

The Mediating Role of Competitive Advantage in the Relationship between Innovation Capability and the Performance of Small and Medium Enterprises in Nigeria

Yakubu Salisu^{1*}, Abba Kura Goni²

^{1,2} Department of Business Administration, Yobe State University, