

An Integrative Model of Organizations' Responsiveness to Innovations (IMORI): Propositions

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Abstract

*Adequate Organizational Responsiveness to Innovation (ORI) is a necessary condition for both organization performance and a creative economy. Hence, understanding the antecedents of organizations' responsiveness to innovation is critical. Nevertheless, in investigating ORI, prior studies have used intra-organizational factors and inter-organizational conditions as mutually exclusive rather than as complementary. In this study, we propose to contribute filling that gap by arguing that ORI is a function of, not only "Intra-Organizations Behavioral Factors" (IOBF) or "Inter-Organizations Environmental Conditions" (IOEC) taken separately but rather of the synergetic combination of both $[ORI = f(IOBF+IOEC) + IOBF*IOEC]$. We then translate this mathematical formulation into an Integrative Model of Organizations' Responsiveness to Innovations (IMORI) to be put to empirical testing in future studies.*

Keywords: Organizations' Responsiveness to Innovation; Integrative Model; IMORI

I- INTRODUCTION

This paper proposes an integrative theoretical framework with the purpose of enhancing our knowledge of organizations' responsiveness to innovations. Researchers have been trying to understand, explain, and predict responsiveness to innovations for decades, as evidenced by more than 1500 published articles found by Rogers and Schoemaker (1971) and more than 4000 indicated more recently by Wejnert (2002, 298). However, in spite of its many merits, the accumulated literature suffers at least two major limitations.

First, the extant literature in this area has focused essentially on individuals rather than on organizations' responsiveness to innovations. Here, commonly theoretical frameworks used have been the Theory of Reasoned Action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), the Theory of Planned Behavior (Ajzen, 1985, 1991), or the Technology Acceptance Model (Davis, 1989, 1993). The main problem is that these theories have been designed primarily for individuals' responsiveness or behaviors, making them less readily applicable to predicting organizations' responsiveness. For instance, Ajzen (1991, 181) has defined the Theory of Planned Behavior as "a theory designed to predict and explain human behavior..." neglecting organization behavior. Nonetheless, as Balkundi et al. (2007, 242) have argued, "to understand...organizational functioning requires moving beyond a consideration of individual actor strategies to consider the social unit as an aggregate social system." Further, Schoorman, Mayer and Davis (2007: 345) have more recently reminded us, "Methodological difficulties can arise in the absence of a clear multilevel conceptual model." Multilevel models are needed to avoid, if not to minimize, what Robinson (1950) called "ecological fallacy."

Indeed, while some constructs of individual level theoretical frameworks like the Theory of Planned Behavior may bode well for the study of organizations' responsiveness, these frameworks have been designed essentially for individual level analysis; not for organizational level analysis. A key difference of organization behavior contrasted with individual behavior is that organization behavior can "*withstand the turnover of personnel as well as some variation in the actual behaviors people contribute*" (Weick, 1979, 34). Therefore, ecological fallacy is likely to occur when researchers try to apply directly individual level theoretical frameworks to organizational level analysis.

Second and more importantly, the extant literature lacks integration. Much of prior research efforts in this area have been spent "*in isolation from the insights of the others*" (Wejnert, 2002, 298). Yet, it has been well documented that the interplay of different theoretical perspectives helps researchers gain more holistic understanding of organizational life (for example, see Astley & Van de Ven, 1983; Bourgeois, 1984; Hrebiniak & Joyce, 1985; Hitt & Tyler, 1991; Mahoney, 1993; Van de Ven & Poole, 1995; and Klein, Tosi, & Cannella, 1999). The main theoretical problem here is that of "*volitional control assumption*" in some of the prior frameworks. This is the assumption that most behaviors are generally under actors' volitional control. In particular, the Theory of Reasoned Action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) posits that behavior depends on only "*attitude*" and "*subjective norms*" and that any other factor that influences behavior does so only indirectly through the two indicated independent variables or their relative weights. Such an assumption has unfortunately led to issues of "*indeterminacies*" (Sapp & Jensen, 1997) and "*insufficiencies*" (Leone, Perugini & Ercolani, 1998). In fact, Ajzen (1985; 1991) was forced to develop an alternative theory, the *Theory of Planned Behavior*, in an attempt to account for some of the effects of the external variables left out initially in the Theory of Reasoned Action. Moreover, Bagozzi (1992, 201) had convincingly argued, "*by simplifying the determinants of action into a small number of unidimensional global variables, current theories lose many of the qualities that constitute social action.*"

