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**Valaei, N, Rezaei, S, Bressolles, G and M. Dent, M**

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**Valaei, N, Rezaei, S, Bressolles, G and M. Dent, M (2021) Indispensable components of creativity and innovation, on FMCG companies' competitive performance: A Resource-Based View (RBV) of the firm. Asia-Pacific Journal of Business Administration. ISSN 1757-4323**

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|------------------|--|
| Journal:         | <i>Asia-Pacific Journal of Business Administration</i>   |
| Manuscript ID    | APJBA-11-2020-0420.R1  |
| Manuscript Type: | Research Paper   |
| Keywords:        | Motivation, creativity-related processes, expertise, creativity and innovation, fast-moving consumer goods (FMCG), resource-based view (RBV) of the firm |
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## Indispensable components of creativity and innovation, on FMCG companies' competitive performance: A Resource-Based View (RBV) of the firm

### Abstract

**Purpose-** In the hyper competitive world, while the essence of strategy making is often focussed on environmental and market-based analysis or the structure of the market, the important rôle of resources and capabilities in determining firm performance and overall strategy formulation within Small and Medium-sized Enterprises (SMEs) begs attention. Grounded in the resource-based view (RBV) of the firm, organisational improvisation theory, and componential theory of creativity, the purpose of this research is to look beyond the determinants of creativity, innovation and proposes a theoretical model investigating organisations formative performance in strategy formulation.

**Design/methodology/approach-** A total of 210 valid paper-and-pencil questionnaires were received from Fast Moving Consumer Goods/Small and Medium-sized Enterprises (FMCG-SMEs) to empirically test the proposed model. Structural equation modelling approach was performed to assess the model fit, measurement and structural models for exogenous and endogenous constructs, and test of nonlinearity.

**Findings-** The results imply that intrinsic motivation, extrinsic motivation, creativity-related processes, and expertise as the firm's capabilities positively influences improvisational creativity; and creativity-related processes and expertise also positively impacts on compositional creativity. Surprisingly, intrinsic and extrinsic motivations are not conducive to compositional creativity and the relationships between extrinsic motivation and improvisational creativity as well as improvisational creativity and performance are nonlinear. Furthermore, both improvisational creativity and compositional creativity are found to be predictors of innovation in FMCG-SMEs.

**Practical implications-** Thus, organisations and specifically FMCG-SMEs can increase the level of improvisational creativity if they formulate strategies to motivate employees both intrinsically and extrinsically and further, they can boost the level of compositional creativity in their companies through hiring and nurturing experts.

**Originality/value-** Less attention has been paid to motivation, creativity, innovation, performance and strategy linkages as the prominent source of competitive advantages among FMCG-SMEs especially in developing countries. Theoretically, through introducing extrinsic motivation as the predictors of improvisational creativity and innovation, from strategic management perspectives, the empirical findings of this research illustrate that resources and capabilities (RBV) lead to improved competitive performance within the FMCG-SMEs. This study also provides empirical evidence for the nonlinear nature of the relationship between motivation and creativity.

**Keywords:** Motivation; creativity-related processes; expertise; creativity and innovation; fast-moving consumer goods (FMCG); resource-based view (RBV) of the firm

### 1. Introduction

In the twenty-first century, the need for creative companies is rising as the market operates in a competitive and challenging environment (Valaei *et al.*, 2017a). Business and economic problems demand researchers provide a better understanding of the firms creativity and innovation (Etlie *et al.*, 2014) because such capabilities and resources are the sources of sustainable competitive advantage (Barney, 1991, Barney, 1986). The management guru Peter F. Drucker gave a metaphorical view to companies indicating that the 'new organization' of the future is like the symphony orchestra (Drucker, 1988) and argued that the 'new organization' of the future would be improvisational in such a way that a business has no score to play by except the score it writes as it plays.

In the manufacturing sector, the firm's competitive advantage can be formulated based on employees' creative prospective which in turn helps to develop unique products for the target market (Terziovski, 2010). Despite the importance of the Fast-Moving Consumer Goods (FMCG) sector (Balmer *et al.*, 2001, Simms and Trott, 2014, Anselmsson and Bondesson, 2015), few empirical research studies have been devoted to creativity and innovation within FMCG-SMEs. Determinants of innovation are different between large firms and SMEs (Roach *et al.*, 2016, Terziovski, 2010).

1  
2  
3 Improvisation takes place in SMEs to a larger extent compared to big enterprises that are change  
4 resistant and somewhat more inflexible. The degree of agility of SMEs is gauged through their  
5 improvisational creativity capabilities that facilitate problem-solving in occasions when time matters  
6 most (i.e. Crisis situations). Further, research is scant on the rôle of different types of creativity in  
7 innovativeness amongst SMEs (Madrid - Guijarro *et al.*, 2013, Terziovski, 2010).

8  
9 As a broad concept, creativity is referred to the ability to produce new ideas, strategies, and  
10 processes (Amabile, 1996, Woodman *et al.*, 1993). Psychological perspectives of creativity refer to the  
11 concept as different steps in understanding the problem, expanding creative solutions and choosing  
12 options from possible solutions (Baark, 2007). Most creativity theories indicate the rôle of creativity  
13 in innovation execution (Yusuf, 2009). Improvisational creativity is the combination of spontaneity and  
14 intuition that result in improvisational knowledge (Vera *et al.*, 2014). Compositional creativity is  
15 considered as the lower extent of creativity that results in embellishments and variations in products,  
16 processes, services, and ideas (Sawyer, 1992). In addition, Amabile (1996)'s theory of creativity  
17 considers three components as the enablers of creativity: domain-relevant skills, creativity relevant  
18 skills, and intrinsic motivation. Even though the empirical research on this area is scarce, this study  
19 hypothesises that these three components facilitate improvisational creativity, compositional creativity,  
20 and innovation. Furthermore, another gap is proposed. The research on the rôle of extrinsic motivation  
21 on positive organizational outcomes is ambiguous and contradictory (Kuvaas *et al.*, 2017). Extrinsic  
22 motivation can be considered as another factor participating in creativity and it needs to be scrutinized  
23 to what extent extrinsic motivation is related to the creativity of employees among FMCG-SMEs.

24  
25 Several gaps exist on the research about improvisation (Magni *et al.*, 2009). Studies on  
26 improvisation overemphasise on the jazz music taxonomy and metaphorical theatre (for example,  
27 Hatch, 1997, Kamoche and Cunha, 2003, Sawyer, 2015). The metaphorical view towards improvisation  
28 hinders both its conceptualization and the extent to which it takes place in organizations. This study  
29 goes beyond the metaphorical view of improvisation and it attempts to examine the concept in the  
30 organizational setting, namely FMCG-SMEs performance. To step outside of the metaphorical  
31 perspective, this study aims to figure out how the components of creativity are related to composition,  
32 improvisation, and innovation within FMCG-SME companies. This study also contributes to academics  
33 and managers' understanding of the resource-based view (RBV) of the firm.

34  
35 SMEs play a major rôle in the national economy of Malaysia and the country has invested  
36 heavily to boost the growth of SMEs in all sectors (Anuar and Mohd Yusuff, 2011). SMEs are the  
37 backbone of the growth in every country and most of the companies registered in any country are  
38 categorised as SMEs (Singh *et al.*, 2009). Literature in innovation more resorts to the studies conducted  
39 in developed countries and there is a lack of research in developing countries (Intarakumnerd and  
40 Chaminade, 2011). However, Malaysian FMCG-SME from manufacturing and service sectors are the  
41 main scope of this study. The following section delineates on the theoretical background of exogenous  
42 and endogenous variables, and the hypotheses are developed. Subsequently, the research method is  
43 proposed and the results of the models and nonlinear relations are tabulated and schematically depicted.  
44 The discussion and implication sections of the research highlight the findings and suggest the further  
45 research accordingly.

## 46 47 **2. Theoretical background and hypotheses**

48  
49 Recently, the field of organizational and strategic management has emphasised theory integration to  
50 understand the strategy (Makadok *et al.*, 2018). Researchers started to study the interactions taking  
51 place between the individuals at the small group level (Tsai and Ghoshal, 1998). Several studies on  
52 creativity emphasised the need for combining these approaches to witness satisfactory creativity,  
53 according to Amabile (1996). Previous studies have shown that the convergence of environment-related  
54 variables and person-related variables (such as motivation, personality, knowledge, and intelligence) is  
55 imperative for creativity (Amabile, 1996, Sternberg and Lubart, 1999, Madrid - Guijarro *et al.*, 2013).  
56 Social capital is a necessary element in building an innovative business climate in SMEs (Glover *et al.*,  
57 2016, Le Phong, 2020) and RBV imply that capabilities and resources furnish the building blocks of a  
58 company's strategy performance linkage (Clegg *et al.*, 2017). Sternberg and Lubart (1999) indicate that  
59 if these paths to creativity are combined then the chances are that a high level of creativity will be  
60

achieved. Similarly, the RBV is based on the link between internal resources of the firm and strategy (Terziovski, 2010).

