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A Framework for Exploring Conditional Factors Affecting User Participation in Information Systems Development

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Abstract

Improving user participation is critical to the success of information systems development (ISD). To this extent, Information Systems (IS) research posits that there are conditional factors that affecting the degree of user participation in ISD. The existing framework to identify these conditional factors lacks its explanatory power when different degrees of user participation are taken into consideration. As a result little is known how different degrees of user participation currently being employed in various IS projects can be enabled or facilitated. In this paper, based on Habermas' theory of communicative action, we propose a framework to explore the conditional factors affecting different degrees of user participation in ISD. We demonstrate the value of the new framework by analysing the conditional factors that have been reported in the literature using the existing framework to inform the future research and development of the field.

Keywords

User participation, Conditional Factors, Theory of Communicative Action,

INTRODUCTION

Research in information systems (IS) has shown that higher level of user participation in Information Systems Development (ISD) leads to a higher chance of system success (Cavaye 1995; He and King 2008; Hwang and Thorn 1999; Ives and Olson 1984). It is therefore important to improve user participation in ISD. IS research posits that there are *conditional factors* surrounding the context of system development that are affecting the degree of user participation (Doll and Torkzadeh 1989; Ives and Olson 1984; Mao and Markus 2004). These factors are needed to enable or facilitate user participation practices (Mao and Markus 2004).

The existing framework used to identify the conditional factors for user participation in ISD is based on the contingency theory widely utilised in Participative Decision Making (PDM) research (Vroom and Yetton 1973). In general, the existing framework has helped identify conditional factors affecting user participation in ISD. However, it lacks the explanatory power when conditional factors affecting *different degrees* of user participation are the object of enquiry. This understanding is important since there are different degrees of user participation that can be employed or adopted in a particular IS project as identified in the previous studies (Mattia and Weistroffer 2008; Puri and Sahay 2007)), which in turns requires the organisation to plan and manage its resources accordingly (Mao and Markus 2004). Consequently, it remains generally unclear regarding how to improve user participation in ISD.

The research question addressed in this paper is “what are the conditional factors affecting different degrees of user participation in ISD?”. Based on Habermas' theory of communicative action (TCA), we propose a framework to complement the existing framework. It adopted Habermas' typology of social actions and the action-constitutive resources as a basis for exploring the conditional factors affecting different degrees of user participation in ISD (Habermas 1984). The typology of social action is used to understand the core actions associated with each degree of user participation. Subsequently, the action-constitutive resources theory is applied to classify the conditional factors affecting each degree of user participation by utilising the idea that conditional factors serve as the constitutive resources to enact these actions.

The remaining of the paper is organised as follows. The literature review begins with a brief review of the research on user participation in ISD and the emphasis is given on the empirical evidence concerning the consequences of participation. Subsequently, the review highlights the current gap in understanding of how to

improve user participation in ISD and, in particular, it explains the existing framework based on contingency theory used to identify conditional framework affecting degree of user participation. The following section outlines the TCA, in particular, the typology of social actions and the action-constitutive resources as the basis of the proposed framework. Next, we show how the TCA is applied to identify the conditional factors affecting different degrees of user participation in ISD using data from the previous studies employing the contingency theory. Finally we discuss how the proposed framework can be useful to inform future research on the conditional factors affecting user participation in ISD.

LITERATURE REVIEW

User Participation in ISD

Participation from the target users in ISD has been the core topic of Information Systems and Human Computer Interaction (HCI) research since 1960s (Swanson, 1974). In IS research, the studies have been greatly influenced by organisation behaviour research, particularly PDM research (Ives and Olson 1984) as IS research generally considers user participation as “a special case of PDM in which system developer and users substituted for superiors and subordinates” (Ives and Olson 1984, p. 587). On the other hand, the studies on user participation in HCI research come from two key streams of literature: Participatory Design (PD) and User-Centric Design. The former stems from the Scandinavian approach in systems development and the Sociotechnical approach that originated in the UK while the later is an approach to developing software products that emerged in the Usability community (Muller et al. 1997; Schuler and Namioka 1993). Although both IS and HCI research offer a fundamental understanding of user participation issue they are not easily integrated as they are not ‘commensurate on goals, philosophical perspectives, methods and findings’ (Mao and Markus 2004, p. 202). In this study, the issue of user participation is examined by following the IS research tradition.

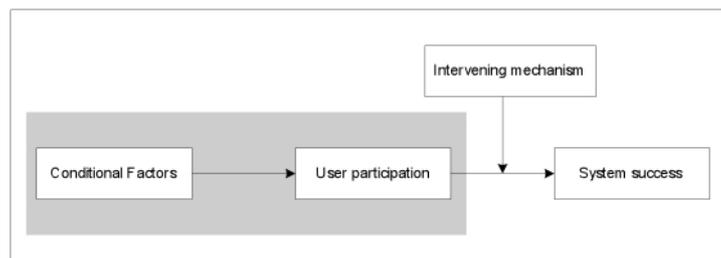


Figure 1: The descriptive model of the research on user participation in ISD (Cavaye 1995)

In general, IS research tradition in examining user participation in ISD can be described using the descriptive model proposed by Cavaye (1995) as shown in Figure 1. The model outlines the important constructs and their relationships when studying user participation in ISD. The terms “user participation” and “user involvement” were used interchangeably in the IS literature until the late 1980s. For example Ives and Olson (1984) defined “user involvement” as “participation in the system development process by representatives of the target user group” (p. 587). Later, Barki and Hartwick (1989) made the first conceptual distinction between user involvement and user participation. They posit that user participation refers to “the behaviours and activities performed by the target users or their representatives during the IS development process” (Barki & Hartwick, 1989, p. 59), while at the same time suggest that the term “user involvement” should be used when referring to a subjective psychological state of the users toward the respective system.

As the model indicated, there is an inherent link between user participation and the success of information systems development. Some studies have empirically examined this conventional wisdom and so far, show that user participation has been found to have a strong impact on the attitudinal/behavioural outcomes such as user satisfaction and the system usage. However, it only has a low to moderate impact to the productivity outcomes such as the individual impact and the organisational impact (Cavaye 1995; He and King 2008; Hwang and Thorn 1999).

These mixed results have been attributed to the psychological factors, which act as “intervening mechanisms” between the user participation as behaviour activity and the system success (Doll and Torkzadeh 1989; Kappelman and Mclean 1991). Some researchers have adopted Locke and Schweiger’s (1979) framework in order to understand these mechanisms. The framework argues that there are three important psychological factors including value attainment (self-expression, independence, influence etc), cognitive (knowledge, creativity), and motivational factors (increased trust and sense of control) that moderate the impact of user participation on information system success.

Conditional Factors Affecting User Participation in ISD

The developer and participating users involved in the ISD do not act in vacuum, but their behaviours are facilitated or constrained by the institutional structure (Orlikowski and Robey 1991). It has been argued that there are factors within the context of ISD that ‘enable/facilitate participation or prohibit/inhibit that participation’ (highlighted in Figure 1) (Cavaye 1995, p. 314). The conditional factors, in turn, affect the degree of user participation. Nevertheless, it should be emphasised that there are two important views that we need to acknowledge with regards to the necessity to improve participation in system development. Understanding of these two views also explains how the proposed framework can complement the existing framework in exploring conditional factors affecting user participation in ISD.

The first of point of view stems from the PDM research, where it argues that effectiveness of participation will be greater if the perceived level of user participation is equal or roughly corresponds to the level of desired user participation (Locke and Schweiger 1979). This condition is called “equilibrium or moderate deprivation” (Doll and Torkzadeh 1989, p. 1160). According to the contingency theory, the degree of desired participation is determined by the conditional factors surrounding system development process (Vroom and Yetton 1973). Arguing that user participation is a special case of PDM, IS researchers have adopted the conditional factors found in PDM research in the study of information system development (Ives and Olson 1984; McKeen et al. 1994; Tait and Vessey 1988). The conditional factors have been categorised into three main domains: Organisational domain, Technical systems domain, and Users domain. Organizational domain covers work arrangements, roles, positions, power, values, norms and cultures. Technical system domain covers the physical means and technical know-how by which information processing tasks are accomplished. It includes hardware and software, which provide the means for better storage, processing and transmission of symbols. The users domain covers user characteristics and their attitudes toward the system. The list of conditional factors that have been reported in the literature is listed in Table 1. The list is by no means exhaustive, but it intended to illustrate the conditional factors emerged from analysis based on the contingency theory. It is, also, has been cross-examined with recent literature review of user participation by Cavaye (1995), He and King (2008), and Bachore and Zhou (2009).