In addition to the above two limitations of prior frameworks, meta-analyses (Downs & Morh, 1976; Tornatzky & Klein, 1982; Damanpour, 1991; Premkumar, 2003) have revealed several other problems. For instance, Downs and Mohr (1976, 700) stated, "*the theoretical value of the research that has been done was problematic*" and suggested, "*progress toward what has been called integrative theory...will have to be made before much of this data will be useful.*" Further, according to Brancheau and Wetherbe (1990, 138), "*it was clear that innovation diffusion theory did not provide a complete explanation for technology diffusion in organizations.*" Bagozzi (1992, 178) has also complained, "*...the developments to date have had rather a piecemeal quality...and therefore lack comprehensiveness and integration.*" Furthermore, according to Wolfe (1994, 405), "*the results of organizational innovation research have been inconclusive, inconsistent, and characterized by low levels of explanations.*" Still, Ramamurthy et al. (1999, 256) contended, "*a shortcoming of most past research...is its failure to view diffusion from both external and internal perspectives.*" Similarly, Premkumar (2003, 94) has argued, "*Organizations react to external environment and their decision making on innovations is influenced by the strategic necessity to compete in the marketplace using resource from the internal and the external environment.*" The problem here is twofold: the non-integration of the literature and the resulting lack of attention to potential interaction between intra-organizational behavioral and inter-organizations environmental antecedents of responsiveness. On one hand, as Rousseau and McCarthy (2007, 86) have pointed it out, "*fragmentation...contributes to the underuse of evidence by making access to relevant research difficult...*" On the other hand, the lack of attention to potential interaction terms between intra-organizational behavioral and inter-organizations environmental determinants of responsiveness has made it difficult to address a key concern of Kurt Lewis (1951): "*how does the act of intending bring about the subsequent action, particularly in those cases in which the consummatory action does not follow immediately the act of intending?*" This important question has remained unsatisfactorily answered, essentially due to the non-integration of behavioral and environmental perspectives and the resulting lack of attentions to their potential interaction. Researchers in the information technology research (Cavaye, 1995; Chin et al., 2003; Oh et al., 2006) have argued for the importance of interaction effects on theory development. Thus, the focus of this study is on the development of an integrative model of organizations' responsiveness to innovation incorporating both intra-organizational behavioral and inter-organizations environmental determinants.

II- THEORETICAL FRAMEWORK

2.1. The IMORI

The IMORI postulates that organizations' responsiveness to innovation (ORI) is a function neither of intra-organization behavioral factors (IOBF) nor of inter-organizations environmental conditions (IOEC) taken separately, but rather of the synergetic combination of both. On the one hand, we argue consistently with Dodor and Rana (2009) that cognitive behavioral factors (*organizations' attitudes toward innovation, perceived subjective norms about innovation, and perceived behavioral control over innovation*) will determine "*organization's behavioral readiness for innovation*", which is expected in turn to predict "*organization's behavioral intention about innovation*." This first contention assumes "*the organization as a reflection of its top managers*" (Hambrick & Mason, 1984; Hambrick, 2007). On the other hand, we assert that environmental factors (*institutional pressure, competitive pressure, and resource dependence*) at the time of innovation will determine "*organizations' environmental conditions*", expected to predict "*organization's strategy orientations toward innovation*." This second contention builds on established open-systems theories like the institutional theory (Meyer & Rowan, 1977), the population ecology theory (Hannan & Freeman, 1977), and the resource dependence theory (Pfeffer & Salancik, 1978). Above all, we posit that organization intention and strategy orientation will conjointly predict directly "*organization's responsiveness to innovation*."

The thesis defended here that behavior (responsiveness) depends on both cognitive factors and environmental conditions is not completely new. Indeed, Lewin (1951) had suggested more than 50 years ago that a person's behavior is a function of the person and the environment [$B = f(P, E)$]. Subsequently, Simon (1956, 130) had argued that mental models that enable decisions "*may depend not only on the characteristics – sensory, neural, and other – of the organism, but equally upon the structure of the environment*." As Tosi (2002) has observed it, "the main theoretical models in organizational sociology, population ecology, and institutional theory focus more on the environment part of the model." According to Tosi, these theories tend to be explanations of processes that help explain why organizations take on the characteristics they do, or what happens when organizations do not develop forms that can adapt effectively to the environment. Thus, environmental theories do not tell us much about what organizations do or why they do it to adapt to the environment. On the other hand, organizational behavior/industrial psychologists tend to, according to Tosi (2002), focus more on intra-organization factors and less so on the environment.