Moreover, Valaei *et al.* (2017b) argues that there are several internal and external factors participative to open innovation activities in SMEs that cannot be thoroughly examined through qualitative approaches. Yet, previous research didn't thoroughly examine "employee behaviors that are critical for innovation" (Kremer *et al.*, 2019, p. 65). However, this research, as a quantitative approach, attempts to explain the enablers of innovation and performance by examining person-related variables of creativity and it develops a model (Figure 1) based on theories of creativity (Amabile, 1996, Amabile, 1988) and organizational improvisation (Cunha *et al.*, 1999, Kamoche and Cunha, 2003).

**Figure 1:** Theoretical research model (Insert here)

### 2.1. Creativity-related processes

In Amabile's "componential theory of creativity", the elements of creative thinking skills and expertise are personal factors. In addition, Amabile (1998) revised the conceptualization of creative thinking skills to creativity-related processes. This study applies creativity-related processes (the new terminology) as one of three components of creativity. Creativity-relevant processes consist a cognitive style that makes it easier for an individual to reap and process information flexibly and creatively, to strengthen social skills on interacting the ideas to others, and a work style that sustains one's focus and energy in the creative processes (Frey *et al.*, 2011, Nguyen Duy, 2018).

Surveying a large company in the US, Sawyer (1992) indicate that employee's creativity is contingent upon creative process engagement. According to Amabile (1988), creativity-relevant processes refer to the extent to which individuals face solutions and problems in their own pace to combine current ideas in a novel way. This process is related to personality and personal capabilities of individuals as well as depending on how a person thinks and works. Shalley *et al.* (2004) state that creativity-related processes may raise the possibility that an individual identifies opportunities/problems, shaping novel ideas, and refining ideas. In her extended model of creativity, Amabile (2012) proposes that creativity-related processes are conducive to response generation of individuals. Scholars (Çakar and Ertürk, 2010) also postulated the relationship between creativity-related processes and creativity.

Huber, Leigh, & Tremblay (2012) indicate that the elements of creativity are: creativity relevant processes, motivation, and experience. As enablers, these components may trigger creativity and innovation. Schlegelmilch *et al.* (2003) determine processes and people as necessary conditions of strategic innovation. Nevertheless, research is scant about the rôle of creativity-related processes on improvisational creativity and compositional creativity and no previous research has investigated these relationships. Therefore, it is noteworthy to appreciate the extent to which creativity-related processes may impact on types of creativity.

The greater the degree of creativity-related processes, the higher the **H1:** improvisational creativity; **H2:** compositional creativity among FMCG-SMEs.

### 2.2. Expertise

Expertise refers to the individual knowledge and everything she/ he can accomplish in the wide area of her/ his profession (Amabile, 1998). It refers to technical skills, intelligence, and talent of employees in the work environment. It is often also referred to as tacit knowledge (Dent, 2014). Expertise includes the basic talent an individual has as well as all the knowledge and technical abilities that she has in the relevant fields of her work domain. According to Amabile (1998), it is not important how an individual obtains the expertise, whether through formal education, practical experience, or interaction with other professionals. The larger the pool of expertise, the higher degree of creativity will be achieved (Reilly, 2008).

Stacey *et al.* (2002) claim that expertise and creativity are negatively related in the knitwear industry and chances are that the designers in this industry will lose creativity while developing expertise. They believe that this is due to designers' orthogonal view toward problem-solving ability

1  
2  
3 and idea generation. In addition, examining expertise and social creativity, Reilly (2008) states that the  
4 notion of expertise does not necessarily refer to a single person, but it can be a shared expertise from  
5 different individuals. In her study, she argues that creativity is not contingent upon expert thinking skills  
6 but the shared expertise of a group of individuals. In contrast, this study presumes that individual  
7 expertise positively influences both improvisational and compositional creativity. According to the  
8 Penrosian view of strategy, Barney (1986) argue that the organisational skills and capabilities are the  
9 source of competitive performance.  
10

11 The greater the degree of expertise, the higher the **H3**: improvisational creativity; **H4**: compositional  
12 creativity among FMCG-SMEs.  
13

### 14 2.3. Motivation

15  
16 Motivation theories are generally divided into process and need-based theories. Process-based theories  
17 are “valence/expectancy theory” (Vroom, 1982), “reinforcement theory” (Skinner, 1953), “goal setting  
18 theory” (Locke, 1968), and etc. There are several need-based theories as well: “Maslow’s hierarchy  
19 of needs” (Maslow, 1943), “ERG theory” (Alderfer, 1969), “McGregor’s Theory X and Theory Y”  
20 (McGregor, 1960), “Herzberg’s dual-factor theory” (Herzberg, 1968), “acquired needs theory”  
21 (McClelland, 1961), and “self-determination theory” (Deci and Ryan, 2002). While delving into these  
22 theories is beyond the scope of this paper, the latter theory mainly focuses on extrinsic and intrinsic  
23 motivation (Truxillo *et al.*, 2015). According to self-determination theory, people try to attain their  
24 fundamental psychological needs such as competence, autonomy, and relatedness via intrinsically  
25 motivated behaviour. This theory also explains that “extrinsic motivation that is sufficiently internalized  
26 become viable substitutes” for aforementioned needs (Palmisano, 2008, p. 364). Need-based theories  
27 of motivation aid managers to determine what different employees require to be motivated at work.  
28

29 Employee performance varies based on several traits including motivation (Zhang, Zhang,  
30 Song, & Gong, 2016), individual ability, and environmental characteristics (Hakimian *et al.*, 2016).  
31 Motivation is focal point of general behaviour (Lin, 2007) and it has become as one of the main ways  
32 to appreciate how employees act at the workplace (Adeola & Adebisi, 2016). Canós-Darós (2013)  
33 indicates that the employees’ motivation is the focal point of knowledge-based industries and the  
34 concept of motivation is intertwined with quality of work, productivity, and performance.  
35

36 Ryan (2014) investigates the impact of motivation on scientists’ research performance in the  
37 UK at the individual level and he finds that internal self-concept motivation is positively associated  
38 with research performance while instrumental motivation showed a negative effect. Furthermore, the  
39 results of a study by Ryan and Berbegal-Mirabent (2016) show that a combination of work motivation  
40 (multi-dimensional causal conditions of internal and external self-concept motivations, intrinsic and  
41 instrumental motivations, and goal internalisation motivation) is conducive to a high degree of research  
42 performance.  
43

44 In general terms, motivation is parsed into two facets: extrinsic and intrinsic (Adeola &  
45 Adebisi, 2016; Lin, 2007; Reddy, Llerena, & Kern, 2016; Smith, Joubert, & Karodia, 2015). There is  
46 no unanimity on the concept of motivation in different disciplines as some researchers suggest that  
47 “source of motivation is intrinsic while modern theories seem to favour intrinsic motivation” (Silvia,  
48 2006, p. 130). Birkinshaw and Ridderstråle (2017, p. 143) indicate that “the confusing plethora of  
49 concepts on motivation is due to the fact that human behaviour is complicated”. In addition, Esteban-  
50 Millat *et al.* (2014, p. 375) quote that “the emphasis placed on studying intrinsic and extrinsic  
51 motivation is justified on the basis of the fundamental rôle they play in many psychology and marketing  
52 theories geared to explaining individuals’ behaviour”. Therefore, further studies in different settings are  
53 required to broaden our understanding of these concepts.  
54

#### 55 2.3.1. Intrinsic Motivation

56  
57 Shalley (1991) defines intrinsic motivation as a feeling of self-determination on a domain task. It is also  
58 defined as the enjoyment of the activity itself (Ryan & Berbegal-Mirabent, 2016). There is unanimity  
59 amongst most the researchers that intrinsically motivated state supports creativity (Gerhart and Fang,  
60 2014). Studies on creativity at individual level also indicate the significant influence of intrinsically

1  
2  
3 motivated behaviour (Shalley *et al.*, 2004, Shalley, 1991). Bodla and Naeem (2014) find that  
4 intrinsically motivated behaviour informs creative performance of salespersons in Pakistan. But, their  
5 hypothesis on the positive effect of intrinsically motivated behaviour on sales performance is rejected.  
6 In addition, surveying 1,025 students in Taiwan, the study by Liang *et al.* (2013) show that intrinsic  
7 motivation positively influences students' imaginative capability development namely, creative  
8 imagination and reproductive imagination. The findings of the study by Uo, Iao, Iao, & Hang (2014)  
9 indicate that intrinsic motivation and job performance are positively related. Sampling 290 employees  
10 from various industries in Korea, Shin and Zhou (2003) find that intrinsically motivated behaviour  
11 mediates the transformational leadership → creativity relationship.

