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THE ANTECEDENTS AND MEDIATORS OF NEW PRODUCT DEVELOPMENT SUCCESS

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ABSTRACT

Purpose: *This study aims to explore the antecedents of new product development (NPD) success rising innovative work behavior and team reflexivity as the mediators. A research model was developed and empirical validations of this model was confirmed.*
Design/methodology/approach: *This study used quantitative study with questionnaire approach to collect the data. The respondents are 41 teams which consist of team leaders and team members from various companies. SPSS software and Smart PLS software was used to analyze the results.*
Findings: *Based on content analysis, this study developed the research framework of NPD team success. The antecedents of NPD success are regulatory focus, project orientation, and task familiarity which affected NPD success through innovative work behavior and team reflexivity. The quantitative result indicates that regulatory focus has significant relationship with innovative work behavior; project orientation and task familiarity has a positive relationship with team reflexivity; innovative work behavior and regulatory focus have significant relationship to the NPD success.*
Research limitation/implications: *The main limitation of this study is that the respondents come from various industries which may results in bias. The comprehensive research framework that developed in this study can be guidance and benchmark for future research. In practice, team leader can get deep understanding about the main factors of NPD success in order to improve their NPD performance.*
Originality/value: *This study developed a comprehensive research framework and ten research hypotheses of NPD success that can be very useful for future focus.*

Keywords: regulatory focus, project orientation, task familiarity, innovative work behavior, team reflexivity, NPD success
Paper type: Research paper

INTRODUCTION

New product success has been an important issue in new product development (NPD) research. Griffin (1997) reports that the average success rate of NPD in USA was 59% and 100 ideas lead to 15.2 successful new products. Ozer and Chen (2006) reports that the success rate of NPD in Hong Kong is 44.91% and 100 ideas only lead to 2.15 successful new products.

Currently, organizations are increasingly relying on teams to innovate and respond to the rapidly changing marketplace (e.g., West, 2002). In other words, an organization needs to maintain and strengthen their NPD teams if they are going to innovate (e.g., Tjosvold,

1991). This study regards team's ability for being reflexive (West, 1996, 2002) as a crucial element to transform the members' knowledge and skills into innovative products. In addition, this study asserts that team reflexivity determined by members' project management skills (Hoegl and Parboteeah, 2006). The skills are necessary for flexible planning and ongoing controlling of the task process, which is of particular importance in the case of innovative projects, since it has high degree of task-related uncertainty and complexity. Moreover, NPD teams will have capability to be reflexive when they have adequate knowledge on certain issues related with the newly developed product. Refer to Brockman and Morgan (2006), team members' knowledge is critical to determine the quality of reflexivity of the team. When the members' have adequate level of knowledge and project skills, team's reflection could generate innovative ideas.

This study proposes that project orientation also determines the level of team reflexivity, either customer- or competitor-related orientation (Kohli and Jaworski, 1990 and Homburg et al., 2007). Based on above discussion, this study considers five variables as determinants of NPD success which are regulatory focus, project orientation, task familiarity, innovative work behaviors and team reflexivity. This study argues that NPD team members' intentional introduction or application of new ideas, products, processes, and procedures to their team (West and Farr, 1989, 1990b; Yuan and Woodman, 2010) also will facilitate the success of NPD. Despite proposing ideas from the team members, innovative work behaviors also includes the ability to adopt others' ideas that are new to one's organization or work unit (Woodman et al., 1993). Similar to the antecedents of team reflexivity, this study proposes that members' innovative behaviors are determined by regulatory focus, project orientation, and task familiarity that NPD teams had.

As a consequences, there are four research objectives of this study. First, to examine the antecedents and consequences of innovative work behaviors and team reflexivity inside NPD teams. Second, to investigate the effect of project orientation, regulatory focus and task familiarity on team reflexivity. Third, to investigate the effect of project orientation, regulatory focus and task familiarity on innovative work behavior. Fourth, to investigate the effect of project orientation, regulatory focus and task familiarity on NPD success.

LITERATURE REVIEW

Definition of Construct

1. Project Orientation

This study identify project orientation based on the concept of market orientation (e.g., Kohli and Jaworski, 1990; Narver and Slater, 1990). According to Narver and Slater (1990) market orientation is "the organization culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business" (p.3). According to Homburg, Grozdanovic, and Klarmann (2007), responsiveness is typically a main facet of market orientation. They further proposed that there are two different kinds of responsiveness: "customer-related responsiveness is the extent to which an organization responds quickly to customer- related changes, and… competitor-related responsiveness is the extent to

which an organization responds quickly to competitor-related changes" (Homburg et al., 2007, p. 19). Based on that, this study adopts both customer-related and competitor-related responsiveness. This study asserts that timely responses to customer-related changes and competitor-related changes will result in many beneficial consequences for NPD teams.