Responding to the call for integration of Klein and Kozlowski (2000), our general proposition is that organization behavior (OB) is a function of both intra-organization behavioral factors (IOBF) and inter-organizations environmental conditions (IOEC); hence, $[OB = f(IOBF, IOEC) + \epsilon]$. We then apply this general proposition to the particular case of innovations in the form of "Organizations' Responsiveness to Innovation" (ORI) as a function of both cognitive intra-organizations behavioral factors (IOBF) and non-cognitive inter-organizations environmental conditions (IOEC); hence: $ORI = f[(IOBF, IOEC) + IOBF * IOEC] \epsilon$ (1)

Where ε (epsilon) stands for any other factor not accounted for in the IMORI (Figure 1)

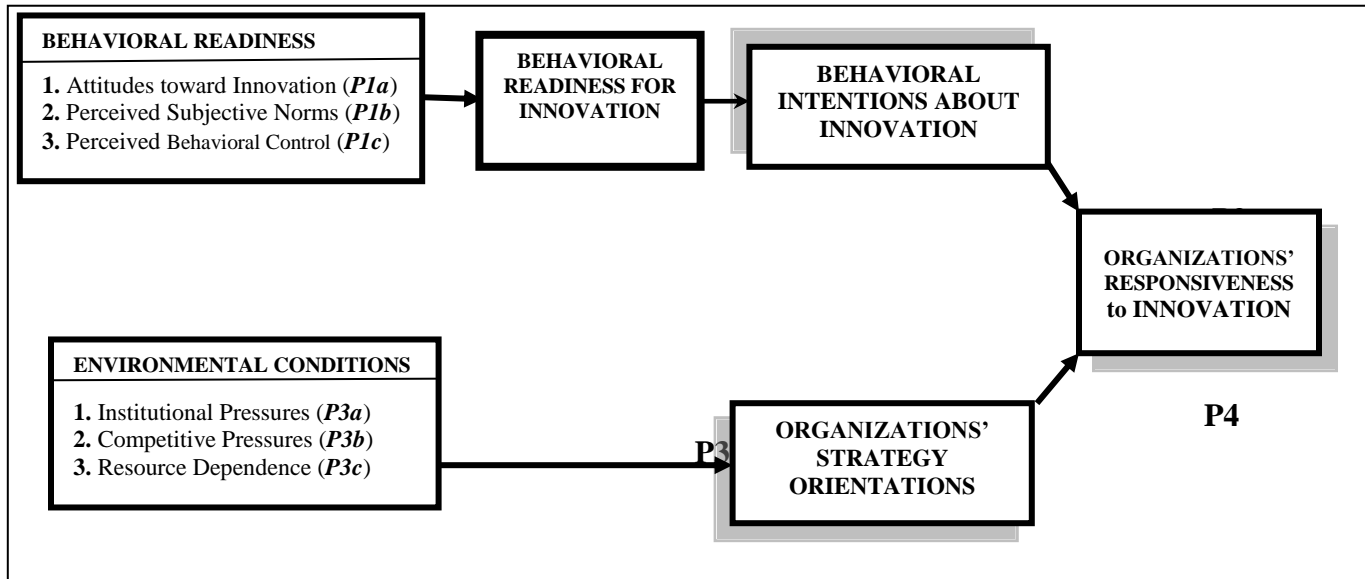


FIGURE 1

Postulated IMORI

The IMORI recognizes that organizations have goals and that their responsiveness to innovations is directed toward achieving those goals. From this premise, comes the practical implication that to achieve a particular organizational goal, top managers should take into consideration not only cognitive behavioral factors but also environmental conditions, because the environment is generally not neutral on organizations' behaviors. We view organizations' managers as entrepreneurs who gather scarce resources and forge ad hoc relationships that are needed to enable organizations' responsiveness to changes and innovations. Thereby, we assume "*the organization as a reflection of its top managers*" (Hambrick & Mason, 1984; Hambrick, 2007): this is an essential condition to be able to adapt methodologically individual level constructs to organizational level analysis.

2.2. Model's Constructs

Proper definitions of major constructs of a theoretical model add to the clarity of any research paper. Consistently, we specify in this section the key constructs used in the study. We acknowledge that our behavior-based constructs are largely derived from individual level theories like the Theory of Planned Behavior. However, we do so assuming "*the organization as a reflection of its top managers*" (Hambrick & Mason, 1984; Hambrick, 2007). In other words, we assume that data can be collected from organizations' top managers to capture organizations' behaviors.