Table 1. Synthesis of the conditional factors affecting the degree of user participation in ISD.

Domain	Description	Conditional factors	References
Organisation	covers work arrangements, roles, positions, power, values, norms and cultures	Time for development	(Cavaye 1995; He and King 2008; Tait and Vessey 1988)
		Financial resources	(Cavaye 1995; He and King 2008; Tait and Vessey 1988)
		Top management support	(Cavaye 1995)
		Management style	(Lu and Wang 1997)
Technical system	covers the physical means and technical know-how by which information processing tasks are accomplished.	Task complexity	(Kim and Lee 1986; McKeen and Guimaraes 1997; McKeen et al. 1994)
		System complexity	(Hwang and Thorn 1999; McKeen et al. 1994; Tait and Vessey 1988)
		Technology availability	(Cavaye 1995)
		Expected system impact	(Lin and Shao 2000; Tait and Vessey 1988)
		System development methodologies	(Lin and Shao 2000)
Users	covers user’s characteristics and cognitive attributes towards the system	User ability to participate	(Cavaye 1995; Hartwick and Barki 1994; Hunton and Price 1997)
		User willingness to participate	(Hartwick and Barki 1994; Tait and Vessey 1988)

The second point of view stems from the Participatory Design (PD) research, where it argues that higher level of user participation is critical for user participation not only to encourage democratic principles into workplace but also enhances psychological buy in towards the system (Muller et al. 1997; Mumford 1983; Schuler and Namioka 1993). It acknowledges that there are different degrees of user participation in ISD that can be employed by an

organisation in developing their systems (Iivari et al. 2001; Mattia and Weistroffer 2008). An organisation generally adopts a particular system development approach, which represents a particular degree of user participation. Some may start with a lower degree of user participation and move up the continuum and others may choose to employ different degrees of user participation for different projects. This, in turns, requires knowledge to plan and devise a strategy for allocating resources needed for facilitating the user participation process for different degrees of user participation.

The use of contingency theory to identify the conditional factors affecting user participation in ISD, although useful, lacks explanatory power when different degrees of user participation are taken into consideration. As described earlier, it explains the conditional factors that determine desirable level of user participation, which in general also describes conditional factors to obtain user participation in ISD. It is, however, not sufficient when conditional factors for different degrees of user participation are the focus of the enquiry. Of course, such endeavour can be accomplished using the “grounded approach” by empirically examining each case of different degrees of user participation (Strauss and Corbin 1990). Yet, a theoretical framework can provide *a priori* theory of “underlying psychological, economic, or social dynamics that justify the selection of factors and the proposed causal relationships” (Whetten 1989, p. 491). The choice obviously depends on the paradigmatic assumptions of the researcher. In this paper, we show how the Habermas’ TCA can be used to provide such a framework.

THEORY OF COMMUNICATIVE ACTION

Habermas’ critical social theory (CST) particularly the theory of communicative action (TCA) is one of the prominent social science theories used in IS research (Mingers and Willcocks 2004). It has been integrated into IS research in two ways (Lyytinen 1992). Firstly, this theory has been applied by IS researchers in discussing one of the paradigms in IS research in addition to the positivist and interpretive paradigm (Orlikowski and Robey 1991). The critical paradigm assumes historically-constituted social reality and this reality is produced and reproduced by the human actors. This process is called self-formative process. Human actors are acknowledged to have the ability to change their social and economic circumstances. However, the critical theorists recognise that their ability to do so is constrained by various forms of social, cultural, and political domination. The fundamental goal of critical theorists is to seek for emancipatory condition from these constraints by influencing social-formative process so that it is steered towards the most desirable conditions. Habermas’ TCA defines the “ideal-speech condition” where such emancipatory conditions can be achieved (Habermas 1984)