2. Team Reflexivity

According to West (1996, 2000, 2002), there are three central elements to the concept of reflexivity—reflection, planning, and action or adaptation. Reflection consists of attention, awareness, monitoring, and evaluation of the object of reflection. Planning is one of the potential consequences of the indeterminacy of reflection, since during this indeterminacy, the courses of action can be contemplated, intentions formed, plans developed (in more or less detail), and the potential for carrying them out is built up. High reflexivity exists when team planning is characterized by greater detail, inclusiveness of potential problems, hierarchical ordering of plans, and long as well as short range planning. The more detailed the implementation plans, the greater the likelihood that they will manifest in innovation (Frese and Zapf, 1994; Gollwitzer, 1996). Indeed the work of Gollwitzer and colleagues suggests that innovation will be implemented almost only when the team has articulated implementation intentions. This is because planning creates a conceptual readiness for, and guides team members' attention towards relevant opportunities for action and means to implement the innovation. Action refers to goal-directed behaviors relevant to achieving the desired changes in team objective, strategies, processes, organizations, or environments identified by the team. In a variety of studies links between reflexivity and team innovation and effectiveness have been demonstrated (Carter and West, 1998; West, Patterson, and Dawson, 1999; Borrill *et al.*, 2000). This study uses these dimensions - reflection, planning, and action or adaptation – to represents the team reflexivity which can influence the product innovativeness of NPD teams' resulted as well as the new product performance.

3. Innovative Work Behaviors

Drawing on West and Farr (1989, 1990b), Yuan and Woodman (2010) define innovative behavior as an employee's intentional introduction or application of new ideas, products, processes, and procedures to his or her work role, work unit, or organization. Examples of such behavior include searching out new technologies, suggesting new ways to achieve objectives, applying new work methods, and investigating and securing resources to implement new ideas. In keeping with Kanter (1988), Janssen (2000), and Scott and Bruce (1994), this study asserts that innovative behavior as complex behavior consisting of activities pertaining to both the generation/introduction of new ideas (either by oneself or adopted from others) and the realization or implementation of new ideas. One related construct in the literature is creative behavior, which refers to behavior pertaining to the generation of ideas that are both novel and useful (Amabile, 1988; Oldham and Cummings, 1996). Creative behavior can be considered as one type of innovative behavior because innovative behavior includes not only generating novel ideas by oneself but also adopting others' ideas that are new to one's organization or work unit (Woodman et al., 1993). Also, creative behavior concerns new idea generation, whereas innovative behavior includes both the generation and implementation of new ideas (Shalley et al., 2004; Zhou, 2003).

4. Regulatory Focus

Specifically, Higgins (1997) proposed that people have two basic self-regulation systems. One regulates the achievement of rewards and focuses individuals on *promotion* goals, while the other regulates the avoidance of punishments and focuses individuals on *prevention* goals. Promotion goals represent the "ideal self" and include hopes, wishes, and aspirations, whereas prevention goals represent the "ought self" and include duties, obligations, and responsibilities.

The regulatory focus is determined both by situational and chronic factors (Higgins, 1997, 1998). Recent studies on prevention-promotion effects have suggested that the regulatory focus can be thought of as rich syndromes that differ from each other on multiple variables (Kluger, Stephan, Ganzach, and Hershkovitz, 2004; Van Dijk and Kluger, 2004). The basic motivations that underlie these two syndromes are two conflicting motivations: the motivation for stability versus the motivation for change. Both motivations are important for survival of the human being (Levontin, Kluger, and Van Dijk, 2004). According to this notion, the purpose of the prevention focus is to assure one's safety and security, to maintain routines, and to preserve the status quo. In contrast, the purpose of the promotion focus is to pursue development and change and to explore the advantage of creative and novel behaviors. Researchers have used regulatory focus theory to study goal attainment (e.g., Forster, Higgins, and Idson, 1998; Shah, Higgins, and Friedman, 1998), decision making (e.g., Crowe and Higgins, 1997), creativity (Friedman and Forster, 2001), information processing and persuasion (Aaker and Lee, 2001), and feedback and motivation (Forster, Grant, Idson, and Higgins, 2001; Van Dijk and Kluger, 2004). However, the theory has not been applied to the study of NPD.

5. Task Familiarity

The concept of familiarity in organizational teams has been defined as "the knowledge that members of a team have about the unique aspects of their work" (Goodman and Garber 1988), such as knowledge about the task itself and about other members of the team (Littlepage et al. 1997). As members work together over time, they become familiar with the task domain and with each other (Katz 1982), and they develop a common knowledge base through which team interaction and location of expert sources in the team can occur (Alavi and Leidner 2001). Task familiarity deals with the innovation , while team familiarity deals with incremental innovation. As discussed by Smith and Tushman (2005), exploration task familiarity is rooted in variance-increasing activities, learning by doing, and trial and error, while exploitation task familiarity is rooted in variance-decreasing activities and disciplined problem solving.

