdom of Saudi Arabia but many other countries also are using in their budgetary practices, has attracted severe criticism from many experts because, according to them, this system is not helping any government to utilize the budget as a means to develop efficiency and take decisions regarding allocation of public resources. As per this approach, many budgetary items are issued every fiscal year without any disagreement or enquiring about them and they are included in the next budgetary years as well as only incremental changes can be considered to make in those items. PPBS was introduced in order to fix this problem and increase rationality elements in the process of budgetary decision making, for instance, the perpetuation of obsolete expenditure is avoided in this budget system.

PPBS, therefore, has an obvious appeal to act as a road map to achieve objectives/ goals as it paves the way to use and utilize the available resources effectively and in an efficient way. This, definitely, will help to raise the level of government services in terms of quality and speed in delivery as well as contribute to identify the problems facing the implementation and contribute to get rid of weaknesses found in the plans, programs and projects and changes that need to be made to those programs and projects. There is a lack of researches conducted to examine and document the implementation of PPBS in developing countries as there is not even a

single research in case of Saudi Arabia as per the researcher knowledge.

The present study is an extension in the line of very few researches which had been conducted in developing countries in regard to implementation of “One Budgetary Approach” which is known as “Program and performance Budgeting System (PPBS)”.

## **2. Research Gap**

Literature review of various researches reveals that undoubtedly a lot of work has been done in this field but no specific study has been undertaken in Saudi Arabian context. The present study includes a number of important issues which represent that some organizations of public sector are exaggeratingly drawing up the budget regardless goals are expected to be executed or achieved. Also, the research problem represents the way that budget is estimated on the level of ministries/ organization/agencies etc., as each of them makes the maximum efforts to get the biggest stake possible regardless of its actual need and without regard the need of other units, priorities of programs meant for execution which lead to show differences between estimated and actual figures. Based on above mentioned reasons, the researcher feels the need to verify reality of applications of budget planning and extent of its effectiveness in institutions of public sector which is, according to the estimation of researcher is below the required level.

## **3. Objectives of the Research**

The major aim of the present study is to shed light on the accounting system prevailed in “Public Sector Organizations” existed in Al Kharj region. The study explores several dimensions such as familiarity, acceptability and adoptability of PPBS, “degree of contribution of Accounting System followed by “public sector organizations” to adopt PPBS”, the benefits that might be realized and the obstacles that probably might be faced if this approach of budgeting is adopted by Public Sector Organizations” in Al-Kharj region.

## **4. Importance of the Research**

The study importance derived from the importance of budgeting planning in general and PPBS in particular. Hence the study considered to be important due to lack of awareness among the public sector organizations in regards to the benefits obtained while adopting PPBS comparing with the traditional line budget. Therefore, the study establishes familiarity, acceptability and adoptability of PPBS in “Public Sector Organizations” existed in Al-Kharj region, as PPBS acts as a road map to achieve objectives / goals and giving more focusing on community goals, needs, and capabilities, further more PPBS provides more effective control of input and output, and it provides better evaluating and reporting than traditional budgeting, and also providing a clear picture on government spending.

## **5. Research Methodology**

This study is based on primary as well as secondary source of data. Primary data has been collected with the help of a well-designed questionnaire. Secondary data has been gathered from the Books, Journals, and various libraries and through internet. To attain the research goals a questionnaire consisting of 37 questions was sent to the accountants of 48 public units during the year 2014-15. The questionnaire was divided into two main parts. Part one contained introductory questions in order to establish the selected sample profile (e.g. Organization, Degree, Major, Years of Experience, Adopted budgeting system etc.) and part two has been designed to measure the attitude of the selected sample towards the following; (a) Familiarity with PPBS (b) Degree of Contribution of the accounting system to adopt PPBS c) Merits of Implementation / Applying PPBS (d) Obstacles faced by financial managers and accountants to adopt PPBS. A five level Likert-type scale was used to characterize the attitude as: (i) agree; (ii) highly agree; (iii) neutral; (iv) not agree; or (v) highly not agree. Sample selection was based on purposive sample. Out of 65 questionnaires, 46 were returned completed (response rate 83 per cent). The sample of the study consists of the following Ministries/Units:

- Prince Sattam bin Abdulaziz University
- Ministry of Social Affairs
- King Khaled Hospital
- Ministry of Education
- Municipality of Al Kharj
- Ministry of Labor
- Ministry of Youth, Culture and Sport

## 6. Research Hypotheses

Based on research problem, research hypotheses can be summarized as follow:

1. There is a familiarity and understanding of PPBS by financial managers and accountants working in the public sector organizations.
2. The accounting system followed by public sector organizations contributes to adopt PPBS successfully.
3. There are certain benefits could be obtained while adopting PPBS by public sector organizations.
4. There are certain obstacles that possibly preventing to adopt PPBS in public sector organizations effectively.

## 7. Research Validity & Reliability

A good test must contain some suitable features such as Objectivity, Execution simplicity, Practicability, comment simplicity, Validity and Reliability. Considering above-mentioned features, the researcher focused more on Validity and Reliability here. Dealing with research Reliability, researcher has utilized “Cronbach's Alpha” and based on Table (1) the measured value of “Cronbach's Alpha” done by SPSS Software is approximately equal to 0.837 therefore the test is considerably valid in view of its Reliability. In Validity examination, 15 questionnaires were sent to respondents for pilot survey, and after 10 days, the same questionnaires were sent again to be answered. This research shows the uniformity of the answers during 10 days which indicate the questionnaires validity.

Table 1. Reliability Statistics

No of Items	Cronbach's Alpha
37	0.837

## 8. Theoretical Background

According to (Ouda, 2013) Program and Performance Budgeting System PPBS is a “broad term of budgeting system used almost exclusively by public organizations, such as branches of government and programs that governments create. The goal is to improve the efficiency and effectiveness of public expenditure by linking the funding of public sector organizations to results they deliver, making systematic use of performance information.

Broadly speaking, “there is no one single definition of program and performance budgeting system .In this context, (Mahmudi & Mardiasmo, 2005) noted that performance refers to “something related to the activities of doing the job that include the outcome of the work”. On the other side, budgeting denotes to planning for various operations based on a particular estimate.

A review of the literature does, however, suggest what PPBS means commonly. Most observers and experts on public budgeting do agree that, program and performance budgeting system is the allocation of funds to achieve programmatic goals and objectives as well as some indication or measurement of work, efficiency, and/or effectiveness (Joyce, 1999) (Husain, 2004). On the other hand, (Gannam, 2006) clearly said that PPBS is “the proper allocation of scarce resources efficiently and effectively through planning and implementing particular programs and activities, measuring performance and establishing proper monitoring mechanism in a way that would guarantee controlling the governmental expenditures”. Program and Performance budgeting differs from traditional approaches because it focuses on spending results rather than the money spent - on what the money buys rather than the amount that is made available” (Carter ,1994).

While acknowledging that no standard definition of PPBS exists, it can be said that PPBS “involves a sophisticated web of relations, from inputs to outputs, to outcomes, the connecting of resources to results for budgeting purposes”.

It's worth mentioning to come across various literature reviews concerning to PPBS. In this context, (Jafer et al., 2010) conducted a study to investigate the applications of program & performance budgeting in the Palestinian Authority during the period (1998-2000), the study concluded that this kind of budgets is helpful for economic benefits, social and political concerns and controlling fiscal deficits. The study further proves that there are many shortcomings in the traditional budgeting system, as it don't contribute to develop the general government budget, and don't determined any priorities for government programs and activities. The study arrived at that program & performance budgeting can be successfully adopted by the authority of Palestine as there are various ingredients contribute to achieve that i.e. the internal environments, experience, qualification for the staff.

Dermawan et al., (2008) described the adoption of PPBS by the Indonesian government and discussed the potentials and challenges for achieving good forest governance at the local level. The study undertaken in the

districts of North Luwu and South Sulawesi, revealed that there are certain areas like lack of infrastructure and transportation, unskilled human resources etc. in the system that needs to be improved, and in this regard the authors suggested to adopt different methods or approaches in a different way, particularly in moving towards the balanced economic development and forest conservation. Robinson & Last (2009) undertook a study with the primary objective of elaborating a basic model of PPBS that could be adopted in the countries that wish to minimize the complexities cost of doing so and those with limited resources and capacity. The authors considered program budgeting as a powerful tool for classifying types of expenditures as per service and objectives and is highly recommended for those countries that have the resources and capacity to introduce it. Willoughby & Benson (2011) provided a historical timeline of the process – considering significant budget laws and executive policies that have strongly influenced budgeting as practiced in the United States and at the federal level of government. The paper also highlights the efforts to advance program analysis, evaluation and performance measurement into the federal budget process which is found significant in securing success of budget reforms.

Qi & Mensah (2012) examines in their study the economic effects of the adoption and implementation of PPBS at the state government level. They investigate the relationship between implementing PPBS and aggregate state expenditures from the General Fund and Other State Funds, and further analyze whether PPBS affects combined functional spending: Future-oriented expenditures, Social expenditures, Public safety expenditures and Other expenditures. They concluded that PPBS is effective in getting state governments to reorganize their spending priorities. In this context, (Schick ,2007), (Fuior & Gutan ,2015) came up into conclusion that such kind of budgeting approach will contribute to achieve results in connection with the allocated resources, and it's a good tool to link resources spent with results. Husain (2004) assured that adopting PPBS is considered as a good step towards reforms and preservation of limited resources.

Lubis et al.,(2014) conducted a study concerning examining the different applications of performance-Based Budget And Zero-Based Budget on Regional Task Force Units In North Sumatra , the study concluded that the application of PBBS affects partially the performance of task force units in Medan city. In addition, it concludes that there is a difference in performance between the Zero-based budget (ZBB) and Performance-based budget.

Brumby and Robinson (2005) identified and examined the “performance budgeting systems i.e. systems used by central budget decision makers (ministry of finance and political executive) to link the funding they provide to those agencies’ performance. The authors undertook a case study of the literature on one specific sector of output-based hospital funding systems. The main aim of this paper is to ascertain what light the empirical literature sheds on the efficacy of performance budgeting and whether, more specifically, that literature supports the contention that efforts to link funding to results in government budgeting have failed. Conclusions drawn from the study were that the empirical literature on government-wide performance budgeting is disappointingly limited in scope and methodology; even though the available literature supports the information in budgeting to improve both allocated and productive efficiencies”. However, despite the benefits obtained from adopting PPBS.

In regards to challenges facing adopting PPBS, (Al Jahmany & Omari, 1999) had revealed in their study that there are certain challenges facing adopting PPBS in Jordan i.e. lacking of qualified information system, lacking of costing system, lacking of experience and qualified staff, challenges in determining targeted programs, difficulties in measuring outcomes for certain activities, lacking in effective monitoring units. This is also had been supported by (Al Shamrani ,2010) in KSA as the study concluded that there are certain difficulties of securing appropriate staff, lack of top-level commitment and information problems, difficulties of programming and performance measurement.

Abed-AL Kareem (2016) had conducted a study to evaluate the efforts made by National Palestinian Authority towards adopting PPBS, the study reached into the following; PPBS is still not adopted successfully due to various reasons, i.e. absence of knowledge about this kind of budgets, ineffective organizational structure and responsibility centers to support such kind of budget, lacking of monitoring programs and activities made, centralization by finance ministry, absence of financial incentives. Quda (2015) revealed that the implementation of PPBS face various challenges i.e. specifying the outcomes; specifying the output; and linking outcomes to outputs.

Based on the literature review, it has been noticed that there is a disparity in the results derived from, some studies proved the importance of implementing PPBS in making planned goals and activities successful, some studies revealed that despite the importance of PPBS, but it's still facing certain challenges during the adoption process.

Broadly speaking, We cannot ignore the basic requirement that PPBS need to adopt successfully, particularly, in

developing countries where various challenges are dominated i.e. financial resources, human resources, technical resources, etc. nevertheless those challenges, we believe that, once the real and serious steps are taken towards reforms, would that be considered as a positive changes towards success .

Indeed, what makes the present study distinguished is its scarcity in Saudi Arabia context, besides to the new reforms and opportunities that the government is intending to adopt in regards to the allocated resources for different sectors, which is in turn, require to take serious move from the traditional budgeting system to PPBS .

### 9. Importance of PPBS for the Government

According to (Young & Richard,2003) (Kumar, 2012) PPBS has a various benefits and advantages to governments for a number of reasons including the following:

1. It's a good tool for strategic planning and goals setting,
2. Provides an evaluation and accountability;
3. Improves understanding of crosscutting programs in government;
4. Drives redesign of programs (focuses on improvements);
5. Helps agencies link their daily activities to overall government outcomes and similar activities of other agencies;
6. Helps rationalize budget allocations (uses performance information as a basis of evidence);
7. Compares cost effectiveness between programs; and allow comparisons between “expected” and “actual” progress.
8. Helps align government spending with overall.

### 10. Program and Performance Budgeting System Cycle

Generally, as the literature implies, there are certain steps that should be taken into consideration while planning for PPBS, which can be summarized as follow:

**Step 1: Develop Strategic Plan:** PPBS cycle begins with Strategic Planning which is relied on mission and vision set up by organization. The strategic planning makes high level plan for next five or ten years. The planning process explains the goals which have to be achieved in near time; prioritize them and define clear strategy to reach those goals. Strategic planning process provides a policy and decision making framework for government spending priorities and desired outcomes.

**Step 2: Define Goals and Objectives:** Strategic planning should end with objectives and a roadmap achieve them. The next logical step is to divide these high level goals into short term, medium term and long term goals. Objectives define strategies or implementation steps to attain the identified goals, those objectives should be very specific and explains the “who, what, when, where, and how” of reaching the goals.

**Step 3: Define Measures and Set Target:** A performance measure is a numeric description of work, which is being done by an organization, as well as the results produced by that work. The next step is to define measures which can be utilized for assessing the efforts made by organization in meeting their stated goals and objectives. A “target” is a detailed measurable performance requirement related to the objective. Defining measures and setting targets are challenging tasks. One of the most delicate tasks is setting effective stretch targets, those that are ambitious, yet achievable, without being demoralizing.