12  
13 Contrarily, Grant and Berry (2011) claim that the results of research on intrinsically motivated  
14 behaviour and creativity are confusing and equivocal. They argue that previous research studies were  
15 designed based on laboratory experiments and field studies and that the results were contradictory. For  
16 instance, in a laboratory study setting with college students, Shalley and Perry-Smith (2001) and  
17 Eisenberger and Aselage (2009) find that intrinsic motivation is not relevant to creativity. Perry-Smith  
18 (2006), in a field study setting of scientists, also indicates a non-significant association between  
19 intrinsically motivated behaviour and creativity. Furthermore, using a sample of 165 R&D personnel  
20 from the United States, Dewett (2007) implies no relationship between intrinsically motivated  
21 behaviour and objective measure of creativity. Findings by Zhang *et al.* (2016) also show no association  
22 between intrinsic motivation and employees' performance. Dewett (2007) mentions that there is a  
23 limited practical study in measuring the relationship between intrinsically motivated behaviour and  
24 employee creativity. Conducting a meta-analysis of the intrinsic motivation → product creativity  
25 relationship, the findings of de Jesus *et al.* (2013) show that intrinsically motivated behaviour is  
26 moderately related to product creativity. Previous research studies have not tapped into the possible  
27 impact of intrinsic motivation on improvisational and compositional creativities.

28  
29 The higher the intrinsic motivation, the greater the level of **H5**: improvisational creativity; **H6**:  
30 compositional creativity among FMCG-SMEs.

### 31 32 33 2.3.2. *Extrinsic Motivation*

34  
35 Extrinsic motivation mainly alludes to financial rewards, fringe benefits, promotions, and contingent  
36 rewards as a whole (Benabou and Tirole, 2003). Extrinsic motivation is referred to external to the task  
37 environment and, for top management, this type of motivation is simpler to effect on than intrinsic  
38 motivation due to being easier to implement and control. According to Farr and Ford (1990), the  
39 performance-reward association impacts on the payoff from change. The notion of "change" is  
40 considered as a creative process that is facilitated by extrinsic means. Freeman and Engel (2007) state  
41 that assigning incentives may result in innovation. Galbraith (1983) expresses that one of the significant  
42 advantages of the reward system is to stimulate, maintain, and motivate employees boosting their  
43 creative behaviour. George and Zhou (2002) indicate that extrinsic rewards (payments and promotions)  
44 moderate the negative mood → creative performance relationship. In addition, in their multi-national  
45 study, Tellis *et al.* (2009) mention that those incentives for the enterprise are substantial practices that  
46 give rise to a maintaining radical innovation.

47  
48 Research has witnessed that pay and bonus systems have a major effect in motivating  
49 individuals to take actions in certain ways that support creativity (Zampetakis, 2014). Gerhart and Fang  
50 (2014) find that extrinsic motivation in terms of pay for performance is positively associated with  
51 workplace creativity and performance. According to Jones and Mawhinney (1977), when extrinsic  
52 motivation is established, higher degrees of intrinsically motivated behaviour can be conducive to  
53 greater degree of satisfaction. In contrast, extrinsically motivated behaviour may supersede the impact  
54 of intrinsic motivation in accomplishing a task (Osterloh and Frey, 2000). Frey *et al.* (2011) indicate  
55 that the synergy between extrinsic and intrinsic motivations is negative. They mention that once  
56 intrinsic motivation is noticeable, it will influence the emotional assessments of the contributors. In  
57 other words, if employees find their work interesting and challenging, the greater degree of intrinsic  
58 motivation will be proportionately repellent to distinct degrees of extrinsic motivators.

59  
60 Since some scholars agree that extrinsic rewards influence creativity, others believe the reverse.  
There exist doubts about the positive effect of extrinsically motivated behaviour on creativity, and

scholars believe that extrinsic motivation may hinder creativity as well (Cummings *et al.*, 1975, Benabou and Tirole, 2003). Previous research hypothesised that the extrinsically motivated employees hinder creativity (Amabile, 1996) in the long run (Benabou and Tirole, 2003). Benabou and Tirole (2003) indicate that contingent rewards, because of its cognitive inharmoniousness, may have negative impacts, particularly on a long-term basis. Cummings *et al.* (1975) describe the bureaucratic company as a type of enterprise that relies heavily on extrinsic rewards and they consider it as a hindrance to creativity. It should be noted that the rôle of both national and organizational culture is critical in motivating employees extrinsically. It is likely that extrinsic rewards are viewed differently cross-culturally and it may be a hindrance to creativity in a culture and enabler of creativity in other cultures. Hence, the concept of extrinsic motivation should be scrutinised in both eastern and western cultures to determine its consequences within FMCG-SMEs.

The higher the extrinsic motivation, the higher the level of **H7**: improvisational creativity; **H8**: compositional creativity among FMCG-SMEs.

### 2.5. *Improvisation, composition, and innovation*

Improvisation is “the absence of pre-determined stipulation” (Yeboah Banin *et al.*, 2018, p. 121). The concept of improvisation is borrowed from jazz music (Sawyer, 1992) and its application in individual and organisational studies were drawn from jazz performance (Hatch, 1997, Kamoche and Cunha, 2003, Kamoche and Cunha, 1998). Scholars have distinct views towards the concept of improvisation. For example, Vera *et al.* (2014) define improvisation capability as a capacity of teams to act spontaneously, extemporaneously and tackle problems in a new way. Sawyer (1992) considers the concept of improvisational creativity as a dimension of creativity and he distinguishes it from compositional creativity. According to him, the creative act and the outcome product are co-occurring in improvisational creativity.

The degree of novelty differentiates modes of creativity (Fisher and Amabile, 2009). In improvisational creativity, “response generation and execution (towards product, service, or design) is simultaneous and convergent in time but in compositional creativity, there is a temporal separation between when a response is generated and when it is executed” (Valaei *et al.*, 2016, p. 334). In addition, Zhou and Shalley (2003) state that the extent of creativity ranges from low to high in which improvisation is referred to the utmost degree of creativity. Improvisational creativity is a simultaneous process and it takes place in a shorter period of time compared to compositional creativity (Valaei *et al.*, 2017b).

Furthermore, compositional creativity refers to the lower degree of creativity that takes place in a high time temporal and its level of novelty is lower than improvisational creativity (Fisher and Amabile, 2009). In compositional creativity, the degree of novelty is low and there is no time constraint (high time in response generation and execution) that makes it as a routine in a daily work of employees (Fisher and Amabile, 2009). According to Sawyer (1992), a creative product is an outcome of a creative activity that takes place in long term (i.e., compositional creativity). Compositional creativity may result in new ideas, products, services that are consistent with the goals and objectives of companies and it does not depart from the domain of the work at hand (Valaei *et al.*, 2016). Vera and Crossan (2005) indicate that both improvisation and composition are considered creativity actions. Further, innovation is a result of creativity (Yusuf, 2009) and it is established as an outcome of a linear procedure (Poutanen *et al.*, 2016). Since there is a time constraint in improvisational creativity due to its extemporaneity and spontaneity, it is very likely for business entities to transform the improvisational creativity into compositional creativity. Studying 178 SMEs, Song and Hung (2018) find an association between innovativeness and company’s performance. Finally, research is limited on the conceptualisation of organizational innovation construct (Weerawardena, 2003).

There is a positive association between improvisational creativity and **H9**: compositional creativity; **H10**: innovation among FMCG-SMEs.

**H11**: The higher the degree of compositional creativity, the higher the innovation among FMCG-SMEs. The higher the level of **H12**: improvisational creativity **H13**: compositional creativity, the higher the performance of FMCG-SMEs.



**H14:** The higher the degree of innovation among FMCG-SMEs, the better their performance.

### 3. Research method

The population of focus for this study is Malaysian FMCG-SMEs and a total number of 300 questionnaires were issued to top managers of FMCG-SMEs active in Malaysia. The questionnaire was mailed randomly to a list of SMEs extracted from the SMECORP source, which is a governmental website: ([www.smecorp.gov.my](http://www.smecorp.gov.my)). The chosen FMCG-SMEs are representative of all 16 states in Malaysia and they were contacted prior to mailing the questionnaires to explain more about the purpose of the research and to ensure returning the completed questionnaires. A pre-paid return envelope was also mailed with the questionnaire to facilitate the faster return and increase the response rate.

