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RESEARCH ARTICLE

Cooperative versus Controlled Culture and Knowledge Transfer

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Abstract

This article investigate the relationship between the organizational culture and the willingness to transfer knowledge, where knowledge sharing appears to be influenced by the individualistic or cooperative nature of the culture. Differences in context between the source and destination of knowledge will challenge knowledge transfer activities, which requires deeper understandings of socialization activities and management policies that influence knowledge transfer among people. Organisations need to encourage the notion that the quality of ideas is more important than the status of source. This article offers an empirical investigation to understand the conditions of culture of knowledge transfer using confirmatory factor analysis. It hypothesized a direct positive relationship between cooperative culture refers to as "*knowledge oriented culture (KOC) socialisation activities*" and controlled culture refers to as "*management practises*". Items representing the knowledge oriented culture (KOC) were developed from the findings of a wide review of literature regarding the most common frictions that inhabit and prevent knowledge transfer (KT). The main findings suggested that organisations should focus on and pay more to socialisation activities since it has more explanation powerful to organisation culture.

Keywords: *Controlled culture, Cooperative culture, Knowledge transfer, Structural equation modelling.*

Introduction

As a consequence of shifting into a knowledge-based economy, organisations need to develop the essential competencies to be able to effectively play a part in a working life that is primarily based on knowledge productivity. Certain organisations have more information than others and turning this into knowledge which gives them an advantage in ascertaining market inefficiencies, putting them in a superior position to innovate. Sveiby [1] argues that organisations are increasingly acknowledging that the keystone for their competitive advantage is their knowledge base. Nonaka [2] asserts that the successful organisations are those that continually create new knowledge, disseminate it extensively all over the organisation and rapidly embody it in new processes and products. For organisations to maintain a competitive advantage continuous innovation is needed. Innovation, as defined by Drucker [3] is the function of knowledge to create new knowledge. The innovation concept was broadened by leidner et al., [4] who stated that the existence of Innovative cultures within the organization will be helpful to conduct knowledge management activities, certainly knowledge creation, sharing and disseminating are the significant knowledge management activities. To that end, some academicians and practitioners argued that knowledge assets are more much crucial for competitive advantage, if not more than the physical and capital ones. In a global economy, knowledge may be a firm's finest competitive advantage [5]. That competitive advantage flows from the creation, ownership, and fortification and utilisation of difficult-to-imitate knowledge assets [6]. Organisations recognise the importance of knowledge as a key factor for prosperity and growth. Organisations use their own resources, human, financial and technological, to track, access, import and ultimately create knowledge. To conclude, knowledge is viewed by organisations as a source of competitive advantage, a corporate asset and/or agent of change. In a turbulent environment where everything is changing rapidly, technology changes on a daily base, products disappear and reappear in relatively no time, continuous innovation is required to keep up with these changes [7]. For such innovation to be sustained, knowledge is required.

Knowledge Transfer

Knowledge transfer is the process by which one unit of an organization, such as a group or department, is affected by the experience of another [8]. According to Argot [9] Knowledge transfer in organizations suggest itself through diverse

mechanisms, [10, 11] training [12] communication [13] observation [2] interactions with suppliers and customers (von Hippel, 1988. According to Tang et al., [14] the following factors influencing knowledge transfer in organizations: similarity between tasks [15] characteristics of the source of knowledge, the recipient, the context, and the knowledge itself [16] characteristics of individual member [17] characteristics of the social network [18] network structure [19] The importance of these factors can be recognized if it is known that knowledge transfer has two dimensions: Knowledge velocity which refers to the speed with which knowledge is transferred and Knowledge viscosity which refers to the richness of the knowledge transferred [20] From the above definitions and arguments it can be concluded that knowledge transfer is related to the effective readiness of people to live in a society, namely, affect and be affected by this society members (member-member and member-group relationships). In fact, this readiness will lead to an active communication with the others, leading to an improved cooperation which is an important attributes of the knowledge culture [4] This cooperation will yield knowledge at the team or community level, the knowledge that was considered by leinder et al. [4] as the most useful knowledge.