Secondly, his typology of human action has been adopted into IS research to gain understanding about the nature of social action which can be useful to interpret the actions performed by the actors associated with the development and the use of information systems (Klein and Huynh 2004; Lyytinen 1992; Mingers 1992). The typology of human action provides what Lyytinen called as “Weberian idea type of analysis to reconstruct and clarify the essential nature of diverse organisation activities” (Lyytinen 1992, p. 165). Hirschheim et al. (1996) pointed out that one of the strong points of Habermas’ TCA is that it also elaborates weberian ideas, which has influenced the functionalist and interpretivist research tradition in Information Systems. This, in turns, helps to capture the diversity of ISD research.

Our proposed conceptual framework to explore the conditional factors for different degrees of user participation in ISD is based on this second approach. This study is among a growing body of work that has appropriated Habermas’ TCA to study the development and use of information systems (see Klein and Huynh (2004) for the historical review). Ngwenyama and Lee (1997) used the perspective in an empirical study of information richness and social influence in electronic mail communications. Likewise, Ngwenyama and Lyytinen (1997) used the concept to analyse social actions involved in groupwork situations and their organisation context as well as to see how the available groupware technologies can support these different action types. It is also found to be useful to interpret the role of IS in support of social action in an organisation (Cecez-Kecmanovic and Janson 1999).

Typology of Social Action

In TCA, Habermas derives a typology of human actions based on the observation of two human tendencies or orientations (Habermas 1984). The first orientation is based on the tendencies towards achieving the actor’s own objective or the purposive-rational. The purposive-rational orientation is the orientation that is directed towards the achievement of given objective and the success is measured through how nearly one achieves this objective. If the objective is achieved through manipulation of non-human object or physical world by following technical rules, the action is called *instrumental action*. On the other hand, if it achieved through manipulation of other human actors, the action is called *strategic action*. The strategic action takes into consideration the impact of the action social situations or other actors who may engage in counteraction.

The second orientation is based on the tendencies toward achieving mutual agreement. Here, the success orientation is replaced by a desire to understand communicating partner. The action itself is called *communicative action*. In communicative action, people reach agreement through having a common background of values, shared

norms, conventions, habits and assumptions about the world. The communicative action does not applicable to non-human objects, which make up the non-social domain, since they do not have the command of language. In the case where breakdown in communicative action occurs caused by misunderstanding or possible differing opinion, the actors can enter the *discursive action* in which all arguments are contested in order to restore the condition to achieve the agreement. It places an emphasis on the concept of argumentation where various assumptions must be carefully examined, clarified and validated. Alternatively, it is also possible that when the breakdown occurs, the actors choose to end their cooperation and pursue their own objectives. This is when the communicative action ends and the strategic action starts.

Action-Constitutive Resources

Each type of action maintains a specific orientation, which assumes a set of resources and understanding of the rules governing social interactions and procedures for enacting the action within specific institutional practices. The basic resources that an actor needs to skilfully perform the action within specific institutional context are called action-constitutive resources (Table 2).

The instrumental action and strategic action are success-oriented actions. However, the instrumental action focuses on control, manipulation, and transformation of the physical object. Hence, for the enactment of this type of action, the actor will depend upon the technical knowledge of input-output relationship and the tools needed to achieve the given ends. On the other hand, strategic action focuses on transformation the behaviour of the other human actor. The actor who engages in strategic action also recognizes that the opponent may engage in intelligent counter-action. Therefore, he/she then needs the knowledge of what feasible outcome to achieve, and of opponent's goals, positions, and potential for counter action. The transformation of the behaviour of other human actor consequently needs domination of one actor over the others. This power can be attained through possession of social resources such social status, authority, and items of exchange value (time, expertise, etc.).

The communicative and discursive actions aim toward achieving agreement among the participating actors. Both actions presuppose the existence of shared media for communication. The communicative action is generally oriented towards maintaining mutual understanding among participating actors in engaged in coordinated action. It is enacted via language and other forms of symbolic interaction in order to seek possible bases for agreements and compromises, interpretations of shared norms, values and the meanings of situated action. When the validity of the agreement is challenged, the actors enter the discursive action, which is oriented towards restoring agreement and condition for coordinated action. Discursive activity unfolds through critical debate and argumentation, which forms the basis for joint decision-making and agreement. Habermas argues that the effectiveness of discursive activity depends on the existence of rules of discourse and critical debate, as well as well tools for analysis and evaluation of the alternative arguments.

