

WORK SYSTEM, ORGANISATIONAL SUPPORT AND QUALITY OF WORK EXPERIENCES IN LARGE HOSPITALS

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ABSTRACT

Work system (WS) has received greater attention by the managers responsible for business strategy and equally the academicians for its research-proven remarkable success in highly competitive environment. However, there are still serious gaps in conceptualization, measurement and model building incorporating the promises of WS. Evidences also point to the fact that there is no standardized scale to measure WS per se. This study attempts to conceptualize and operationalize the concept, besides develop an instrument which could tap the essence of WS and lastly, partially test the relationships between WS, organizational support and quality of work experiences (QWE). One hundred ninety nursing staff from three large hospitals has responded to the questionnaire consisting of scales to measure WS and the outcomes of WS as stated above. Factor analysis suggests bi-dimensional structure of the concept namely WS-Initiated and WS-received. Type of organization, job level and type of department either has independent or combined effects on WS. Besides, moderated regression analysis shows that relationship between WS and quality of work life is moderated by organizational support. Implications are drawn for business strategy and future research directions.

Keywords: *Work System, Quality of Work Experience, Organizational Support System, Task Interdependence*

INTRODUCTION

Organizations meet the needs of the people, while directing the efforts of their members who work therein. These efforts are designed in an interdependent fashion or what is classically termed 'Work System'. Members receive and initiate complementary transactions while sharing information, decisions, resources etc. However, today, any deliberate attempts to ensure that such members are enabled to work better through various HR activities is a work system (Appelbaum *et al.*, 2000; Lawler III, 2005; Legge, 2005). Work systems (also referred to as highly involvement work system, high performance organizations in the literature) represent an organization design that has attracted the attention of both parishioners and researchers in the recent years. It is increasingly being recognized and used by Fortune 1000 companies (Harmon *et al.*, 2003). Work system is considered as a set of HRM practices confirmed to have positive impact on business organizations in plethora of research works (Chandrasekhar, 1997).

Conceptualization of work systems in view of research work is like any other conceptualization of HRM related concepts, very divergent from one author to another. Nadler, Gerstein & Shaw (1992) defined work systems as 'an organizational architecture that brings the congruence or 'fit' among them in order to produce high

performance in terms of effective response to customer requirements and other environmental demands and opportunities'. Huselid, Jackson & Schuler (1997) defined it as 'an internally consistent set of policies and practices that ensure that a firm's human capital contributes to the achievement of business objectives. Different researchers have alternative definitions of WS differently. Synthesized from previous studies, the characteristics of WS can be summarized as a work organization that provides employees with the opportunity to participate in decisions and human resources practices, that provides the workforce with the skills and Background incentives to participate effectively (Bailey and Merritt, 1992). According to MacDuffie (1995), three conditions must hold in order for innovative HRM practices to yield improved economic performance: (1) employees must have knowledge and skills, (2) HRM practices must motivate employees to use their knowledge and skills to contribute discretionary effort, and (3) discretionary effort must enable the firm to achieve its business or production strategy.

Quite a few studies have found positive effects of WS on HRM outcomes and company performance (e.g. Appelbaum *et al.*, 2000; Arthur, 1994; Becker and Huselid, 1998; Guthrie, 2001; Ichniowski *et al.*, 1997;

MacDuffie, 1995; Wood, 1999), although some found clear negative effects (Cappelli and Neumark, 2001).

LITERATURE REVIEW

The Present Study

As understood from the preceding section which presented an overview of some significant research works on WS, this study takes a complete digression from the perspective of conceptualization, operationalization and measurement of the concept of WS while relating it to the immediate outcomes of a good WS namely quality of work experiences. From the global perspective, WS has been viewed as various good HRM practices which provide meaningful experiences to the employees on one hand and quality of services to the customers. However, there are no evidences of conceptualizing WS as an exclusive concept and no evidences of evolving exclusive measures to tap the essence of WS. Thus, such a serious gap is addressed in this study. Firstly, the conceptualization is addressed. Secondly, the measurement details are presented and thirdly, the immediate outcome of WS namely quality of work experiences have been related empirically.

While conceptualizing work system as a broad concept, it is stated that this concept includes as many organizational concepts as the sub-systems that are created in the organization to facilitate goal-achieving. Since it was a difficult task to conceptualize it, this study confined the conceptualization from open systems theory point of view. This has facilitated in creating the boundaries of work system as the initiation of work on one hand and the receiving of work on the other in the system by its constituents. Initiation is the input of work whereas the output is received by another individual in the system. Thus, initiating and receiving of work were taken as the extremes of work system or otherwise known as input and output components of a work flow.