Differences in context between the source and destination of knowledge will challenge knowledge transfer which requires deeper consideration of the socialization and training process that affects knowledge transfer among people, this means that the member–member or the social network plays an important role in knowledge transfer [21,4] Management philosophers today consider knowledge and the ability to create knowledge to be the ultimate source of a firm's sustainable competitive advantage [22].

According to Cummings and Teng [14] four approaches are used to identify knowledge transfer success. The first approach defines transfer success as the number of knowledge transfers engaged in during a certain period of time [23] A second approach, defined a successful transfer as one that is on time, on budget, and produces a satisfied recipient [24] A third approach focused on the extent to which the knowledge is *re-created* in the recipient. A fourth approach defines transfer success as the extent to which a recipient obtains ownership of, commitment to, and satisfaction with the transferred knowledge, which was termed as knowledge internalization.

Knowledge Culture

In the above discussion it was asserted that knowledge transfer is related to the readiness to live in society, which in turn means the sense of belonging. By this sense the individuals seize feeling toward their community which leads to the inspiration that the community grows to be an essential characteristic of working arrangement, consequently, this will be an effective component of organizational culture [4] So there is a necessity for the willingness to transfer the knowledge to be cultural ingredient of the organisational culture. There is a relationship between the organizational culture and the willingness to transfer knowledge, for example, knowledge sharing appears to be influenced by the individualistic or cooperative nature of the culture, namely, individualistic cultures inhibit sharing, while cooperative cultures enable the creation of virtual communities [4] Within the same context, Baltahazard and Cooke [25] pointed out that the cultures emphasizing values related to encouragement are expected to have superior victory in knowledge management, this result was supported by Gold et al. [26] who asserted that the cultures that are characterized as encouraging organizational cultures positively influence the resulting KM practices. On the other hand, the organization culture may challenge knowledge management activities, for example, knowledge management outcomes may be restricted due to cooperative culture, which was concluded by considering the effect of organizational culture on knowledge sharing behaviours [23] Gold et al [26] focused on the influence of culture on the potential provided by knowledge management. Jarvenpaa and Staples [28] concluded that organizational culture which supports having a shared goal will end with a better knowledge sharing. Earley's [29] work on organizational culture emphasized the individualistic and collectivistic aspects of culture. Cultural socialization influences the communication patterns with and among learners [7, 26]. Even though tacit knowledge possessed by individuals in organisations cannot be codified and imitated by competitors easily [6] the mobility and idiosyncrasies of experts can be too demanding to assimilate into organisational culture effectively.

On the other hand, Argot and Ingram [8] claimed that in order for knowledge transfer to be successful, the knowledge reservoirs imported from one context must be well-matched with the receiving context. This involves expanding the knowledge transfer concept to be a cultural issue.
According to Ahmed et al., [31] culture is the principal determinant of knowledge management. They have indicated that it is not enough to simply deciding that the organisation should manage and practise knowledge activities but also organisation actions should create an environment that

facilitate knowledge sharing and transfer. Therefore, organisations should strive to create an environment that would make it simpler to convert tacit rules and knowledge into explicit knowledge Bhatt [32] and to be disseminated a cross the organisation. If the notion of knowledge culture as indicated by Ahmed et al., [31] is to be useful then its significance will be attained as long as the meaning of this term is understood. Before attempting to investigate deeper into the concept of knowledge culture (termed in this study as the culture of knowledge transfer), it is important to understand that knowledge culture has developed from wider concepts such as organisational or corporate culture. According to Davis corporate culture offers a contrast to the past rigidity of management models. He defines culture as the pattern of shared beliefs and values that give organisation members meaning, and provide them with the rules for behaviour in their organisation. Corporate culture can be also seen as the values, beliefs, norms, and traditions within an organisation that influence the behaviour of its members. There is a magnitude of definition of culture as Ahmed et. al., [31] indicated where most suggested culture is the pattern of arrangement or behaviour adapted by the group such as corporate and teams as an approved method of solving problems. From a learning perspective, generally, learning definitions of culture deal essentially with the way we act or the way we think [33]. A more widely recognised definition of culture was provided by Schein where he describes culture as a pattern of basic assumptions that a given group has created, discovered, or developed in learning to cope with its problems of external adaption and internal integration, and that have worked well enough to be considered valid and, hence, to be taught to new members as the appropriate way to perceive, think, and feel in relation to those problems. According to this definition, the core feature is that culture is taught to new members as the correct way to behave and to react to problems when they arise and, hence, support the organisational aim for survival and growth. Viewing culture as mental programming, Hofstede [34] defines culture as the collective programming of the mind, which distinguishes the members of one category of people from another.