Before collecting the main data, a pre-test and pilot test ( $n=26$  and 122 respectively) were administered and the questionnaire was revised accordingly. “*A-priori sample size calculator for structural equation models*” (Soper, 2015) showed the lower band sample size of 100 cases (for a high effect size of 0.3). Accordingly, in actual data collection procedure, there was a response of 230 from FMCG-SMEs in which 210 responses were considered as acceptable and decided to be taken for further analyses and 20 incomplete questionnaires were discarded. Thus, the sample size of 210 cases was obtained. Furthermore, the high “Kaiser-Meyer-Olkin” of 0.892 represents the sampling adequacy. To treat any possible missing values, EMA (Little, 1988) was conducted applying SPSS software Version 21. Prior to applying EMA, Little’s “MCAR  $\chi^2$  statistics” displayed random cases of missing data. Then, EMA was conducted to treat the few random missing values. Table 1 tabulates demographic information of the Malaysian SMEs’ participants such as gender, age, race, and the number of employees at the firm level.

This research used measurement items from previously established researches. All the measurement items and their sources are tabulated in Appendix A. Likewise to the current study, the adopted measurement items were administered in English language and their previous reliability values are also tabulated in Appendix A. The comparison of reliability values shows that all the constructs of this study except improvisational creativity received higher values. The improvisational creativity construct received an acceptable alpha value of 0.835.

**Table 1:** Sample characteristics ( $n=210$ ) (Insert here)

In social science research, due to single survey method, the CMV (also known as common method bias) might exist (Podsakoff *et al.*, 2003). This study addresses CMV following the guidelines Podsakoff *et al.* (2003). Harman’s one-factor test was used (26.5% of total variance which is less than the threshold of 50%) and the partial correlation procedure (the highest correlation between the variables is 0.614, according to Table 4a) showed that CMV is not an issue. Furthermore, this study applied SmartPLS software version 3.2.7 (Ringle *et al.*, 2015) to assess the level of fit, the measurement and structural models, as well as WarpPLS 6.0 (Kock, 2017) to test the nonlinearity. Finally, this study used “consistent PLS algorithm” to ensure the results are homogeneous across both software.

## 4. Results

### 4.1. Measurement model

Before examining the measurement model, the goodness of model fit should be ensured initially (Henseler *et al.*, 2016). SmartPLS software provides “standardised root mean square residual” (SRMR) (Hu and Bentler, 1998), and bootstrap extracted indices such as “geodesic discrepancy ( $d_G$ )” and “unweighted least squares discrepancy ( $d_{ULS}$ )” (Dijkstra and Henseler, 2015). Shown in Table 2, based on the guidelines made by Henseler *et al.* (2016), all values of SRMR,  $d_{ULS}$  and  $d_G$  bootstrap quantiles are acceptable.

**Table 2:** Goodness of model fit (Insert here)

In order to assess the measurement model, Cronbach's Alpha, composite reliability, and Dijkstra-Henseler's rho ( $\rho_A$ ) values are examined. Shown in Table 3, composite reliability, measurement item loadings, Alpha, and  $\rho_A$  values are higher than 0.7 (Henseler *et al.*, 2016), indicating acceptable reliability. Furthermore, Table 3 provides empirical evidence that FMCG-SMEs performance measure is a formative rather than reflective indicator.

**Table 3:** Construct reliability and validity (Insert here)

Furthermore, to assess the validity criteria, all the AVE values are acceptable and higher than the threshold. The benchmark values of "Fornell-Larcker" and "Heterotrait-Monotrait" ratio (HTMT) (Gold and Arvind Malhotra, 2001) are tabulated in Tables 4a and 4b. According to these tables, the validity of latent constructs is met.

**Table 4a:** Fornell-Larcker criterion (Insert here)

**Table 4b:** HTMT criterion (Insert here)

#### 4.2. Structural Model

Through 5000 resampling, the results of bootstrapping are achieved to test the hypotheses. The findings of bootstrapping in Table 5 indicate that all the hypothesised relationships except H6, H8, and H9 are supported. Amongst the supported hypotheses, expertise (with a high path of 0.461) and creativity-related processes (with a high path of 0.256) are found to be highly associated with compositional creativity and intrinsic motivation (with a high path of 0.452) and creativity-related processes (with a high path of 0.190) are also highly related to improvisational creativity.

**Table 5:** Structural relationships and hypothesis testing (Insert here)

The  $R^2$  values of improvisational and compositional creativities (Table 6) suggest that 88% and 81% of changes in these components can be predicted through intrinsic motivation, extrinsic motivation, creativity-related processes, and expertise. The high  $R^2$  of 85.6% for innovation construct indicates that 86 of its changes is estimated through compositional and improvisational creativities, which is mirrored by four aforementioned components of creativity. In addition, the proposed model has high "predictive relevancy" ( $Q^2$ ) and the  $q^2$  effect size indicate that both improvisational and compositional creativity have large effect size on innovation in FMCG-SMEs.

**Table 6:** Results –  $R^2$  and  $Q^2$  values (Insert here)

According to Becker *et al.* (2013), several researchers fail to address heterogeneity in data, which leads to incorrect interpretations. PLS-Multi Group Analysis (PLS-MGA) is used to assess the cultural differences. Table 7 shows that, among the proposed relationships, only the relationship between Expertise → Compositional creativity is higher for those SMEs with the majority of Malay staffs. This could be construed that more compositions take place in FMCG-SMEs with the majority of Malay staffs. Since compositional creativity is geared to the low level of novelty and risk-taking, it can be concluded that these SMEs are less creative compared to others. Previous research also indicated that Malays avoid risks (Salleh and Ibrahim, 2013). Therefore, FMCG-SMEs' CEOs should practice more functional diversity to boost improvisational creativity as well. The results of Welch-Satterthwait are very similar to the parametric test as well (See Table 7). Similar results across multimethods (PLS-MGA, parametric test, and Welch-Satterthwait test) provide high confidence in the final results (Hair Jr *et al.*, 2017). These findings could be useful to multi-national firms entering Malaysia to come up with efficient organizational settings where a higher degree of cultural diversity is intertwined with a higher level of creativity.

**Table 7:** PLS-MGA results of cultural differences

#### 4.3. Nonlinear Relations

Naturally, many relationships in behavioural science are nonlinear (Kock, 2016) and nonlinear relationships provide a more nuanced view of the data. This study uses a nonlinear variance-based SEM software, WarpPLS 6.0 (Kock, 2017), to find out which proposed relationships are nonlinear. The Warp3 algorithm, the software's default, is used to examine which relationships are "warped". This algorithm abates the number of instances of "Simpson's paradox" as well (Kock, 2015).

Sternberg (1999, p. 413) argues that there could be "an inverted-U relationship between motivation and creativity". No previous study has empirically tested this proposition. The results show that two relationships (extrinsic motivation → improvisational creativity; and improvisational creativity → performance) are warped. This study also specified the linear relationships between these variables (see Table 5). Therefore, to assess the nonlinear association between extrinsic motivation and improvisational creativity, the S-curve shown in Appendix B is the combination of two U-curves (also known as J-curves). The inflexion point is placed at around -1.39 standard deviations (SD) from the "ExtMot" mean. The first U-curve goes from -4.15 to -3.05 SD of the mean value, where the minimum improvisational creativity is shown in the U-curve. It can be interpreted that an increase in extrinsic motivation causes a decline in level of improvisational creativity. After that (the second U-curve), an increment to extrinsic motivation leads to an increment in improvisational creativity. This result may be due to the complex concept of improvisational creativity within which a low degree of extrinsic motivation in terms of income, bonus, and fringe benefits results in low level of improvisation in FMCG-SMEs. But, at a certain point (approximately -3.05), this situation changes and firms start to reap benefits from higher extrinsic rewards in terms of the higher level of improvisational creativity.

Considering the non-linear relationship between improvisational creativity and performance, the S-curve illustrated in Appendix C indicates that the first U-curve goes from -4.33 to -3.20 SD of the mean value, where the minimum level of performance is achieved for the U-curve. It implies that an increment in improvisational creativity causes a decrease in FMCG-SMEs' performance. This could be due to the fact that not all improvisational activities result in positive outcomes (Valaei *et al.*, 2017b). The second U-curve indicates that an increment in improvisational creativity results in an increment in performance.

## 5. Discussion and conclusion

In order to survive in this turbulent market, SMEs need to innovate relentlessly (Valaei, 2017) and rely on their resources and capabilities (Terziovski, 2010). Innovation as a key source of competitive advantage (Barney, 1986, Barney, 1991) indicates the firm's capability in exploring novel approaches to discover and actualize new methods, systems, processes, services, and products (Pervan, Al-Ansaari, & Xu, 2015). SMEs need to be innovative (Valaei *et al.*, 2017b). Because, SMEs' performance is contingent upon their innovation strategy which is crucial for knowledge-intensive firms (Purcarea, Espinosa, & Apetrei, 2013). The results of this study suggest that creativity related processes, extrinsic and intrinsic motivations are conducive to improvisational and compositional creativity which in turn lead to organisational performance. Specifically, the FMCG companies need to consider the positive impact of intrinsic motivation and how it improves competitive performance.

