THE EFFECTS OF MANAGEMENT STYLES AND USER PARTICIPATION ON MIS SUCCESS OVER DIFFERENT SYSTEMS GROWTH STAGES

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Abstract - Although some researchers do not doubt the effectiveness of user participation in MIS success, research findings show that such relationships are not consistent under all circumstances. The present paper investigates the relations between user participation on MIS success, in light of the managerial styles over systems growth stages. Six product-oriented companies were selected that had a minimum condition of having 1000 employees and have been experiencing MIS for at least 5 years. A sum of 48 managers and 55 users in the MIS department were selected to answer four standard questionnaires. The results showed that 1) only user participation were affected in the system development stage, 2) there was no effect of managerial styles on user participation and systems success, 3) managerial styles, user participation and systems success differ in MIS growth stages and finally 4) the relationships and systems success differ over MIS growth stages.

Keywords- MIS Success, User Participation, Management Styles, MIS Growth Stages.

INTRODUCTION

Approximately seventy five percent of large and complex systems fail in the implementation and running stages of the Management Information System. Although some of these systems continue to work, relatively heavy expense and ample time are consumed to keep them running, or they have so many pitfalls that they could not achieve the forecasted results. [20] During the 80's two to four percent of organizational incomes were used in Management Information Systems. Simultaneously, with such heavy costs, information systems in supporting business, specially the need systems satisfying users were unsuccessful from their user's view point. [4] Statistics from England and the United States regarding MIS shows that systems that lack managerial skills, managerial computer knowledge and a lack of emphasis on using computers are apt to be less successful. [17, 20]

The present article that is based on a field research tries to measure the effects of managerial styles user participation on MIS success over MIS growth stages.

BACKGROUND

Deetz et. al. [7] believe that no part of a management could be as successful as user's

participation. Chung [6] also emphasizes that human and management factor could play an important role in the success of a technological project. Some systems analysts and MIS designers insist on human factors and that those who do work with the system should participate in systems design and implementation stages. [20]

Information System users could have an interrelations with system designers in the conceptual, design and implementation phases to help each other in all system's development phases. [13] Mackeen & Guimaraes [15] also believe that active participation of users in system development could have the following advantages: 1) more complete and precise user's information needs, 2) identification of the company or organizational sector which the system is trying to support, 3) a decrease of unnecessary specification of the system, 4) a better understanding of the user from the system, 5) more realistic expectation of the user from the system, 6) an opportunity for determining the differences on design problems, 7) a feeling of ownership, 8) a decrease in resistance to change extracted from the system and 9) more user commitment to the success ot the system.

Users participation has been a major issue in the information systems since the beginning of the 1960's. Many researches are carried out, [3] and a number of them have shown that the users participation has affected the systems success, but some other results do not show such relations. Ives, et. al. [10] investigated the research conducted between 1959 through 1981. Out of a total of 22 research only eight cases, that is 36% percent showed positive relations between user participation and systems success. After a decade, Caveye [5] in a similar move, studied 19 research cases that were conducted between 1882 through 1992. Only seven cases out of 19, that is 37% percent showed a positive relation between user participation and systems success.

RESEARCH METHODOLOGY

The present article is based on a field study that investigates the effects of managerial styles and user's participation on MIS success over different systems growth stages in six companies; Mobarekeh Steel Company (MSC), Stephan Cement Company (SCM), Iran's Polyacryle Company (IPC), Isfahan Oil Refinery (IOR), Petrochemical Company (PTC), and Isfahan Steel Mill Company (ISMC). The research statistical population consists of MIS managers and MIS personnel as system users in the afore mentioned companies. The number of managers were determined from the top charts and totally consisted of 48 MIS mangers, plus 55 MIS personnel as system users were identified that brought the total population into 103 statistical units. The variables under consideration have been measured by four standard questionnaires: 1) manager styles with Luthan's [11] leadership styles questionnaire, 2) users participation with final version of user participation of Doll and Torkzadeh, [9] 3) information system's success with users satisfaction questionnaire of

Doll and Torkzadeh, [8] and finally systems growth stages with information system's complexity questionnaire of Li and Roger. [12]

MIS managerial style and system's growth stage questionnaires were made in the A and B sections of a questionnaire called managerial style leadership of information systems in systems growth stages. Likert's 5 points scaling systems were used for each question to be answered, and were distributed among 48 MIS managers. Only 43 completed questionnares were returned. At the same time participation and users satisfaction questionnaires were made in the A and B sections of a second questionnaire. Again, Likert's 5 points scaling were used for each question and were distributed among 55 MIS systems analyst users. Only 54 completed questionnaires were returned.

