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System Adoption: Socio-Technical Integration

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ABSTRACT: In this case study we identify the factors that influence the adoption of a new system in a major company in Saudi Arabia. We develop a theoretical framework to help derive better understanding of system adoption via socio-technical integration.
We formulation of 14 hypotheses that were tested via a survey of 42 system users. Management support and change management were found to be significant factors influencing system adoption. As a result, the 14 null hypotheses were rejected due to their statistical significance (p-value < 0.05). Discussions and recommendations for future research are discussed.

I. INTRODUCTION:

System adoption is a complex phenomenon (Soja and Paliwoda-Pekosz (2009)) due to the ever evolving nature of the human kind, the world that we live in and the speed of technological advances. Understanding how people interact with and adopt a certain type of technology is of interest to the information systems research in addition to having major economic and non-economic benefits to the world. The Management Information Systems (MIS) literature has produced various frameworks to explain system adoption, yet they all lacked socio-technical integration. (Venkatesh et al. 2003, 2012 and Davis et al. 1989).
Thus, in this research we try to fill this gap in the literature. We examine the adoption of a newly introduced system in a major company in Saudi Arabia. Saudi Arabia is exceptional in terms of its social and environmental context making it unique venue for conducting MIS research. We develop a framework that is of contrast to previous models throughtheintegration of socio-technical aspect of information systems.

II. LITERATURE REVIEW:

Technology adoption literature has produced various models and frameworks that aim to explain system adoption. These models include Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Combined TAM and TPB, Model of PC Utilization (MPCU), Diffusion of Innovation (DOI) and Social Cognitive Theory (SCT). Despite their predictive power that reached 70% (Venkatesh et al. (2003)), these models laocked socio-technical integration.
Socio-technical integration entails the human, social, technical aspects of information systems. Thus, integrating socio-technical approach aid a better understanding information system adoption (Baxter and Sommerville 2011). Ryan and Bock (1992) indicate that socio-technical perspective provides a broadened view beyond that of technical focus. Because socio-technical systems involve a relationship between humans and machines, Cooper and Foster (1971) pointed out the importance of considering a "fit" perspective between humans and machines. The 'fit' is that both of these two elements complement each other. This perspective recognizes the trade-off between machines and humans.
Second, a multi-view analysis is needed when analyzing system adoption. According to Green et al. (2013), the multi-view framework may present an ideal template for reflection on computer systems development. We suggested that multi-view is also has an important application in reflecting on system adoption.Green et al. (2013) indicted that the multi-view perspective can work as a meaningful reflective tool to aid practitioners and academics to further develop

their practices. As pointed out by Avison and Wood (1991), the multi-view framework is more practical choice as it provides a comprehensive view rather than focusing on one aspect of the information system development which might not provide the full answer.

Third, system adoption frameworks are required to acknowledge of actors and their influence. Kling cited in Markus and Robey (1988) highlights that there are different theoretical perspectives in social analysis of computing. These perspectives are distinguishable from each other by their respective definition of technology, social setting, ideologies of the workplace, beliefs about the dynamics of the diffusion of the technology, theoretical constructs and evaluation of the "good" technology. Markus and Robey (1988) refer to these casual structure as casual agency. Casual agency describes the nature of causal action and direction of casual influence among the elements in a theory. Robey cited in Markus and Robey (1988) advised that computing technology can be viewed as a moderating variable which moderates the strength of the causal relationship between the uncertainty of the environment and organizational structure.

III. METHODOLOGY:

We apply mixed research design for the purpose of this study. The mode of inquiry in mixed research methods often makes use of induction to find patterns, deduction to test theories and hypotheses to uncover and understand results. As pointed out by Denzin cited in Gray (2014), triangulation (mixing qualitative and quantitative research methods) is suggested to be the most powerful approach because of the different paradigms can be counterbalanced.Flick cited in Gray (2014) pointed out that mixed research methods allow for one method to compensate for the shortfalls of another. Therefore, combining more than one research method in case studies provides very powerful tool in terms of the ability to address both exploratory and confirmatory research questions in one research simultaneously (Venkatesh et al. (2013)). Mixed research approach provides powerful mechanism to deal with the rapidly changing technological environment. In such environment, information system researchers often encounter situations where existing theories and findings do not provide sufficient explanation or significant insight into the phenomena being studied. Therefore, mixed research strategies are powerful in dealing with such situations. Mixed research methods have the ability to provide stronger inferences compared to single methods because they can leverage the complementary strength and offer greater insight on various information systems research. Mixed research methods also provide a venue for researchers to obtain greater mix divergence or complimentary world views. In this research we interview four Subject Matter Experts (SMEs) to get more insight on the research framework and formulate the research hypotheses. We use the interviews outcomes to revise the model and examine the hypotheses using quantitative methods (survey questionnaire). In addition, we validated the survey outcomes by interviewing six system users.