**Step 4: Allocate Resources:** Allocation of resource is a series of decisions taken in respect to budget in which each program or agency is allotted resources. In budgeting process, key decision makers in a systematic way take into consideration the target service levels of programs and past outcomes achieved by expenditure based on program evaluation. The resource allocation processes reflects organization’s priorities and encourage efficient and effective spending.

**Step 5: Evaluate Performance:** This is the last step of Program and Performance Budgeting cycle. In this stage, the agencies will measure all the results produced by each program against target set earlier. The result should be collected and analyzed in timely manner. Evaluation is important because indicators alone are often insufficient to judge program performance. Evaluation serves as feedback loop for further improvement in strategic planning process. These results should be used as vital input for next cycle of Program and Performance Budgeting in this stage.

### 11. Budgeting System in Saudi Arabia

In the Kingdom of Saudi Arabia, one general budget is prepared for the whole nation. The general budget is related to the Kingdom’s overall plan for socio-economic development. The budget method, which is used by the kingdom of Saudi Arabia government, is the line item (traditional) budget since 1938 till now on the ground that

it suits the Saudi environment. Saudi Arabia released its 2015 national budget, another expansionary plan that highlights the government's intention to stimulate the economy by focusing on an investment program, particularly in Education, Water, Agriculture, Industry, and other Economic Resources, Specialized Credit Development Institutions and Government Financing Programs, Health and Social Affairs, Municipality Services, Infrastructure and Transportation to enhance long term economic growth and employment opportunities across a variety of sectors. Moreover, particular attention is given to science, technology, and e-government projects.

A cursory glance over data set out in Figure-1 clearly indicates that there is a constant progression in actual spending and budgeted spending both, in the case of Saudi Arabia. While, comparing actual and budgeted spending of, 2011 and 2014, since from the 2011, there is a tremendous gap found in the actual and budgeted spending. Moreover, the year 2015 shows that the amount of spending by the government seems gradual, due to the relative dropped down in oil prices.

The budgeted level of spending as compared to the actual level of spending is relatively lower in 2014 that is up to 1,100 billion SR. While, it is observed that there is no stance that stimulates the reconsideration of ongoing expansionary fiscal budget, and this is very normal trend that the actual spending exceeding the budgeted level. While assigning the budget by the government, the spending regularly swamped on an average of 25 % through the past decade as shown in the Figure-1 .Likewise, in the year 2000 that the last time the budgeted spending overrun the actual spending. In addition to that the projected spending as share on Non-Oil GDP is in-line and reached historical levels, at an average of 51 percent in the last ten years. In fact, the increase in overall budgeted spending in 2015, because of the lowered the current spending on investment spending. While, the budgeted current spending for the year 2012, has been enhanced by a greater amount up to SR 675 billion or 18 percent high as compared to the previous year. While, the highest annual growth found since 2012. The major contributor constituents for the higher spending remained focused on the salary and wages heads. In addition to that the operations and repair costs are also expected to be a growing source of current spending in coming years as major projects likely to become operational in future. At the same time the investment spending brought down by 35 percent and i.e., SR 185 billion for 2015, while since 2002, it has been observed that the government has reduced their budgeted investment spending first time. Therefore, it indicates that the current year projected spending are 36 percent higher than its level, in comparison with the previous five year.

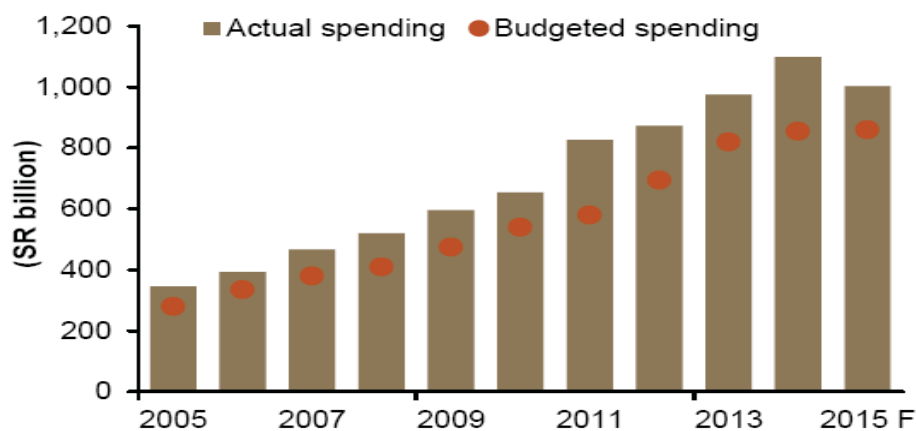


Figure 1. The comparison between actual spending and budgeted spending during 2005 to 2015

Source : Jadwa Investment (2015) , [www.jadwa.com](http://www.jadwa.com)

## 12. Research Findings

### 12.1 General Information

Table 2 given below clearly indicates that the majority of respondents (Financial Managers & Accountants) were having bachelor's degree specialized in accounting which is sound good enough and indicate that they are well qualified to answer the survey questions. On the other hand, table (2) reveals that the selected sample having good experience which shows that around (52.2 per cent) having experience which vary between 5 to 10 years. It can be observed from the analysis that (80.4 per cent) from the selected sample are adopting line item budget.



Table 2. General Information about Respondents

S.N	Variable	Particular	Number of Respondents	Percentage to Total
1	Degree	Diploma Holder	14	30.4
		Bachelor	27	58.7
		Master	4	8.7
		Ph.D.	1	2.2
		<b>Total</b>	<b>46</b>	<b>100.0</b>
2	Major	Accounting	29	63.0
		Finance	10	21.7
		Management	3	6.5
		Professional Qualification	1	2.2
		Other	3	6.5
		<b>Total</b>	<b>46</b>	<b>100.0</b>
3	Years of Experience	Less than 5 years	12	26.00
		5-10 years	24	52.2
		More than 10 years	10	21.8
		<b>Total</b>	<b>46</b>	<b>100.0</b>
4	Kind of Budget Adopted	Line-Item Budget	37	80.4
		PBBS	7	15.2
		PPBS	2	4.4
		ZBB	-	-
		<b>Total</b>	<b>46</b>	<b>100.0</b>

### 12.2 Familiarity with Program and Performance Budgeting System PPBS

Table (3) shows the attitude of respondents (Financial Managers & Accountants) in regards to familiarity with Program and Performance Budgeting System PPBS, its clear from the results that the highest mean was relating to the statement No (4) which is shedding light on the ability and qualification to prepare PPBS as the mean was a bout (3.72). On the other hand the lowest mean was relating to the statement No (2) which was about (3.44) concerning the level of knowledge and understanding about the Program and Performance Budgeting System. Hence, it can be concluded based on the overall average mean which was about (3.57) for the statements (1-4) that there is a fair familiarity, understanding and awareness of this budget format among the majority of respondents (Financial Managers & Accountants) in the selected public organizations in Al Kharj region, hence more training and development is recommended to enhance the familiarity with PPBS.

Based on Table 3 considering T value 12.89 and sig = 0.000 (<) 0.05 therefore, the hypothesis is confirmed. Hence, it can be concluded that there is a familiarity and understanding of PPBS by financial managers and accountants working in the public sector organizations.

Table 3. Familiarity with PPBS

S.N.	Statements	Mean	Std. Deviation	t	Sig
1	Knowledge and understanding about the Program and Performance Budgeting System PPBS	3.61	.49	8.60	.000
2	Awareness with the mechanism and features of PPBS	3.44	.68	4.46	.000
3	Understanding the difference between Traditional Budgeting and PPBS	3.48	.50	6.64	.000
4	The Ability and qualification to prepare PPBS	3.72	.68	7.27	.000
	<b>Average</b>	<b>3.57</b>	<b>.30</b>	<b>12.89</b>	<b>.000</b>

### 12.3 Degree of Contribution of the Accounting System to Adopt PPBS

Table 4 exhibits the attitude of respondents (Financial Managers & Accountants) relating to the degree of contribution of the present accounting system in the selected public organizations to adopt PPBS, The results showed that the highest mean was relating to the statement No (7) which is concerning to the effective accounting reporting system, whereas the lowest mean was relating to the statement No (9) which was about (3.47) measuring the attitude of the selected (Financial Managers & Accountants) relating to providing an enough staff with appropriate administrative and accounting skills. Hence, it can be concluded based on the overall average mean which was about (3.70) for the statements (5-9) that there is a tendency towards the side of highly agreeing in regards to the degree of contribution of the prevailed accounting system followed by the selected public sector organizations in Al Kharj region to adopt PPBS .

Based on Table 4 considering T value 7.720 and sig = 0.000 (<) 0.05 therefore, the hypothesis is confirmed. Hence we can conclude that the accounting system followed by public sector organizations contributes to adopt PPBS successfully.

Table 4. Degree of Contribution of the accounting system to adopt PPBS

S.N.	Statements	Mean	Std. Deviation	t	sig
5	Providing data and information needed for decision-making accurately and quickly.	3.76	.76	6.74	.000
6	Effective controlling systems	3.71	.75	6.48	.000
7	Effective Accounting reporting system	3.89	.67	8.96	.000
8	Controlling the process of spending	3.65	1.05	4.17	.000
9	Providing an enough staff with appropriate administrative and accounting skills	3.47	1.149	2.82	.007
	<b>Average</b>	<b>3.70</b>	<b>.61</b>	<b>7.72</b>	<b>.000</b>

#### 12.4 Merits of Implementation / Applying PPBS

Table 5 reveals the attitude of respondents (Financial Managers & Accountants) relating to the merits of implementation or applying PPBS, the results showed that the highest mean was relating to the Statement No (14) pertaining to that PPBS provides better reporting than traditional budgeting. On the other hand the lowest mean was relating to the statement No (10) and (20) respectively measuring the attitude of the respondents (Financial Managers & Accountants) pertaining to the effective distributing of financial resources and developing a sense of the various administrative levels responsible for "public expenditure". Hence, it can be concluded based on the overall average mean which was about (3.80) for the statements (10-21) that there is a tendency towards the highly agreeing in regards to the merits of implementation PPBS in public sector organizations.

Based on Table 5 considering T value 9.431, and sig = 0.000 (<) 0.05 therefore the hypothesis is confirmed. Hence we can conclude that there are certain benefits could be obtained while adopting PPBS by public sector organizations.

Table 5. Merits of Implementation / Applying PPBS

S.N.	Statements	Mean	Std. Deviation	t	sig
10	Effective distributing of financial recourses	3.60	.95	4.32	.000
11	Act as a road map to achieve objectives / goals	3.71	.80	6.02	.000
12	PPBS provides more effective control of output	3.97	.90	7.31	.000
13	PPBS provides more effective control of input	3.63	.90	4.73	.000
14	PPBS provides better reporting than traditional budgeting	4.00	.98	6.85	.000
15	PPBS makes decisions making more effective	3.95	.63	10.28	.000
16	Raising the level of government services in terms of quality and speed in delivery	3.82	.79	7.02	.000
17	PPBS provides flexibility in implementation	3.78	.94	5.64	.000
18	PPBS provides Reality in appropriations	3.97	.82	7.99	.000
19	PPBS provides a measure tool for following-up and evaluating the performance	3.82	.97	5.75	.000
20	Develop a sense of the various administrative levels responsible for "public expenditure"	3.60	1.02	4.04	.000
21	PPBS contributes in improving communications between managerial level	3.71	1.00	4.84	.000
	<b>Average</b>	<b>3.80</b>	<b>.57</b>	<b>9.43</b>	<b>.000</b>

#### 12.5 Obstacles faced by Financial Managers & Accountants to adopt PPBS

Table 6 depicts the attitude of the respondents (Financial Managers & Accountants) towards the obstacles faced by them to adopt PPBS, Its clear from the results that the highest mean was relating to the statement No (26) which is relating to that PPBS provides more focus on short-term objectives. On the other hand the lowest mean was relating to the statement No (28) which shows that adopting PPBS is too costly. Hence, it can be concluded based on the overall average mean which was about (3.81) for the statements (22-31) that there is a tendency towards the highly agreeing in regards to existing the obstacles which are standing as stumbling-stone to adopt PPBS in "public sector organizations" in Al-Kharj region by financial managers and accountants . However, there is an urgent need for training, research and development to overcome such kind of challenges.

Based on Table 6 considering T value = 18.011, and sig = 0.000 (<) 0.05 therefore the hypothesis is confirmed. Hence we can conclude that there are certain obstacles that possibly preventing to adopt PPBS in public sector organizations effectively.

Table 6. Obstacles faced by Financial Managers &amp; Accountants to adopt PPBS

S.N.	Statements	Mean	Std. Deviation	t	sig
22	Quantifying programs outcomes or performance indicators	3.89	.73	8.20	.000
23	Difficulties in implementation, as it require a complicated accounting system.	3.89	.82	7.34	.000
24	Difficulties in implementation for long run goals and projects	3.63	.95	4.49	.000
25	The possibility to implement the program at inappropriate time	3.80	.83	6.54	.000
26	More focus on short-term objectives	4.02	.95	7.26	.000
27	PPBS is too complex	3.67	.84	5.41	.000
28	PPBS is too costly	3.43	1.24	2.37	.022
29	Lack of qualified staff to tackle preparation of PPBS	3.97	.77	8.56	.000
30	Lack of training to tackle with the latest budgets used	3.89	.90	6.71	.000
31	Not supported by the top management	3.88	.95	6.21	.000
	<b>Average</b>	<b>3.81</b>	<b>.30</b>	<b>18.01</b>	<b>.000</b>

### 13. Concluding Remarks

The current research paper had set up certain objectives to achieve i.e. examining the familiarity and understanding level of PPBS by financial managers and accountants working in the public sector organizations, measuring the contribution of the accounting system followed by public sector organizations to adopt PPBS successfully, highlighting the benefits that could be obtained while adopting PPBS, and exploring the technical challenges that can be encountered when implementing Program and Performance Budgeting System PPBS in the public sector organizations.