Further, it is suggested that every open system's concept has a set of interrelating components in a network which are deliberately created to achieve the purpose for which that system is created. Thus, a work system, as an open systems concept, also has interrelationship between the initiation of work and the receiving of work, thereby creating interdependence between two people who are involved in such simple work system (Kiggundu, 1983; Ashforth, 1985).

Interdependence, a centrality of work system, was selected as the major independent variable for this study. Further, this variable was treated as bi-dimensional via., initiated interdependence and received interdependence,

based on suggestions made by Kiggundu (1983). Each dimension was assumed to have three sub- dimensions namely, scope, resources and criticality.

Quality of Work Experience

The basic premise of these studies was that creating a working environment that supports internal and external needs and expectations leads to higher firm performance. The underlying themes or principles of WS are as follows: Employees shared timely and accurate information about business performance, plans and strategies in a rapidly changing environment. They need to learn continuously to support the organization's needs. Performance-reward linkage aligns employees' intention and behaviors with the needs of the firm help them engage in activities that are mutually beneficial to themselves and the organization.

High involvement or participatory systems contribute to a knowledgeable, highly skilled, motivated and loyal workforce. Under this system, staff members work together in teams to share common experiences, act responsibly and exert discretionary effort. Such efforts enable the firm to achieve its goals and enhance its performance. There is convincing evidence that employee involvement in decision making produces a positive effect on employee productivity (Lawler *et al.*, 1995; Pil and MacDuffie, 1996; Wood, 1996). A participatory work organization is accompanied by a complementary set of HRM practices that enhances the skill sets of employees and provides incentives for discretionary effort.

Literature survey on interdependence revealed that it influences negatively on the people's work lives. Kiggundu (1983) suggested that initiated interdependence will yield positive relationships with affective work outcomes since the initiator of the work, experiences a sense of accomplishment by giving off his output to others. He further suggested that received interdependence will have negative relationship with affective work outcomes because any received work system interdependence may create feelings of burdensome, responsibility and accountability, over and above the risk of losing job.

With this premises, it was assumed that there exists a positive relationship between initiated work system interdependence and quality of work experience, whereas a negative relationship between received work system interdependence and quality of work experience.

Organizational Support

The role of perceived organizational support as moderator of relationships between work system

interdependences and quality of work experiences is also rationalized based on studies which supported that POS will be very useful in either neutralizing or reducing the negative or deleterious effects of work on people's work lives.

In the literature on organizational studies, support systems were of more helpful in providing moderating effects on the relationships between positive and negative concepts. Using such standard approach to the understanding of moderating effects of support variables, in this study it is playing a mediating role between the HPSW and the QWE variables.

Objectives and Hypotheses

To study the characteristics of work system interdependences which include dimensions like initiated and received work system interdependences viz., scope, criticality, and resources as subdimensions, perceived by nursing personnel according to different types of ownership of hospitals, work-units and job-levels.

To assess the relationships between work system interdependences and quality of work experiences perceived by the nursing personnel.

It is hypothesized that the type of organization, type of unit and job level will not have main and interaction effects on the perceived work system interdependence. The relationships between work system interdependences and perceived quality of work experiences are moderated by the perceived organizational support.

RESEARCH METHODOLOGY

A 3x2x2 design was adopted in selecting the samples of this study. This has resulted in three large hospitals namely, government hospital, university hospital and corporate hospital; 2 organizational units namely, intensive care unit and general care unit and; 2 job levels namely, supervisory level and staff level. A sample of 140 staff out of 150 and 59 supervisory nurses out of 75 responded to the structured questionnaire administered to them. Thus, the total sample was 199.

Measuring instruments utilized in the study are by using Kiggundu's (1983) conceptualization, interdependences scales were developed to measure work system interdependences. Caplan & Jones (1975) scale to measure POS was adapted by incorporating few more items to make it more reliable since pilot study could not yield greater reliability coefficients. These scales were factor analyzed. A scale to measure intrinsic quality of work experience and extrinsic quality of work experiences were specially developed

Chandrasekhar (1997).

RESULTS AND DISCUSSION

The results of the study are presented in several sections. The reliability estimates (item analysis and alpha coefficient) and the factor analysis of the WS scale items are presented as it forms the primary objective of the study. Secondly, interaction effects of variables like type of organization (A), type of unit (B), and job level (C) on the WS scores are presented. Thirdly, the moderation of relationship between WS and the QWE by organizational support variables has been presented.