6. Outcomes

New product performance constitutes the very end of the innovation process (Perez Bustamante, 1999). New product performance has defined by Marsh and Stock (2006) as company's innovative capabilities, product quality, and efficiency of the firms on their new product. Song and Montoya-Weiss (1998) measures new product success as the degree to which a product met a firm's profit objectives. The vast majority of the studies suggest that being market oriented is associated with superior performance of

new-product success (e.g., Harmancioglu, McNally, Calantone, and Durmusoglu, 2007; Narver, Slater, and MacLachlan, 2004). Consistent with this stream of literatures, this study asserts that new product success can be assessed by market success of new product. Following Millson and Wilemon (2006), the market success is determined by four of new product success measurement as follows: (1) the degree to which a new product's profits exceeded or fell short of what is expected; (2) the degree to which sales exceeded or fell short of what is expected; (3) the degree to which a new product created a product category new to the firm; and (4) the degree to which a new product created a market that is new to the industry.

Hypotheses Development

1 The Determinants of Innovative Work Behaviors

Kark and Van Dijk (2007) indicate that the purpose of the promotion focus is to pursue development and change and to explore the advantage of creative and novel behaviors. Consequently, NPD team members will have greater willingness to perform innovative work behaviors when they have greater promotion focus. In contrast, members who operate primarily within the prevention focus are more concerned with duties and obligations, are likely to be sensitive to the presence or absence of punishments, and use avoidance as a goal attainment strategy (e.g., Crowe and Higgins, 1997; Friedman and Forster, 2001). Further, the purpose of the prevention focus is to assure one's safety and security, to maintain routines, and to preserve the status quo (Kark and Van Dijk, 2007). This study argues that members with prevention focus have less willingness to perform innovative work behaviors due to their avoidance attitude

NPD teams might have customer or competitor related responsiveness (Homburg et al., 2007). Either one, responsiveness of the NPD team members toward customer- or competitor-related changes will increase the innovative work behaviors from the members. In a product design firm, Sutton and Hargadon (1996) found that design engineers used brainstorming sessions as "prestige" or "status auctions"—that is, as opportunities to impress their peers and establish favorable social images. Thus, when NPD teams have customer or competitor related responsiveness, the members will tend to introduce innovative ideas in order to impress each other. Therefore, the following hypothesis is developed:

Hypothesis 1. Regulatory focus has positive influence on innovative work behavior
Hypothesis 2. Project orientation has positive influence on innovative work behavior

2 The Determinants of Team Reflexivity

Customer orientation echoes the classic tenet of 'stay close to the customer' and 'put the customer at the top of the organizational chart' and therefore is the most essential part of a market orientation (Peters and Austin, 1985; Deshpande´ and Farley, 1998). Consequently, the NPD team needs to be more reflexive on any changes related with their customers. On the other hand, competitor orientation focuses on the strengths and weaknesses of its competitors (Deshpande´ et al., 1993; Armstrong and Collopy, 1996). To response on any actions being taken by its competitors, NPD team also need to

be reflexive in order to overcome the thgreats posed by the competitors. In summary, Day and Wensley (1988) propose that customer and competitor orientations are two distinct approaches that lead to competitive advantage. A customer orientation, with its detailed analyses of customer needs and wants, helps a firm satisfy its customers better, and thus is more likely to lead to a differentiation advantage. In contrast, a competitor orientation may lead to a cost advantage because competitor-oriented businesses tend to watch costs closely, so they may quickly match the marketing initiatives of competitors. These advantages could be reach when the NPD teams are being reflexive toward their current tasks.

Harrison et.al. (2003) conjectured that the effects of familiarity on team performance may differ depending on the nature of the task itself. Similarly, Reagans et.al. (2005) also concluded that the task matters when studying the effects of familiarity. Their experimental study shows that team performance increased with task experience and decreased with task complexity. Performance on simpler tasks improved more strongly with task experience than on more complex tasks. Based on above descriptions, the following hypotheses are developed:

Hypothesis 3. Project orientation has positive influence on team reflexivity

Hypothesis 4. Task familiarity has positive influence on team reflexivity

3. The Effect of Team Reflexivity

Teams that engage in a complex processing (i.e., that are highly reflexive) will develop more innovations (ideas for new and improved ways of doing things or new products and services) than nonreflexive teams do (Hülsheger et al., 2009). The team reflexivity can make the team develop more innovation in the project. Furthermore, team reflexivity positively relates to higher levels of innovation and greater product performance (e.g., Carter & West, 1998; Tjosvold, et al., 2004). Reflexive teams are also likely to make better use of team members' expertise, thus achieving better project success due to greater awareness of their fellow team members' expertise and skills (Tjosvold, et al., 2004). From the results of previous research we conclude that team reflexivity plays an important role in determining the success of new product development. Based on above descriptions, the following hypothese are developed:

Hypothesis 5. Team reflexivity has positive influence on innovative work behavior.

Hypothesis 9. Team reflexivity has positive influence on NPD success.

4. The Effect of Innovative Work Behaviors

One of the major reasons people innovate in the workplace is to bring performance gains (Yuan and Woodman, 2010). This statement clearly states that there is a relationship between innovative work behaviour and performance gains. Expected performance outcomes are positive when employees believe that their innovative behaviors will bring performance improvement or efficiency gains for their work roles or work units, particularly in NPD teams (Yuan and Woodman, 2010). The innovative work behavior plays an important role in determining the sucess of the product development. Based on above descriptions, the

following hypothesis is developed:

Hypothesis 8. Innovative work behavior has positive influence on NPD success

5. The Effect of Regulatory Focus

Each regulatory focus has different consequences for perception, decision making, and emotions, as well as for individuals' behavior and performance (Higgins, 1997, 1998). Individuals who operate primarily within the promotion focus are more concerned with accomplishments and aspirations, are likely to be sensitive to the presence or absence of rewards, use approach as a goal attainment strategy, are more creative in problem-solving processes, show more willingness to take risks, and experience emotions ranging from elation and happiness to dejection (e.g., Brockner and Higgins, 2001; Crowe and Higgins, 1997; Friedman and Forster, 2001). In contrast, individuals who operate primarily within the prevention focus are more concerned with duties and obligations, are likely to be sensitive to the presence or absence of punishments, use avoidance as a goal attainment strategy, and experience emotions ranging from agitation or anxiety to quiescence or calmness.

The company which support the team by good promotion goals will be able to motivate the team members in doing their job. The purpose of the prevention focus is to assure one's safety and security, to maintain routines, and to preserve the status quo. In contrast, the purpose of the promotion focus is to pursue development and change and to explore the advantage of creative and novel behaviors. Based on above descriptions, the following hypothesis is developed:

Hypothesis 6. Regulatory focus has positive influence on NPD success.

6. The Effect of Task Familiarity

The concept of familiarity in organizational teams has been defined as "the knowledge that members of a team have about the unique aspects of their work" (Goodman and Garber 1988), such as knowledge about the task itself and about other members on the team (Littlepage et al. 1997). As members of a team work together over time, they become familiar with the task domain and with each other (Katz 1982), and they develop a common knowledge base through which team interaction and location of expert sources in the team can occur (Alavi and Leidner 2001). On the contrary, since exploitation task require NPD team to develop new product based on the existing product, thus, has higher familiarity with the tasks, and will able to produce a new product. Based on above descriptions, the following hypothesis is developed:

Hypothesis 7. Task Familiarity has positive influence on NPD success.

7. The Effect of Project Orientation

According to Homburg, Grozdanovic, and Klarmann (2007), responsiveness is typically a main facet of market orientation. They further propose that there are two different kinds of responsiveness: "customer-related responsiveness as the extent to which an organization responds quickly to customer- related changes, and… competitor-related responsiveness as the extent to which an organization responds quickly to competitor-related changes"

(Homburg et al., 2007, p. 19). This study asserts that timely responses to customer-related changes and competitor-related changes have several beneficial consequences for NPD. Based on above descriptions, the following hypothesis is developed:

Hypothesis 10. Project orientation has positive influence on NPD success.

RESEARCH METHODOLOGY

1. Research Model

Based on the above literature review and hypotheses development, this study develops a comprehensive research framework as shown in Figure 1. As shown in the framework, NPD success are influenced by regulatory focus, project orientation, task familiarity through NPD team reflexivity and innovative work behaviors. In this framework, innovative work and team reflexivity are served as two mediators that can facilitate the influences of the three antecedents on NPD success.