2.2.1. Organization's responsiveness to innovation: The main outcome construct "*Organization's Responsiveness to Innovation*" (ORI) denotes the degree to which an organization is receptive to a given innovation. This concept is preferred to the traditional binary concept "*adopt/reject innovation*" for two reasons. First, responsiveness to innovations has been defined in the literature as a broad behavior involving a series of phases and decisions (Rogers, 1995, 2003; Zmud & Apple, 1992; Swanson & Ramiller, 2004; Meyer & Goes, 1988; Kwon & Zmud, 1987). For instance, Rogers (1995, 2003) distinguished the following phases: knowledge (awareness about the innovation), persuasion (being convinced of the value of the innovation), decision (commitment to adopt the innovation), implementation (put the innovation to use), and confirmation (validation of the adoption decision). Second, the construct "*responsiveness to innovation*" covers "*trying*" (Bagozzi & Warshaw, 1990). Indeed, responsiveness to change may end up with success as well as failure. Thus, the idea of "*responsiveness to innovation*" captures and incorporates these two possible outcomes. In other words, in their attempts to respond to any given innovation, organizations may succeed or fail. Failures should not be viewed as absolutely negative outcomes, because failures are sometimes necessary for "*organizational learning*" (Senge, 1990) and "*sense-making*" (Gioia & Thomas, 1996; Weick, Sutcliffe & Obstfeld, 2005).

2.2.2. Organization's behavioral intention about innovation: This reflects the state of mind, plan and commitment of organizations' top managers to perform a given behavior ("*responsiveness to innovation*"). Alternatively, "*organization behavioral intention*" may denote top managers' willingness to perform or not to perform a given behavior. Behavioral intention is a central construct in our model because actual behavior comes only as an enactment of pre-conceived intention.

2.2.3. Organization Strategy orientation: An organization's strategy refers to the extent of match or alignment between its external environment and its internal structure and processes. According to Fredrickson and Mitchell (1984, 400), "*the degree of alignment may be the result of an integrated strategy that was produced by a formal planning system.*" In addition, Bowman (1974, 47) suggested that strategy is a "*continuing search for rent*"; while Mahoney (1993, 175) indicated that strategy is "*the protection of these Ricardian rents via human, physical, locational, organizational, and legal capital.*" Still, according to Rumelt (1980), strategy is a set of objectives, policies and plans that define the scope of the undertaking rather than the actions taken by the organization. Furthermore, Porter (1980) presented strategy as the means by which a firm achieves and sustain a competitive advantage over the competition within an industry. More recently, Hitt, Ireland, and Hoskisson (1999, 127) defined strategy as "*an integrated and coordinated set of commitments and actions designed to exploit core competencies and gain a competitive advantage.*" Therefore, the concept "*organization strategic orientation*" is used in this paper to capture the aggregate impact on organization behavior of countless strategic decisions that have been made over time. Child (1972) had developed a strategic choice model that was aimed at understanding organization-environment relations. Miles and Snow (1978, 21) distinguished four generic strategy orientations: defensive, prospective, analytic, and reactive. Subsequently however, Gioia and Thomas (1996), drawing on Levinthal and March (1993), synthesized the typology into "*domain defensive*" and "*domain offensive*" strategic orientations.

2.2.4. Organization's behavioral readiness for innovation: As Smits and Ezzat (2003, 9) indicated it, the concept of "*readiness*" is a commonly understood term. For instance, we talk generally about sports teams' readiness for competitive matches, students' readiness for examinations, an army's readiness for a battle, or an organization's readiness for competition. Here however, we use the concept "*behavioral readiness*" to capture the level of preparedness to respond or react to a given change phenomenon. In other words, "*behavioral readiness*" denotes a pre-behavior state of an actor's preparedness in terms of perceived "*strengths and opportunities*" (Porter, 1980) as well as "*weaknesses and threats*" (Porter, 1980) that can motivate or deter the actor's behavioral intention to perform or not to perform a given behavior. In particular, "*organization behavioral readiness for innovation*" has to do with organizational processes that enable both absorptive (Cohen & Levinthal, 1990 & 1994) and dynamic (Teece, Pisano, & Shuen, 1997; Lavie, 2006) capabilities to respond effectively to a given innovation. We should point out that Holt, Armenakis, Field and Harris (2007) have recently proposed a scale to study the "*readiness for organizational change.*" However, their focus was at individual rather than organizational level. In the current study, organization's behavioral readiness refers more to a collective action.