According to [33] this definition stresses that culture:

- Is collective and not a characteristic of individuals (shared values);
- Is mental "software", therefore invisible and intangible as such;
- Is interesting only to the extent that it differentiates between categories of people

Knowledge Transfer Culture Attributes

Culture as either explicit or implicit as indicated by Ahmed et al., [31] Explicit culture represent the idiosyncratic patterns of behaviour by individuals and the specific artefacts they produce and live within, where implicit culture involves to the value, beliefs, and norms which reflect the observed patterns of behaviour resulted from the explicit culture. They have indicated that the strength of the culture relies in the proportion of members holding strongly to specific beliefs and standard of behaviour and the match between the implicit and explicit aspect of culture. According to Alkhaldi [7] knowledge culture can be considered as a key factor, the presence of such culture "*knowledge-friendly culture"* the process of knowledge creation will be most efficient and stronger. In a survey conducted by Davenport and Prusak [5] on the factors leading to knowledge project success, a *knowledge-friendly culture* was named the most consequential conditions. They propose that the knowledge friendly culture has different segments that have a positive orientation to knowledge. These segments can be viewed as:

- Employees are bright, free and willing to explore;
- Absences of inhibitors, (*e.g. employees, are not resentful to the organisation and they do not fear sharing their knowledge*);
- The fitness of knowledge management projects to the organisational knowledge culture.

They describe remedies for culture factors that inhabit knowledge transfer. Where there is lack of trust, they propose that the organisation should build relationships and trust through face-to-face meeting. This is also supported by [35,36]. According to Ahmed et al., [31] trust should be viewed from two dimensions, managers trusting employees to act in the organisation's best interest, and managers should act in a way that earn trust of their workforce. In the case of the existence of different cultures and frame of reference, a common motive should be created to overcome the diversity through education, teaming and job rotation. A place and time for knowledge transfer should be established [37,22,38,5] through fairs and talk rooms whenever the organisation senses there is a lack of time and meeting places. Organisations should provide incentives on the basis of sharing, not owning, knowledge [39]. Ahmed et al., [31] recognised the value of incentives in promoting knowledge sharing by emphasises on awards and rewards, it is the manner in which successes and failure are celebrated and rewarded, where ideas are valued, attention, support, and encourage-

ment from the top management, and a respect for the beginning ideas. According to Tang et. al., [14] it becomes evident that the ability of organizations to transfer knowledge influences positively its productivity and even its existence. When the organisation's ability to create knowledge and use it is weak, it should provide time for learning [27] and hire employees for their openness of ideas. According to Ahmed et. al., [31] the amount of time and training given to the employees to develop and share new ideas and new possibilities should be supported by key actions and features such as encouragement of lateral thinking and skill development, opportunity, time, promotions, and infrastructure (e.g. rooms, equipment, etc.). Whenever a belief arises among members that certain groups claim that they are the source of knowledge, the organisation should encourage the notion that the quality of ideas is more important than the status of source. Finally, an organisation should expand the horizon of intolerance by accepting and rewarding the creative errors and collaboration [39]. Adopting this action by the top management will extend the degree of which individuals are given the latitude in defining and executing their own ideas and work, leading to more freedom to experiment, challenging the status quo, freedom to try and fail [31] Effective knowledge management requires a supportive, collaborative culture and exclusion of traditional rivalries which means that organisation must assume the basic level of contemporary organisational skills, such as collaborative work, effective listening, and using problem-solving paradigms [27].

Research Model

Based on the above discussion conceptual model was developed, see table 1, to investigate the possible relation between the knowledge transfer cultural and the nature of organisational culture whether it can be classified under cooperative culture where the individual is the actor the motivator , or whether the controlled culture can has the lead impact in determining the behaviours and the actions of individuals as a consequences of culture of knowledge sharing as
govern by a management policies. Items of the proposed research model are listed in table 3, 4. It is hypothesised that *all factors should have a direct positive impact on the organisational knowledge culture whether the motives is purely from the cooperative nature of the individual (SOC) or as a result of enforced controlled culture as in a form of management policies (MOC).* No hypotheses were claimed to the nature and the strength of impact from either side, or it was left to be revelled as results of the investigative part of this research.