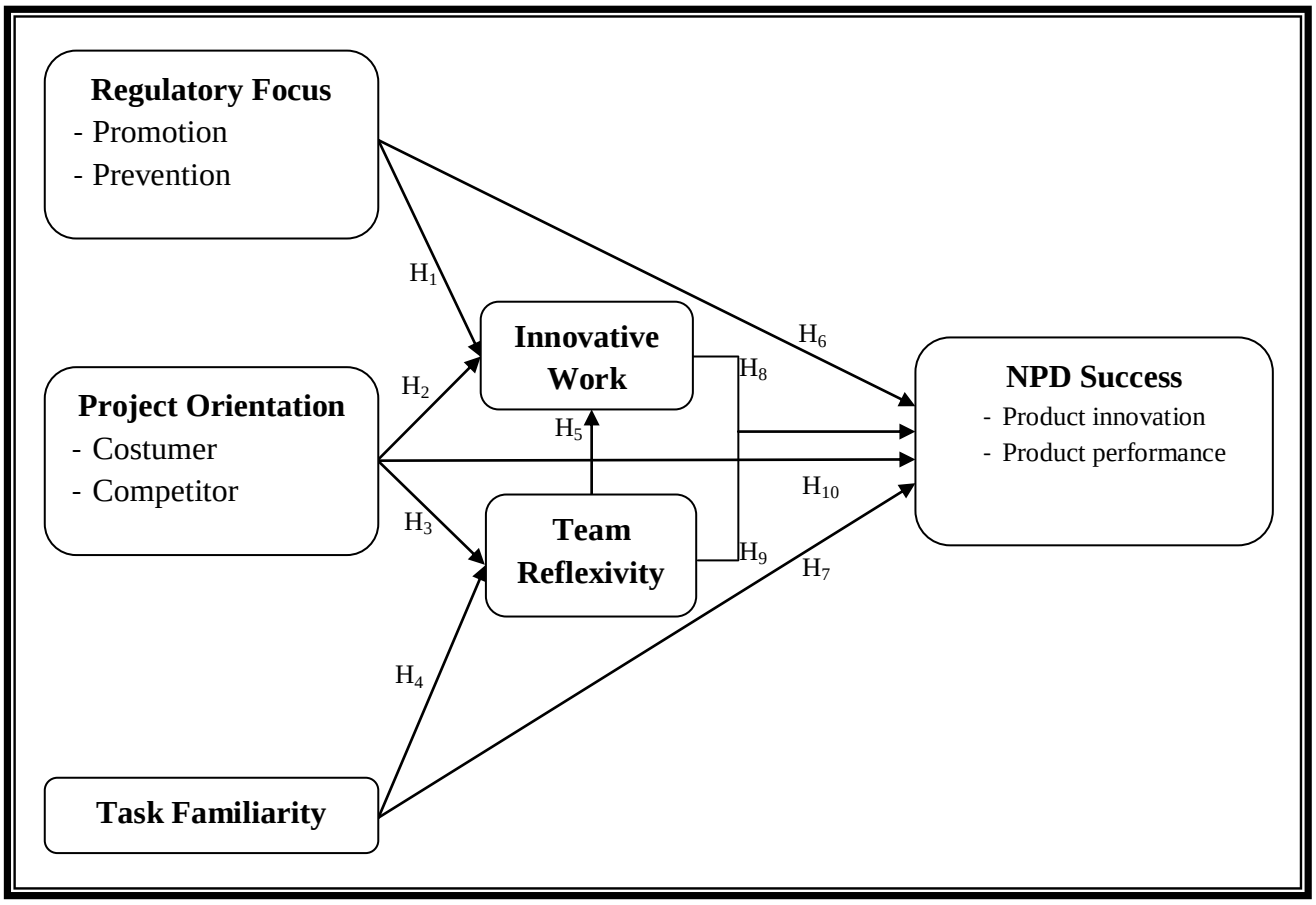

Figure 1 : Research Framework

2. Measurement of Construct

Survey questionnaire items were designed based on the review of literature. Some potential questionnaire items are listed below:

1. *Regulatory Focus.*
   This study adopted RFQ items from Higgins, Friedman, Harlow, Idson, Ayduk, and Taylor (2011) to measure regulatory focus based on their life history. All questionnaire items were measured on a 5-point Likert scale.
2. *Project Orientation.*
   This study adopted the items developed by Narver and Slater (1990) to measure the construct of project orientation. All the questionnaire items were measure on a 5-point Likert scale.
3. *Task familiarity.*
   This study employed items that modified from the existing knowledge developed by Moorman and Miner (1997) and Brockman and Morgan (2006). All the questionnaire items were measured on a 5-Likert rating scale.
4. *Innovative work behaviors.*
   This study employed six items of innovative work behaviors as developed by Scott and Bruce (1994) and further adopted by Yuan and Woodman (2010). All the questionnaire items were measured on a 5-Likert rating scale.
5. *Team reflexivity,*
   The questionnaire items of team reflexivity were adopted from Hoegl and Parboteeah (2006). All the questionnaire items were measured on a 5-Likert rating scale.
6. *NPD Success*
   The questionnaire items of product innovation were adopted from Jordan and Segelod (2006) and product innovation were adopted from Copper and Kleinschmidt (1987), and Akgun et al. (2006).

3 Sampling Design and Data Collection

In both, online and offline questionnaire surveys were conducted in this study. Forty one R&D teams of new product development (NPD) were selected. For each NPD team, there are one team leader and four team members that answer our questionnaire items.

Table 1. Demographic characteristics of respondents

Characteristic		Number	Percent
Gender	Male	147	72%
	Female	58	28%
Marriage	Single	115	56%
	Married	90	44%
Age	Less than 25	61	30%
	26-35	72	35%
	36-45	43	21%
	46-55	25	12%
	More than 55	4	2%
Education	Bachelor degree	111	54%
	Master degree	85	41%
	Doctoral degree	9	4%
Working experience	Less than 5 years	82	40%
	6-10 years	66	32%
	11-15 years	30	15%
	More than 16 years	27	13%
Project Experience	Less than 5 years	128	62%
	6-10 years	51	25%
	11-15 years	13	6%
	More than 16 years	13	6%
Position	General Employee	120	59%
	Supervisor	40	20%
	Lower-level manager	19	9%
	Middle-level manager	13	6%
	Top Manager	13	6%
Position in NPD team	Leader	41	20%
	Member	164	80%
Type of industry	Traditional industries	53	26%
	High-tech manufacturing industry	61	30%
	Other	91	44%

A total of 205 respondents from Indonesia and Taiwan participate in the survey. The survey material includes a cover letter from researcher and university-addressed. Respondents were asked to express their opinions about their project orientation, team reflexivity, task familiarity innovative work behaviors, and NPD success. Respondents were promise to complete anonymity of any information that they submitted.