2.2.5. Organization's attitude toward innovation: By "*organization's attitude toward innovation*", we refer to "*the degree to which the organization's top managers have favorable or unfavorable evaluation or appraisal of the innovation of interest*" to them. As indicated previously, we assume that organizations are largely the reflections of their top management team members.

2.2.6. Perceived organizational subjective norms about innovation: The concept "*subjective norms about behavior*" refers to an actor's "*perceived social pressure to perform or not to perform the behavior*" (Hsu and Chiu, 2004). By extending this definition to organizational level, "*Perceived subjective norms about innovation*" denotes an "*organization's top managers' perceived social pressure to respond or not to the innovation of interest*" to them. Again, we assume that organizations are largely the reflections of their top management team members.

2.2.7. Perceived organizational control over innovation: Ajzen (1991) defined "*perceived behavioral control*" as referring to "*people's perception of the ease or difficulty of performing the behavior of interest.*" Consistently, we define an "*organization perceived behavioral control over innovation*" as the "*organization's top managers' perception of the ease or difficulty of responding to the innovation of interest*" to them. In this definition, we once again assume that organizations are largely the reflections of their top management team members.

2.2.8. Environmental conditions: By environment, we mean the task environment in which organizations in a given industry conduct their normal operations. Duncan (1972) made a distinction between the internal and the external environment. Tung (1979, 673) subsequently indicated that the internal environment corresponds to “*all that internal force operating within the organization itself*”, which implies that the external environment refers to all those things outside the organization. In this study, the term “environment” refers to the external environment because the internal environment, as defined by Tung (1979, 673), has been incorporated in our intra-organizational factors. The concept “*environment conditions*” is used to capture the conditions of the external task environment of organizations at the time of a given innovation.

2.2.9. Institutional pressures: This construct denotes the extent of “*coercive, mimetic or normative pressures*” (DiMaggio & Powell, 1983) on an organization to perform a given behavior (“*responsiveness to innovation*” in this case). Coercive pressures are pressures from important stakeholders or groups of stakeholders. Mimetic pressures denote pressures an organization is subject to because other organizations in the organizational population have adopted the behavior under consideration, this irrespectively of evidence of actual efficacy and effectiveness of the behavior being contemplated. Finally, normative pressures refer to pressures an organization may be subject to comply with industry standards or normative behaviors.

2.2.10. Competitive pressures: This construct is used to capture the extent of rivalry or hostility among organizations within a given organizational population. According to Boone (2000, 552), “*competitive pressures*” refer to the “*effects on a firm’s incentive to undertake product and process innovations.*” The intensity of competitive pressures on organizations within an industry largely depends on the density of the population as well as on the similarity among organizations within the industry. When density is high (e.g., the concentration of organizations is strong) and the activities of organizations within the industry are similar, then the potential for territorial disputes (both from the demand and supply sides), and therefore competitive pressures, is high.

2.2.11. Resource Dependence: This construct reflects the extent to which an organization has to rely on others’ resources to make and implement important strategic decisions, such as responding to an innovation. The strategy literature has broadly defined the concept “*resources*” to include everything from knowledge (Conner and Prahalad, 1996) to capital equipment (Schroeder, Bates, and Juntilla, 2002), even though Bigelow and Stone (1995) consider funding as the primary resource. The degree of resource dependence within an organizational niche depends on both the width of the niche and the similarity among players within the niche. The narrower an organizational niche is and the more similar are the players within the niche, the greater should be resource dependence among organizations operating within that particular niche, partly because available scarce resources should be shared among a larger number of organizations.

III- PROPOSITIONS

The main purpose of the empirical test in this study is to show that the postulated integrative model (IMORI) is more useful statistically than its reduced sub-models taken each on a stand-alone basis. However, for the clarity of the paper, we organize the testable hypotheses into the two sub-models: the behavior-based sub-model and the environment-based sub-model.