IV. Subject Matter Experts Interviews:

In order to get more insight into the research framework and develop the research hypotheses, we conduct interviews with four Subject Matter Experts who are senior staff of the system development team in the company. The interviews were conducted at the interviewees convenience at the company headquarter in Saudi Arabia. Interview information sheets and consent forms have been completed by all participants. During the interviews the following questions were asked:

1. *What is your perspective about this developed model?*
2. *How do you think it can be enhanced?*
3. *What are the most important hypotheses?*

DATA ANALYSIS (STAGE-1):

In order to analyze the interview data, we use thematic analysis. Gray (2014) defines thematic analysis as a method for identifying and analyzing patterns within the data. Thus, the interviewsrevealed the followingpatterns:

SME One	SME Two	SME Three	SME Four
Management Support	Documentation	Management Support	Training
Social Influence	Management Support	Training	Social Influence
Training	User Support	User Support	User Support
User Support	Training	User Engagement	User Engagement
User Engagement	User Engagement	Social Influence	Management Support
Self-Efficacy	Social Influence	Attitude	Complexity
Hedonic Motivation	Job performance	Complexity	Effort

As a result, the research 14 hypotheses were formulated as follows:

H1: Users attitude is positively influenced by management support.

H2: Users hedonic motivation is increased by management support.

H3: Users self-confidence is influenced by management support.

H4: System complexity is reduced by training.

H5: Users job performance is enhanced by training.

H6: Effort required to use the system is reduced by training.

H7: Self-confidence required to use the system is enhanced by training.

H8: Users job performance is enhanced by user support.

H9: Effort required to use the system is reduced by user support.

H10: Users job performance is enhanced by user engagement.

H11: Effort required to use the system is reduced by user engagement.

H12: Users hedonic motivation is increased by user engagement.

H13: Users attitude is positively influenced by social influence.

H14: Users self-confidence is increased by social influence.

Survey Questionnaire:

Sample Size:

The population of research study consisted of 47 users. We useSolvin formula, to measure the required sample size by identify the population size denoted N and the margin of error tolerance (e). In line with previous studies (e.g. Al-Gahtani et al. (2007), Al-Qeisi et al. (2015), Bellaaj et al. (2015), Alkhasawneh and Alanazy (2015), Maillet et al. (2015), Decman (2015), Venkatesh et al. (2012), Venkatesh (2000) and Marchewka et al. (2007)) we used 0.05 significant level with a confidence interval of 95%. As a result, the sample size is calculated as follows:

$$SampleSize(n) = \frac{47}{1 + (47)(0.05)^2} = 42$$

Response Rate:

The survey questionnaire was distributed via company email and ran from November 1stto November 30, 2016. Reminders were sent every two days to encourage participation. By end of November 2016, a total of 42 respondents completed the survey. As a result, the response rate was 89.4%.

DATA ANALYSIS (STAGE-2):

Instrument Validity:

We used correlation to validate the survey instrument. As shown in the below correlation matrix the survey instrument exhibitedwellconvergent and discriminant validity. Gray (2014)

Survey Instrument Correlation[c]