Table 2. Habermas' typology of human action and action constitutive resources. Adapted from (Ngwenyama and Lyytinen 1997)

Type of action	Description	Action-constitutive resources	Description
Instrumental action	Transformation, Manipulation, and Control of Objects	Technical knowledge	Technical knowledge of cause-effect relationships and skills in operation of tools.
		Tools	Resources that are involved in the generation of power derived from human dominion over nature
Strategic action	Influencing and Transforming the behaviour of others	Knowledge of the rules of process, and opponent	Actor's knowledge of what is feasible to achieve, and of opponents' goals, positions, and potential for counter action.
		Items of exchange value	Social and material resources that are involved in the generation of power and dominion of some actors by others. Such resources include: charisma, social status, authority, time, and financial.
		Shared media for communication	Medium for strategic action between the actors
Communicative action	Maintaining understanding and	Shared media for communication	Medium for communicative action between the actors.

	coordinating action	Knowledge of language, shared norms, and action situations	Actors' knowledge of shared language (including the use of syntax), shared norms, and action situations
Discursive action	Restoring agreement and conditions for coordinated action	Knowledge of rules of discourse & critical debate; Evaluation protocols	Tools for evaluating evidence in discursive activity and for evaluating alternative solution
		Shared media for communication	Medium for discursive action between the actors

Since user participation is considered a form of human action, understanding the action constitutive resources required for each type of human action helps identify the contingency factors that affect different degrees of user participation. The action constitutive resources are actually related to the contingency factors that affect human ability to perform a particular action. For example, in the context of IS development, to perform Instrumental Action, two action-constitutive resources involved are 'Technical knowledge' and 'tools', which are in turn influenced by a number of factors including the complexity of task/system involved, technology availability and system development methodologies. Likewise, to enact Strategic Action, resources in terms of knowledge of the rules of process and users, items of exchange value, and the ability of shared media for communication are affected by available time for system development, expected impact, financial resources, top management support, and available technology to support participation.

In the next section, we discuss the different degrees of user participation in IS development and identify the relevant human actions for each degree of participation. By doing this we demonstrate the value of the Habermas' typology of human action and action constitutive resources in exploring the conditional factors for different degrees of user participation in ISD, by incorporating those factors summarised in Table 1.

USER PARTICIPATION AS HUMAN ACTION

The degrees of user participation are associated with "developer enacted" approaches (Mattia and Weistroffer 2008; Puri and Sahay 2003; Puri and Sahay 2007) because in assessing the degrees of user participation, the developer's point of view (i.e. the actor) towards the users (i.e. opponents) is considered. These approaches are generally classified into (1) agency driven approach (2) shared driven approach (3) and user driven approach and are based on the functionalism, social relativism, and neohumanism paradigms (Hirschheim and Klein 1989). Beside these three paradigms, Information Systems discipline also recognises radical structuralism paradigm where the users (normally their representatives) define organisation's objectives and responsible for the system development. However, it has been argued that this approach rarely exists in ISD, even in the development Open Source System (Puri and Sahay 2007) and hence it is not included in this study.

Agency Driven Approach (AD)

This approach relies on the developer's expertise to translate organisation objectives and construct the system in order to meet these objectives. Therefore, the developer has to be the expert in technology, tools and methods of system design, and project management in order to perform the task. The users have no input in the system development process but mainly to operate the system in order to meet organisation's objectives. In the case where there is resistance by the users for the system, the developer relies on a series of approaches to overcoming the resistance (Hirschheim and Klein 1989; Mattia and Weistroffer 2008).

This approach falls into "functionalism" paradigm of ISD (Hirschheim and Klein 1989), which views user participation as a rational process (Mattia and Weistroffer 2008). In the functionalism paradigm, the actor (i.e. developer) relies on the positivist approach by searching for rational explanation to gain knowledge about the reality. Furthermore, he/she views the organisation reality as independent of what is observed to exist.