Estimates of Reliability and Factor Analysis

An estimate of internal consistency was computed for each of the two factors and the total inventory for each of the two factors and the total inventory. Further, each factor was split into three sub dimensions as suggested by Kigundoo (1983) namely 'scope' 'resources' and 'criticality'. The internal consistency was calculated for them also. The results are presented in table 1.

Table 1: Reliability and Factor Analysis of Work System Interdependences Scales

Items	Item-part r	Factor loadings for factor I	Items	Items-part r	Factor Loadings for factor II
1	0.3577	0.6641	16	-0.3041	0.6214
2	0.5254	0.4715	17	0.4235	0.7347
3	0.4558	0.7124	18	0.2616	0.8261
4	0.3466	0.8377	19	0.7387	0.8682
5	0.5256	0.4620	20	0.6754	0.7530
6	0.5073	0.7016	21	0.7693	0.5059
7	0.2653	0.6280	22	0.7241	0.6814
8	0.6201	0.6825	23	-0.2473	0.5472
9	0.6812	0.7226	24	0.4938	0.6181
10	0.5410	0.8564	25	0.2148	-0.6775
11	0.6811	0.7503			
12	0.6419	0.7238			
13	0.5743	0.6970			
14	0.2502	0.4437			
15	0.3746	0.8249			
Eigen values		6.02			3.32
% of variance		35.5			33.3
Coefficient	0.7511			0.6706	

interdependence (IWSI) ($\alpha=0.7511$), scope-ISC ($\alpha=0.5267$); resources-IRE ($\alpha=0.7849$); criticality-ICR ($\alpha=0.5214$). Regarding receive work system interdependence (RWSI), scope- RSC ($\alpha=0.6380$); resources-RRE ($\alpha=0.5425$); criticality-RCR ($\alpha=0.4332$). The total work system interdependence (TWSI) ($\alpha=0.6706$). All these results support the internal consistency of both the scales.

Interaction Effects on Initiated Work System Interdependence

Table 2 presents the main effects of type of organization (A), type of unit (B), and job level (C) and their interactive effects on IWSI scores obtained by the respondents.

Table 2: Summaries Of 3x2x2 Factorial ANOVAs Performed on Scores of Measures of Initiated Work System Interdependence Variables

Dimensions of Initiated work System Interdependence	Source	df	Mean squares	F-ratio
Scope	Organization type (A)	2	64.98	6.300*
	Unit Type (B)	1	80.55	7.810*
	Job Level (C)	1	48.34	4.687@
	Interaction (AxB)	2	7.88	0.765
	Interaction (AxC)	2	107.92	10.464*
	Interaction (BxC)	1	14.82	01.438
	Interaction (AxBxC)	2	48.23	4.677*
	Error	187	10.31	
Criticality	Organization type (A)	2	04.91	0.76
	Unit Type (B)	1	63.17	9.78*
	Job Level (C)	1	66.92	10.36*
	Interaction (AxB)	2	1.11	0.17
	Interaction (AxC)	2	1.62	0.25
	Interaction (BxC)	1	74.73	11.57*
	Interaction (AxBxC)	2	0.41	0.06
	Error	187	6.45	
Resources	Organization type (A)	2	04.08	0.13
	Unit Type (B)	1	114.30	3.90@
	Job Level (C)	1	497.21	16.97*
	Interaction (AxB)	2	15.03	0.51
	Interaction (AxC)	2	18.71	0.63
	Interaction (BxC)	1	404.24	13.80*
	Interaction (AxBxC)	2	79.20	2.70
	Error	187	29.28	

Initiated work system inter-dependence	Organization type (A)	2	144.25	1.72
	Unit Type (B)	1	942.45	11.29*
	Job Level (C)	1	1344.52	16.11*
	Interaction (AxB)	2	56.56	0.67
	Interaction (AxC)	2	133.77	1.60
	Interaction (BxC)	1	1032.66	12.37*
	Interaction (AxBxC)	2	55.48	0.66
	Error	187	83.42	

$P < 0.01$; @ $P < 0.05$ Source: Primary data

The summaries of ANOVAs given in table 2 show that type of organization did not have a significant main effect on any of the IWSI variables except for the scope. Whereas, type of unit had a significant main effect on all the IWSI variables. Similarly, job level also had a significant main effect on all the IWSI variables.

Regarding 2-way interaction effects, the interaction term 'AxB' did not have a significant interactive effect on any dimensions of IWSI, whereas AxC did have a significant interactive effect on scope. On the other hand, BxC had significant interactive effect on all the dimensions of and overall scores IWSI except on scope of IWSI. This means that the effects of type of organization on IWSI depends upon job level.