	CAT	NAT	GEN	EXP	MS1	MS2	MS3	TRND1	TRND2	TRND3	TRND4	TRNB1	TRNB2	TRNB3	TRNB4	US1	US2	UE1	UE2	UE3	SI1	SI2
CAT	1	.109	-.024	-.042	-.090	-.217	-.121	-.113	.028	.026	.054	.025	.072	.030	.083	.011	-.004	.048	-.063	-.032	-.034	-.008
NAT	.109	1	-.266	.473**	.152	.274	.241	.262	.248	.258	.222	.252	.277	.209	.258	.169	.176	.206	.298	.246	.034	.008
GEN	-.024	-.266	1	-.449**	.061	.022	-.012	.000	.163	.011	.119	-.054	-.023	-.035	.011	.095	.101	.100	.035	.179	.158	.163
EXP	-.042	.473**	-.449**	1	-.102	.045	.075	.106	-.106	.034	-.027	.130	.062	.094	.133	-.058	-.084	-.134	.037	.035	-.223	-.219
MS1	-.090	.152	.061	-.102	1	.873**	.833**	.579**	.707**	.711**	.685**	.526**	.675**	.736**	.625**	.772**	.721**	.796**	.682**	.626**	.743**	.707**
MS2	-.217	.274	.022	.045	.873**	1	.796**	.645**	.715**	.750**	.709**	.424**	.575**	.636**	.593**	.667**	.616**	.724**	.634**	.645**	.658**	.639**
MS3	-.121	.241	-.012	.075	.833**	.796**	1	.646**	.656**	.699**	.628**	.654**	.733**	.682**	.726**	.696**	.728**	.712**	.720**	.627**	.700**	.778**
TRND1	-.113	.262	.000	.106	.579**	.645**	.646**	1	.864**	.861**	.884**	.751**	.757**	.792**	.724**	.706**	.519**	.679**	.580**	.784**	.519**	.372*
TRND2	.028	.248	.163	-.106	.707**	.715**	.656**	.864**	1	.904**	.952**	.682**	.807**	.789**	.725**	.675**	.576**	.769**	.566**	.827**	.611**	.513**
TRND3	.026	.258	.011	.034	.711**	.750**	.699**	.861**	.904**	1	.925**	.719**	.802**	.841**	.790**	.682**	.658**	.795**	.649**	.834**	.601**	.521**
TRND4	.054	.222	.119	-.027	.685**	.709**	.628**	.884**	.952**	.925**	1	.703**	.754**	.844**	.747**	.723**	.621**	.799**	.638**	.843**	.598**	.499**
TRNB1	.025	.252	-.054	.130	.526**	.424**	.654**	.751**	.682**	.719**	.703**	1	.808**	.820**	.770**	.584**	.693**	.689**	.659**	.813**	.562**	.420**
TRNB2	.072	.277	-.023	.062	.675**	.575**	.733**	.757**	.807**	.802**	.754**	.808**	1	.902**	.909**	.608**	.536**	.676**	.523**	.652**	.573**	.452**
TRNB3	.030	.209	-.035	.094	.736**	.636**	.682**	.792**	.789**	.841**	.844**	.820**	.902**	1	.896**	.702**	.624**	.771**	.642**	.714**	.584**	.437**
TRNB4	.083	.258	.011	.133	.625**	.593**	.726**	.724**	.725**	.790**	.747**	.770**	.909**	.896**	1	.599**	.552**	.678**	.649**	.636**	.527**	.499**
US1	.011	.169	.095	-.058	.772**	.667**	.696**	.706**	.675**	.682**	.723**	.584**	.608**	.702**	.599**	1	.764**	.828**	.756**	.630**	.721**	.604**
US2	-.004	.176	.101	-.084	.721**	.616**	.728**	.519**	.576**	.658**	.621**	.693**	.536**	.624**	.552**	.764**	1	.831**	.837**	.755**	.789**	.736**
UE1	.048	.206	.100	-.134	.796**	.724**	.712**	.679**	.769**	.795**	.799**	.689**	.676**	.771**	.678**	.828**	.831**	1	.824**	.779**	.808**	.688**
UE2	-.063	.298	.035	.037	.682**	.634**	.720**	.580**	.566**	.649**	.638**	.659**	.523**	.642**	.649**	.756**	.837**	.824**	1	.699**	.658**	.686**
UE3	-.032	.246	.179	.035	.626**	.645**	.627**	.784**	.827**	.834**	.843**	.813**	.652**	.714**	.636**	.630**	.755**	.779**	.699**	1	.633**	.526**
SI1	-.034	.034	.158	-.223	.743**	.658**	.700**	.519**	.611**	.601**	.598**	.562**	.573**	.584**	.527**	.721**	.789**	.808**	.658**	.633**	1	.857**
SI2	-.008	.008	.163	-.219	.707**	.639**	.778**	.372*	.513**	.521**	.499**	.420**	.452**	.437**	.499**	.604**	.736**	.688**	.686**	.526**	.857**	1

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

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

c. Listwise N=42

Survey Instrument Reliability:

The reliability test shows high reliability of the instruments with Cronbach's alpha (α) = 0.957.