For each NPD team, the team leader in the high-tech firms in Taiwan and Indonesia were asked to participate in the survey. The survey questionnaires were sent to the leaders and members of representative NPD teams

4 Construct Reliability and Validity

The final versions of the survey questionnaire items were refined through a process of purification including factor analysis, item-to-total correlation, and Cronbach's alpha. A total 205 respondents from 41 NPD teams of firms were participated this study. The

members were asked to express their perception toward regulatory focus, project orientation**,** task familiarity. While the items related with team reflexivity, innovative work behaviors, NPD success, and firm performance were responded by team leaders. In order to achieve the purposes of this study and to test the research hypotheses, SPSS and Smart PLS software were employed to analyze the collected data.

To purify the measurement scales of each research construct and to identify their dimensionality, principal components factor analysis with varimax rotation were applied to condense the collected data from a number of variables into a few factors. After conducting factor analysis, item-to-total correlation and internal consistency analysis were employed to confirm the reliability of each factors. Result of the factor analysis are presented in table 2. As shown, all factor loadings were higher than 0.6 with eigenvalue is higher than 1. The *item-to-total correlation* for all variables were higher than 0,5 and Cronbach's alpha higher than 0.6, suggest higher internal consistency for all variables.

Table 2. Result of Factor Analysis

Research Construct	Research Item	Factor Loading	Eigenvalue	Accumulative Explanation %	Item-to-Total Correlation	Cronbach's α
Regulatory Focus	**Promotion Focus**		3.259	35.064		0.794
KMO=0.771 Barlett=0.000	RF7	0.835			0.617	
	RF3	0.772			0.525	
	RF6	0.725			0.654	
	RF5	0.720			0.626	
	Prevention Focus		1.504	68.048		0.806
	RF8	0.880			0.699	
	RF9	0.834			0.637	
	RF11	0.769			0.636	
Project Orientation	**Costumer Orientation**		3.693	61.548		0.874
KMO=0.814 Barlett=0.000	PO5	0.820			0.722	
	PO3	0.808			0.707	
	PO2	0.795			0.691	
	PO4	0.785			0.677	
	PO6	0.761			0.650	
	PO1	0.735			0.621	
	Competitor Orientation		2.198	73.280		0.817
	PO8	0.892			0.733	
	PO7	0.854			0.669	
	PO9	0.820			0.615	
Task Familiarity	**Task Familiarity**		2.816	70.402		0.858
KMO=0.767 Barlett=0.000	TF2	0.866			0.741	
	TF1	0.848			0.710	
	TF3	0.827			0.692	
	TF4	0.815			0.674	
Team Reflexivity	**Team Reflexivity**		4.253	53.164		0.871
KMO=0.827 Barlett=0.000	TR9	0.806			0.725	
	TR6	0.796			0.709	
	TR5	0.751			0.650	
	TR7	0.747			0.653	

Research Construct	Research Item	Factor Loading	Eigenvalue	Accumulative Explanation %	Item-to-Total Correlation	Cronbach's α
	TR8	0.703			0.598	
	TR2	0.697			0.595	
	TR1	0.679			0.577	
	TR4	0.637			0.532	
Innovative Work Behavior	**Innovative Work Behavior**		4.023	67.049		0.900
KMO=0.885 Barlett=0.000	IWB6	0.872			0.801	
	IWB5	0.861			0.788	
	IWB1	0.821			0.729	
	IWB4	0.793			0.701	
	IWB2	0.782			0.683	
	IWB3	0.778			0.684	
NPD Success	**Product Innovation**		3.587	71.736		0.893
KMO=0.813 Barlett=0.000	NS4	0.890			0.813	
	NS3	0.869			0.794	
	NS2	0.869			0.764	
	NS1	0.861			0.755	
	NS5	0.736			0.621	
	Product Performance		3.597	71.947		0.902
	NS7	0.891			0.815	
	NS6	0.874			0.791	
	NS8	0.866			0.778	
	NS10	0.831			0.734	
	NS9	0.774			0.665	

RESULTS AND DISSCUSSIONS

The research results are displayed in Figure 2. Each latent variable is related to one or more manifest variables that are measured. For example, for the task familiarity (TF) latent variable the four manifest variables are:

a. A great deal of information about this product category (TF1)
b. A great deal of knowledge about this product category (TF2)
c. A strong understanding of this product category (TF3)
d. A great deal of insight regarding this product category (TF4)

There are total of six latent variable with its own manifest variable in this framework. There are also ten hypotheses among the latent variable.