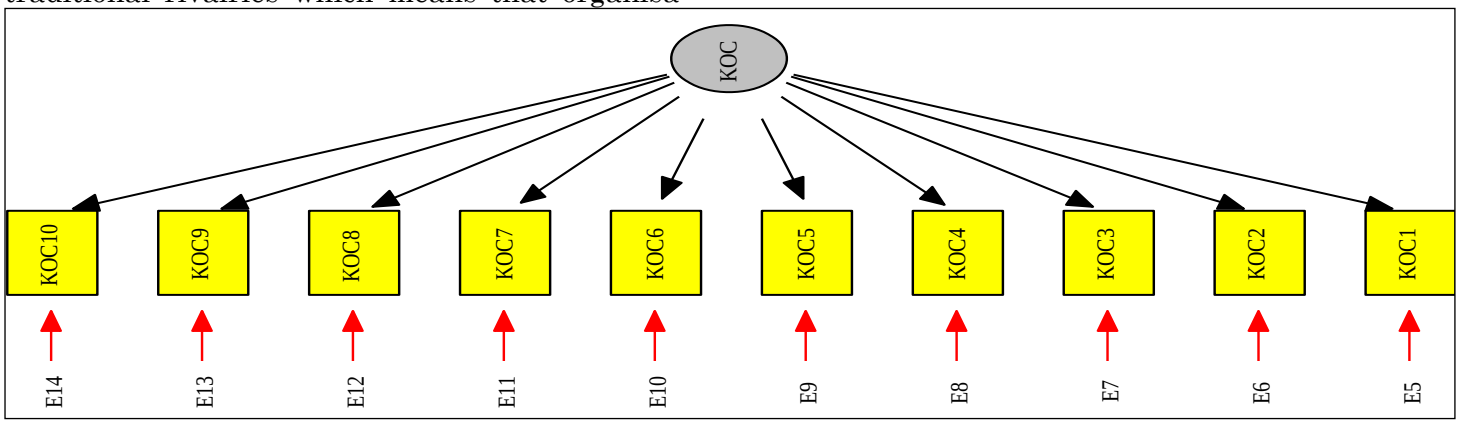

Fig. 1: The hypothesised model of the knowledge oriented culture (koc)

To accomplish the objectives of this study, a quantitative approach was adopted. Attributes representing the knowledge oriented culture (KOC) were developed from a wide review of literature as described in pervious sections, regarding the most common frictions that inhabit and prevent knowledge transfer (KT) see tables 3, and 4. The recommendations to overcome inhibitors of KT were taken and developed into

items that reflect the aspect of KOC. All items were analysed based on a score of the extent of practice. Each attribute of the scale was assessed on a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree. Prior to the distributions of the final version of the questionnaire, pre-testing stages and a pilot work for validating the survey instrument were performed.
The questionnaire was administrated largely to middle managers, the pre-test administered to two banks showed a Cronbach's alpha value of 0.82, indicating the reliability of the scale. Content validity was ensured through an extensive review of the literature. The result of the non-response bias test also revealed no significant difference between those who responded and those who choose not to participate in the study.

Research Methods

Survey and Procedure

Data were collected from 14 UK banks in, questionnaires were distributed to a total of 402 respondents via a bank contact person. They were free to answer the questionnaire anonymously. Of the 402, 102 completed questionnaires (25%) were retained and analyzed. The value of Cronbach's alpha was 0.88 which indicated a good internal consistency of the developed scale. In addition to the sample size requirement, there were two basic assumptions to be met for factor analysis: normality and correlation among variables. Skewness and kurtosis indicators were used to test the normality assumption, and it verified that all variables tested in this study were all normally distributed. Both the Bartlett test of sphericity (416.72 at p=.000) and the Kaiser–Meyer–Olkin measure of sampling adequacy (KMO = 0.889) indicated that there were sufficient inter-item correlations within the data for performing factor analysis