In fact, while both developed and developing countries are incrementally moving towards adopting PPBS, for most countries the implementation of PPBS is still in its early stages of development. Consequently, exploring the technical challenges and problems can assist in successful transition to Program and Performance Budgeting System and can bring radical changes to structure and format of the government budgets and to budgetary decision making processes.

We believe that, they are some countries who had achieved a positive results by adopting PPBS, whereas some countries they are still in the process to adopt. Therefore, we suggest to shift to another system i.e. PPBS where we can find an answer for those questions where the traditional budgeting system failed to answer, either in decision making process, financial government planning, monitoring expenditures and activities.

The foregoing results of survey obtained from 46 respondents (Financial Managers & Accountants) safely deduce that despite the fair of familiarity and the problems in implementation of PPBS in public sector organizations of Al Kharj, there is a remarkable support from the respondents for PPBS as a superior approach for earmarking the civic funds. PPBS provide a measure tool for following-up and evaluating the performance and develop a sense of the various administrative levels responsible for "public expenditure". Respondents perceived PPBS as a better approach to contribute in improving communications between managerial levels. These benefits depicted in Table 5 seem satisfactory to validate the implementation of PPBS in public sector organizations in Al Kharj region. Looking to the degree of contribution of the prevailing accounting system to adopt PPBS in the selected public organizations in Al Kharj region, it is observed that 75 per cent of respondents believe that the current accounting system provides data and information needed for decision-making accurately and quickly and has an effective controlling/reporting systems, and controlling the process of spending. It is also found that 69 per cent of respondents were in view that an enough staff with appropriate administrative and accounting skills is provided. PPBS can be successfully adopted in public sector if a proper training and qualification for staff to tackle preparation of PPBS is provided to deal with the required or needed accounting system, quantifying programs outcomes or performance indicators and an adequate support by the top management is given to implement PPBS.

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# Quality of Work Life, Job Satisfaction, and the Facets of the Relationship between the Two Constructs

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## Abstract

Quality of Work Life (QWL) and job satisfaction are critical concepts in the field of Human Resource Management (HRM). An intellectual puzzle was chosen by the researchers with regard to whether QWL and job satisfaction are the same or different, and if different, how they are differed. By using the desk research strategy a systematic attempt was made to solve the intellectual puzzle to a reasonable extent. Both constructs were found to be different and related. Four facets of the relationship between the two constructs were revealed: Job satisfaction being a dimension of QWL; job satisfaction not being a dimension of QWL; job satisfaction working as an antecedent of QWL; and finally job satisfaction being a consequence of QWL. Formulated synthesis is perceived as an original contribution to the concepts of QWL and job satisfaction.

**Keywords:** quality of work life, job satisfaction, human resource management

## 1. Introduction

Quality of Work Life is an important issue not only for the management discipline. It has been vastly discussed by different authors in the world in relation to different disciplines including education, medicine, engineering, agriculture, information technology sector and so on. Job satisfaction is a very popular concept which has applicability and relevance to any job in any field. Basically QWL and job satisfaction are two main concepts (indeed constructs) in the fields of HRM and Organizational Behaviour. Schular and Youngblood (1986) consider QWL a strategic purpose of HRM. Opatha (2009) considers QWL a strategic goal of HRM and job satisfaction as an objective of HRM. Bernadian and Russell (1993) consider QWL a critical need for creating a competitive advantage for the firm and job satisfaction a characteristic of QWL programs. As mentioned by Patil and Swadi (2014), QWL is a buzz word in the modern time.

An intellectual puzzle arose within us with regard to whether QWL and job satisfaction are the same or different, and if different, what the differences are. If both constructs are related, it is interesting to find the facets of the relationship between the two constructs. The purpose of this study is to present a new contribution to the existing knowledge of QWL and job satisfaction by creating a new synthesis that has not been done before definitely locally (in Sri Lankan context) and perhaps internationally. Our approach for the purpose is ostensibly descriptive. This study addresses the following questions:

- 1) What are the origin, definitions, importance, and dimensions of QWL?
- 2) What are the origin, definitions, importance, and dimensions of job satisfaction?
- 3) Are the constructs of QWL and job satisfaction the same or different?
- 4) Is job satisfaction a dimension of QWL?
- 5) Is job satisfaction not a dimension of QWL?
- 6) Is job satisfaction an antecedent of QWL?
- 7) Is job satisfaction a consequence of QWL?

## 2. Method

As this is an attempt to answer the above mentioned specific questions, a methodical review of existent literature was accomplished through the use of archival method as approved by Tranfield, Denyer and Smart (2003).

Academic books and journals are, in general, the most useful sources of information (Sekaran & Bougie, 2013). Published information over the past 45 years in relevant books and refereed journals which have been published in the popular data bases such as Springer link, JSTOR, SAGE journals, Wiley Online Library, Emerald Insight, Taylor and Francis Online were utilized.

Exhibit- 1. Definitions of quality of work life in chronological order

Year	Author	Definition of quality of work life
1972	International Labors Relation Conference in New York	Aims to share knowledge and initiates a coherent theory and practice on how to create the conditions for a "humane working life."
1975	Hackman and Oldham	Involves the satisfaction and motivation in the workplace.
1977	Boisvert	A set of beneficial consequences of working life for the individual, the organization and society.
1979	American Society of Training and Development as cited Patil and Swadi (2014)	A process of work organization which enables its members at the levels to actively participate in shaping the organization's environment, methods and outcomes. This value based process is aimed towards meeting the twin goals of enhanced effectiveness of organizations and improved QWL of employees.
1981	Dessler	The level to which employees are able to satisfy their personal needs not only in terms of material matters but also of self-respect, contentment and an opportunity to use their talents making contribution for personal growth.
1983	Carlson	Two perspectives; it is as a goal and an organizational process for 1. As a goal, QWL is the commitment of any organization to work improvement: the creation of more involving, satisfying and effective jobs and work environments for people at all the levels of the organization. 2. As a process, QWL calls for effort to realize this goal through the active involvement of people throughout the organization.
1983	Nadler and Lawler	A way of thinking about people, work and organizations. Its distinctive elements are 1. A concern about the impact of work on people as well as on organizational effectiveness, and 2. The idea of participation in organizational problem solving and decision making.
1990	Kieman and Knutson	It means something different to each and every individual, and is likely to vary according to the individual's age, career stage and/or position in the industry.
1993	Bernadian and Russell	The degree to which individuals are able to satisfy their important personal needs.
1997	Cummings and Worley	The way of thinking about others, work, and the organization which is concerned about workers' wellbeing and organizational effectiveness.
2001	Sirgy, Efraty, Siegel and Lee	A variety of needs through resources, activities and outcomes stemming from participation in the workplace.
2000	Lau	The favourable working environment that supports and promotes satisfaction by providing employees with rewards, job security and career growth opportunities.
2011	Nazir et al.	A combination of strategies, procedures and ambiance related to a workplace that altogether, enhance and sustain the employee satisfaction by aiming at improving work conditions for the employees of the organizations.
2014	Mazloui et al.	Attitudes of employees towards their job, especially their work outcomes including job satisfaction, mental health, and safety which directly influence organizational outcomes.
2014	Šverko and Galić	Perceived extend to which employees can satisfy their important personal needs through their activities in the work place and experiences in the organization.

(Source: Literature review)

### 3. Literature Review: Quality of Work Life

#### 3.1 Origin of Quality of Work Life

According to the evidence from the evolution of Human Resource Management, the concept of QWL emerges from the post-industrial revolution as a result of the contribution of certain eminent management thinkers like Robert Owen, Charls Babbage, F.W. Taylor, Elton Mayo (Patil & Swadi, 2014). During the era, higher productivity was emphasized totally misplacing human factors at the workplace. Several examples are: due to the division of work and specialization fellow workers were socially isolated, employees faced difficulties due to the overdependence of rules and procedures at work places, people had to work more hours a day against the accepted norms, employees were kept on ad-hoc or temporary basis. Therefore, employees were suffered from work stress, health hazards, monotony, lack of general happiness etc. As a result, negative consequences were recorded including absenteeism, high turnover, fatigue, occasional sabotage, boredom, poor morale, accidents resulting from non-attention, drug addiction and alcoholism. Hence, various studies and many experiments were conducted after the 1850s. During the period of 1857-1911, Frederick W. Taylor under the application of scientific principle mentioned the best way of doing tasks. He emphasized the importance of worker training,

maintaining wage uniformity, and focus on attaining better productivity. He, as a consultant, considered that employees work only for money. For that reason, money should be matched to the amount produced by the employee. Meanwhile, Mayo (1927 to 1940) conducted an experiment to find out the causes of the work environment on the productivity of employee. His experiment shifted the focus of human resource from increasing worker productivity to increase worker efficiency through greater work satisfaction. During this era studies of Maslow's (1954) Hierarchical need theory and McGregor (1960) theory X and theory Y and various theories developed by other researchers suggested that a positive relationship between productivity and morale exists and enhancement in human relations would accelerate both the QWL and job satisfaction. Accordingly, the concept of QWL is not a new one (Timossi et al., 2008). The early 1970s were a fertile period for research and it was attempted to clarify the definition of QWL (Martel & Dupuis, 2006). Nadler and Lawler (1983) mentioned that it was discussed prior to 1970s. The term "Quality of Work life" was introduced by "Louis Davis" and the research papers were published in USA journals in the year 1970. The 1<sup>st</sup> International Conference of QWL was held in Toronto in 1972. The International Council of QWL was established in 1973. Hence, the age of the concept of QWL is closer to a half century. Due to the drastic changes in the world of business such as information technology, globalization, world business competitiveness and scarcity of natural resources, organizations pay their attention highly towards the concept of QWL and many research findings have been published in different fields. In 1960, Mayo considered QWL a multifaceted concept and Walton (1975) highlighted QWL consisting of humanistic value and social responsibilities in an organization. It is an approach or a method used for improving work in an organization (Ford, 1973). Lawler (1975), Martel and Dupuis (2006), as cited in Šverko and Galićin (2014) noted that no universally accepted definition of QWL has been formulated yet, except it has to do with the well-being of employees in an organization. Therefore, different definitions could be found from different authors and the most prominent ones are categorized based on chronological order in Exhibit 1.

### 3.2 Definitions of QWL

An examination of the definitions given in Exhibit 1 makes clear that the concept of QWL has been defined in different ways by different authors from different geographical settings. Showing that it is an abstract concept. As per the definition given by the International Labor Relation Conference, QWL is about creating the conditions for a humane working life. Employees are human beings and therefore they need to be considered with kindness, thoughtfulness, and sympathy. Human beings should be utilized for organizational works in order to achieve organizational goals in the way that causes them as little pain or suffering as possible. According to some, it is a process that allows employees to actively participate in making decisions which affect their lives. Further, Boisvert (1977) thought about the beneficial consequences of QWL including three aspects such as individual employees, the organization and the society. The American Society of Training and Development considered that the QWL is needed to achieve twin goals including effectiveness of organization and employee improvement. As a result, it seems that some authors considered organizational perspective of QWL (Carlson, 1980; Cummings & Worley, 1997). Other authors considered employee perspective of QWL (Nadler & Lawler, 1983; Kiernan & Knutson, 1990). Not only the above, but also Armstrong (2006) includes QWL as one of human resource management policies and he has mentioned that this involves increasing the sense of satisfaction of people obtained from their work by, so far as possible, reducing monotony, increasing variety, autonomy and responsibility, and avoiding placing people under too much stress. Further, Nazir et al. (2011) also mentioned the expanded role of QWL as follows "QWL is also a combination of strategies, procedures and ambiance related to workplace that altogether, enhance and sustain the employee satisfaction by aiming and improving work condition for the employees of the organizations." Opatha (2009) mentioned that the concept of QWL could be considered one of the strategic goals of Human Resource Management. It means that the concept of QWL has exceeded its boundaries not limiting to human resource management function of an organization, it works as a concept under the strategic level of an organization. Therefore, Opatha (2009) described that human resource management needs to be done legally, fairly, efficiently and effectively in order to improve QWL. Based on the above discussion three nominal definitions are presented in this paper and they are:

1. QWL is the extent to which working in the organization possesses characteristics which make the employee healthy and happy.
2. QWL is the degree of availability of features for ensuring humane working life for each employee of the organization.
3. QWL is the extent to which employees' reasonable expectations about the employment have been met.

### 3.3 Importance of Quality of Work Life

Recently, the concept of QWL has become important in the discipline of Human Resource Management. It discusses the way of managing people within an organization. Ahmad (2013) mentioned, "Nowadays, QWL is globally drawing more attention. In modern society people spend about more than one-third of their lives at their workplaces. Hence, the eminence and importance of QWL are unparalleled and unquestionable." Further, in 2013, Yukthamarani Permarupan et al. mentioned that an effective QWL is fundamentally a tool of improving working conditions (an employee's viewpoint) and greater organizational efficiency (mainly from the employer's viewpoint). Hence, the importance of QWL is worth to be discussed through both employee and employer perspectives. Schuler and Youngblood (1986) mentioned that QWL involves both job design and work environment. Further, they highlighted followings. Due to the deficiencies of QWL, productivity slows down and decline in the quality of products occurs in the United States. They experienced that workers are demanding greater control and involvement in their jobs. Hence, they suggested, "when employees are given a chance to voice their opinions and participate in decision making, they respond favourably; their morale, self-respect, and involvement increase; and their stress level and accident decrease." Mullins (1996) also explained that improvement of QWL is an important thing because the contribution can increase towards organizational effectiveness and reduce the negative behaviour of workers. According to Opatha (2009), if the level of well-being of employees is low, there exists a low QWL. Wright and Croppanzano (2004), Warr (2005), Wright and Bonett (2007), as cited in Bora et al. (2015) QWL is important for the success of organizational objectives. They mentioned that employees' QWL experiences are directly related to a variety of desirable organizational outcomes including reduced rate of absenteeism, tardiness frequency, reducing health care costs and turnover. Accordingly, this concept is more important for efficient and effective utilization of human resources in modern organizations. Having done a massive literature review, Bora et al. (2015) concluded "a happy worker can concentrate on work and give more productivity. A skilled worker can be retained in the organization if he/she is satisfied." Hence, QWL can be considered the core constituent at the work place to enhance their satisfaction.