Regression Weights:

Dependent Variables	Independent Variables	Standardized Estimates (β)	Unstandardized Estimate (B)	S.E.	C.R.	P-Value
Complexity	TRNB1 (Q12)	.849	.913	.118	7.741	***
	TRND1 (Q8)	.888	.913	.118	7.741	***
Attitude	SI1 (Q21)	.799	.809	.132	6.109	***
	MS1 (Q5)	.931	.814	.105	7.735	***
Self Efficacy	TRNB4 (Q15)	.818	.780	.121	6.461	***
	TRND4 (Q11)	.924	.906	.116	7.805	***
	MS3 (Q7)	.761	.688	.118	5.841	***
	SI2 (Q22)	.555	.616	.155	3.972	***
Effort	UE2 (Q19)	.741	.682	.122	5.583	***
	US2 (Q17)	.726	.688	.126	5.438	***
	TRND3 (Q10)	.929	.885	.112	7.865	***
	TRNB3 (Q14)	.898	.814	.110	7.432	***
Job Performance	UE1 (Q18)	.853	.727	.106	6.875	***
	US1 (Q16)	.805	.723	.115	6.312	***
	TRND2 (Q9)	.880	.864	.120	7.213	***
	TRNB2 (Q13)	.870	.811	.114	7.088	***
Hedonic Motivation	MS2 (Q6)	.824	.783	.124	6.326	***
	UE3 (Q20)	.783	.792	.135	5.888	***

****. P-value is significant at the 0.05 level.*

Squared Multiple Correlations (R^2):

R^2 enables the assessment of dependent variables reliability and validity. Validity is assessed through the Average Variance Explined (AVE) equation while reliability is assessed through Composite Relability equation.

$$\text{Average Variance Extracted (AVE)} = \sum R^2 / (\sum R^2 + \text{Measurement Error})$$

$$\text{Measurement Error} = (1 - R^2)$$

$$\text{Composite Relability} = (\sum \text{standarized regression estimates})^2 / ((\sum \text{standarized regression estimates})^2 + \text{Measurment Error})$$

As can be seen in the below table, all dpendent variable constructs have high level of relaiblity ≥ 0.60. Thus, all constructs are measuring true scores with high levels of accuracy. On the other hand, all latent variables constructs have acceptable level of convergent validity with AVE values ≥ 0.50.. Hair et al. (1998)

Dependent Variables	Independent Variables	Standardized Estimates (β)	Squared Multiple Correlation (R^2)	Measurement Error ($1-R^2$)	Average Variance Extracted (AVE)	Composite Reliability
Complexity	TRNB1 (Q12)	.849	.613	.387		
	TRND1 (Q8)	.888	.679	.321		
	Sub-total	**1.737**	**1.292**	**.708**	**0.646**	**0.810**
Attitude	SI1 (Q21)	.799	.757	.243		
	MS1 (Q5)	.931	.774	.226		
	Sub-total	**1.730**	**1.531**	**.469**	**0.766**	**0.865**
Self Efficacy	TRNB4 (Q15)	.818	.648	.352		
	TRND4 (Q11)	.924	.728	.272		
	MS3 (Q7)	.761	.806	.194		
	SI2 (Q22)	.555	.862	.138		
	Sub-total	**3.058**	**3.044**	**.956**	**0.761**	**0.907**
Effort	UE2 (Q19)	.741	.528	.472		
	US2 (Q17)	.726	.549	.451		
	TRND3 (Q10)	.929	.308	.692		
	TRNB3 (Q14)	.898	.578	.422		
	Sub-total	**3.294**	**1.963**	**2.037**	**0.491**	**0.842**
Job Performance	UE1 (Q18)	.853	.854	.146		
	US1 (Q16)	.805	.670	.330		
	TRND2 (Q9)	.880	.866	.134		
	TRNB2 (Q13)	.870	.638	.362		
	Sub-total	**3.408**	**3.028**	**.972**	**0.757**	**0.923**
Hedonic Motivation	MS2 (Q6)	.824	.789	.211		
	UE3 (Q20)	.783	.720	.280		
	Sub-total	**1.607**	**1.509**	**.491**	**0.755**	**0.840**