Sample Characteristics

The respondents' average age was 38 years ranging from 23 to 55 and they have been at the present job for an average of 2.9 years but demonstrate an immense variation, ranging from 2 months to 12 years. The most frequent number of decision levels from the final approval was reported as 1 or 2 levels (63.7%) and the next frequent was 3 or 4 level (16.7%). Most of the respondents' titles were managers 62.7%, and the next frequent position was senior managers 9.8%. The most frequent number of involvement in project innovation was 1-5 projects, which constitutes 35.3%. The next frequent number of involvement was more than a 15 projects, which represent 33.3%. The most frequent level of education was reported as postgraduate degree, 39.2% and the next frequent level of education was Bachelor's degree at 32.4%. Approximately 72% were line managers, mostly in marketing and sales, and product development departments, and the remaining were engaged in accounting and finance, information technology and customer services.

Data Analysis

Confirmatory Factor Analysis

To confirm the factor structure, the researcher conducted CFA using EQS 6.1. Several indices are available to express the fit to the underlying data. The most commonly used indices are Chi-square, Root Mean Square Error of Approximation (RMSEA), Goodness-of-fit Index (GFI), Adjust Goodness-of-fit Index (AGFI), and Comparative Fit Index (CFI) as in table 1. The two-step approach was adopted for examining the measurement model and following the structural model. In the measurement model, the hypothesized relationship between the 10 knowledge culture attributes and the two first-order factors were examined to determine how well the relationships fit the data. In the structural model, the focus was on the relationship between the two first-order latent factors-SOC and MOC and one second-order latent factor.

Second-order CFA involved the evaluation of the relationship between the two first-order factors (SOC and MOC) and a second-order factor (KOC). In other words, the structure model examined how the two cultural value factors contributed to an overall knowledge culture construct. The results of the structural model generated a non-significant χ^2 value of 31.3 (p=0.50), which indicated that the data fit the model very well. Other fit indices revealed similar results (RMSEA=.00; CFI=1.00; GFI=.94), see table 1. The beta coefficients represent the regression of exogenous factors (KOC) on endogenous factors (SOC, and MOC). As is shown in Fig. 2, "SOC" has the highest beta coefficient (beta=.90). This indicates that, for cooperative "socially" oriented culture, SOC can explain more variance in knowledge culture than the controlled "management policies" oriented culture. Thus, it was concluded that managers should be more concerned about SOC practices than about the MOC aspects. Assessing the fit of individual parameters in a model was performed by determining the viability of their estimated values. The completely standardized factor loadings for each indicator are listed in Table 2 and 3. The results showed that all loadings in the model were significant (t-value >1.96), and the indicators loaded very well on their respective factors. Since all items were loaded on their designated factors, and were substantially explained by latent factors, it was concluded that the relationships between the KOC attributes and the two latent factors were confirmed by the data and thus the hypothesized model was accepted.

Table 1: Summary of the goodness of fit for the CFA and reliability tests

Goodness of fit Measures						**Reliability tests**
	X^2	GFI	RMSEA	TLI	CFI	*Alfa*
Acceptance level	N/A	>0.85	Significate at 0.05	>0.90	>0.90	>0.60
KOC	31.3,P=0.50	0.94	0.00	1.00	1.00	0.88

X^2, Chi-square; GFI, Goodness-of-fit index; RMSEA, Root-mean-square error of approximation; TLI, Tucker-Lewis fit index; CFI, Comparative fit index; C.A., Cronbach's Alpha

Findings of the Direct Relationship

The review of the hypothesised model as in figure1 and the resulted model as in figure 2, reveals an accepted *t*-value of the completely standardised coefficient of both KOC → SOC and KOC → MOC. The structural model was estimated with three latent variables (KOC, SOC and MOC), and two paths. The structural equation fit of the endogenous construct is as follows (see table 2).

- The coefficient of determination R^2 of the OC (regression path: SOC →KOC) = 0.78 shows that 78% of the total variance in OC construct was accounted for by the SOC.

- The coefficient of determination R^2 of the OC (regression path: MOC →KOC) = 0.71 shows that 71% of the total variance in OC construct was accounted for by the SOC.