Based on the typology human action, system development for agency-driven approach is governed by two social actions: developer's instrumental action and strategic action. The instrumental action is performed in order to transform tools and physical artefacts into a system, while strategic action is needed in order to translate organisation objectives and to ease any resistance from the users over the developed system in order to influence and transform user's behaviour to conform to organisation's objectives.

Therefore, as summarised in Table 3, the understanding of the task and system complexity, the available technology to support participation and system development methodologies are important factors to facilitate agency driven approach. From the Habermas' TCA perspective, these factors affect the attainment of "technical knowledge" and "tools" needed to enact the instrumental action. Furthermore, top management support, time for development, financial resources, expected system impact, and technology available are also important factors for agency driven approach. From Habermas's TCA perspective, top management support affects the availability of the resources needed to enact the strategic action in terms of "the knowledge of rules of process and opponent" as

the agency driven approach is relied on the management to define organisation objectives. Similarly, time, financial, and expected system impact influence the constitutive resources for strategic action in terms of “items of exchange value”. Finally, in information system development, the technology availability affects action resource in terms of providing new alternative “medium for communication”. For example, Ngwenyama and Lyytinen (1997) show how different technologies can facilitate different types of action (i.e. strategic, communicative, and discursive) between different groups in the groupware environment.

Shared Driven Approach (SD)

In the shared-driven approach, the users have a role to interpret and make sense of the system and their surrounding. However, it is the developer who acts as a facilitator to interact with the users, work within their perspective and help them find their preferred views of the system. The developer relies on his experience and insights to ease any conflicting views among the users (Hirschheim and Klein 1989; Mattia and Weistroffer 2008).

This approach falls into the “socio-relativism” paradigm of ISD (Hirschheim and Klein 1989). The socio-relativism paradigm is where the actors involved in ISD obtain knowledge by “sense-making” and reject the empirical explanations of social phenomena. The actors also view the social phenomena (ontology) as socially constructed where the actors directly take part in the construction of the social reality. Here, the developer acts as a facilitator (Mattia and Weistroffer 2008) .

In the shared-driven approach, consultation between the developer and the users occurs. Therefore, the actors involved in the system development take communicative orientation to reach the agreement about the development process. Both users and developer are engaged in the communicative action as their form of social interaction. However, in this approach, the developer still maintains the authority to make the final decision about the development process. Hence, in this instance, the developer performs strategic action. Instrumental action is also performed by the developer for transforming and manipulating physical objects into the working systems.

In addition to the set of conditional factors that affect the agency driven approach, the shared driven approach also requires the user willingness to participate, the user ability to participate, the management style and technology availability. These factors are important, since from the perspective of TCA, they affect the availability of action resources needed to enact communicative action in terms of “knowledge of language, shared norms, and action situation”. Similarly, the available technology can also provide alternative medium for conducting communicative action.

User Driven Approach (UD)

In the user-driven approach, the developer and users act as partners (Mattia and Weistroffer 2008). The users are encouraged to define and convey their aspirations, needs etc. The development agenda is set jointly and users’ views and knowledge are deliberately sought and respected. Relevance of local practices and knowledge is more explicitly recognized. The development process is being conducted based on joint decisions between developer and users (Hirschheim and Klein 1989; Mattia and Weistroffer 2008).

This approach falls into the “Neohumanism” paradigm of ISD (Hirschheim and Klein 1989), which views user participation as an equal opportunity process. Neohumanism paradigm reflects the desire to remove barriers to emancipation to improve the existence of organisational actors by developing the system that supports rational discourse (Mattia and Weistroffer 2008).

From the perspective of the typology of human action, system development is governed by three social actions. When user-driven approach is being implemented, both developer and users are again engaged in the communicative action to reach an agreement about the development of the system. However, when the agreement is not yet been resolved, the developer does not go his own way, but continue to engage with the users in the discursive action until the best possible agreement are made with regards to the system development. Hence, both developer and users continue to engage in the discursive action. Again, as in previous two approaches, instrumental action by the developer also needs to be performed.