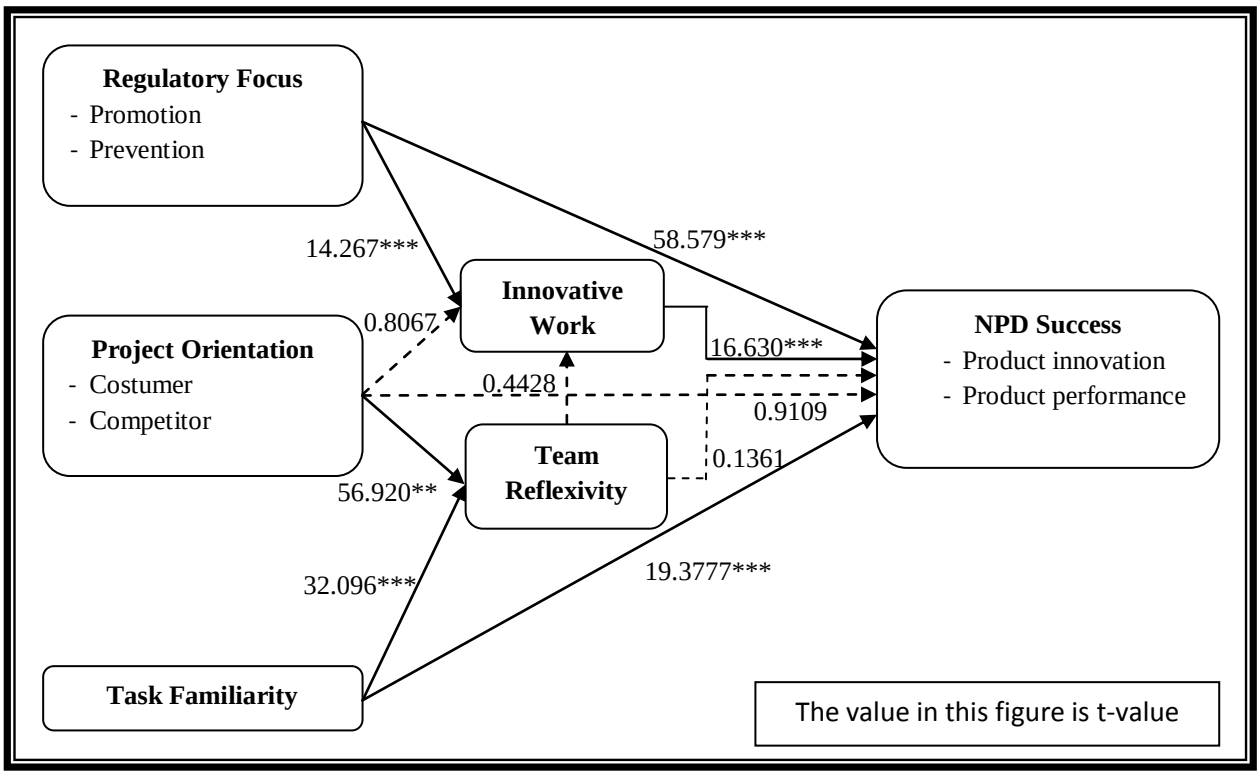

Table 3. Overview Result of Partial Least Square

	AVE	Composite Reliability	R Square	Communality
IWB	0.6540	0.9186	0.0300	0.6540
NS	0.8863	0.9397	0.3823	0.8863
PO	0.8540	0.9213	0.0000	0.8540
RF	0.6980	0.8220	0.0000	0.6980
TF	0.7030	0.9044	0.0000	0.7030
TR	0.5275	0.8990	0.4476	0.5275

There are ten hyphotheses in this study with 205 samples consist of 41 team leaders and 164 team members of various company. SmartPLS software was used to test the hypotheses. The result of SmartPLS is provided in Table 4.

a. The determinants of innovative work behavior (hypothesis 1 and 2)

   Table 4 shows that regulatory focus has negative effect (β=-0.1554; $p<0.01$) on innovative work behavior and project orientation has no effect on innovative work behavior ((β=-0.0612; $p>0.01$). This result is contrast with Higgins (2001) that stated the company which support the team by good promotion goals will be able to motivate the team members in doing their job. Furthermore, Sutton and Hargadon (1996) stated that NPD teams which have knowledge of project orientations will tend to introduce the innovative ideas. Therefore, it can be concluded that hypothesis 1 and 2 are not supported.

b. The determinants of team reflexivity (hypothesis 3 and 4)
From table 4, we can see that both project orientation (β=0.4797; p<0.01) and task familiarity (β=0.2756; p<0.01) have positive effect on team reflexivity. This result is in line with Zhou, Brown, Dev, and Agarwal (2007) which states that project orientation places the highest priority on creating and maintaining superior customer value, and provides firm-wide norms and beliefs that guide organizational behaviors. Furthermore, Espinosa et al. (2007) states that familiarity can improve team performance. Thus, it can be concluded that hypothesis 3 and 4 are supported.

c. The effect of team reflexivity (hypothesis 5 and 9)
Table 4 shows that team reflexivity has no effect on innovative work behavior (β=0.612; p>0.01) and NPD success (β=-0.0047; p>0.01). This result is contrast with Hülsheger et al. (2009) which state that the team which engage in a complex processing (i.e., Highly reflexive) will develop more innovations (new ideas, new ways of doing job, or new products and services) than non-reflexive teams do. Furthermore, team reflexivity positively relates to higher levels of innovation and greater product performance (e.g., Carter & West, 1998; Tjosvold, et al., 2004). Therefore, it can be concluded that hypothesis 5 and 9 are not supported.