As a result of a high quality work life, employees have the opportunity to drive towards personal growth and development, cooperation among members and solving problems effectively. Hence, the highest productivity can be achieved when the goals of individuals are integrated with the organizational goals. Such integration may result in a high quality product. Therefore, it can be concluded that due to having a proper QWL in an organization, ultimately customers have the chance for fulfilling their demand at the optimum level.

### 3.4 Dimensions of Quality of Work Life

As an abstract construct QWL possesses less measurable and observable properties than a concrete concept. Researchers face difficulties in defining and measuring this abstract concept due to its subjective nature. For the purpose of measurement, dimensions of QWL are need to be identified. A dimension should be a specifiable aspect of a concept. First of all, it is worth to consider the theoretical understanding of QWL. Bernadian and Russell (1993), mentioned the features of QWL in a broader perspective. They are: employment conditions (safety, health, physical environment), equity of pay, benefits and other rewards, employment security, social interaction, self-esteem, democracy (participation in decision making), worker satisfaction, income adequacy, voluntary participation by employees, training provided to employees, managers and support staffs (professionals) on their new roles and responsibilities, availability of ongoing skills training, encouragement of multi-skills development and job rotation, participation by the union when relevant, and team building.

Lawler (1975) proposed four characteristics that are necessary to include in measuring QWL. They are; First of all, it must measure the important aspects of QWL. Secondly, it must also have sufficient face validity in the eyes of anyone likely to use it. Thirdly, it must be objective and consequently, verifiable without any possibility of being manipulated. Finally, it must be capable of distinguishing between individual differences within the same work environment. As cited in Royuela et al. (2008), 10 dimensions of QWL have been presented by European Commission. They are; 1. Intrinsic job quality, 2. Skills, life-long learning and career development, 3. Gender equality, 4. Health and safety at work, 5. Flexibility and security, 6. Inclusion and access to the labor market, 7. Work organization and work-life balance, 8. Social dialogue and worker involvement, 9. Diversity and non-discrimination, and 10. Overall work performance. However, the measurement process of the above 10 dimensions is somewhat vary from others because it is essential to have objective indicators of QWL rather than subjective indicators.

There are numbers of dimensions of QWL that can be found from the empirical findings that have been conducted by various scholars and Exhibit 2 lists these components.



## Exhibit 2. Dimensions of quality of work life in chronological order

Year	Author & Country	Dimension	Type of Industry
1975	Walton (USA)	<ol style="list-style-type: none"> <li>1. Adequate and fair compensation</li> <li>2. Safe and healthy working conditions</li> <li>3. Immediate opportunity to use and develop human capacities</li> <li>4. Opportunity for continued growth and security</li> <li>5. Social integration in the work organization</li> <li>6. Constitutionalism in the work organization</li> <li>7. Work and total life space</li> <li>8. Social relevance of the work life</li> </ol>	Service Industry employees
1979	Saklani, as Cited in Bora et al. (2015) (India)	<ol style="list-style-type: none"> <li>1. Adequate and fair compensation</li> <li>2. Fringe benefits and welfare measures</li> <li>3. Job security</li> <li>4. Physical and work environment</li> <li>5. Work load and job stress</li> <li>6. Opportunity to use and develop human capacity</li> <li>7. Opportunity for continued growth</li> <li>8. Human relations and social aspect of work life</li> <li>9. Participation in decision making</li> <li>10. Reward and penalty system</li> <li>11. Equity, justice and grievance handling</li> <li>12. Work and total life space</li> <li>13. Image of organization</li> </ol>	Managerial and non-managerial categories of employees from 24 different types of organizations
1984	Levine, Taylor and Davis (Europe)	<ol style="list-style-type: none"> <li>1. Respect from superior and trust on employee's capability</li> <li>2. Change of work</li> <li>3. Challenge of the work</li> <li>4. Future development opportunities arising from the current work</li> <li>5. Self esteem</li> <li>6. Scope of impacted work and life beyond work itself</li> <li>7. Contribution towards society from the work</li> </ol>	Insurance Sector employees
1984	Mirvis and Lawler (UK)	<ol style="list-style-type: none"> <li>1. Safe work environment</li> <li>2. Equitable wages</li> <li>3. Equal employment opportunities</li> <li>4. Opportunity for advancement</li> </ol>	Corporation service employees
1991	Baba and Jamal (UK)	<ol style="list-style-type: none"> <li>1. Job satisfaction</li> <li>2. Job involvement</li> <li>3. Work role ambiguity</li> <li>4. Work role conflict</li> <li>5. Work role overload</li> <li>6. Job stress</li> <li>7. Organizational commitment</li> <li>8. Turn-over intention</li> </ol>	Health sector employees
1998	Lau and Bruce (US)	<ol style="list-style-type: none"> <li>1. Job security</li> <li>2. Reward system</li> <li>3. Training</li> <li>4. Career development opportunities</li> <li>5. Participation in decision making</li> </ol>	Manufacturing industry employees
2001	Wyatt and Wah (Singapore)	<ol style="list-style-type: none"> <li>1. Favorable work environment</li> <li>2. Personal growth and autonomy</li> <li>3. Nature of the Job</li> <li>4. Stimulating opportunities and co-workers</li> </ol>	All type of industry employees
2002	Ellis and Pompli, as Cited in Bora et al. (2015) (Canberra in Australia)	<ol style="list-style-type: none"> <li>1. Poor working environment</li> <li>2. Resident aggression</li> <li>3. Work load, inability to deliver quality of care preferred</li> <li>4. Balance of work and family</li> <li>5. Shift work</li> <li>6. Lack of involvement in decision making</li> <li>7. Professional isolation</li> </ol>	Health sector employees

		8. Lack of recognition 9. Poor relationship with supervisors/peers 10. Role conflict 11. Lack of opportunities to learn new skills	
2006	Saraji and Dargahi (Tehran)	1. Fair pay and autonomy 2. Job security 3. Reward system 4. Training and career advancement 5. Opportunities 6. Participation in decision making 7. Interesting and satisfying work 8. Trust in senior management 9. Recognition of efforts 10. Health and safety standards at work 11. Balance between the time spent at work and the time spent with family and friends 12. Autonomy of work to be done 13. Level of stress experienced at work 14. Occupational health and safety at work	Education and health sector employees
2006	Rose, Beh, Uli, & Idris, (Malaysia)	1. Career satisfaction 2. Career achievement 3. Career balance	Managers from free trade zones
2007	Rathinam and Ismail (Malaysia)	1. Health and well-being 2. Job Security 3. Job Satisfaction 4. Competence Development 5. The balance between work and non-work life	Information Technology professions
2010	Hosseini, as Cited in Bora et al. (2015) (Iran)	1. Fair and adequate pay and benefits 2. Observance of safety and health factors 3. Opportunity to continued growth and security of staff 4. Acceptance of work organization 5. Work life and social dependence of society and individual life 6. Governing the overall living space in the environment 7. Integration of social improved human abilities	Insurance sector employees
2011	Al Muftah and Lafi, (Quatar)	1. Physical 2. Psychological 3. Social factors	Employees in oil and gas companies
2012	Sinha C. (India)	1. Communication 2. Career development and growth 3. Organizational commitment 4. Emotional supervisory support 5. Flexible work arrangement 6. Family response culture 7. Employee motivation 8. Organizational culture 9. Organizational support 10. Job satisfaction 11. Reward and benefits 12. Compensation with appropriate instructions	Middle level managers from various organizations
2012	Stephen & Dhanapal (India)	1. Adequate and fair compensation 2. Fringe benefits and welfare measures 3. Job security 4. Physical and work environment 5. Work load and job stress 6. Opportunity to use and develop human capacity 7. Opportunity for continued growth 8. Human relations and social aspect of work life 9. Participation in decision making 10. Reward and penalty system 11. Equity, justice and grievance handling 12. Work and total life space	Employers and employees in different type of small scale organizations

13. Image of organization			
2012	Ayesha Tabassum (Bangladesh)	1. Adequate and fair compensation 2. Safe and healthy working condition 3. Opportunity for continued growth and security 4. Opportunity to use and develop human capacities 5. Social integration in the work organization 6. Constitutionalism in the work organization 7. Work and total life space 8. Social relevance of the work in life	Higher education sector employees
2013	Satyaraju and Balaram, as Cited in Bora et al. (2015) (India)	1. Education 2. Housing 3. Health 4. Employment and working condition 5. Income 6. Clothing 7. Food 8. Transportation 9. Communication 10. Fuel and electricity 11. Environment and pollution 12. Recreation 13. Social security and 14. Habit	Employees in manufacturing sector
2014	Mazloumi et al. (Iran)	1. General well-being 2. Home-work interface 3. Job satisfaction and career satisfaction 4. Stress at work 5. Working conditions	Transport sector (Railway) employees
2015	Swamy et al. (India)	1. Work environment 2. Organization culture and climate 3. Relation and cooperation 4. Training and development 5. Compensation and reward 6. Facilities 7. Job satisfaction and job security 8. Autonomy of work 9. Adequacy of resources	Employees in Mechanical Manufacturing SMEs
2015	Almarshad (Saudi Arabia)	1. Stress at work 2. Work occupy 3. Job satisfaction and career satisfaction 4. Working condition	Diverse Professionals

(Source: Literature review)

The dimensions which are mentioned in Exhibit 2 cover an array of studies that have been conducted worldwide. It reviews literature from the origin of QWL to present situation; from 1975 to 2015. It includes different authors in different countries of the world, diverse sets of dimensions used for different sectors of organization (it means production, service, entrepreneurial, educational, health, transportation, higher education, technical and Information Technology sector etc.), and different kinds of employee categories such as managerial and non-managerial employees who are representing different levels of the organizations. Šverko and Galić (2014) emphasized that the factors that will be encompassed depend largely on the author's purpose and theoretical perspective.

#### 4. Literature Review: Job Satisfaction

##### 4.1 Origin of Job Satisfaction

The concept of Job Satisfaction has widely been used in the area of Industrial Psychology and Organizational Psychology (Judge & Church, 2000) and it has been subjected to scientific research with Hawthorn studies conducted in the early twentieth century (1924-1933). The finding is that people work for purposes other than pay was of great importance. In 1943 Maslow's hierarchy of needs laid the foundation for the concept of job satisfaction and it explained that people seek to satisfy five basic needs in life including physiological, safety, belonging, self-esteem and self-actualization needs. Several other motivational theories are also validated to consider job satisfaction such as Adam's (1965) Equity Theory, Porter and Lawler's theory (1968), Vroom's

Theory, Herzberg's (1968) Two-Factor theory, Lock's (1969) Discrepancy Theory and Hackman and Oldham's (1976) Job Characteristic Model.

Further, the Classical management approach and the Neo-classic management approach are important to study the origin of the concept of job satisfaction. The Classical approach is a combination of Weber's Bureaucratic management approach and Taylor's Scientific approach regarding workers as machine and economic beings. Workers are biological (human) beings who do jobs to earn money to meet their needs. Accordingly, what workers should do is to follow the instruction of managers carefully. As a result, rewards will come in the form of money at the end. To earn more money, the worker will use his/her abilities wisely. According to Hicks and Gullett (1981), quoted in Calik (2011), "The Classical theory is minimizing human needs." On the other hand, the Neo-classical approach considers that a person is not only an economic being but he is also bearing respect for others, realizing him, and wishing to advance. With reference to this theory, humans behave in relation to other humans' behaviours. While it is called social behaviour, even the ordinary worker and the boss do the same (Roethlisberger, 1996, cited in Calik, 2011). Job satisfaction is a complex, multifaceted concept. Different authors have defined it differently. However, some of the most commonly cited definitions of job satisfaction are presented in Exhibit 3.

#### 4.2 Definitions of Job Satisfaction

Exhibit 3. Definitions of job satisfaction in chronological order

Year	Author	Definition of job satisfaction
1935	Hoppock	It is as any combination of psychological, physiological and environmental circumstances that causes a person truthfully to say I am satisfied with my job.
1964	Vroom	Focuses on the role of the employee in the work place and he explained job satisfaction as effective orientation on the part of individuals toward work roles which they are presently occupying.
1976	Lock	The pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values.
1992	Luthans	The extent to which work outcomes meet or exceed expectations may determine the level of job satisfaction.
1997	Spector	Extent to which people like (satisfaction) or dislike (dis-satisfaction) their jobs.
2005	Robbins	A general attitude towards one's job; the difference between a number of rewards workers receive and the amount they believe they should receive.
2006	Armstrong	Attitude and feelings people have about their work. While positive and favourable attitudes towards the job indicate job satisfaction, negative and un-favourable attitudes towards the job indicate job dis-satisfaction
2009	Robbins and Judge	Describes a positive feeling about a job, resulting from an evaluation of its characteristics.
2015	Opatha	Feeling about a job or job experiences and feelings derive from an evaluation of the job. It is an attitude which is the degree to which an employee has favourable or positive feelings about his or her job.

(Source: Literature review)

According to the above definitions, job satisfaction is an attitude and mainly it is the feeling component of the attitude. Also it derives from an evaluation of the job. An employee will be satisfied when her or his needs are fulfilled. In this paper we present two nominal definitions of job satisfaction as given below.

1. Job satisfaction is the degree of pleasure felt by the employee as a result of his or her evaluation of the job.
2. Job satisfaction is the magnitude to which the employee feels favourable about his/her job.

#### 4.3 Importance of Job Satisfaction

Job satisfaction becomes an important concept in modern organizations when it comes to manage employees who seek psychological and physiological fulfillment throughout their lives. Actually, job satisfaction is a feeling of employees towards their work and place of work. Hence, the concept of 'Job Satisfaction' is paramount in complex areas for the accomplishment of organizational expectations as well as the employees' expectations. It will provide direct and indirect advantages to the whole society. As mentioned by Robbins (2005), there are a large number of studies conducted to investigate the impact of job satisfaction on employee productivity, citizenship behaviors, absenteeism and turnover. Therefore, Robbins (2005, p. 87) cited followings for highlighting the importance of job satisfaction.