Therefore the task complexity, system complexity, technology availability, and system development methodologies are also important factors for user driven approach as they affect the attainment of the “technical knowledge” and “tools” needed for enacting instrumental action. The available technology is also important to provide alternative “shared media for communication” to enact both communicative and discursive action. Similar to the shared driven approach, the user willingness, the user ability to participate, and the management style are important factors that are affecting communicative action resources in terms of providing “knowledge of language, shared norms, and action situation”. Lastly, the management style is critical factor that is affecting the availability of resources for communicative and discursive action in terms of “knowledge of language, shared norms, and action situation” and “knowledge of rules of discourse, critical and evaluation protocol debate”.

Table 3. The proposed framework for exploring conditional factors affecting different degrees of user participation in ISD

Degree of user participation	Type of action involved*	Action-constitutive resources	Conditional Factors (Domain**)
Agency Driven	Instrumental action	Technical knowledge Tools	<ul style="list-style-type: none"> ▪ Task complexity (T) ▪ System complexity (T) ▪ System development methodologies (T) ▪ Technology availability (T)
	Strategic action	Knowledge of the rules of process and opponent Items of exchange value Shared media for communication	<ul style="list-style-type: none"> ▪ Top management Support (O) ▪ Time for development (O) ▪ Financial resources (O) ▪ Expected system impact (T) ▪ Technology availability (T)
Shared Driven	Instrumental action	Technical knowledge Tools	<ul style="list-style-type: none"> ▪ Task complexity (T) ▪ System complexity (T) ▪ System development methodologies (T) ▪ Technology availability (T)
	Strategic action	Knowledge of the rules of process and opponent Items of exchange value Shared media for communication	<ul style="list-style-type: none"> ▪ Top management Support (O) ▪ Time for development (O) ▪ Financial resources (O) ▪ Expected system impact (T) ▪ Technology availability (T)
	Communicative action	Knowledge of language, shared norms, and action situation Shared media for communication	<ul style="list-style-type: none"> ▪ User willingness to participate (U) ▪ User ability to participate (U) ▪ Management style (O) ▪ Technology availability (T)
User Driven	Instrumental action	Technical knowledge Tools	<ul style="list-style-type: none"> ▪ Task complexity (T) ▪ System complexity (T) ▪ System development methodologies (T) ▪ Technology availability (T)
	Communicative action	Knowledge of language, shared norms, and action situation Shared media for communication	<ul style="list-style-type: none"> ▪ User willingness to participate (U) ▪ User ability to participate (U) ▪ Management style (O) ▪ Technology availability (T)
	Discursive action	Knowledge of rules of discourse, critical and evaluation protocol debate Shared media for communication	<ul style="list-style-type: none"> ▪ Management style (O) ▪ Technology availability (T)

* This typology does not imply that other social actions do not occur. Rather than it is focusing on the type of actions, which form the core of the participatory activity as implied by the definition of each degree of user participation

** Domain: O = Organisation, T = Technical System, U = Users.

CONCLUSION AND FUTURE RESEARCH

This paper has proposed a framework to identify the possible conditional factors affecting different degrees of user participation based on the Habermas' TCA. It complements the existing framework, which has utilised the contingency theory to identify the factors which are considered necessary to predict or explain the user participation. As a result, it opens new insights and possibility for further research on the conditional factors affecting a particular degree of user participation in information systems development.

Hence, by focusing on the core human actions associated with each degree of user participation, we can obtain a new insight into conditional factors for different degrees of user participation in ISD. The proposed framework

shows that there are different sets of factors for different degrees of user participation in ISD. Since, currently there are different degrees of user participation employed by organisations, the framework provides a guideline for organisations to strategically plan their resources when involving users in the development of information systems.

Finally, it should be emphasised that the framework only outlines a set of conjectures on the possible conditional factors affecting different degrees of user participation. Hence, it needs to be further refined through an empirical investigations. Such exploration can utilise this framework as *a priori* theory to interpret the conditional factors identified from the different cases involving different degrees of user participation. In the next stage of study, the proposed framework will be used to guide the first author's on-going study on *the conditional factors affecting user participation in development of ICT services within community-IT organisations*. In the end, we hope that the proposed framework can shed light to our existing understanding on how to improve user participation in ISD.

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