Lastly, AxBxC interactive term had a significant interactive effect on scope of IWSI only, but not on another dimension of and overall score on IWSI.

Interaction Effects on Received Work System Interdependence

Table 3 presents the main and interactive effects of type of organization (A), type of unit (B) and, job level (C) on RWSI scores obtained by the participants of this study.

Table 3: Summaries of 3x2x2 Factorial ANOVAs Performed on Scores of Measures of Received Work System Interdependence Variables

Received Work System Interdependence	Source	df	Mean squares	F-ratio
Scope	Organization type (A)	2	6.03	0.49
	Unit Type (B)	1	1.84	0.15
	Job Level (C)	1	115.59	9.47*
	Interaction (AxB)	2	28.20	2.31
	Interaction (AxC)	2	16.35	1.34
	Interaction (BxC)	1	28.09	2.30
	Interaction (AxBxC)	2	15.56	1.27
	Error	187	12.19	

Criticality	Organization type (A)	2	22.49	5.45@
	Unit Type (B)	1	0.04	0.01
	Job Level (C)	1	10.88	2.61
	Interaction (AxB)	2	0.07	0.01
	Interaction (AxC)	2	01.62	0.39
	Interaction (BxC)	1	02.38	0.57
	Interaction (AxBxC)	2	07.98	1.93
	Error	187	04.12	
Resources	Organization type (A)	2	121.73	3.04@
	Unit Type (B)	1	13.25	0.33
	Job Level (C)	1	07.85	0.19
	Interaction (AxB)	2	161.16	4.02*
	Interaction (AxC)	2	05.81	0.14
	Interaction (BxC)	1	60.63	1.51
	Interaction (AxBxC)	2	50.80	1.26
	Error	187	40.04	
Received work system interdependence	Organization type (A)	2	210.14	3.31@
	Unit Type (B)	1	6.26	0.99
	Job Level (C)	1	01.05	0.01
	Interaction (AxB)	2	270.98	4.26@
	Interaction (AxC)	2	113.84	1.79
	Interaction (BxC)	1	479.98	7.56*
	Interaction (AxBxC)	2	29.66	0.46
	Error	187	63.48	

$P < 0.01$; @ $P < 0.05$ Source: Primary data

The summaries of ANOVAs given in table 3 show that type of organization had a significant main effect on all the dimensions of and overall score on RWSI scale, except on scope. The type of unit did not have a significant main effect on any of the RWSI dimensions. Similarly, so with job level, but it had a significant main effect on scope only.

A 2-way interaction term 'AxB' yielded significant interactive effects on resources and overall scores on RWSI scale only. The AxC interaction term did not have a significant effect on dimensions of RWSI. Interestingly, BxC interaction term did yield a significant interactive effect on overall RWSI. This means, the effect of type of unit on RWSI depends on job-level of the participants. The 3-way interaction term of AxBxC did not have any significant interactive effect on the dimensions of RWSI.

Organizational Support as Moderator of Relationships Between HPSW and QWE

In order to find out the status of QWE in relation to work system interdependences influenced by organizational support, moderated regression analyses were carried out. Here, the scores on each independent variable were multiplied by the scores on organizational support scale obtained by the participants for the sake of developing moderated regression equations. The results are presented in table 4.

Table 4: Moderated Regression Analysis Results

Sl. no	Variables	IQWE		EQWE		TQWE	
		Adj.R2	B T	Adj.R2	B T	Adj.R2	B T
1.	IWS x POS	0.512	0.717 14.46**	0.495	0.705 13.971**	0.579	0.762 16.538**
2.	RWS x POS	0.512	0.717 14.46**	0.488	0.700 13.781**	0.390	0.627 11.306**
3.	TWS x POS	0.382	0.620 11.11**	0.566	0.753 6.108**	0.550	0.743 15.609**

** $P < 0.0000$ Source: Primary Data

Intrinsic Quality of Work Experience

Regarding IQWE, the IWS x POS has a strongest relationship with ($\beta = .717$, $P < .0000$), predicting to the extent of 51.2 percent of variance in IQWE. This means, that POS influence is quite substantial on the relationship between IWS and TWS. In other words, the presence of POS scores has improved 7.6 percent of variance more in IQWE than the percentage of variance explained by IWS alone as presented in 4.

Interestingly, the RWS x POS, has a stronger relationship with IQWE ($\beta = .460$, $P < .0000$), predicting to the extent of 20.7 percent of variance in IQWE. In other words, the RWS along with POS has improved the percentage of variance explained in IQWE by 11.9 percent as against its individual contribution of 8.8 percent indicated in 6.82.