3.1. Behavior-based Sub-model

Organization Behavioral Readiness and Behavioral Intention: As indicated, the concept “*Behavioral readiness*” refers to a pre-behavior state of an actor’s preparedness that covers perceived internal strengths and opportunities as well as weaknesses and impediments that can motivate or deter behavioral intentions to perform or not to perform a given behavior. A positive (optimistic) behavioral readiness is generated when perceived strengths and opportunities outweigh perceived weaknesses and impediments. In contrast, the net result is a negative (pessimistic) behavioral readiness when perceived weaknesses and impediments outweigh perceived strengths and opportunities. The more positive is behavioral readiness for innovation, the more likely and the stronger should be behavioral intention about innovation. Conversely, the more negative is behavioral readiness, the less likely and the weaker should be behavioral intention. Negative behavioral readiness depicts a deficit of readiness, while positive behavioral relates to a surplus of readiness. An organization is more likely to think about responding to an innovation when it feels ready for that innovation. Consistently, we postulate that:

Proposition P1: *Organization behavioral readiness for innovation will predict organization behavioral intention about innovation.*

Organization Attitude toward Innovation: The relationship between attitude toward behavior and behavior is quite well established in both the TRA and the TPB. Ajzen (1991, 190) reported correlation coefficients between attitude and intention in the range of 0.26 to 0.92, yielding a mean of 0.54. According to Davis, Bagozzi, and Warshaw (1989), attitude is an antecedent to intentions to adopt computer technologies. Organization's managers form attitudes on behalf of their organization to decide whether to respond or not to a given innovation. Because attitude toward behavior refers to the degree to which an actor has a favorable or unfavorable evaluation of the behavior under consideration, the more favorable are top managers' attitudes toward the behavior, the stronger should be the organization's behavioral readiness to respond to the behavior. Prior studies (Mohr, 1969; Hage & Dewar, 1973) indicated that favorable attitudes play an important role in predicting organizational innovation. Consequently, we posit that:

Proposition P1a: *Organization attitude toward innovation will affect organization behavioral readiness for innovation.*

Perceived Organizational Subjective Norms about Innovation: Again, the relationship between subjective norms about behavior and behavior is well established in the extant literature. The correlations coefficients reported in Ajzen (1991, 190) range from -0.01 to 0.70, which yields a mean of 0.36. Because subjective norms correspond to perceived social pressures on an actor to perform or not to perform a given behavior, an organization's (through its top managers) perception that important stakeholders would approve or disapprove responding to a given innovation should normally influence the organization behavioral readiness for the innovation. The stronger are the organization's beliefs that important stakeholders would approve the decision to respond to the innovation; the more likely and the stronger should be the organization's behavioral readiness to respond to the innovation. Thus, we postulate that:

Proposition P1b: *Perceived organizational subjective norms about innovation will influence organization behavioral readiness for innovation.*

Perceived Organizational Control over Innovation: "Perceived behavior control over innovation" has to do with an actor's perception of the ease/simplicity/controllability versus difficulty/complexity/non-controllability of responding to a given innovation of interest to the actor. Prior research has found that the construct "perceived behavioral control" is relevant in predicting behavior. For instance, Davis et al. (1989) found ease of use to be an important factor in decisions to use computer software. As a general rule, the easier, simpler, and more controllable an actor perceives performing a behavior, the more likely and the stronger should be the actor's behavioral intention to perform the behavior. Conversely, the more difficult, complex, and more uncontrollable the actor perceives performing the behavior, the less likely and the weaker should be the actor's behavioral intention to perform the behavior. The 19 correlation coefficients reported in Ajzen (1991, 190) range from 0.20 to 0.89, which gives a mean of 0.52. Thus, we contend that:

Proposition P1c: *Perceived organizational control over innovation will determine organization behavioral readiness for innovation.*

Behavioral Intention and Organization Responsiveness: Prior studies have provided evidence concerning the relation between intentions and actions. For instance, Fishbein and Ajzen (1981) found that people's voting intentions prior to a presidential election tend to correlate with actual voting choices in the range of 0.75 to 0.80. Manstead, Proffitt and Smart (1983) reported that mothers' choices of feeding method for their newborn babies have a correlation of 0.82 with intentions expressed several weeks prior to the deliveries of the babies. More recently, Ravis & Sheeran (2003, 219) reported correlation coefficients between behavioral intention and actual behavior in the range of 0.19 to 0.38, while Cooke & Sheeran (2004, 160) indicated that 28% to 34% of the variances in actual behavior can be predicted by behavioral intention. Although these latter findings are lower than results reported initially by Fishbein & Ajzen (1981) and Manstead et al. (1983), they still show that some relation exists between behavioral intention and actual behavior. Ajzen, (1991, 186) indicated that when "*behaviors pose no serious problems of control they can be predicted from intentions with considerable accuracy.*" Similarly, Harrison, Mykytyn & Riemenschneider (1997, 176) indicated that intention is the channel through which all cognitive and evaluative processes have an impact on behavior and that intention should be the best predictor of behavior if nothing in the environment has occurred to cause a change in plans. Thus, generally, we expect that:

Proposition P2: *Organization behavioral intentions about innovation will predict organization responsiveness to innovation.*

3.2. Environment-based Sub-model

As it appears from the previous propositions from the behavior-based sub-model, the external environment was assumed stable. Ajzen, (1991, 186) indicated “*when behaviors pose no serious problems of control*”, while Harrison et al. (1997, 176) stated “*if nothing in the environment has occurred to cause a change in plans.*” Such assumptions are barely realistic in most cases because the external environment is more often unstable than stable. As noted previously in our argumentation, actual or perceived environmental conditions can influence behavior. Thereby, it is necessary to formulate propositions to account for environment-based effects.

Environmental Condition and Strategy Orientation: The relationship between the environment and organizations’ strategies has a strong theoretical foundation (Lawrence & Lorsch, 1967; Thompson, 1967; Duncan, 1972). According to Thompson (1967), organizations are expected to act rationally and try to manage the uncertainty that threatens rationality. To cope with environmental uncertainty, organizations have generally to adapt or align their internal structure to respond to environmental constraints. For Thompson (1967), internal structuring and planned strategies are some of the means by which organizations seek to approach some degree of rationality. Thus, environment and strategic decision process are concepts that are closely linked (Bourgeois, 1980; Fredrickson & Mitchell, 1984). Prior studies found both negative and positive relationships between environmental conditions and organizations’ behaviors. For instance, Zahra (1993) found that the introduction of new products was negatively associated with price-based rivalry. However, Zahra and Covin (1995) found a positive relation between proactive firm behaviors and the amount of hostility in the external environment. They have argued, “*Hostile environments afford fewer opportunities for achieving growth and profitability, and that in these settings, corporate entrepreneurship is a logical means to creating and exploiting opportunities that result in competitive superiority*” (Zahra & Covin, 1995, 48). Further, as Tung (1979, 676) indicated it, “*Most organizations avail themselves of one of two strategies for dealing with perceived environmental uncertainty.*” One such strategy, which is more defensive in nature, involves a kind of passive responsiveness to changing environmental conditions. The alternative strategy, which is more offensive in nature, requires managing and monitoring somehow actively the environment. This discussion leads us to the following:

Proposition P3: *Environmental condition at the time of innovation will predict organization strategy orientation toward innovation.*

Institutional Pressures: Institutional theorists (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Oliver, 1991) have argued convincingly that organizations are constrained by external non-competitive factors (social rules, regulations, laws, taken-for-granted conventions, norms and practices) that subject them to important pressures. Indeed, the external environment introduces some degree of homogeneity within a given organizational population through similarity in institutional arrangements, strategic alliances, human capital transfers, social and professional relationships and competency blueprints (Oliver, 1997). Within such environmental context, organizations try to emulate each other through a process known as organizational isomorphism (DiMaggio & Powell, 1983). Prior studies have tested the effects of “*institutional pressures*” on organizations’ behaviors. Teo, Wei, and Benbasat (2003) tested empirically the relationships between institutional pressures and organizations’ “*intentions*” to adopt inter-organizational linkages, while Berrett & Slack (1999) used both institutional and competitive pressures to investigate corporate sponsorship decisions. Buckho (1994, 90) argued that institutional pressures constitute “*a powerful force*” against transformational change, implying a negative relationship between “*institutional pressures*” and organizations’ behaviors. However, Greening and Gray (1994, 476-478) predicted positive relations between institutional factors and organizations’ “*issues management.*” Thus, it is conceivable to expect both negative and positive effects of “*institutional pressures*”; hence, we simply state that:

Proposition P3a: *Institutional pressures at the time of innovation will determine organization environmental condition.*

Competitive Pressures: Population ecologists (Hannan & Freeman, 1977, 1984) have provided convincing arguments to expect competitive pressures within industries. For instance, when a given organizational population is highly concentrated with low connectedness among individual organizations, competitive pressures within the population tend to be high. This argument is consistent with the idea of “*density dependence*” of population ecologists (Hannan & Freeman, 1977; Freeman & Hannan, 1983; Carroll, 1985).