Chi-Square (X^2) or CMIN To Degree Of Freedom (DF) Ratio:

The Chi-Square (χ^2) test is used for evaluating the model fit. It "assess the magnitude of discrepancy between the sample and fitted covariance matrices". Hooper et al. (2008)

The Chi-Square (χ^2) value is calculated using the below formula:

$$\chi 2 = \sum \frac{(ObservedValue - ExpectValue)\text{^}2}{ExpectedValue}$$

Researchers recommend a minimum ratio of CMIN/DF < 2 and maximum ratio of CMIN/DF < 5 to conclude model fit. Hoelter (1983), Schumacker and Lomax (2004), Hooper et al. (2008), Pelsmacker et al. (2008) and Sarli and Baharun (2016)

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	50	581.453	121	.000	4.805
Saturated model	171	.000	0		
Independence model	18	1386.690	153	.000	9.063

The Chi-Square (χ^2) value of the research model = 581.453 while the Degrees of Degrees of Freedom (DF) = 121. Therefore, the CMIN/DF = 4.805 which is < 5. Thus, concluding the model fit.

INTERVIEWS WITH SYSTEM USERS:

Because the sample size of the qualitative this research is 42 end users, which might be criticized of being small, we complement the quantitative analysis by conducting in-depth interviews with randomly selected system users. We interviewed six system users and asked them about the research findings with one question "*what is your perspective of the research findings*?"

FINDINGS:

Management Support:

Management support has been found to be a significant factor that influence system adoption by moderating the relationship between user factor and system factors. We found that user factors which include attitude, hedonic motivation and self-confidence are moderated by management support. According to one system user, the "success of the system depends on the willingness of management to adopt the new tools. New system requires by default new mentality to translate the new concepts into actions". Another system user indicated that "management support was one important tool that was used by the company to implement the system but I think this has led to more mandate than selective choice". These findings are supported by previous research such as Sargent et al. (2012), Dong et al. (2009), Al-Khaldi and Wallance (1999), Alballaa and Al-Mudimigh (2011), Damanpour and Schneider (2006) and Riaz et al. (2014).

In this study framework we distinguished between management support and other change management process recognizing the unique influence it has on system adoption. This is in line with previous researchers such as Sargent et al. (2012) who made a distinguishing between top management support and other facilitating conditions. As pointed out by Sargent et al. (2012), management support has not been fully incorporated in the system adoption theories.According to Sargent et al. (2012), the literature has not defined specific management support behavior associated with technology implementation success. Regression analysis revealed that management support (MS1) explained more variance with a regression weight of 0.931 compared to 0.799 regression weight in social influence (SI1).

Training:

Training was essential for reducing system complexity and effort required to use the system as well as enhancing users job performance and self-confidence.Regression analysis revealed that driver-based planning training (TRND1) explains more variance with a regression weight of 0.888 compared to 0.849 regression weight for base-level planning training (TRNB1). Thus, driver-based planning was found to be more complex than base level planning, yet training was a significant factor in reducing system complexity of both planning approaches. These findings are supported by the findings of Al-Khaldi and Wallance (1999), Gahtani (2004), Alballaa and Al-Mudimigh (2011), Smarkola (2008) and Decman (2015).According to one system users: "we have noticed that the more you engage yourself in the process, the more you realize how critical is the training". Another system user highlighted that "the system complexity is highly reduced by training".According to Glanz et al. (2008) and Maillet et al. (2015), Job performance and effort required are linked to self-efficacy. Training is directed linked to self-efficacy through providing users with the required tools and skills to use the system, thus as their self-efficacy increase, job performance is enhance while effort required is reduced. The regression analysis revealed the importance of training as a significant moderator of users attributes and system use. For self-efficacy training had explained 0.818 (TRNB4) and 0.924 (TRND4). For effort training had the highest weight with 0.898 (TRNB3) + 0.929 (TRND3). For job performance training also has the highest weight with 0.870 (TRNB2) and 0.880 (TRND2). Training explained most of the variance in all users attributes indicating its significance. These findings are in line with Davis (1989) established his theoretical framework on self-efficacy theory. As pointed out by Glanz et al. (2008), research has shown that the performance of many behaviors is determined by self-efficacy which becomes more important for behaviors of progressive tasks, complexity or difficulty. This view is also supported by Maillet et al. (2015), Vanneste et al. (2013), Al-Harbi (2011) and Al-Somali et al. (2009).