Table 1: Frequency Distribution of MIS Managers in Population Research

Companies	IPC	ISM	IR	MSC	SC	PAI	Totals
No. of Managers	3	12	3	14	5	6	43
Frequency Performance	6.98	27.91	6.98	32.55	11.63	13.95	100

Source: Extracted from Statistical Calculations.

Table 2: Frequency Distribution of Information System Users in Population Research

Companies	IPC	ISM	IR	MSC	SC	PAI	Totals
No. of Users	4	14	3	20	6	7	54
Frequency Distribution	7.41	25.93	5.55	37.04	11.11	12.96	100

Source: Extracted from Statistical Calculations.

Since the questionnaires were standard and used in different research studies around the world, it showed its validity. The Cronbach Alpha Index reliability for MIS managerial styles and systems growth stages questionnaire was 81% and the reliability of users participation and satisfaction questionnaire was 86%.

Five hypotheses were provided as follows: 1) Users participation has effect on systems success in each MIS growth stage. 2) Managerial styles has effect on systems success on each MIS growth stage. 3) Managerial styles has effect on users participation in each MIS growth stage. 4) Managerial styles, users participation and systems success is different in different MIS growth stages. 5) Finally the relationship between managerial styles, users participation and systems success change over different MIS growth stages.

ANALYSIS

To investigate the first hypotheses, the data, which were gathered from users participation and IS end users satisfaction questionnaire, were used. The correlation co-efficient from data calculation showed users participation has effect only in the MIS development stage.

Table 3: Correlation Coefficient between User Participation and Systems Success over MIS Growth
Stages

Stages	Initiation	Development	Maturity	Totals
Correlation Coefficient	0/619	0/515*	0/340	0/532**

* CC is significant at 0/05 level.
** CC is significant at 0/01 level.
Source: Extracted from Statistical Computations.

The evaluation of the second hypotheses which data was gathered from managerial and users satisfaction questions showed that the managerial style does not have any effect on the systems success over any MIS growth stage.

Table 4: CC Between Managerial Styles and Systems Success in MIS Growth Stages

Stages	Initiation	Development	Maturity	Total
Managers Styles	H-O T-O	H-O T-O	H-O T-O	H-O T-O
Correlation Coefficient	0/094, -0/454	-0/247, -0/206	-0/057, -0/264	-0/080, -0/279

Source: Extracted from Statistical Computations.

The third hypotheses was evaluated from the data gathered from the managerial style and users participation questions. The resulting correlation coefficient from data gathered showed that the managerial style does not have any effect on the systems success over MIS growth stages.

Table 5: Correlation Coefficient between Managerial Styles and Users Participation over MIS
Growth Stages

Stages	Initiation	Development	Maturity	Total
Managerial Styles	H-O T-O	H-O T-O	H-O T-O	H-O T-O
Correlation Coefficient	-0/339, -0/268	-0/435*, -/203	-0/127, -0/01 3	-0/266, -0/178

* Correlation coefficient is significant at the 0/05 level.
Source: Extracted from Statistical Computations.

In order to evaluate the fourth hypotheses, the data was extracted from the leadership styles, users participation and users satisfaction questionnaires. Variance analysis on the data showed that the managerial styles, users participations and systems success over MIS growth stages were different.

Table 6: Variable Average Differences over Different Systems Growth Stages

Stages Variables	Initiation & Development	Initiation & Maturity	Development & Maturity
T-O Style	0/T1841	0/0514	0/1327
H-O Style	0/1515	0/4539*	0/3024*
U-P Style	0/4062	0/1687	0/2375
SS	0/2672	0/1664	0/4336*

* Correlation is significant at the 0/05 level.
Source: Extracted from Statistical Computation.