Extrinsic Quality of Work Experiences

Regarding EQWE, IWS scores in combination with POS scores has a stronger relationship with ($\beta = 0.705$, $P < 0.0000$), predicting to the extent of 49.5 percent of variance in EQWE. In other words, it could be said that the variance explained by IWS x POS has improved by 27.2 percent as against its individual contribution of 22.3 percent. This amount of variance explained by the combination of IWS and POS is quite immense which further reveals that POS did influence the relationship between IWS and EQWE positively.

A similar trend was also observed regarding the RWS and POS combination of scores. That is, both the variables could have stronger relationship with EQWE ($\beta = 0.700$, $P < 0.0000$), predicting 48.8 percent of variance in EQWE. In other words, the variance explained by the combination of both variables is 22.7 times more than the variance explained by RWS alone as indicated in table 4.

Lastly, the total work system interdependence scores in combination with POS scores had a strongest relationship comparatively ($\beta = 0.753$, $P < 0.0000$), explaining to the extent of 56.6 percent of variance in EQWE. In other words, the percentage of variance

explained by both the variables together is 21.7 times more than the percentage of variance explained by TWS alone as indicated in table 6.29. It could be concluded that the moderating influence of POS scores on the relationship between TWS and EQWE perceived by the participants is quite substantial and positive.

DISCUSSION

The factor analysis established the bi-dimensional structure of the WS scale. These are Initiated interdependence of WS and received interdependence of WS. Further the reliability of the two scales were sufficiently established in this study, declaring them dependable for future.

The 1st hypothesis had received some support. About initiated work system interdependence, only type of organization and job level together as 2-way interaction term had a significant interaction effect on it. The 3-way interaction term failed in yielding significant effect on this variable. Regarding received work system interdependence, the two 2-way interaction terms namely, (i) type of organization and type of unit, and (ii) type of organization and job level had significant interaction effect on this variable. The 3-way interaction term failed to reveal its significant effect on this variable. Regarding total work system interdependence, all the 2-way interaction terms had significant effects on the variable. The 3-way interaction term failed to yield significant main interaction effect on the variable. Regarding quality of work experiences and perceived organizational support, neither the 2-way interaction terms nor the 3-way interaction term yielded significant interaction effect on these variables.

Thus, the 2nd hypothesis that “the relationships between work system interdependences and perceived quality of work experiences are moderated by the perceived organizational support” has been well accepted. Unlike the western studies (Aneshensal & Stone, 1982; Blau, 1981; Ganellen & Blaney, 1984; Lin, Simeone, Ensel & Kuo, 1979; Turner, 1981) which have failed to reveal the moderating effects of perceived organizational support, this study fully confirmed that POS is a real moderator of relationships between work system interdependences and quality of work experiences.

What do these results convey from practice point of view? A good WS planned properly has a greater advantage from the perspectives of ensuring meaningful work experiences for the employees on one hand and quality of services for the clients on the other hand. Further, work system should also be designed while arranging for more organizational support available for

the employees to enable them to experience more quality of work as they perform their jobs.

Secondly, area of interest concerns the debate in the literature as to what the other dimensions of work system are, since it is a very broad concept. For instance, Overton *et al.*, (1977) found that there are many work technological variables that are loaded on task interdependence. Overtone *et al.*, (1977) also suggested that there can be a study to report the relationships between work system interdependence dimensions and the technological variables.

Thirdly, an approach may be developed to arrive at a more comprehensive conceptual framework which explores the relationships between work system interdependences and hierarchical communications and interpersonal relationships among the system members. This may be due to the reason that the work flow component of work system may produce many direct effects on the communication patterns and the relationships in the organizations.

Fourthly, there is a further need for reassessing the relationships between work system interdependences and quality of work experiences and to examine the effects of moderating variables. For instance, organizational support may be studied from two approaches namely, structural and functional. Since, functional support is popularly accepted for its positive connotations, it may be classified further as instrumental, emotional or informational (Thoits, 1986) and assess their moderating effects. Cohen & Wills (1985) identified four forms of social support namely: self-esteem support, appraisal support, belonging support and tangible support. All these types of support from several constituents may be studied in relation to the work system and quality of work experiences.

CONCLUSION

The concept of work system interdependence may be extended beyond the level of individual to the level of the departments/units/teams in the hospitals. Cross-functional analysis of interdependence among different professionals, line and staff levels may also bring out interesting findings. This is supported in view of the distinct characteristics of line and staff functions in hospitals. For instance, the line in the hospital comprises of highly qualified, experienced and reputed professionals unlike the line in the manufacturing organizations, where the staff consists of qualified persons.

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