User Support:

In this research, we tested if user support had a significant effect on two attributes of system user which are enhancing user job performance and reduce user effort to use the system. Recognizing the importance and criticality of user support, the company has developed a dedicated system user support centre with the objective of tackling any system issues. According to one SME, "I would say that one of our success factor is having our own user support desk. Since the beginning of the system development we do our own support because we did not want to relay on corporate Information Technology (IT) help desk because it is going to take a long period of time to resolve users issues. Users can directly contact us and we will try our best to resolve their issues as fast as we possibly can. About 80% of users issues are resolved within the same day and the reset are resolved within a week. We have actually raised the standard within entire company. So it is kind of user engaged which is number three to me. All of this also is part of change management". On the other hand, users seems to agree with the SME statement. One system user: "I totally agree with your findings that the effort required to use the system is reduced by user support". Another system user: "user support was excellent as well as engagement". "when the user support is available, user's job becomes easier and his productivity increases". Regression analysis revealed that user support had a strong influence on both enhancing job performance and reducing effort. User Support explained 0.726 on effort and 0.805 on job performance. These findings are supported by previous research such as Sargent et al. (2012), Venkatesh et al. (2012) and Shaw et al. (2002). According to Sargent et al. (2012), facilitating conditions that include training and end user support is important to system adoption. Shaw et al. (2002), service quality can be a measurement of the difference between end-user expectations and the perceived performance of the entity providing end-user support. Shaw et al. (2002) findings revealed that a significant correlation between end-user support and user satisfaction.

User Engagement:

As indicated by Kappelman and Mclean (1992) and ME de Wall and Batenburg (2014), user engagement is one important yet an overlooked factor in the system adoption literature. The term user engagement in this research refer to both refers to both "user participation" and "user involvement". The company has taken unique approach to use engagement through the creation of change agents and business ambassador programs. User engagement was found to be a significant moderator that positively influenced users and system attributes. User engagement was found to enhance users job performance, reduce the effort required to use the system and enhance users hedonic motivation. According to one system user, "user engagement is one of the keys for better performance because collaboration with other users, management and system support give you wider knowledge, better ways to do things, system help, morale boost and confidence to perform the job". Another system user pointed out that "users job performance is enhanced by user engagement. I also agree that effort required to use the system is reduced by user engagement. Yes, users hedonic motivation is increased by user engagement".Regression analysis revealed that user engagement is a strong influencing factor of system adoption explaining 0.738 of hedonic motivation, 0.741 of effort and 0.853 of job performance. Despite the mixed results found in the literature about the user engagement influence on system adoption (Kappelman and Mclean (1992)). These findings are supported by Markus and Mao (2004) who pointed out that user engagement has a psychological impact and therefore, companies need to ensure deploying a user engagement approach that meets users expectations. The research findings are also supported by Bai and Cheng (2010) who pointed out that user's participation enables user to perceive sense of responsibility which influences system adoption. Hwang and Thorn (1999) supported these findings by shown that both user participation and involvement had positive correlation with system adoption while user involvement had the strongest correlation.

Social Influence:

Social influence is defined as expectations about how important others will evaluate the performance of a particular behavior and person's willingness to be guided by their evaluation. The literature have produced varying results on the significant impact of social influence on system adoption. Wong et al. (2013), Qeisi et al. (2015), Marchewka et al. (2007) and Vanneste et al. (2013) have found that social influence had a weak effect on system adoption. In contrast to previous findings, social influence is found to be a significant factor that influence system adoption process by moderating users attributes (attitude and self-confidence) and system adoption. Social influence plays an important role in behavioural

intention to use and adopt information technology. Unlike previous studies, we measured specific constructs to test for social influence impact on system adoption. Social influence explained 0.799 of variance for attitude and 0.555 for self-efficacy. This may explained the variation in previous studies result on social influence affect. Social influence was also found to be a weak influencing factor. This result was attributed to the moderating effect of experience and voluntariness as indicated in the literature. The literature also interpret this result as an effect of technology or application used. In this research, social influence explained more variance on attitude and less variance on self- efficacy. This could be attributed to the fact that self-efficacy has to do more with learning and outcome expectation which requires understanding and engagement unlike attitude which has to do more with individual feelings about something without required learning. As indicated, social influence by itself is a mean of facilitating change and also a product of other moderators. Social influence as a moderate enable creating a positive feeling about the system and thus enhancing users attitude to use the system.