Finally, the fifth hypotheses was tested with the use of correlation coefficient for the relationships of managerial style, user participation, and user satisfaction.

A variance analysis on the correlation coefficient for variables were also performed and it showed that different relations between variables over different MIS growth stages prevailed.

A COMPARATIVE STUDY

An overall relational comparisons between managerial styles, users participation and systems success over MIS growth stages from data analysis shows that between managerial styles, user participation and systems success the following relations exist:
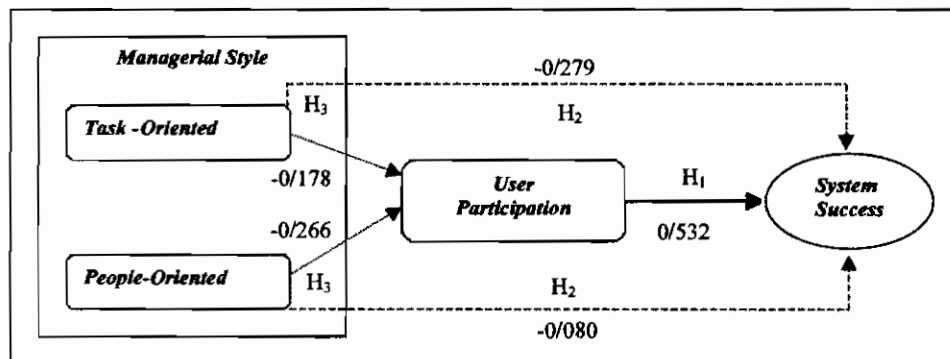

Figure 1: Correlation Analysis in General
Source: Extracted from Statistical Computation

As shown in Figure 1 regarding managerial styles, both task oriented and people oriented styles are not related to user participation and systems success. This result totally contradicts the work done by Lu and Wang. [14] Their calculations show that in general both people oriented and task oriented styles are significantly related to the user participation and MIS success. At the same time the present research shows a significantly positive relation between user participation and system success. The same results were reached by Lu and Wang. [14]

As shown in Figure 2, the calculation resulted so that task oriented and people oriented managerial styles were not correlated with user participation at the initiation stage. But people oriented managerial style is weakly correlated with system success. At the same time task oriented managerial style is not correlated with system success. This result totally contradicts the same research conducted by Lu and Wang. [14] Their calculations show that only the people oriented managerial style is correlated with user participation.
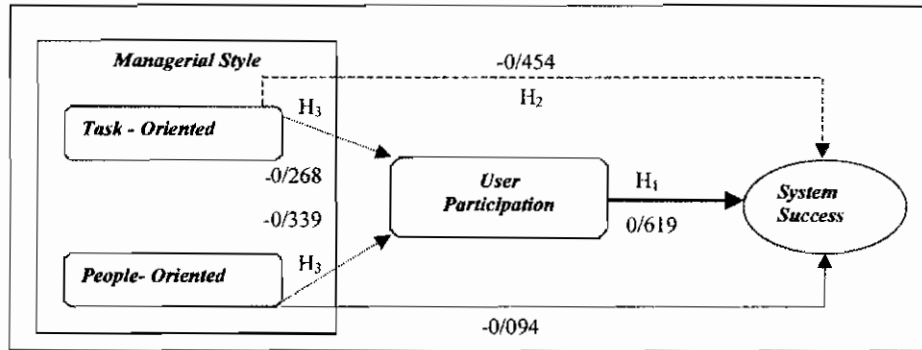

Figure 2: Correlation Analysis at the Initiation Stage
Source: Extracted from Statistical Computation

At the same time the present research shows that a strong statistical relations exist between user participation and systems success. This result is similar with the work conducted by Lu and Wang.