d. The effect of regulatory focus, task familiarity, project orientation and innovative work behavior on NPD success (hypothesis 6, 7, 8, and 10)
From table 4, we can see that regulatory focus (β=0.4935; p<0.01), team reflexivity (β= 0.1540; p<0.01), and innovative work behavior (β= 0.1310; p<0.01) have positive effect on NPD success. This result is in line with Yuan and Woodman (2010) that the expected performance outcomes are positive when employees believe that innovative behaviors will improve their performance or efficiency gains for their work roles or work units, particularly in NPD teams. Higgins (2010) state that the company which support the team by good promotion goals will be able to motivate the team members in doing their job. Furthermore, Alavi and Leidner (2001) state that since exploitation task require NPD team to develop new product based on the existing product, thus, with higher familiarity with the tasks, will able to produce a new product. But, project orientation (β=0.0660; p>0.01) has no effect on NPD success. This result is contrast with Homburg et al. (2007) who asserts that timely responses to customer-related changes and competitor-related changes will have beneficial consequences for NPD success. Therefore, it can be concluded that hypothesis 6, 7, and 8 are supported but hypothesis 10 is not supported.

e. The mediating effect of innovative work behavior and team reflexivity
According to figure 2, first, we can conclude that the effect of regulatory focus on NPD success is partially mediated by innovative work behavior because regulatory focus has direct and indirect effect on NPD success. Second, innovative work behavior is fully mediating the effect of project orientation on NPD success. Third, team reflexivity has no mediation effect on both the effect of project orientation and task familiarity on NPD success.

CONCLUSIONS AND SUGGESTION

This study attempts to explore the antecedents of new product development (NPD) success. Based on extensive literature reviews and quantitative study using SPSS and SmartPLS as the analytical tools, this study found the following results. Firstly, five essential elements that might contribute to the NPD success were identified. These elements include regulatory focus, project orientation, task familiarity, innovative work behaviour, and team reflexivity. Second, both regulatory focus and project orientation have a influence on innovative work behavior. Third, project orientation and task familiarity has a positive relationship with team reflexivity. The quantitative results show these two variables have a

Table 4. Result of Partial Least Square (PLS)

Relations		Standardized Coefficients	C.R.
Variables			
Regulatory Focus (RF)	Pro_m	0.8072	84.739***
	Pre_m	0.8628	89.338***
Project Orientation(PO)	Con_m	0.9226	197.090***
	Com_m	0.9256	221.631***
Task Familiarity (TF)	Tf1	0.8619	131.555***
	Tf2	0.8619	123.156***
	Tf3	0.8094	100.829***
	Tf4	0.8191	98.228***
Innovative Work Behavior (IWB)	Iwb1	0.7609	0.8033
	Iwb2	0.7074	0.5086
	Iwb3	0.8228	21.325***
	Iwb4	0.8616	20.940***
	Iwb5	0.8454	17.304***
	Iwb6	0.8428	16.457***
Team Reflexivity (TR)	Tr1	0.7196	91.309***
	Tr2	0.7445	87.865***
	Tr4	0.6645	86.052***
	Tr5	0.6997	52.757***
	Tr6	0.7721	85.601***
	Tr7	0.7280	88.096***
	Tr8	0.6821	73.280***
	Tr9	0.7911	103.691***
NPD Success (NS	Inn_m	0.9373	165.737***
	Per_m	0.9544	172.398***
Path			
RF → IWB (H1)		-0.1554	14.267***
PO → IWB (H2)		-0.0612	0.8067
PO → TR (H3)		0.4797	56.920***

TF → TR (H4)	0.2756	32.096***
TR → IWB(H5)	0.612	0.4428
RF→ NS (H6)	0.4935	58.579***
TF→ NS (H7)	0.1540	19.377***
IWB → NS (H8)	0.1310	16.630***
TR → NS(H9)	-0.0047	0.1361
PO→ NS (H10)	0.0660	0.9109

Note : Critical t-values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent).

significant and positive impact on team reflexivity. This results further confirm that a more clear project orientation and a higher task familiarity will result in higher team reflexivity.

Fourth, the quantitative results show that innovative work behavior and regulatory focus have significant relationship to NPD success, while the task familiarity and project orientation and have no significant relationship to NPD success.

Fifth, path of regulatory focus to NPD success is partially mediating by innovative work behavior and path of project orientation to NPD success is fully mediating by innovative work behavior. Furthermore, team reflexivity can not be a mediating variable for both of project orientation and task familiarity because the path of team reflexivity to NPD success is not significant.

Finally, this reaserach promises to contribute our understandings of NPD practices by developing comprehensive model that encompassed the antecedents and consequences of team reflexivity and innovative work behaviors. The antecedents include regulatory focus, project orientation and task familiarity. The three antecedents are proposed to be mediated by team reflexivity and innovative work behaviors before having effects on NPD success. This study has aimed to develop comprehensive sources of NPD team reflexivity and innovative work behaviors by proposing that regulatory focus, project orientation, and task familiarity as the determinants. The results can enhance understanding on the role of these antecedents on NPD team operations. This study has aimed to extend the concept of innovative work behaviors as the phenomenon inside NPD teams that will contribute to members', teams, and organizational outcomes. This study further argues that members will have innovative work behaviors when the team has sufficient time to reflect their current assignment. Thus, the results of this study can provide valuable information for NPD management and for further academic validation.

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