- i. Ostroff (1992); Ryan, Schmit and Johnson (1996); Harter and Schmidt (2002) and Hayes (2002) mentioned that it is a stimulate support for the original satisfaction-performance relationship.

- ii. Locke (1976); McShane (1984); Hackett and Guion ((1985); Steel and Rench (1995) found that a consistent negative relationship between satisfaction and absenteeism, but the correlation is moderate.
- iii. Hom and Griffeth (1995); Griffeth, Hom and Gaertner (2000) mentioned that satisfaction is also negatively related to turnover showing a moderate correlation.
- iv. Spector (1997) proved that job satisfaction must be a major determinant of an employee's organizational citizenship behavior. Satisfied employees would seem very probable to talk positively and confidently about the organization, help others and go beyond the normal expectations in their job with voluntary commitment.
- v. Schneider and Bowen (1985); Tornow and Wiley (1991); Weaver (1994); Naumann and Jackson (1999); Spring (2001); Griffith (2001) indicated that satisfied employees accelerate customer satisfaction and their loyalty.

Moreover, Rain et al. (1991) declared that job satisfaction correlates with life satisfaction. In this manner the researchers can say that a person who is satisfied with life will tend to be satisfied with one's job and also a person who is satisfied with the job will tend to be satisfied with one's life. Accordingly, it is worthwhile to manage a satisfied workforce within the organization. The ultimate benefit of such a workforce is the attainment of goals of the organization.

#### 4.4 Dimensions of Job Satisfaction

As the concept of QWL, job satisfaction has also a subjective nature, based on employees' job experience and expectations. Therefore, commonly used job satisfaction measures can be found in the academic literature. As mentioned by Opatha (2015) there are two approaches for measuring job satisfaction including: 1. General evaluation (job satisfaction of an individual is measured by asking a general question). 2. Specific evaluation (job satisfaction of an individual is measured by asking several questions with regard to specific dimensions of the job). Accordingly, the following Exhibit shows measurement dimensions of job satisfaction that have been most commonly used by researchers in literature.

Exhibit 4. Dimensions of job satisfaction in chronological order

Year	Author	Dimension
1961	Yuzuk	<ol style="list-style-type: none"> <li>1. Communication</li> <li>2. Hours of work</li> <li>3. Fellow employees</li> <li>4. Recognition</li> <li>5. Work conditions</li> <li>6. Supervisor</li> <li>7. Other evaluation and descriptive factors</li> </ol>
1967	Weiss et al.	<p><i>Minnesota satisfaction questionnaire included:</i></p> <ol style="list-style-type: none"> <li>1. Coworkers</li> <li>2. Achievement</li> <li>3. Activity</li> <li>4. Advancement</li> <li>5. Authority</li> <li>6. Company policies</li> <li>7. Compensation</li> <li>8. Moral values</li> <li>9. Creativity</li> <li>10. Independence</li> <li>11. Security</li> <li>12. Social service</li> <li>13. Social status</li> <li>14. Recognition</li> <li>15. Responsibility</li> <li>16. Supervision-Human relations</li> <li>17. Supervision-Technical</li> <li>18. Variety</li> <li>19. Working condition</li> </ol>
1969	Smith	<p><i>Job descriptive indexes:</i></p> <ol style="list-style-type: none"> <li>1. Work itself</li> <li>2. Pay</li> <li>3. Promotion opportunities</li> <li>4. Supervision</li> </ol>

		5. Co-workers
1973	Cross	1. Firm as a whole 2. Pay 3. Promotion 4. Job itself 5. Supervisor 6. Co-workers
1976, 1980	Hackman and Oldhman	<i>Job characteristic model</i> 1. Skill variety 2. Task identity 3. Task significance 4. Autonomy 5. Feedback
1976	Herzberg	<i>Two Factor Theory</i> 1. Hygiene factors that extrinsically bring dissatisfaction Company policies and administration, Supervision, Interpersonal relations, work conditions, Salary, Status, and Job security. 2. Motivating factors that intrinsically motivate employees Achievement, Recognition, Work itself, Responsibility, Advancement, and Growth.
1983	Scarpello and Campbell	1. Nature of work 2. Control over work 3. Quality of Physical environment 4. Supervisor 5. Co-worker 6. Job reward
1986	Schuler and Youngblood	1. Sense of responsibility 2. Challenge 3. Meaningfulness 4. Self-control 5. Recognition 6. Achievement 7. Fairness or Justice 8. Security 9. Fair pay 10. Participation in decision making 11. Feed-back
1987	Khaleque and Rahman	1. Co-workers 2. Hours 3. Work Environment 4. Recognition 5. Security 6. Desired job 7. Autonomy 8. Benefits 9. Promotion 10. Supervision
2009	Robbins and Judge	A Summation score of a number of job facets: 1. Nature of work 2. Supervision 3. Promotion opportunities 4. Relation with coworkers
2015	Opatha	Approach of 'specific evaluation' including: 1. Pay 2. Promotion opportunities 3. Peers 4. Supervision 5. Customers 6. Job duties

(Source: Literature review)

The above Exhibit 4 shows the dimensions of job satisfaction which have been used by different authors since 1961 to present. There are several world recognized measurement dimensions which have been used for measuring the construct of job satisfaction (including Minnesota satisfaction questionnaire, job descriptive indexes, job characteristic model and two factor theory of Herzberg etc.).

## 5. Relationship between QWL and Job Satisfaction

QWL and job satisfaction are both abstract concepts and they are related to work and work environment of the employee working in an organization. According to the above discussion, it seems that both concepts are crucial concepts on behalf of employees' perspective as well as organizational perspective. Krueger et al. (2002) mentioned that QWL is "an umbrella term which includes many concepts." The above literature findings under topic 3.4 revealed different ways of measuring QWL and its dimensions. On the other hand, exhibit 2 shows different dimensions of QWL used by different authors. Accordingly, several researchers have embraced that the concept of job satisfaction is one of the dimensions of the construct of QWL. But some have not measured job satisfaction as a dimension of QWL. Hence, it creates a gap to clarify the nature of the relationship between both variables and whether job satisfaction is a dimension of QWL or not.

### 5.1 Job Satisfaction: As a Dimension of QWL

This means that job satisfaction is a feature of QWL. Bernadian and Russell (1993) mentioned that worker satisfaction is one of the components among the characteristics of QWL. In Exhibit 2, Baba and Jamal (1991) Rathinam and Ismail (2007), Sinha, (2012), Mazloumi et al. (2014), Swamy et al. (2015), Almarshad (2015) provide evidence that they have used job satisfaction as a dimension of QWL in their studies. It can be simply mentioned that around 30 percent of the studies (in Exhibit 2) have considered job satisfaction a measure of QWL. Especially, those findings represent UK, Malaysia, India, Iran and Soudi Arabia. Except the above main evidence, some recent empirical findings are also discussed below.

Khetavath (2015) conducted a study under the topic of "An Empirical Analysis of QWL of Employees in Indian Private Sector Organizations." For the fulfillment of this study researcher has conducted a massive literature review and finally, 77 dimensions of QWL have been found from different studies. Job satisfaction is also one of the components among the selected 77 dimensions. Therefore, the researcher selected the most frequently used six dimensions for the study, including work condition and work complexity, organizational and interpersonal relations, employee involvement and commitment, growth feeling opportunities, job satisfaction and job security.

In the study "Quality of Work Life: Scale Development and Validation." conducted by Swamy et al. in 2015, QWL was considered a multidimensional construct and initially 27 important QWL components regarding the frequency of usage of them. Job satisfaction was one of these components. For the reduction of the components exploratory factor analysis was conducted and finally nine dimensions were selected. While nine dimensions together explained 82.24% of total variance, the component of job satisfaction came out as the seventh component out of 9. Further, it contributes to a 7.59 percentage of the variance. Accordingly, it substantiates that job satisfaction is one dimension of the measurement of QWL. Kerce and Booth-Kewley (1993), cited in Martel and Dupuis in 2006, state that assessing job satisfaction is still the most commonly used method in QWL research. Providing further evidence, Sirgy et al. (2001) used job satisfaction as a new assessment tool of QWL. Lawler (1975) mentioned that job satisfaction works as a vital part of QWL. Thus, there are some evidence to claim that job satisfaction is a dimension of QWL.

### 5.2 Job Satisfaction: Not as a Dimension of QWL

This means that job satisfaction is not a feature of QWL. Several researchers have not included job satisfaction as a dimension of the construct of QWL in their researches (in Exhibit 2) including Walton (1975); Saklani (1979); Levine, Taylor and Davis (1984); Mirvis and Lawler (1984); Lau and Bruce (1998); Wyatt and Wah (2001); Ellis and Pompili (2002); Saraji and Dargahi (2006); Rose, Beh, Uli, , and Idris (2006); Hosseini and Jorjafki (2010); Al Muftah and Lafi (2011); Stephen (2012); Tabassum (2012); and Satyaraju and Balaram (2013). In around 70 percent of studies in Exhibit 2, job satisfaction has not been considered a dimension of QWL by different authors who are representing many countries in the world including USA, India, Europe, UK, Sigapoor, and Australia. Seashora (1975), Sheppard (1975) and Lawler (1975), cited in Martel and Dupuis (2006), agreed that job satisfaction should be a different construct rather than a dimension of QWL. Further, important ideas suggested by several researchers are useful here. Timososi et al. (2008) appreciated the model proposed by Walton which broadly covers basic aspects of the work situation. As the pioneer of this concept Walton did not apply job satisfaction as a dimension to measure the construct of QWL and it provided a strong evidence for this discussion.

### 5.3 Job Satisfaction: As a Cause or an Antecedent of QWL

This means that job satisfaction works as an independent variable that contributes to change the behaviour of QWL. Due to the contradictory ideas towards the relationship between QWL and job satisfaction, Seashore (1975) mentioned that job satisfaction is a construct that is inseparable from QWL and it must be considered a

cause not a consequence of QWL. Further, Sheppard (1975) also mentioned that job satisfaction must be perceived as a cause of QWL. Mejbek et al. (2013) have conducted a thorough literature review under the topic of "Drivers of Quality of Working Life." In this study QWL was the dependent variable and eight drivers were labeled as independent variables including job satisfaction.

#### *5.4 Job Satisfaction: As an Outcome or Consequence of QWL*

This means that QWL leads to or results in job satisfaction. There is empirical evidence that QWL resulted in employees' work responses such as job satisfaction, organizational identification, job involvement, job performance, organizational turnover, job effort, intention to quit and personal alienation (Efraty & Sirgy, 1990; Efraty et al., 1991). Quinn and Shepherd (1974), Davis and Chern (1975), Hackman and Suttle (1977), Kabanoff, (1980), Near et al. (1980), Staines (1980), Champoux (1981), Kahn (1981) and Lawler (1982), as cited in Sinha (2012), asserted that QWL is different from job satisfaction. Conversely, QWL leads to job satisfaction. Sirgy et al. (2001) emphasized that QWL has a significant impact on satisfaction in work life (job satisfaction), satisfaction in non-work life domain, and finally satisfaction with overall life. In 2010 Reddy and Reddy did a study under the topic of "QWL of employees: emerging dimensions." In this paper they have mentioned QWL as a judgment methods. Accordingly, they explain job satisfaction, job involvement, job performance, sense of competence and productivity as the judgmental indices of the construct of QWL in an organization. In 2013 Jyothi and Neelakantan conducted a study under the title of "QWL and academic dual-career couples' job satisfaction" and results revealed a significant positive relationship between dimensions of QWL and job satisfaction. Moreover, Darabi et al. (2013) did a study titled "Relationship between Quality of Work Life and Job Satisfaction" and the results point toward that if the QWL improves, the job satisfaction will also increase. Sojka (2014) conducted a study on specification of quality of work life characteristics and identified 17 characteristics of QWL. He expressed the differentiation between QWL and job satisfaction in this way: "Although there is no formal definition of QWL, industrial psychologists and management scholars agreed that it is a construct that deals with the well-being of employees and that QWL differs from job satisfaction in that job satisfaction is just one of many outcomes of QWL."

In addition to the above mentioned studies conducted, with the intention of finding the nature of the relationship between QWL and job satisfaction, Hosmani et al. (2014) also conducted a study under the topic of "Impact of QWL on job performance amongst employees of Railway in India." In their study several characteristics of QWL have been considered together with safety measures, working conditions, welfare practices, opportunities and career development. Here, job satisfaction was considered an outcome variable. It was suggested that one can determine the success of any organization based on employee satisfaction levels, one's performance, productivity and successful QWL programs.

A study of "Quality of Work Life and Job Satisfaction among Employees in Government Organizations in IRAN" conducted by Nekouei et al. (2014) showed that there is a relationship between QWL and job satisfaction. As a result, they suggested that job satisfaction could be improved in a better way by improving and promoting QWL. Moreover, Muindi et al. (2015) studied towards quality of work life, personality, job satisfaction, competence and job performance: a review of literature and emphasized that QWL is a strategy for improving employees' QWL with the objective of satisfying both organizational objectives and employee needs. Conversely, successful organizations contemplate job satisfaction to be vital for the work performance. On the other hand, they conclude that job satisfaction alone cannot lead to performance.

Hence job satisfaction must be one of the outcomes of QWL. Rai (2015) conducted a study with reference to the IT Professionals in India having the topic of "Does quality of work life have effect on job performance?" and it was found that the accomplishment of employees' needs will intensify employee satisfaction with the job, commitment to his/her job and hence leading to desire long tenure at their workplace. According to Swapna (2015), a study under the title of "Quality of Work Life Metrics as a Predictor of Job Satisfaction and Organizational Commitment" with special reference to IT industry, QWL influences job satisfaction and organizational commitment to a greater extent when compared to other industries.