The ideas of “*density dependence*” and “*organizational niche*” presume inherent competition within organizational populations. Indeed, organizational niches are limited in their scopes and carrying capacities. Because of those limitations, organizational niches can generally afford to carry only limited number of organizations. As the number of organizations increases within a given niche, the density dependence of the niche increases while its carrying capacity diminishes. Gatignon and Robertson (1989), Berrett and Slack (1999), and Ramamurthy et al. (1999) tested previously the effects of competitive pressures on organizations’ behaviors. Consistently, we assert that:

Proposition P3b: *Competitive pressures at the time of innovation will determine organization environmental condition.*

Resource Dependence: Resource dependence theorists (Pfeffer & Salancik, 1978, 2) recognized that the key to organizational power is the ability to acquire and maintain resources. Romanelli (1989, 370) had added that the extent of available resources in an environment is likely to influence firms’ abilities to overcome difficulties. Naturally, the extent of available resources in a given industry affects the amounts and kinds of resources that organizations can acquire within that industry. Further, building on the resource dependence theory, Frooman (1999) has recently suggested a stakeholders’ theory. Frooman (1999) argued that the type of resource relationship between the organization and its stakeholders (resource dependence) determine where power lies. The greater is the resource dependence of an organization, the more limited should be the degrees of freedom available to the organization to make and implement strategic decisions. At least Bigelow and Stone (1995) and Schumaker (2002) tested previously the effects of resource dependence on organizations’ decision-making. Thereby, we posit that:

Proposition P3c: *Resources dependence at the time of innovation will determine organization environmental condition.*

Organization’s Strategy orientation and Responsiveness: The extra-organizational context and industry in which an organization is located influence innovativeness (Van de Ven, 1986) positively as well as negatively. To mitigate the negative impacts of the environment and maximize its positive effects, organizational managers reorient generally their strategies. Miles and Snow (1978) distinguished four strategy orientations: reactive, defensive, analytic and prospective. However, Gioia and Thomas (1996), synthesized the typology into “*domain defensive*” and “*domain offensive*” strategy orientations. Levinthal & March (1993) made a distinction between strategies that focus on change, flexibility and innovation from strategies that emphasizes operational efficiency, the refinement of routine set of activities and the maximization of current economic returns. Following Gioia and Thomas (1996), we distinguish here two strategy orientations: “*defensive*” and “*offensive.*” In a defensive strategy, the defender deliberately reduces responsiveness (*planned unresponsiveness*) by focusing on the current market domain and maintaining the current product positions. Weick (1979, 135) argued that organizations fitted to a specific niche (domain) may be unable to adapt to change. However, in an offensive strategy, the organization increases its responsiveness capability to develop new products, engage in new markets to increase its market share. Therefore, we expect that:

Proposition P4: *Organization’s strategy orientation will predict organization responsiveness to innovation.*

3.3. The Interactive Effects

Prior studies (Lewin, 1951 and Simon, 1956) argued for the complementary between behavioral factors and environmental conditions in predicting action. Lewin (1951) had suggested more than 50 years ago that a person’s behavior is a function of the person and the environment [$B=f(P, E)$]. Similarly, Simon (1956, 130) argued that mental models that enable decisions “*may depend not only on the characteristics – sensory, neural, and other – of the organism, but equally upon the structure of the environment.*” Based on these prior studies, we can expect significant interactions between the study’s behavior-based factors and the environmental variables; hence, we formulate the following hypothesis for testing.

Proposition P5: *Overall, “intra-Organizations behavioral factors” and “inter-organizations environmental conditions” will interact significantly in predicting organizational responsiveness to innovations.*

VII- CONCLUSIONS

In conclusion, we believe that it possible to integrate intra-organizations behavioral theories and open-systems environmental theories into a holistic theoretical framework. When this done, our understanding, explanation and prediction of organizations' behaviors toward changes and innovations will be far more comprehensive and better grounded. As such, theoretically, this study may have important implications. It has the potential to help the literature on behaviors toward innovations to advance and accumulate more coherently because as has pointed out Wejnert (2002, 298), the extant literature has accumulated "in isolation from the insights of the others". The study may also contribute to bridging the intra-extra divide of organizational analysis.

In spite of its potential contributions, we acknowledge possible limitations. First, we did not include moderating variables (such as organizations' ownership, size, and age). However, because prior studies (Poole & Van de Ven, 1989; Abrahamson, 1991, Wolfe, 1994) have suggested that research efforts should be directed at determining the contingencies that govern when various innovation theories or models hold, future research should consider testing potential moderating effects of these variables on the postulated IMORI. Second, we were unable to include the empirical portion of the paper here due essentially to pages limitations. However, if this theoretical portion is accepted, we can later publish the empirical portion as a separate research paper.

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