Taking into account the impact of innovation in the success and growth of companies, this study examined the antecedents of creativity that resulted in innovation and performance within FMCG-SME industry. The contribution made from this study is both practical and theoretical. This research provides extensive insights for business owners and researchers to consider the process of improvisational creativity and compositional creativity in a business environment.

Amabile (1988), Shalley (1991), Shalley *et al.* (2004), Anderson *et al.* (2004) witnessed the positive rôle of intrinsic motivation on creativity. But, in contrast to the aforementioned, previous studies (Shalley and Perry-Smith, 2001, Dewett, 2007, Eisenberger and Aselage, 2009), also found that intrinsically motivated behaviour is not relevant to creativity. In addition, in line with these studies the results of the current research showed that intrinsic motivation is not conducive to compositional creativity. This resonates with the arguments made by Grant and Berry (2011) within which the association between intrinsically motivated behaviour and creativity is ambiguous. Therefore, this discrepancy signals for further research on this context. Future research should also investigate the role of "prosocial motivation" and "perspective taking process" (Grant and Berry, 2011) on creativity.

Another theoretical contribution of this research to the literature is that both intrinsic and extrinsic motivations can be considered as enablers of improvisational creativity and this suggests that researchers should take these factors into account when assessing creativity in FMCG-SMEs. Thus, the results of this research are aligned with Tellis *et al.* (2009) and Gerhart and Fang (2014) in demonstrating the importance of extrinsic motivation in creativity. In line with Shalley *et al.* (2004), Sawyer (1992), and Amabile (2012), the study found that creativity-related processes are positively associated with creativity.

In addition, the results of the PLS algorithm, bootstrapping, and nonlinearity analyses have revealed significant contributions to the study. The results of the PLS algorithm helped to fit a measurement model that can be applied for further research. High  $R^2$  and  $Q^2$  values of the proposed model indicated high effect sizes and high predictive power of the proposed model. Albeit Sawyer (2015) theorised that organizational innovation is improvisational, the results of the current research empirically showed that it can also be compositional. As several studies have delineated individual creativity, there is a limited understanding of firm-level/collective creativity (Mo *et al.*, 2017). However, this research, as one of the few, provided empirical evidence at the firm level.

The findings of this research provided empirical proofs for the proposition made by Sternberg (1999) and the results implied that the relationships between extrinsic motivation and improvisational creativity as well as improvisational creativity and performance are curvilinear (distorted S-curve patterns). Previous research also found nonlinear relationships between ethical leadership and firm creativity (Mo *et al.*, 2017), and between leadership and performance (Lee *et al.*, 2017). Lubart and Sternberg (1995) propose that the impact of motivation on creativity acts according to the Yerkes-Dodson principle, where a mediocre level of motivation is better than a very high or very low extent. Therefore, this study showed the potential boundary conditions for the impact of extrinsic motivation in provoking improvisational creativity (Appendix B) as well as the effect of improvisational creativity in stimulating FMCG-SMEs performance (Appendix C).

## 6. Implications

Practically, motivation, creativity, innovation, performance and strategy linkages are the prominent source of competitive performance among FMCG-SMEs. Theoretically, from a strategic management perspective, the empirical finding of this research illustrates the RBV leads to competitive performance. At the organizational level, the results of this research can help CEOs and managers leading their company in a more productive way. First of all, the results show the degree to which innovation and performance of FMCG-SMEs resort to compositional and improvisational creativities. Managers can observe the factors participating in the compositional and improvisational creativities of FMCG-SMEs and they can make decisions to strengthen those factors that have the highest impact. It is recommended that Malaysian CEOs can resort to the findings of this research by observing the factors that received higher path coefficients. In addition, it should be noted that overemphasis on the proposed factors may result in low level of creativity and innovation and this study is the first to prove Sternberg (1999)'s proposition on the nonlinear nature of motivation → creativity relationship; though the results of this research implied the potential boundary conditions for the impact of extrinsic motivation in stimulating improvisational creativity (shown in Appendix B).

Our findings indicate that both compositional and improvisational creativities are found to be predictors of innovation and performance in FMCG-SMEs. Given the importance of motivation in compositional and improvisational creativities, and innovation in the FMCG context, managers can increase the level of improvisational creativity if they formulate strategies to motivate employees both intrinsically (a high path coefficient of 0.45) and extrinsically (with a path coefficient of 0.2) and they can boost the degree of compositional creativity in their companies through hiring and nurturing experts (a high path coefficient of 0.46).

Finally, policymakers, as decision-makers at a macro level, can observe the factors participating in creativity, innovation, and performance from the FMCG-SME perspective and they can legislate rules and regulations for any specific industry to come out with a better organizational atmosphere that triggers creativity and innovation. Furthermore, at a macro level, there could be an agenda for SMEs in each industry to bolster their creative capabilities. Each industry can be directed through the nature of creativity in its particular industry. For instance, some industries are more creativity driven than others,

and in some industries, creativity depends on financial/extrinsic motivators rather than intrinsic motivators. Therefore, based on this study's findings, industry players such as FMCG-SMEs should examine which mixture of intrinsic motivation, extrinsic motivation, expertise, and creativity-related processes is most suitable for them and choose the most appropriate trade-off between these factors to come out with the optimal solution for them.

**Appendix A:** Measurement items (Insert here)

**Appendix B:** The Non-linear relationship between extrinsic motivation and improvisational creativity (Insert here)

**Appendix C:** The Non-linear relationship between improvisational creativity and performance (Insert here)

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Figure 1: Theoretical research model