Figure 3 shows that in the development stage the task oriented and people oriented managerial styles are not positively correlated with the user participation. Also task oriented and people oriented managerial styles are not correlated with system success, while only user participation is positively correlated with the system success. The present results contradict the findings of Lu & Wang, [14] but agrees with them in that the user participation and systems success are positively correlated.
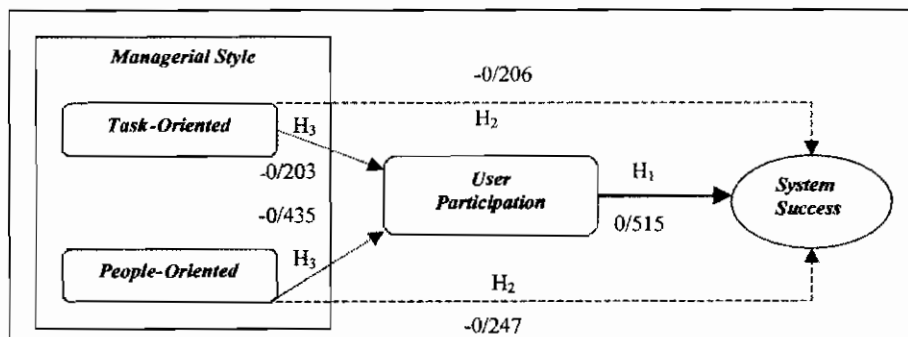

Figure 3: Correlation Analysis at the Developing Stage
Source: Extracted from Statistical Computations

At the Maturity Stage, as shown in Figure 4, the task oriented and people oriented managerial styles are not correlated with the user participation. At the same time, the task oriented and people oriented managerial styles are not correlated with the system
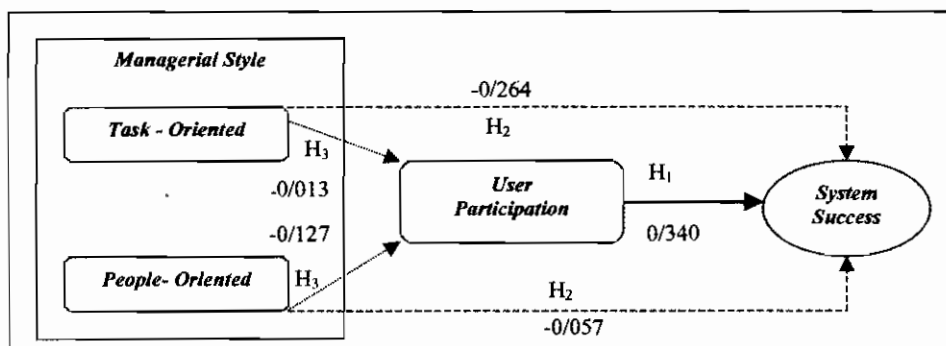
Figure 4: Correlation Analysis at the Maturity Stage
Source: Extracted from Statistical Computation.

success. The present results do not confirm with Lu and Wang, since they prove that there is a negative correlation between people oriented managerial style and user participation. However, there is a weak relation between the task oriented managerial style and user participation. At the same time a positive statistical relations exist between user participation and system success. Besides, Lu and Wang proved that there are positive statistical relations between people oriented and task oriented managerial styles and system success.

Specifically a comparison between the present results and that of Lu and Wang are summarized in Table 1 which clearly show that the last columns in the table which relates to user participation and system success, in both the present research and that of Lu &

Variables	T-O and U-P		P-O and U-P		T-O and S-S		P-O and S-S		U-P and S-S	
Authors / Stages	J&R	J&R	J&R	J&R	J&R	J&R	J&R	J&R	J&R	J&R
General	-0/178	+0/252	-0/266	+0/315	-0/279	+0/350	-0/080	+0/380	+0/532	+0/573
Initiation Stage	-0/268	+0/042	-0/339	+0/435	-0/454	+0/270	+0/094	+0/200	+0/619	+0/383
Development Stage	-0/203	+0/258	-0/435	+0/274	-0/206	+0/250	-0/247	+0/354	+0/515	+0/524
Maturity Stage	-0/013	+0/160	-0/127	-0/030	-0/264	+0/378	-0/057	+0/323	+0/340	+0/484

Source: Extracted from Research Analysis Stages and Lu & Wang Findings.

Wang [14] have similar conclusions. Also statistical relations between user participation and system success over all growth stages are positive. But other findings on overall growth stages do not confirm. A main question raised here is why is it so? Possibly the answer could be that we should look at cultural, political, social, economical, and managerial values in the two different statistical populations.

RESULTS

Although application of Lu and Wang [14] in Taiwan showed that managerial styles have

impact on user participations and systems success, but application of this model in our universe showed that managerial styles of MIS managers have no effect over MIS growth stages on user participation and systems success. At the same time other calculation results showed that although the relations between managerial styles, user participation and systems success change over different MIS growth stages, MIS managers do not change their managerial styles with changes over MIS growth stages. It could be said that the MIS managers of the six companies have not been able to use managerial style factors to raise the users participation and systems success.

The result of testing this model for explaining some ambiguities in previous research express the fact that user participation have impact over the MIS development stage. In other word, we are unable to say that users participation have effect over the systems different growth stages.

As some researchers see a clear relationship between users participation and systems success, there are similarities between Cavaye's [5] and Ives and Olson [10] findings. There are still doubts between users participation and systems success. Most recent researchers who have studied similar cases and find the dissimilarities between previous research findings, have emphasized the effects of contingency factors. These researchers recommend that before further research is conducted, it is better to identify the situational factors and then categorize them. This will give the opportunity to examine the contingency and situational factors by users participation on the systems success.

REFERENCES

[1] Alvanee, S. M. *Public Management*. Tehran: Neie Publishing Company, 1999.

[2] Barki, H., & Hartwick, J. "Rethinking the Concept of User Involvement," *MIS Quarterly*, 13(1), 59-82, 1989.

[3] _____ "Measuring User Participation, User Involvement, and User Attitude," *MIS Quarterly*, 18(1), 59-82, 1994.

[4] Bytheway, A. & et al., "Understanding User Perception of Information Systems Success," *Journal of Strategic Information Systems*, 6, 35-68, 1997.

[5] Cavaye, A.L.M. "User Participation in System Development Revisited," *Information and Management*, 28(5), 311-323, 1995.

[6] Chung, C. A. Humane Issues Influencing the Successful Implementation of Advanced Manufacturing Technology, *Journal of Engineering and Technology Management*, 13(3), 283-289, 1996.

[7] Deetz, S. & et. al. *Leading Organizations through Transition*. New Delhi: Sage Publications, 2000.

[8] Doll, W. J. and Torkzadeh, G. "The Measurement of End-User Computing Satisfaction,"

MIS Quarterly, 12(2), 259-273, 1994.

[9] Doll, W. J. & Torkzadeh, G. "The Measurement of End-User Software Involvement," *OMEGA,* 18(4), 399-406.

[10] Ives, B. and Olson, M. "User Involvement and MIS Success: A Review of Research," *Management Science,* 30(5), 586-603.

[11] Jamshidian, M. and Dalvee, M. R. *Organization & Management: Concepts, Principles, Processes, Theories and Applications.* Tehran: Simin Publisher, 2003.

[12] Li, E.Y. and Rogers, J.C. "An Information Systems Profile of US Companies," *Information And Management,* 2, 19-36, 1991.

[13] Lin, W.T. and Shao, B.B.M. "The Relationship between User Participation and System Success: A Simultaneous Contingency Approach," *Information and Management,* 37, 283-295, 2000.

[14] Lu, H.P. and Wang, J.Y. "The Relationship between Management Styles, User Participation and System Success over MIS Growth Stages," *Information and Management,* 32, 203-213, 1997.

[15] Mckeen, J.D. and et. al. "The Relationships between User Participation and User Satisfaction: An Investigation of Four Contingency Factors," *MIS Quarterly,* 18(4), 427-451, 1994.

[16] Mckeen, J.D. and Guimaraes, T. "Successful Strategies for User Participation in Systems Development," *Journal of Management Information Systems,* 14(2), 133-151, 1997.

[17] Momenee, H. *Management Information Systems.* Qom: Ettehad Publisher, 1994.

[18] Nolan, R. L. "Managing the Crisis in Data Processing," *Harvard Business Review,* 57(2), 115-126, 1979.

[19] Rahmanzadeh, M. "Mechanized Information Systems Stages," *Management,* 35, 38-41, 2000.

[20] Rezaee-Nejad A. *Management Information Systems.* Tehran: Resa Cultural Services, 1999.