## **6. Conclusion**

Detailed discussion about QWL and job satisfaction uncovers that it is generally observed that both concepts are employee related concepts which are essential for the achievement of goals of a particular organization. This detailed discussion separately shows the origin, definitions, importance and dimensions of both constructs QWL and job satisfaction. Then, the discussion was directed under the sub-title "relationship between QWL and job satisfaction". Different facets of job satisfaction could be explored through the literature and those were categorized into four aspects including job satisfaction as a dimension of QWL; job satisfaction not as a dimension of QWL; job satisfaction as a cause or an antecedent factor of QWL; and job satisfaction as a



consequence or outcome factor of QWL. As a result it reveals QWL and job satisfaction being not the same but different concepts. Of course they are related as two phenomena in managing people at work. It is possible to treat job satisfaction as an important dimension of QWL. Hence, job satisfaction is a narrower concept and QWL is a broader concept. Not only that it is possible to treat job satisfaction as an antecedent of QWL, but also job satisfaction works as a consequence or outcome factor of QWL. Furthermore, the findings reveal that many researchers have used job satisfaction as an outcome factor or consequence of QWL. Having sufficient evidences, finally, we argue that both constructs QWL and job satisfaction are not the same, but different. Further, different four facets of the relationship between the two constructs were explored. We believe that our desk research will be useful for future research studies involving QWL and job satisfaction.

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# The Impact of Consolidation Industrial Jordanian Companies on Profitability and Liquidity Ratios

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## Abstract

This research aims to explore and concentrated on the impact of consolidate industrial Jordanian companies, on financial performance reflect on profitability and liquidity ratios and made a comparison between pre consolidate and post consolidate companies, for four industrial consolidate companies were included in the sample. Three years pre and post-consolidation data is used to test the effect. The Data took from the annual financial statements for these companies, and the data was processed by using SPSS program.

The findings indicated that there are significant differences in the profitability of consolidated industrial companies before and after consolidation and there are significant differences in the liquidity of consolidated industrial companies before and after consolidation.

**Keywords:** profitability ratios, liquidity ratios, consolidation

## 1. Introduction

The world had faced in the last twenty years a lot of changes that effect on the nature of business and the nature of companies, as the evolution at all levels of economic, social, cultural, technical, and the concomitant development of technical and technological progress, in front of all these variables had to be the development of work tools.

As the result of that, escalated in recent, many companies start merging with other companies for many reasons, to keep up with the change that is happening in the economy, an essential part of the development type companies.

Lin and other define the business combination as merging two or more enterprises with infrastraction, operation and activities to become one enterprise.

Under IFRS 3 the business combination define as one or more businesses are control on same Transactions that owned by two or more business to share earnings and profits, losses and expenses. [IFRS 3].

Beams remind four types of combination as the following:

- 1- Merger type one: (known as an reorganization) a business combination through asset acquisition , that acquires company's assets and often liabilities.
- 2- Merger type two: that acquires all stock and then transfer assets and liabilities to its own books
- 3- Acquisition more than 50%: a business combination that creates a new company in which none of the previous companies survive. So, it looks like  $A + B = C$  (here, distinct companies A and B consolidate into a new company, C)
- 4- Control ownership: establishes contractual control over variable interest to corporate in activities.

Generally accepted accounting principles (GAAP) require consolidated financial statements from parent companies that own or control subsidiary companies or have controlling interests in joint ventures and strategic partnerships. To report only the financial information of the parent company tells only part of the story of the entire enterprise since each subsidiary contributes both income and liabilities to the financial strength of the parent.

## 2. Research Problem

The effecting nowadays of globalization significantly the pattern of competition, and open market to any company that has the ability to permeate new market and Theoretically, it is improve the performance of the company; for this reason the study highlights the role of consolidation to keep companies' sustainability by improving their financial performance. Therefore, the researcher in this context will make an attempt to analyze the impact of consolidation on the financial performance of the industrial Jordanian companies, so the study problem can be identified by the following question:

- 1- Did the consolidated Jordanian companies success to improve the financial performance of these companies?

## 3. Research Hypotheses

H01: There are no significant differences in the profitability of consolidated companies before and after consolidation.

H02: There are no significant differences in the liquidity of consolidated companies before and after consolidation.

## 4. Methodology

This study use the analytical statistical method using SPSS program, to congruent the aims the study data had been gotten from four consolidation cases occurred in Jordan.

## 5. Study Sample

The sample of this study includes two Jordanian consolidation cases:

- 1- Industrial Delel Complex, and Middle East Complex for industry and trade (2007)
- 2- Jordan International Industries, and Jordanian International Company for Tourism & Real Estate Investment (2006)
- 3- Rum for mineral industries, and Ala Adin industries. (2001)
- 4- International Tobacco & Cigarettes, and Al- Eqbal Investment Company (2000)

## 6. Data Source

Data obtained from the two main sources:

- 1- Ministry of the trade and industry
- 2- GUIDE of Amman bursa published and exist in the site of Amman bursa by downloading these data.

## 7. The Literature Review and Previous Studies

### 7.1 Introduction

The business become more riskier than ever because the industrial revolution that consider as turning point in business structure , That reflect to increased volume of production, created huge competition for customers, development in technology ,increase investment involved in acquiring a factory and machinery discouraged for many new undertakers from entering competitive fields.

These factors all combined to rise the trend of consolidation. That made all Businesses over the world combined into trusts and corporations, and pooled resources to limit, and maybe to eliminate competition, or maybe creates industry-wide monopolies.

### 7.2 History of Consolidation

In the past, the simple economics in the world reflect on the simple nature of transaction of the companies, and almost all companies were Limited contribution (individual companies) owned by one owner or two owners.

In 1929 the great depression comes to collapse the biggest companies in American exchange market, that effect in the type of dealing businesses between each other, and that encourage the companies to increase the corporation between them to resolve the fallout from great depression, Especially with the advent of public shareholding companies, many companies are merging tougher to increase the share stock in the market exchange.

In 1973 when FASB begin to put the basic international accounting standard, it took in advance the simple merging that happened to some companies and put the reference standard for embedded companies in determining the mechanism of dealing which has encouraged other companies to merge to the existence of

standards that define how to integrate and disclosed in the financial statements.

### *7.3 Considerations of Consolidation*

For the companies that decide to consolidate, it must take in advance many issues, first, the type of business that the companies work with it, and the company that may want to consolidate make feasibility study if the products or services are appropriate to consolidate, for increasing the successful. The second issue, how the consolidation companies treat the different culture of employees in the companies specially when the companies are located in a different continent from the other company.

The third issue, how much the collaboration will be the management of the consolidation companies, to achieve the common goals. The fourth issue, the extent to which the merged companies in compliance with international standards. So by these issues must be companies consider them when consolidation to gain more than its loss.

The fourth issue, Feasibility study of the extent of dilution of expenses and potential losses resulting from the merger and excellence among asset-integrated companies.

Finally, Must take into account the size of the merged companies, because the difference in the size of companies that can significantly affect the reflection on the financial and productive, monetary and strategic aspect of the company.

### *7.4 Consolidation Significance*

Improving the future performances are the main reason of why many companies consolidate, So consolidate companies are always seeking to increase assets, gains and profits. Some consolidate companies are focus to increase intellectual property that contain trademarks and patents, to further improve the product and innovation in the management of production lines.

For other reason some consolidate companies went to get rid of the environmental, legal and tax problems by decreasing the expenses and the cost that will afford one company, by spreading these cost over consolidate facilities, and encourage companies to apply new techniques that increase the production and reduce waste.

The consolidation also development the strategies by taking ideas outside their organization so it will reflect positively on the companies repetition that increase market share for consolidated companies, or to grow company culture or encourage the investor to invest or increase the investment in consolidate companies.

Also the consolidation significant is to improve the technology that reflect on the production and administrative organizations and the improvement of the functional structure and increase the effectiveness of good governance.

Also the consolidate companies search with this consolidation to achieve the competitive advantage for its activates by rise the knowledge innovation to improving business performances

On the other hand, the successful consolidation and merging give an opportunity to companies to survival by eliminate the losses and increase the profit by using many strategies.

Finally, the successful competition resulted from consolidation companies may create a competitive advantage and creation in the product and services in the companies.

### *7.5 The Consequence from Consideration*

The is no doubt that the companies when its decided to consolidate, will effect in all sides by the following:

- 1- The structure of the consolidate companies will change be merging two different structure into one complex structure, that result to create may sections, departments, create many jobs and Senior management positions
- 2- The management of the consolidate companies will change by The division of power and public administration merged company to the partners' shares resulting from the merger.
- 3- The polices and strategies in the consolidate companies will be different on the original companies before consolidate such as the marketing strategy will expand to include the largest number of area covered by the merged company.
- 4- Distribution of staff will differ between the merged companies could be an increase in the training of new employees at the combined company functions.
- 5- The quantitative and qualitative of the assets will be change in the consolidated companies.
- 6- Quality of products and services offered by the merged companies will vary, which can be reflected on the increasing expense of research and development.

### 7.6 Previous Studies

- Yusuf Hroot (2016) "The Impact of Mergers on Financial Performance of the Jordanian Industrial Sector"

This study aimed to focus on merging companies in industrial sector in Jordan and who its effected on financial performance ( market prospect, profitability, liquidity, leverage, efficiency ratios),and made a comparison between pre and post- merging four seven companies among two years before and after.

It used SPSS program to analysis data, and the finding of this study, concluded that the merging effect positively to these companies that reflect on increasing the ratios that took in this study.

-Sunday Ajao and Adewale Emmanuel (2013) "Banking Industry Consolidation and Financial Performance of Selected Quoted Banks in Nigeria"

The study aimed to reflect the financial performances that contain in this study (net profit margin, return on assets, return on capital employed, shareholder's fund, total assets) on pre and post consolidation . the study depend on financial stamen of banks annual reports and use a spss program in the statistical analyze. The result of the study , that there was a good impression on the consolidation on banking industry The study, recommended to increase the consolidation between companies specially the weak companies to increase corporate governance and transparency in their reports.

- Al-Dabas (2012), "Impact of integration on the performance of companies and their profits"

This study discuss the impact of integration on the performance of companies and their profits, that included the impact of the merger on performance and on the profit of companies, the researcher use Tobin's-Q model to measure assumptions, The sample of this study are: Industrial Delel Complex, and Middle East Complex for industry and trade, which happened in the year 2007. That took two years before the event and one year after the event to measure any impact on profitability and performance by SPSS program .the results: there is no relationship between merger and perform of the companies, also there is no relationship between merger and profitability of the companies. It is return for the weak financial position of these companies before the merger, then merger.

-Tsai-Mei Linet al. (2011). "Enhancing performance through merger and acquisition or strategic alliances? In knowledge innovation based"

This study make a comparison of merging and acquisition on stock prices and stock trading volumes from 1993 to 2008. By using methodology of models for The standardized cumulative average abnormal returns (SCAR) and the model of The standardized cumulative average abnormal volumes ( SCAV.) the sample of the study are the industrial sector specially the non-electronics companies the study resulted that there is a strong relationship between merging and acquisition and SCAR and SCAV.

The recommendation of the study to understands the models that used previously in the research and adopted by all companies consolidated that want to increase the profits.

-Joshua Okpanachi (2011) "Comparative analysis of the impact of mergers and acquisitions on financial efficiency of banks in Nigeria"

This study the financial efficacy that contain ( gross earnings, profit after tax and net assets ) by compare the the pre consolidate and post consolidate by use the annual reports that published in Nigerian exchange stock, the sample of the study are banks, this study use SPSS program to fine the differences, the result of the study are positive on financial efficacy, and the study recommended to expand consolidation between banks to improve the quality of the profits

-Luis Santo-Pinto, (2010) "The impact of firm cost and market size asymmetries on national mergers in three-country model"

This study aimed to fine the impact capital and the size of companies on merger decisions the study use the methodology of model that define the relation between capital and size variables on the decisions, the sample of this study, are many companies from the third world that took their financial statements from there exchange markets belong to these companies. The study fine many results as following: the companies that have a huge capital Trent to merging more than the companies with the small capital because the regulation that exit in the large companies that encourage to merge more than the small companies, and the companies that have a large capital and size, have more interest in merging than the smallest companies.

-John Kwoka and Michael Pollitt (2010) "Do mergers improve efficiency? Evidence from restructuring the US electric power sector"



This paper fined impact of merger on the efficiency of the companies in electricity sector in America during the period 1994–2003. The methodology used by analyzing total cost and profits, among years by divided it of pre consolidate and post consolidate between electric consolidated companies and electric non- consolidated companies. The results of the study are fined the efficiency of consolidation and merging to . improved cost performance.

-Nicholas F. et al. (2009) “Operating performance changes associated with corporate mergers and the role of corporate governance”

This study fined the impact of principles of corporate governance on consolidate firms by testing (board ownership, board size, and block-holder control). The results of the study are fined the significance impact principles of corporate governance to improve the consolidation technics between companies.

-IQBAL ZAMIR (2008) “THE IMPACT OF CONSOLIDATION ON ISLAMIC FINANCIAL SERVICES INDUSTRY”

This study analyze the impact of consolidation on financial services industry, This study is based on a comparison of Islamic banks embedded in several countries in the world, so it took Islamic banks compact before and after the merger and compared with total assets of Islamic Murabaha and Leases ownership and other Islamic financial formulas, and was one of the most prominent results of this study include: taking into account the legal aspect and when the merger Islamic banks and stimulate diversity in the integration not only in the banking sector but in several sectors.

## 8. Statistical Analysis

To test the hypotheses of the study we applied SPSS on financial ratios of merged companies before and after consolidation, we used

Average of financial ratios before and after consolidation.

Independent t-test sample to compare the profitability and liquidity before and after consolidation.

Hypotheses Test

H01: There are no significant differences in the profitability of consolidated companies before and after consolidation.