Table 2: Knowledge oriented culture direct relationship

KOC Constructs	β;(T_{test})	R^2
KOC= ±β *f*(MOC)	0.82;(4.46)	0.78
KOC= ±β *f*(SOC)	0.90; (N/A)	0.71

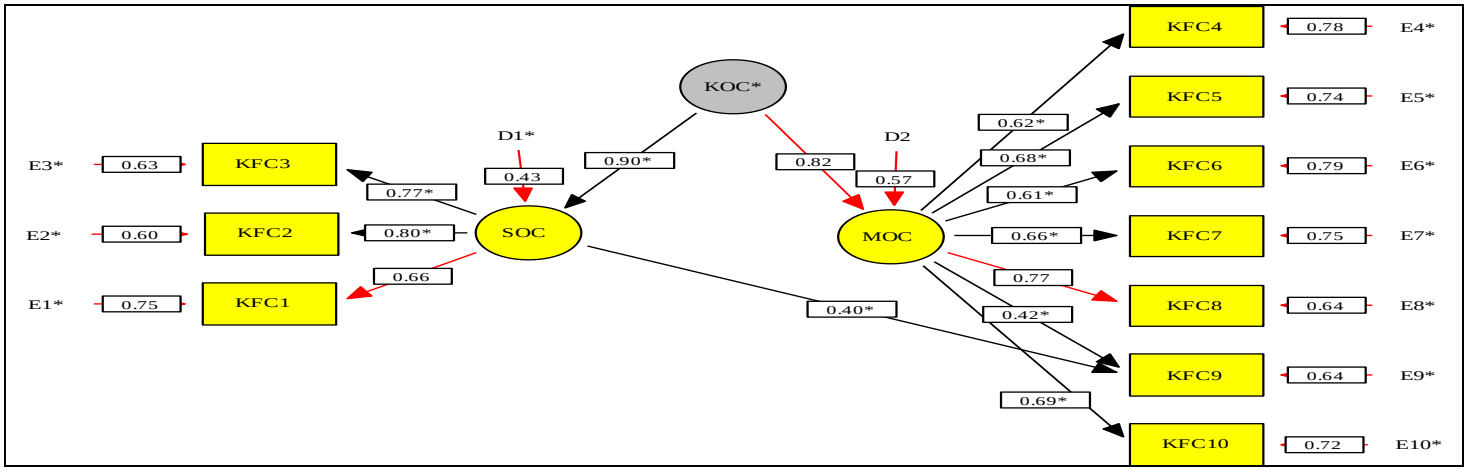

Figure 2: Second order confirmatory factor analysis results for the KOC construct

SOC *f* (KOC): a significant relationship (beta = 0.90) with T_{test} value =4.46 was found between KOC and SOC. This indicates that social oriented culture which is centred around encouraging building relationships and trust through face-to-face meetings providing time for learning, supporting establishing common ground through education, discussion, publication, teaming, and job rotation, supporting establishing time and space for knowledge transfer through fairs, talk room, and conference reports, has an independent effects on knowledge oriented culture. The findings of this model revealed that hypothesis, which predicts a direct positive relationship between KOC and SOC was not rejected. The statistics on the hypothesised relationship are presented in table 3.

MOC *f* (KOC): a significant relationship (beta = 0.82) was found between KOC and MOC. This indicates that management oriented culture which is centred on accepting and rewarding creative error and collaboration, evaluating individual's performance and provide incentives based on sharing knowledge, educating employees for flexibility, encouraging a non-hierarchical approach to knowledge. i.e. knowledge is appreciated no matter the hierarchical-level of the source, conveying the vision regarding what kind of knowledge should be developed, hiring for openness of ideas has an independent effects on knowledge oriented culture. The findings of this model revealed that hypothesis H1b, which predicts a direct positive relationship between KOC and MOC was not rejected.

The statistics on the hypothesised relationship are presented in table 4.

Findings of Indirect Relationships

- KOC's *f* (SOC=*f* KOC 1, 2, 3, and 9): a significant relationship where beta ranges from (0.56-0.71) where t_{test} ranges from 4.46-6.46 and the coefficient of determination (R^2) ranges from (0.44-0.65). This indicates that the factors constitute the cooperative cultural oriented "social" activities has an independent effect on knowledge oriented culture.