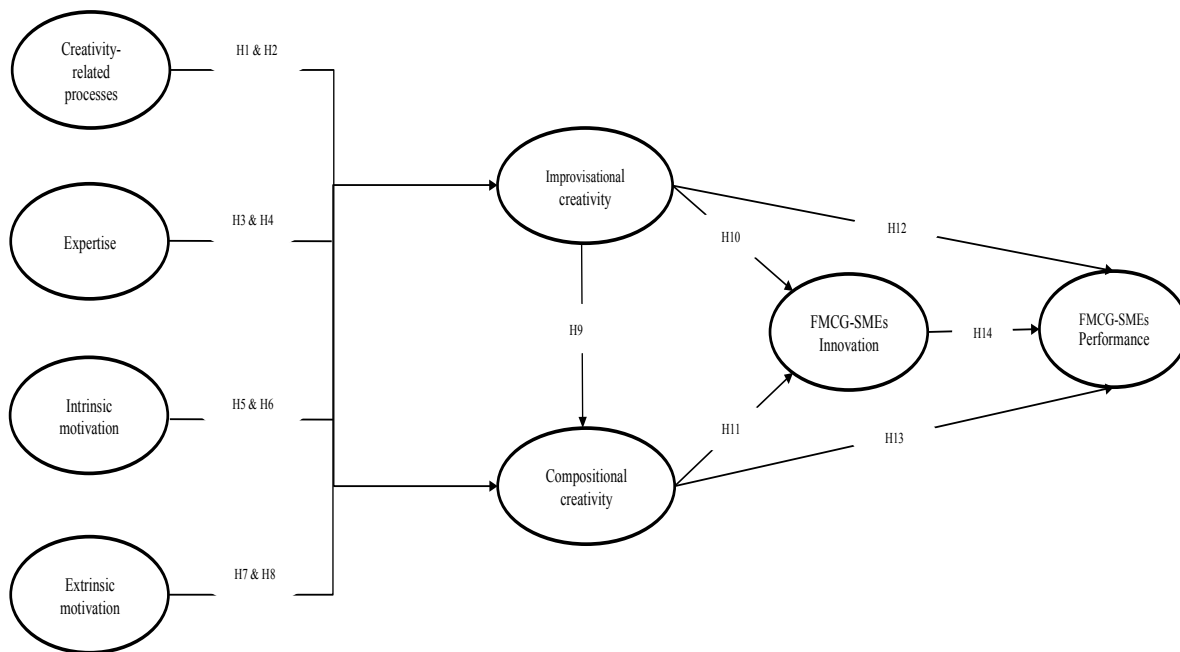
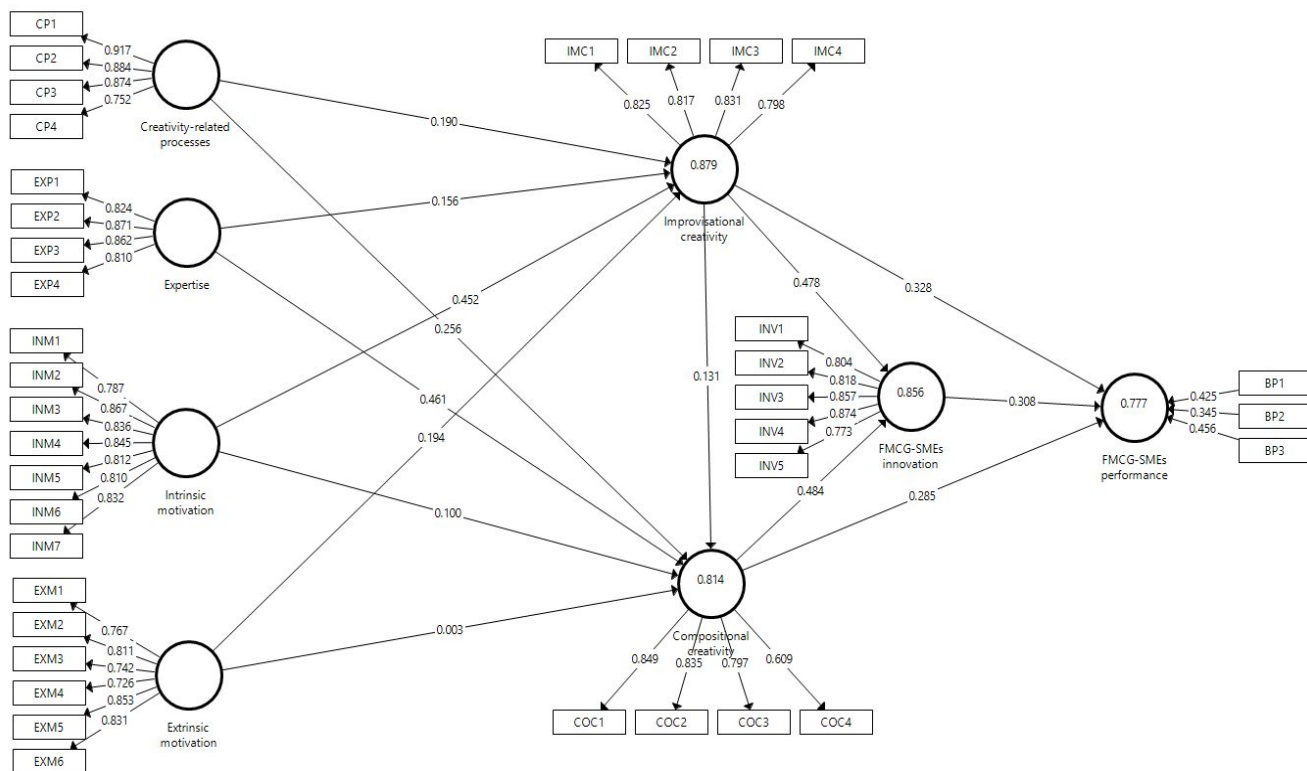
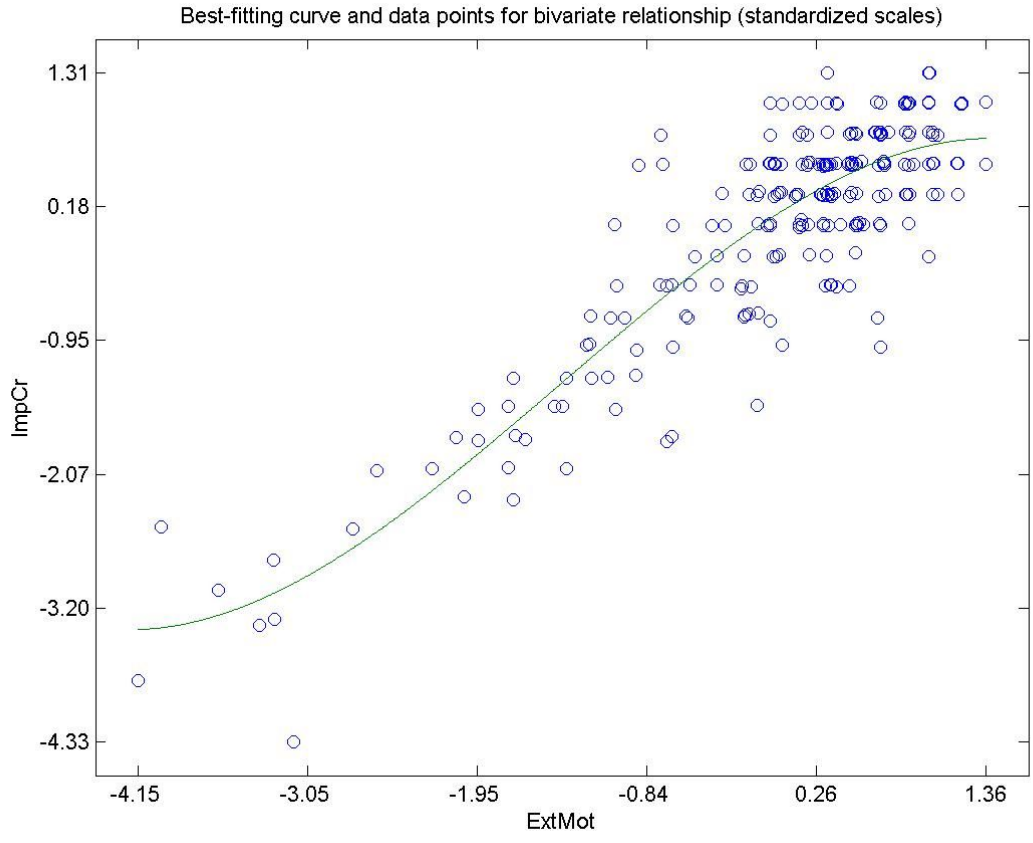


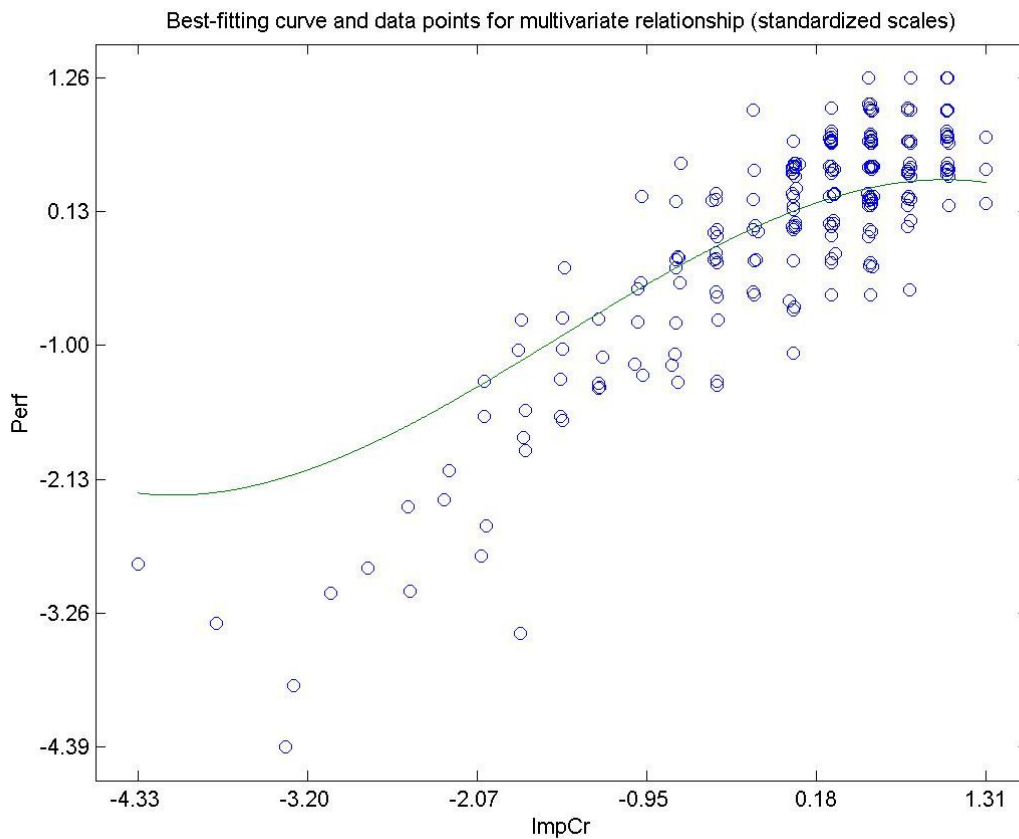
Figure 2: Measurement model



**Appendix B:** Non-linear relationship between extrinsic motivation and improvisational creativity



**Appendix C: Non-linear relationship between improvisational creativity and performance**



**Table 1:** Sample characteristics ( $N=210$ )

|                           | Characteristics     | Frequency | Percent |
|---------------------------|---------------------|-----------|---------|
| Majority of gender groups | Male                | 148       | 70.5    |
|                           | Female              | 62        | 29.5    |
| Majority of age groups    | Between 20-29       | 126       | 60.0    |
|                           | Between 30-39       | 68        | 32.4    |
|                           | Between 40-49       | 16        | 7.6     |
| Majority of ethnic groups | Malay               | 159       | 75.7    |
|                           | Chinese             | 42        | 20.0    |
|                           | Indian              | 3         | 1.4     |
|                           | Others              | 6         | 2.9     |
| Number of employees       | Between 5 And 20    | 148       | 70.5    |
|                           | Between 20 And 50   | 47        | 22.4    |
|                           | Between 50 And 100  | 10        | 4.8     |
|                           | Between 100 And 150 | 5         | 2.4     |

**Note:** All demographic information is at firm level.

**Table 2:** Goodness of model fit

|                             | Saturated model | Estimated model |
|-----------------------------|-----------------|-----------------|
| <b>SRMR</b>                 | 0.080           | 0.083           |
| <b><math>d_{ULS}</math></b> | 4.540           | 4.834           |
| <b><math>d_G</math></b>     | 3.376           | 5.531           |

**Notes:** Unweighted least squares discrepancy ( $d_{ULS}$ ). Geodesic discrepancy ( $d_G$ ).

**Table 3:** Construct reliability and validity

| Research Construct           | Item        | Loading | AVE   | Dijkstra-Henseler's rho ( $\rho_A$ ) | Composite Reliability | Cronbach's Alpha |
|------------------------------|-------------|---------|-------|--------------------------------------|-----------------------|------------------|
| Compositional creativity     | <b>COC1</b> | 0.849   | 0.606 | 0.807                                | 0.858                 | 0.780            |
|                              | <b>COC2</b> | 0.835   |       |                                      |                       |                  |
|                              | <b>COC3</b> | 0.797   |       |                                      |                       |                  |
|                              | <b>COC4</b> | 0.609   |       |                                      |                       |                  |
| Creativity-related processes | <b>CP1</b>  | 0.917   | 0.738 | 0.883                                | 0.918                 | 0.879            |
|                              | <b>CP2</b>  | 0.884   |       |                                      |                       |                  |
|                              | <b>CP3</b>  | 0.874   |       |                                      |                       |                  |
|                              | <b>CP4</b>  | 0.752   |       |                                      |                       |                  |
| Extrinsic motivation         | <b>EXM1</b> | 0.767   | 0.624 | 0.883                                | 0.908                 | 0.879            |
|                              | <b>EXM2</b> | 0.811   |       |                                      |                       |                  |

|    |                            |             |            |               |                |       |
|----|----------------------------|-------------|------------|---------------|----------------|-------|
| 1  |                            |             |            |               |                |       |
| 2  |                            |             |            |               |                |       |
| 3  |                            | <b>EXM3</b> | 0.742      |               |                |       |
| 4  |                            | <b>EXM4</b> | 0.726      |               |                |       |
| 5  |                            | <b>EXM5</b> | 0.853      |               |                |       |
| 6  |                            | <b>EXM6</b> | 0.831      |               |                |       |
| 7  |                            |             |            |               |                |       |
| 8  | Expertise                  | <b>EXP1</b> | 0.824      | 0.710         | 0.864          | 0.907 |
| 9  |                            | <b>EXP2</b> | 0.871      |               |                | 0.863 |
| 10 |                            | <b>EXP3</b> | 0.862      |               |                |       |
| 11 |                            | <b>EXP4</b> | 0.810      |               |                |       |
| 12 |                            |             |            |               |                |       |
| 13 | Improvisational creativity | <b>IMC1</b> | 0.825      | 0.668         | 0.835          | 0.890 |
| 14 |                            | <b>IMC2</b> | 0.817      |               |                | 0.835 |
| 15 |                            | <b>IMC3</b> | 0.831      |               |                |       |
| 16 |                            | <b>IMC4</b> | 0.798      |               |                |       |
| 17 |                            |             |            |               |                |       |
| 18 | Intrinsic motivation       | <b>INM1</b> | 0.787      | 0.685         | 0.924          | 0.938 |
| 19 |                            | <b>INM2</b> | 0.867      |               |                | 0.923 |
| 20 |                            | <b>INM3</b> | 0.836      |               |                |       |
| 21 |                            | <b>INM4</b> | 0.845      |               |                |       |
| 22 |                            | <b>INM5</b> | 0.812      |               |                |       |
| 23 |                            | <b>INM6</b> | 0.810      |               |                |       |
| 24 |                            | <b>INM7</b> | 0.832      |               |                |       |
| 25 |                            |             |            |               |                |       |
| 26 | FMCG-SMEs Innovation       | <b>INV1</b> | 0.804      | 0.682         | 0.885          | 0.915 |
| 27 |                            | <b>INV2</b> | 0.818      |               |                | 0.883 |
| 28 |                            | <b>INV3</b> | 0.857      |               |                |       |
| 29 |                            | <b>INV4</b> | 0.874      |               |                |       |
| 30 |                            | <b>INV5</b> | 0.773      |               |                |       |
| 31 |                            |             |            |               |                |       |
| 32 |                            |             |            |               |                |       |
| 33 |                            |             | <b>VIF</b> | <b>Weight</b> | <b>T-Value</b> |       |
| 34 | FMCG-SMEs Performance*     | <b>BP1</b>  | 1.636      | 0.425         | 7.008**        |       |
| 35 |                            | <b>BP2</b>  | 1.472      | 0.345         | 5.364**        |       |
| 36 |                            | <b>BP3</b>  | 1.427      | 0.456         | 9.697**        |       |
| 37 |                            |             |            |               |                |       |

a. Average variance extracted (AVE) = (summation of the square of the factor loadings)/[(summation of the square of the factor loadings) + (summation of the error variances)]. b. Variance inflation factor (VIF).

\*Formative construct, \*\*P<0.01

**Table 4a:** Discriminant validity – Fornell-Larcker criterion

| Research Construct           | Compositional<br>creativity | Creativity-<br>related<br>processes | Expertise    | Extrinsic<br>motivation | Improvisational<br>creativity | FMCG-<br>SMEs<br>Innovation | Intrinsic<br>motivation |
|------------------------------|-----------------------------|-------------------------------------|--------------|-------------------------|-------------------------------|-----------------------------|-------------------------|
| Compositional creativity     | <b>0.778</b>                |                                     |              |                         |                               |                             |                         |
| Creativity-related processes | 0.433                       | <b>0.859</b>                        |              |                         |                               |                             |                         |
| Expertise                    | 0.579                       | 0.529                               | <b>0.842</b> |                         |                               |                             |                         |
| Extrinsic motivation         | 0.426                       | 0.522                               | 0.593        | <b>0.790</b>            |                               |                             |                         |
| Improvisational creativity   | 0.547                       | 0.545                               | 0.583        | 0.579                   | <b>0.817</b>                  |                             |                         |
| FMCG-SMEs Innovation         | 0.590                       | 0.470                               | 0.614        | 0.578                   | 0.590                         | <b>0.826</b>                |                         |
| Intrinsic motivation         | 0.532                       | 0.509                               | 0.576        | 0.562                   | 0.509                         | 0.596                       | <b>0.827</b>            |

a. The off-diagonal values in the above matrix are the correlations between the latent constructs and diagonal are square values of AVEs.

**Table 4b:** Discriminant validity – HTMT

|                                 | Compositional<br>creativity | Creativity-<br>related<br>processes | Expertise | Extrinsic<br>motivation | FMCG-<br>SMEs<br>innovation | Improvisational<br>creativity |
|---------------------------------|-----------------------------|-------------------------------------|-----------|-------------------------|-----------------------------|-------------------------------|
| Creativity-related<br>processes | 0.787                       |                                     |           |                         |                             |                               |
| Expertise                       | 0.806                       | 0.753                               |           |                         |                             |                               |
| Extrinsic motivation            | 0.780                       | 0.735                               | 0.800     |                         |                             |                               |
| FMCG-SMEs innovation            | 0.856                       | 0.784                               | 0.846     | 0.791                   |                             |                               |
| Improvisational<br>creativity   | 0.837                       | 0.786                               | 0.804     | 0.822                   | 0.833                       |                               |
| Intrinsic motivation            | 0.765                       | 0.802                               | 0.781     | 0.849                   | 0.795                       | 0.835                         |