To test this hypothesis we applied t-test for all the companies included in study sample, the results was as following:

Table 1. t-test Profitability ratio results for the sample

	Mean difference	Std error	t-value	Sig
DALEL Profitability ratio	-0.0746	0.295	-0.253	0.809
Jordan International Industries profitability ratio	0.159	0.202	0.787	0.475
Rum for minerals industries profitability ratio	0.116	0.046	-2.513	0.066
International Tobacco & Cigarettes profitability ratio	-0.091	0.044	-2.057	0.109

We notice that the effect of consolidation on the companies' profitability is not significant for all companies, because:

- For al Delel complex, the mean difference is (-0.0746) and Sig is (0.809) greater than 0.05.
- For Jordan International Industries, the mean difference is (0.159) and Sig is (0.475) greater than 0.05.
- For Rum for minerals industries, the mean difference is (0.116) and Sig is (0.202) greater than 0.05.
- For International Tobacco & Cigarettes the mean difference is (0.159) and Sig is (0.475) greater than 0.05.

So we can conclude that there is no significant effect of consolidation on the profitability of consolidated companies. Then the null hypothesis is accepted.

H02: There are no significant differences in the liquidity of consolidated companies before and after consolidation.

Table 2. t-test Liquidity ratio results for the sample

	Mean difference	Std error	t-value	Sig
DALEL				
Liquidity ratio	0.275	1.996	0.137	0.000
Jordan International Industries				
Liquidity ratio	0.0717	0.482	0.149	0.895
Rum for minerals industries				
Liquidity ratio	-0.1233	0.917	-0.134	0.905
International Tobacco & Cigarettes				
Liquidity ratio	-0.153	0.638	-0.240	0.833

We notice that the effect of consolidation on the companies' liquidity is not significant for all companies except for Delel complex, because:

- For al Delel complex, the mean difference is (0.275) and Sig is (0.000) greater than 0.05.
- For Jordan International Industries, the mean difference is (0.0717) and Sig is (0.895) greater than 0.05.
- For Rum for minerals industries, the mean difference is (-0.1233) and Sig is (0.905) greater than 0.05.
- For International Tobacco & Cigarettes the mean difference is (0.833) and Sig is (0.475) greater than 0.05.

So we can conclude, in general, that there is no significant effect of consolidation on the liquidity of consolidated companies. Then the null hypothesis is accepted.

## 9. Conclusion

Based on the collected data and statistical analysis and hypothesis testing we reach to the following results:

- 1-There are significant differences in the profitability of consolidated industrial companies before and after consolidation.
- 2-There are significant differences in the liquidity of consolidated industrial companies before and after consolidation.

## 10. Recommendations

- 1-expand the consolidation between companies in Jordan cause many cases improve that the consolidation reflect positively on financial position for consolidate companies.
- 2-improve the regulation that encourage the consolidation between companies such as provide tax breaks.

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**Appendix 1**

Ratio	Industries Delel Complex		POST COSOLIDATION	
	PRE-COSOLIDATION			
	2005	2006	2007	2008
Profitability				
ROA	0.05	0.02	-0.006	0.008
ROE	0.07	0.02	-0.07	0.009
ROI	0.05	0.02	-0.006	0.008
ROS	0.94	0.91	0.93	0.61
Liquidity				
CURRENT RATIO	3.62	4.29	3.69	1.47
CASH RATIO	0.02	0.01	3.06	0.81

Ratio	Jordan International Industries			POST COSOLIDATION		
	PRE-COSOLIDATION					
	2004	2005	2006	2007	2008	2009
Profitability						
ROA	0.06	0.045	0.034	0.019	0.023	0.047
ROE	0.07	0.05	0.04	0.023	0.027	0.05
ROS	0.76	0.56	0.58	0.09	0.12	0.37
Liquidity						
CURRENT RATIO	1.81	2.23	1.56	1.53	1.46	2.67
CASH RATIO	0.93	1.63	1.29	1.04	0.99	1.33

Ratio	Rum for mineral industries			POST COSOLIDATION		
	PRE-COSOLIDATION					
	1999	2000	2001	2002	2003	2004
Profitability						
ROA	-0.056	-0.055	0.049	0.0017	0.0207	0.0033
ROE	-0.12	-0.11	-0.10	0.003	0.035	0.006
ROS	-0.17	-0.065	-0.306	0.003	0.034	0.006
Liquidity						
CURRENT RATIO	2.01	0.74	1.86	1.66	1.68	1.54
CASH RATIO	0.285	0.001	0.331	0.387	0.390	0.310

Ratio	AL EQBAL			POST COSOLIDATION		
	PRE-COSOLIDATION					
	1998	1999	2000	2001	2002	2003
Profitability						
ROI	0.0103	0.0033	0.0295	0.0965	0.1258	0.0768
ROE	0.00107	0.0043	0.00321	0.1724	0.1802	0.1247
ROS	0.15	0.13	0.10	0.15	0.15	0.17
Liquidity						
CURRENT RATIO	0.20	1.42	0.75	0.96	1.17	1.08
CASH RATIO	0.04	0.001	0.03	0.10	0.01	0.04

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# Quest for a Valid Phillips Curve in the Long Run: An Empirical Approach

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## Abstract

This paper examines the relationship between inflation rate (percentage change in consumer price index) and unemployment rate (number of unemployed persons as a percentage of the labor force) by using modern econometric approach to find a “Phillips Curve”. Using US data of both monthly and yearly frequency, the paper finds the existence of a long-run trade-off between inflation and unemployment. A linear form of the Phillips curve is estimated for the USA using ordinary least squares estimation (OLS). The co integration test shows the long run relation between the variables. This contradicts the theory that in long run the Phillips curve should be vertical. Some of the findings can be summarized as follows: (a) the Phillips Curve fits the data well; (b) inflation of previous year influences the present rate of inflation and (c) both monthly data and yearly data support the existence of Phillips curve in the long run

**Keywords:** inflation, unemployment, consumer price index, Phillips curve

## 1. Introduction

The Phillips curve is named after a single-equation empirical model built by A.W.H. Phillips (1958). The model relates wages negatively to unemployment. Based on a scattered diagram of the two time series data using the UK annual data for the period 1861-1957 net of the interwar period, Phillips conjectured a hyperbolic function between the growth rate of wages and unemployment rate. In an economy, it is the study of inverse relationship between the rate of unemployment and the rate of inflation either short run or long run. Phillips and Samuelson-Solow drew curves through the inflation and unemployment data; they used these as structural relations to discuss a long-run Phillips curve trade-off between inflation and unemployment. There are three assumptions of Phillips curve; first one is, in short run, there is tradeoff between inflation and unemployment. Second, aggregate supply shock can break the concept of Phillips curve because it can cause both higher rate of inflation and unemployment which is also known as stagflation. Third, in long run there is no significant tradeoff between inflation and unemployment. Therefore economists have massive interest to identify their relationship; there is a short run tradeoff between the rate of inflation and unemployment, (McConnell, 16th ed). In this regard it has been also seen in many studies that there is short run tradeoff between inflation and unemployment in different countries in different time periods. Though, the rate of low inflation and low unemployment are major economic goals. But it is not possible to achieve both economic goals (low inflation and low unemployment) simultaneously. Inflation is the concern of monetary policy while unemployment is of fiscal policy. The aim of monetary policy is to control the level of inflation or to maintain the sustainable inflation in the economy by sacrificing employment. In contrast, the goal of fiscal policy is to make low unemployment in the economy at any rate of inflation. Therefore, coordination among the policies is very important in order to maintain optimal level of tradeoff between inflation and unemployment.

Basically, the term inflation refers to increase in overall price level of goods and services in the economy which leads to decrease in the purchasing power of household. Because whenever prices will increase, the value of money will be depreciated and ultimately the real income of household will decrease. Usually it is assumed that increase in prices of goods and services are just like decrease in income and vice versa.

The definition of unemployment is that the condition in the economy when supply of labor exceeds the demand for labor in the labor market of the economy. Simply, a person who is willing to do the job but due to shortage of the jobs he or she could not find the job in the economy is known as unemployment.

In this study, we will investigate whether inflation rate and unemployment rate are associated with each other or not in short-run and long-run and if they are then whether it is positive or negative. The rest of the paper is organized as follows. Section 2 documents the objective of the research, section 3 reviews literature, section 4 states the source of data and depicts the methodology. Section 5 presents empirical results and their implication and finally section 6 concludes.

## 2. Objective of the Study

There is an age-old debate regarding the relationship between inflation and unemployment. On the basis of actual data, Phillips (1958) confirms an inverse relationship between inflation and unemployment. The macroeconomic mechanism of such inverse relation is very much straightforward. Increase in inflation reduces the real rate of wage that is likely to increase the demand for labour. Increase in the demand for labour results in higher employment and thereby low rate of unemployment. This inverse relationship between inflation and unemployment has later become known as Phillips Curve relationship. Since the inception of this law, a wide volume of researches has been carried out on the issue. Some of the researchers have come up with the conclusion that the inverse relation between inflation and unemployment is a short-run phenomenon. In the long-run the inverse relation rather disappears. As opposed to the downward sloping Phillips curve on inflation and unemployment plane, the latter school advocates a vertical Phillips curve in the long run. In this paper our main objective is to examine the Phillips relation in the long run. Using monthly and yearly US data, we examine the existence of original Phillips relation in the long run.

## 3. Literature Review

Numerous researchers have conducted research to find out trade-off between inflation and unemployment. But we will only discuss and review those papers that used econometric approach and those have the similarities with our works. We also review some major paper and empirical works. Some of them are mentioned in this paper.

A.W. Phillips who became famous for his work entitled “The Relationship between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom 1861-1957” in 1958. According to him, there was a strong negative association between unemployment and inflation in his study. This trade-off relationship was named by him as Phillips curve. From the time William Phillips made this pronouncement in the end of the 1950s, a lot of research studies have been done with a purpose of either to confirm or to refute his work.

Paul Samuelson and Robert Solow were the very first researchers who supported the Phillips hypothesis about the negative association between unemployment and inflation. Samuelson and Solow (1970) examined the relationship between the two macroeconomics variables in the context of the United States. The results led to a conclusion that there existed an inverse relationship between unemployment and inflation rates in the USA. Furthermore, Solow (1970) and Gordon (1971) confirmed the existence of a negative trade-off relationship between unemployment and inflation using U.S. macroeconomic data. These empirical findings have been known as the “Solow-Gordon affirmation” of the Phillips curve. This paper finds an empirical evidence of their findings, and agreed with them about negative relationship between unemployment and inflation. Milton Friedman (1968) and Edmund Phelps (1967) openly criticized the hypothesis and maintained that there is no trade-off between unemployment and inflation. Furthermore, Lucas (1976) strongly opposed the proposition of the existence of the Phillips curve. The workers would foresee the high inflation in the future and would demand wage increase from their employers. In this case, there could be coexistence of high unemployment and high inflation rate which is known as the “Lucas Critique”. But this paper opposes the findings of Friedman, Phelps and Lucas as it finds the negative association while conducting estimation. However Jeffrey (1995) Assistant Vice President and Economist, Federal Reserve Bank of Boston discuss briefly upon the history of Phillips curve. His writing was a criticism of “federal bank of Boston conference, 1978”. Most papers of this conference were sounded the knell death of Phillips curve. But this paper shows that it is still (1995) alive and well. Perry (1960) included lags of the consumer price index as adjustment for the cost of living in his wage price Phillips curve. Klein and Goldberger (1955) in their model includes an equation that makes the change in wage a function of the unemployment rate and lagged change in the price level. John Dinar do and Mark Moore (1999) used panel data analysis to examine 9 member countries of the “Organization for Economic Co-operation and Development” (OECD). The researchers used the method of Ordinary Least Squares (OLS) and Generalized Least Squares (GLS). Their findings confirmed the existence of the “common” Phillips curve in these OECD countries. As Dinar do and Moore concluded, “In sum, we believe that our results show a remarkable robust relationship