As pointed out by one SME, "social influence is actually important because we are 'social animals' and it is important for people who have not yet made up their minds and have not yet adopted the system". Our study findings is supported by the findings of Al-Khowaiter et al. (2013), Bellaaj et al. (2015) and Al-Somali et al. (2009). Al-Somali et al. (2009) concluded that social influence and awareness of the banking services had positive effect on perceived usefulness of using online banking service. System users supported the findings on social influence effect.

V. DISCUSSION AND FUTURE DIRECTION:

Although the findings of this study is consistent with previous research finding (Al-Gahtani (2004), Al-Gahtani (2008), Al-Somali et al. (2009), Al-Harbi (2011), and AlKhalaf et al. (2012)) yet it was developed in a different approach that of value to the MIS literature.

First, this study was undertaken in a major company in Saudi Arabia that is unique in terms of its operation, structure and social context. This setting provided a rich environment for the researcher to conduct a study that mixed different approaches of research design. Second, this research was conducted in a live setting where the company was undergoing a major change in its processes in order to enter new businesses which makes this research hard to replicate. These processes provided a valuable input to complement the theoretical concepts used to develop the research theoretical framework. According to Dong et al. (2009), system adoption is "a complex, intertwined set of social and political interactions" and therefore requires researchers to gain a broad perspective. Third, the developed theoretical framework has integrated the socio-technical aspects of information systems which allowed for the measurement of system adoption dynamics. Furthermore, the framework enabled a multi-view perspective interpretation of the system adoption phenomena within a specific setting. Moreover, it allows researchers to gain more understanding and acknowledgment of actors and their influence in the system adoption process. Fourth, this study used a combination of research designs mixing quantitative with qualitative data analysis. The literature indicates that less than five percent of system adoption literature that was conducted in the period between 2001 and 2007 in major information systems journals employed mixed research methods. Venkatesh et al. (2013)

Our findings may help future researchers to look into the optimum managerial actions required to mediate system adoption. Future researchers might utilize this research findings to investigate the effect of power distances on system adoption in Saudi organizations. Future research might look into the different methods required to create a social influence that helps users adoption of information systems.

VI. CONCLUSION:

In this research study we aimed to examine the factors that influenced system adoption in a major company in Saudi Arabia. we developed a framework that entails human, processes and system factors. Using the developed framework, we interview four Subject Matters Experts (SME). Accordingly, the interviews resulted the formulation of 14 hypotheses that were tested. We surveyed a total of 42 users and used Structural Equation Modelling (SEM) in order to interpret the survey data. Accordingly the 14 null hypotheses were rejected due to their statistical significance. These results were validated by interviews with six system users.

Management support and change management (training, user support, user engagement and social influence) were found to playa significant positive role in influencing system use.

LIMITATIONS OF THE STUDY:

The findings of this research might be criticized that it cannot be generalized on wider context as it was the outcome of a study that was done in the boundaries of an organization. Therefore, further research might use this research framework to extend it to cover a wider context. The sample size in both the qualitative and quantitative research sections can be criticized to be of a small size. It is beyond the researchers' ability to influence the number of positions to be held or the willingness of senior staff to take part of this study. Further researchers might use this study approach to interview more candidates as the use of the system expands to other organizations or in similar organizational setting.

The survey sample of 42 participants might be criticized to be small. Thus, influencing the study statistical power. In an organization where the setting and operations are not standardized due to the nature of the business, a customized systems are required. It is beyond the capability of the researchers to increase the sample size selected for the survey as the number of users during the time of the study was only 47 out of which 42 is the optimum sample size for the purpose this study. Future researches can build on this research framework to test it on a larger sample size. Although this research might exhibit some features of action research, it was beyond the researchers' capability to impose change to the organization process. However, the findings of study provide an important feedback and input to the organizational management via a systematic framework for system adoption moderation. This might enable the organization to find the optimum mix of change management processes or environmental moderators to ease adoption and enable documentation of processes. Future pragmatic research might use the study framework to enable change or improve system adoption processes.

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