- KOC's *f* (MOC=*f* KOC 4-10): a significant relationship where beta ranges from (0.54-0.71) where T_{test} ranges from 6.02-6.90 and the coefficient of determination (R^2) ranges from (0.39-0.60). This indicates that the factors constitute culturally oriented management practices has an independent effects on knowledge oriented culture

Table 3:Cooperative "Socialisation" Culture (SOC) direct and indirect relationship

Label	Item	β:SOC;(T_{test})	β :KOC;(T_{test})	R^2
KOC1	My organisation encourages building relationships and trust through face-to-face meetings.	0.66; (N/A)	0.56;(4.46)	0.44
KOC2	My organisation supports establishing common ground through education, discussion, publication, teaming, and job rotation	0.81;(6.47)	0.68;(4.91)	0.65
KOC3	My organisation supports establishing time and space for knowledge transfer through fairs, talk room, and conference reports.	0.77;(6.33)	0.65;(4.82)	0.60
KOC9	My organisation provides time for learning	0.40;(2.73)	0.71;(6.46)	0.59

Table 4: Controlled "Management Policies" oriented culture direct and indirect relationship

Label	Item	β:MOC;(T_{test})	β :KOC;(T_{test})	R^2
KOC4	In my organisation management evaluate individual's performance and provide incentives based on sharing knowledge.	0.62;(6.02)	0.55;(6.02)	0.39
KOC5	My organisation educates employees for flexibility.	0.68;(6.72)	0.60;(6.72)	0.46
KOC6	My organisation encourages a non-hierarchical approach to knowledge. i.e. knowledge is appreciated no matter the hierarchical-level of the source.	0.61(6.02)	0.54;(6.02)	0.38
KOC7	Leadership and top management conveys their vision regarding what kind of knowledge should be developed.	0.66;(6.55)	0.59;(6.55)	0.44
KOC8	My organisation hires for openness of ideas	0.77;(N/A)	0.68;(N/A)	0.60
KOC9	My organisation provides time for learning	0.42:(2.91)	0.71;(6.46)	0.59
KOC10	In my organisation management accepts and rewards creative error and collaboration.	0.70;(6.90)	0.61;(6.90)	0.48

Discussion and Conclusion

Encouraging building relationships and trust through face-to-face meetings and supporting establishing common ground through education, discussion, publication, teaming, and job rotation bring to view the role of socialization concept in constitute knowledge transfer. This findings in line with the beliefs revealed in the literature of Davenport and Prusak [5] Nonaka, [2] Nonaka and Takeuchi [40] On the other hand supporting establishing time and space for knowledge transfer through fairs, talk room, and conference reports as a socialization activity shows less tendency to be supported than previous ones but still it is supported. This is assent with El Sawy et al.,[37] Nonaka et al., [22] Nonaka and Konno [38] Davenport and Prusak [5] referred to in the literature. The role of management in evaluating individual's performance and providing incentives based on sharing knowledge was supported. This agrees with McGourty et al., [39] Ahmed et al., [31] previously stated in the literature. Also, flexibility and non hierarchical approach to

knowledge were supported. Managerial vision regarding what kind of developed knowledge was stressed. O'Dell and Garyson [27] opinion in considering openness of ideas talked about previously was supported. Furthermore, providing time for learning was stressed. Finally, McGourty et al., [39] toward accepting and rewarding the creative errors and collaboration was supported.

To conclude, it was found that there is a direct positive relationship between knowledge oriented culture (KOC), cooperative "socialisation" activities and controlled "management practises" activities. Indicating that cooperative oriented culture which is centred around encouraging building relationships and trust through face-to-face meetings providing time for learning, supporting establishing common ground through education, discussion, publication, teaming, and job rotation, supporting establishing time and space for knowledge transfer through fairs, talk room, and conference reports, has an independent effects on knowledge oriented culture. Also, controlled oriented culture which is centred on
accepting and rewarding creative error and collaboration, evaluating individual's performance and provide incentives based on sharing knowledge, educating employees for flexibility, encouraging a non-hierarchical approach to knowledge. *i.e. knowledge is appreciated independently of the hierarchical level of the source*, to this end activi-

ties such as conveying the vision regarding what kind of knowledge should be developed , hiring for openness of ideas should be embrace and encourage since it has a significant effect on knowledge oriented culture.

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