between relative inflation and relative unemployment". As this paper use Ordinary Least Square (OLS) method and find the negative association, it also confirms the presence of a Phillips curve. Fatima Shad man (1996) used Johansen's maximum likelihood method of testing for co integration; a long-run inverse relationship is indeed depicted between the rate of inflation and the unemployment rate. However, the main impact of deviations from this long-run equilibrium is on the unemployment rate rather than the rate of inflation. This work is also having similarities with our work. Turner and Seghezza (1999) also employed the panel data method. They examined the Phillips curve in 21 OECD countries over the period from the early 1970s to 1997. To analyze the pooled data, Turner and Seghezza used the method of Seemingly Unrelated Estimation (SURE) rather than the OLS. The researchers concluded that the overall result provided a "strong support" for the existence of the "common" Phillips curve among the 21 chosen member countries of OECD. This paper also agreed with them. But the difference is that, we use data of U.S.A instead of OECD countries. Hassler and Neugart (2003), Aguir, Meneul and Martinst (1997) works on the linearity of the Phillips curve and explains that Phillips curve is linear and also statistically significant. They find trade-off between inflation and unemployment in their work but Okun law shows some non linearity. But his work was not statistically significant. Berger (2010) found that increase in cyclical unemployment will lead to decrease in output which ultimately causes to decrease in inflation. The New Keynesian Phillips Curve incur orates forward looking behavior of inflation. (Fuhrer and Moore,1995; Roberts, 1995). Inflation contains important low-frequency variation, as captured by a "unit root" stochastic process, then one can estimate long-run trade-offs using procedures like those of Gordon and Solow. Further, these types of estimates can be large even after 1970, as shown in (King and Watson, 1992). Watson (1994) used monthly data in his paper and found evidence that there is a pronounced negative correlation of inflation and unemployment at business cycle frequencies which is remarkably stable over the post war period lower frequencies of inflation & unemployment. However this links are very unstable across time. Marika and Dennis (2002) in their paper stated that when the time discount rate is positive, the backward looking determinants of wage formation have a stronger influence than the forward looking ones. (ii) Hence an increase in money growth raises the inflation rate and reduces the unemployment rate in the long run; the long-run Phillips curve is downward-sloping. Ann-Charlotte Eliasson (2001) tested the linearity and parameter constancy of Phillips for Australia, Sweden and the United States The nonlinear alternative is specified as a smooth transition regression model. It turns out that linearity is rejected for both Australia and Sweden while the Phillips curve for the United States appears to be linear. The current paper also finds the evidence of linear Phillips curve for United States. Jordi Galí and J David López-Salido (2010) provides evidence on the fit of the new Phillips curve for Spain over the most recent disinflationary periods (1980-1998) then in Spain. This paper has pointed out two things (1) the npc fits data well (2) the backward looking component of inflation is important. This paper introduces us with a new concept of phillips curve "New Phillips Curve (NPC)". New phillips curve based on staggered nominal price setting, in the spirit of Taylor's (1980) seminal work. Difference of NPC with traditional Phillips curve is that price changes are the result of optimizing decisions by monopolistically competitive firms subject to constraints on the frequency of price adjustment where traditional phillips curve relates inflation to some cyclical indicator plus lagged value of inflation. This paper also reveals that it is possible to find some evidence of a phillips curve relationship which explicitly emphasized the link between inflation and unemployment. Ricardo (2005) in an econometric approach shows a new specification of phillips curve that contains different unemployment lengths in a time varying NAIRU (non accelerating inflation rate of unemployment) settings, and finds that unemployment duration matters in the determination of prices and wages. Fumitaka Furuoka (2007) finds an empirical evidence to report the existence of the Phillips curve in the case of Malaysia. The most interesting findings of this paper is the existence of a long run trade off relationship and also causal relationship between the unemployment rate and the rate of inflation in Malaysia. Pami Dua (2009) analyzed the economic variables of eight Asian countries and found that output gap is significant in explaining inflation rate. For all countries the forward looking Phillips curve better fits. Intiaz, Osmanand and Nayaz (2011) observed positive relation between inflation & unemployment for Pakistan & negative relation for Bangladesh while they observed no relation for India & Srilanka. Hasan (2012) works on the determination of inflation within the framework of Phillips curve and investigates whether there exist any relationship between these two. This paper has provided an empirical evidence to support the existence of Phillips curve in the case of Bangladesh. Gary Koop and Luca (2012), using theoretical structures based on the new Keynesian and neo-classical Phillips curve and applying both regression and VAR-based model, finds that there have been shift in the Phillips curve and identifies three sub periods in emu. Smith (2006) in his paper observed a Phillips curve for Japan which looks like Japan. He indeed took his inspiration from (Brauce, 2003). Daly and Hobijn(2014)introduce a model of monetary policy with downward nominal wage rigidities and showed that both the slope and curvature of the Phillips curve depend on the level of inflation and the extent of downward nominal wage rigidities. Kumar and Orrenius (2015) find the mixed

evidence of non-linearity with some recent studies either rejecting nonlinearity or estimating only modest convexity while they estimating the Phillips curve for U.S. they find strong evidence that the wage-price Phillips curve is nonlinear and convex.

From the review of above literatures it is observable that though theoretically long run Philips curve is vertical, but there is empirical evidence of long run downward sloping Phillips curve. It means even in the long run there exists a trade-off between rate of inflation and rate of unemployment.

**4. Data and Methodology**

*4.1 Source of Data*

The data have been taken from online resources. This paper examines the relationship between inflation rate (percentage change in consumer price index) and unemployment rate (number of unemployed persons as a percentage of the labor force) in U.S.A. In the whole process we use data from online resource including metadata (It is often referred to as data about data or information about data because it provides data users with information about the purpose, processes, and methods involved in the data collection). For U.S.A we use monthly data of inflation and unemployment from the January, 1973 to May, 2012. All data sources are given at the end of the paper.

*4.2 Modeling Phillips Curve*

In this paper, we follow the model developed by Perry (1960) who included lags of the consumer price index as adjustment for the cost of living in his wage price Phillips curve. We use inflation rate ( $Inf_t$ ) as the percentage change in consumer price index as dependent variable. Our independent variables are unemployment rate ( $Un_t$ )-percentage of share of labor force without work but available for and seeking employment and previous year inflation or lagged inflation ( $Inf_{t-1}$ ). All these variables are taken in this paper in order to examine the Phillips curve for selected countries. The simple Phillips curve could be estimated by using following equation:

$$Inf_t = \beta_1 + \beta_2 Un_t + \beta_3 Inf_{t-1} + \varepsilon_t \dots \dots \dots (1)$$

$\beta_1$  is constant and  $\beta_2$  and  $\beta_3$  are slope coefficient and  $\varepsilon_t$  is the error term. We used software E-Views for conducting all the estimations and tests necessary for this paper. In the first stage of the study, in order to assess the Phillips curve, unit root test is used to examine the stationary of data sets. The current paper uses the augmented Dickey-Fuller (ADF) unit root test to find out the stationary data (Dickey and Fuller 1979, 1981). Then in the second stage we have conducted the estimation of equation 1. Then we check the estimation result. After having all the expected sign in the estimation output, we then in the third stage conducted the unit root test again for the residual to investigate whether the variable are co integrated or not. After having confirmation of co integration, we will check the correlation coefficient between the independent variables to find out the existence of multicollinearity. If multicollinearity exists in the model we have to mitigate this. Finally we carry out the tests for checking stability. In this paper we use Ramsey RESET test. It shows us our model is correctly specified or not.

**5. Empirical Findings**

*5.1 Unit Root Test for Inflation*

In this section we observe the unit root test result for our inflation series for U.S.A. Then we will observe the probability value of the t-statistic. Which will guide us to decide whether the series “inflation” is stationary or not. If we can reject null, it will mean that “inflation” don’t have a unit root. That is the series is stationary.

Null Hypothesis: inflation has a unit root		
Lag Length: 15 (Automatic based on SIC, MAXLAG=17)		
Augmented Dickey-Fuller test statistic		t-Statistic Prob.*
		-3.517118 0.0387
Test critical values:	1% level	-3.978266
	5% level	-3.419686
	10% level	-3.132458

\*MacKinnon (1996) one-sided p-values.

Here in the ADF unit root test t-statistic value is -3.517(prob=0.0387) .We can see from the above table that the critical value at 5% level is -3.419. So, we can reject the null ( $H_0$ ) that, inflation has a unit root. That is why the series is stationary.

*5.2 Unit Root Test for Unemployment*

In this subsection we observe the unit root test result for our unemployment series for U.S.A. in order to decide



whether the series “Unemployment” is stationary or not. If we can reject null, it will mean that “Unemployment” don’t have a unit root. That is the series is stationary.

Null Hypothesis: unemployment has a unit root  
Lag Length: 4 (Automatic based on SIC, MAXLAG=17)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.823622	0.0557
Test critical values:		
1% level	-3.444098	
5% level	-2.867496	
10% level	-2.570005	

\*MacKinnon (1996) one-sided p-values.

Here in the ADF unit root test t-statistic value is -2.824(prob: 0.0557) .We can see from the above table that the critical value at 5% level is -2.867. So we cannot reject null at 5% level. But it is not near to 5% level. So we will consider the 10% level. As this is marginally miss the 5% level we will accept this at 10% level. So we can reject the null ( $H_0$ ) that, unemployment has a unit root. That is the series is stationary.

### 5.3 Estimation Output of Equation 1

Now we are ready to estimate our equation (1) by using E-Views we find the following result.

Dependent Variable: INF				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.306439	0.082536	3.712820	0.0002
UN	-0.043777	0.012127	-3.609770	0.0003
INF_LAG	0.993494	0.006291	157.9274	0.0000
R-squared	0.981645	Mean dependent var		4.436229
Adjusted R-squared	0.981567	S.D. dependent var		3.095127
S.E. of regression	0.420219	Akaike info criterion		1.110255
Sum squared resid	82.81798	Schwarz criterion		1.136677
Log likelihood	-259.0202	Hannan-Quinn criter.		1.120648
F-statistic	12541.53	Durbin-Watson stat		1.258872
Prob(F-statistic)	0.000000			

If we analyze the result of estimation, we can see a clear trade-off between unemployment and inflation in the long run. It is also noticeable that the probabilities of the coefficients are very significant. The R-Square is 0.98 which is also significant. The probability of F statistic is also seems statistically significant. Here the coefficient of the constant is 0.306439, the coefficient of independent variable unemployment is -0.043777 and the coefficient of inflation lag is 0.9934. So dependent variable inflation is negatively related with unemployment, and lagged value of inflation has a strong influence on current inflation (see appendix for related graphs). So the Estimated model is:

$$Inf_t = 0.30640 - 0.0438Un_t + 0.9934Inf_{t-1} + \hat{\epsilon}_t \dots \dots \dots (2)$$

But before we conclude we have to test the residual by a unit root for ensuring the co integration between the variables the result looks like the following-

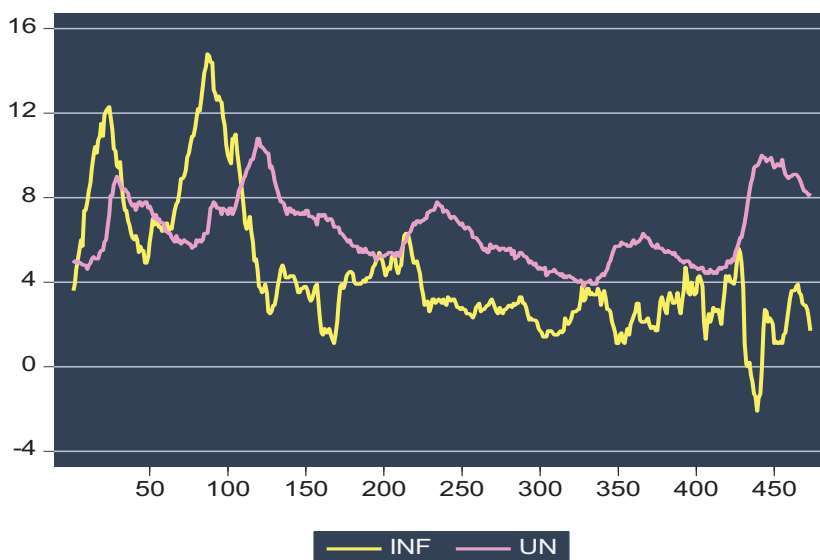


Figure 1. Inflation and unemployment trade off

#### 5.4 Unit Root Test of the Residual for Testing Co-Integration

We will now test the residual by an ADF unit root test. The purpose of conducting the test is to find stationary residual. A stationary residual will mean that the variables are co integrated. So our null ( $H_0$ ) is residual has a unit root. We want to reject the null ( $H_0$ ).

Null Hypothesis: RESIDUAL has a unit root

Lag Length: 12 (Automatic based on SIC, MAXLAG=17)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.290442	0.0000
Test critical values:		
1% level	-3.444373	
5% level	-2.867617	
10% level	-2.570070	

\*MacKinnon (1996) one-sided p-values.

The result indicates us that we can reject the null ( $H_0$ ) at 5% level. So the residual series is stationary. It means that the variables are co integrated.

#### 5.5 Correlation Test of the Independent Variable to Detect Multicollinearity

In this subsection we examine the correlation between the independent variable to check the multicollinearity. The correlation examination is important for us because here in our model we take the lagged value of inflation as an independent variable. So if the correlation coefficient becomes high it will indicate that there is multicollinearity between the independent variables. This might cause serious problem. So if the value of the correlation coefficient comes out high, we have to mitigate multicollinearity. We can do so by avoiding a variable from the model which has a higher probability and higher correlation coefficient. But if the correlation coefficient is low we need not to be worried about.

	UN	INF_LAG
UN	1.000000	0.097951
INF_LAG	0.097951	1.000000

Table: correlation coefficient between unemployment and lagged value of inflation in U.S.A

We can see that the correlation coefficient between unemployment and inflation lag is 0.097951, which is not too high. It means the problem of multicollinearity is absent.

#### 5.6 Ramsey's RESET Test

Now we test the adequacy of the model. There are many tests available to test the stability. But we will approach by the Ramsey RESET test. The following results are found.

Ramsey RESET Test:				
F-statistic	3.592210	Prob. F(1,468)		0.0587
Log likelihood ratio	3.609079	Prob. Chi-Square(1)		0.0575
Test Equation:				
Dependent Variable: inflation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.404686	0.097271	4.160386	0.0000
UN	-0.045921	0.012147	-3.780474	0.0002
INF_LAG	0.954455	0.021532	44.32766	0.0000
FITTED^2	0.003058	0.001614	1.895313	0.0587
R-squared	0.981785	Mean dependent var		4.436229
Adjusted R-squared	0.981668	S.D. dependent var		3.095127
S.E. of regression	0.419063	Akaike info criterion		1.106846
Sum squared resid	82.18714	Schwarz criterion		1.142075
Log likelihood	-257.2157	Hannan-Quinn criter.		1.120703
F-statistic	8408.431	Durbin-Watson stat		1.257783
Prob(F-statistic)	0.000000			

The Ramsey RESET test tells us that the model is correctly specified. The null ( $H_0$ ) in Ramsey RESET test is there is no mis-specification in the model. So our target is to accept the null ( $H_0$ ). And we in this test we cannot reject the null ( $H_0$ ) at 5% level. So there is no misspecification in this model. So, From the result of our estimation we can conclude that there is a long run trade of between rate of inflation and the rate of unemployment in U.S.A. and as we go through necessary statistical test we also can say that the result and the model is quite significant. The relation is depicted in the following figure.

## 6. Conclusion

Empirical results of the paper give several points worth noting. In the light of empirical evidence, we have observed a clear long run trade-off relationship between the rate of inflation and the rate of unemployment by using both monthly and yearly data. It means there is a negative association between these two macroeconomic variables in the long run. A linear form of the Phillips curve is estimated using ordinary least squares estimation (OLS) approach. The co integration test shows long run relation between the variables. This rules out the possibility of vertical shape of Phillips Curve in the long run. Availability of better data set, the influence of previous inflation on current inflation and the existence of original Phillips relation in the long run provide incentives for further research on the present issue.

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