**Note:** The criterion for HTMT is below 0.9 (Gold & Arvind Malhotra, 2001)

**Table 5:** Structural relationships and hypothesis testing

| Hypothesis | path  | Beta  | Standard Error | T-Value | Decision      |
|------------|---|-------|----------------|---------|---------------|
| H1         | Creativity-related processes → Improvisational creativity | 0.190 | 0.052          | 3.664** | Supported     |
| H2         | Creativity-related processes → Compositional creativity   | 0.256 | 0.091          | 2.811** | Supported     |
| H3         | Expertise → Improvisational creativity                    | 0.156 | 0.061          | 2.560*  | Supported     |
| H4         | Expertise → Compositional creativity                      | 0.461 | 0.084          | 5.470** | Supported     |
| H5         | Intrinsic motivation → Improvisational creativity         | 0.452 | 0.049          | 9.194** | Supported     |
| H6         | Intrinsic motivation → Compositional creativity           | 0.100 | 0.093          | 1.067   | Not Supported |
| H7         | Extrinsic motivation → Improvisational creativity         | 0.194 | 0.062          | 3.140** | Supported     |
| H8         | Extrinsic motivation → Compositional creativity           | 0.003 | 0.088          | 0.033   | Not Supported |
| H9         | Improvisational creativity → Compositional creativity     | 0.131 | 0.087          | 1.500   | Not Supported |
| H10        | Improvisational creativity → FMCG-SMEs Innovation         | 0.478 | 0.052          | 9.173** | Supported     |
| H11        | Compositional creativity → FMCG-SMEs Innovation           | 0.484 | 0.051          | 9.426** | Supported     |
| H12        | Improvisational creativity → FMCG-SMEs Performance        | 0.328 | 0.082          | 3.975** | Supported     |
| H13        | Compositional creativity → FMCG-SMEs Performance          | 0.285 | 0.089          | 3.194** | Supported     |
| H14        | FMCG-SMEs Innovation → FMCG-SMEs Performance              | 0.308 | 0.090          | 3.420** | Supported     |

Note: for two-tailed tests: \*1.96 (5% significance level), \*\*2.57 (1% significance level)

**Table 6:** Results of  $R^2$  and  $Q^2$  values\*

| Endogenous constructs      | $R^2$ | $Q^2$ |
|----------------------------|-------|-------|
| Compositional creativity   | 0.814 | 0.491 |
| Improvisational creativity | 0.879 | 0.588 |
| FMCG-SMEs Innovation       | 0.856 | 0.580 |
| FMCG-SMEs Performance      | 0.777 | 0.484 |

Note\*:

| $Q^2$ Value | Effect Size |
|-------------|-------------|
| 0.02 =      | Small       |
| 0.15 =      | Medium      |
| 0.35 =      | Large       |



**Table 7: PLS-MGA results of cultural differences**

| Path  | PC difference<br>(Malay vs.<br>Chinese) | P-Value<br>PLS-MGA | P-Value<br>Parametric Test | P-Value<br>Welch-<br>Satterthwait Test |
|---|---|--------------------|----------------------------|--|
| Compositional creativity → FMCG-SMEs innovation           | 0.016                                   | 0.454              | 0.907                      | 0.915                                  |
| Compositional creativity → FMCG-SMEs performance          | 0.125                                   | 0.301              | 0.562                      | 0.615                                  |
| Creativity-related processes → Compositional creativity   | 0.248                                   | 0.850              | 0.283                      | 0.292                                  |
| Creativity-related processes → Improvisational creativity | 0.068                                   | 0.275              | 0.627                      | 0.603                                  |
| Expertise → Compositional creativity                      | 0.674                                   | <b>0.001</b>       | <b>0.003</b>               | <b>0.006</b>                           |
| Expertise → Improvisational creativity                    | 0.123                                   | 0.788              | 0.443                      | 0.436                                  |
| Extrinsic motivation → Compositional creativity           | 0.276                                   | 0.895              | 0.208                      | 0.221                                  |
| Extrinsic motivation → Improvisational creativity         | 0.133                                   | 0.144              | 0.423                      | 0.306                                  |
| FMCG-SMEs innovation → FMCG-SMEs performance              | 0.124                                   | 0.703              | 0.609                      | 0.620                                  |
| Improvisational creativity → Compositional creativity     | 0.001                                   | 0.520              | 0.964                      | 0.968                                  |
| Improvisational creativity → FMCG-SMEs innovation         | 0.024                                   | 0.575              | 0.864                      | 0.879                                  |
| Improvisational creativity → FMCG-SMEs performance        | 0.017                                   | 0.511              | 0.940                      | 0.950                                  |
| Intrinsic motivation → Compositional creativity           | 0.182                                   | 0.806              | 0.418                      | 0.399                                  |
| Intrinsic motivation → Improvisational creativity         | 0.094                                   | 0.771              | 0.495                      | 0.485                                  |

PC: Path Coefficient

**Appendix A: Measurement items**

|   | Research construct           | Item  | Cronbach's Alpha | Source  |
|---|------------------------------|---|------------------|---|
| 1 | Intrinsic motivation*        | <b>INM1</b> Employees enjoy tackling problems that are completely new<br><b>INM2</b> What matters most to employees is enjoying what they do<br><b>INM3</b> Curiosity is the driving force behind much of what employees do<br><b>INM4</b> Employees prefer to figure things out for ourselves<br><b>INM5</b> Employees want to find out how good they really can be at their work<br><b>INM6</b> Employees are more comfortable when they can set their own goals<br><b>INM7</b> The more difficult the problem, the more employees enjoy trying to solve it | 0.79             | KEYS and WPI items (Amabile, Burnside, & Gyskiewicz, 1999; Amabile, Hill, Hennessey, & Tighe, 1994) |
| 2 | Extrinsic motivation         | <b>EXM1</b> Employees are keenly aware of the income goals they have for themselves<br><b>EXM2</b> Employees are keenly aware of the promotion goals they have for themselves<br><b>EXM3</b> Employees are strongly motivated by the money they can earn in the company<br><b>EXM4</b> Employees often think about salary, bonuses, and fringe benefits<br><b>EXM5</b> Employees have to feel that they are earning something for what they do<br><b>EXM6</b> Employees want other people to find out how good they really can be at their work               | 0.78             | KEYS and WPI items (Amabile et al., 1999; Amabile et al., 1994)                                     |
| 3 | Creativity-related processes | <b>CP1</b> Employees use their imaginations when solving problems<br><b>CP2</b> To do their work, employees put existing ideas together in new combinations<br><b>CP3</b> Employees approach problems flexibly<br><b>CP4</b> Employees' solutions for problems change the status quo<br><b>CP5</b> To do their work, employees use knowledge from disparate fields  | 0.74             | KEYS and WPI items (Amabile et al., 1999; Amabile et al., 1994)                                     |
| 4 | Expertise                    | <b>EXP1</b> Employees have the required knowledge for their work<br><b>EXP2</b> Employees are aware of the processes related to the domain of their tasks<br><b>EXP3</b> Employees have the technical skills needed for their work<br><b>EXP4</b> Employees possess the knowledge from related fields referring their work  | 0.71             | KEYS and WPI items (Amabile et al., 1999; Amabile et al., 1994)                                     |
| 5 | Improvisational              | <b>IMC1</b> Employees demonstrate originality in their work.  | 0.924            | (Vera & Crossan,  |

|    |            |   |   |   |
|----|------------|---|---|---|
| 1  |            |   |   |   |
| 2  |            |   |   |   |
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| 6  |            |   |   |   |
| 7  |            |   |   |   |
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| 10 |            |   |   |   |
| 11 |            |   |   |   |
| 12 |            |   |   |   |
| 13 |            |   |   |   |
| 14 |            |   |   |   |
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| 17 |            |   |   |   |
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| 60 |            |   |   |   |
|    | creativity | <b>IMC2</b> Employees respond in the moment to unexpected problems.<br><b>IMC3</b> Employees figure out processes as they go along.<br><b>IMC4</b> Employees carry out processes with little preparation. |   | 2005)   |
|    | 6          | Compositional creativity  | <b>COC1</b> Employees make suggestions on incremental changes to existing processes/products that are useful to the company.<br><b>COC2</b> Employees extend and build on what was currently done or what is currently done by the company.<br><b>COC3</b> Employees refine how things are currently done/what is currently done at the company.<br><b>COC4</b> Employees suggest ideas that improve upon existing processes, or products and services.                                       | 0.878<br>(Valaei & Rezaei, 2017; Valaei, Rezaei, & Ismail, 2017)      |
|    | 7          | Innovation  | <b>INV1</b> Novel and useful processes and products are adopted from an outside organization by my company<br><b>INV2</b> Novel and useful processes and products are successfully implemented by my company<br><b>INV3</b> Novel and useful processes and products have become a stable and regular part of the company<br><b>INV4</b> Novel and useful processes and products are developed by my company<br><b>INV5</b> Novel and useful processes and products are produced by my company | 0.918<br>(Valaei, 2017)   |
|    |            | Business Performance**  | <b>BP1</b> Change in sales revenue relative to your largest competitor.<br><b>BP2</b> Change in market share relative to your largest competitor.<br><b>BP3</b> Change in customer satisfaction relative to your largest competitor.  | NA<br>(Baker & Sinkula, 2005; Theodosiou, Kehagias, & Katsikea, 2012) |

\*7-Point Likert scales anchored by strongly disagree to strongly agree. \*\* 7-point scales anchored by significant increase to significant decrease. NA: Not applicable.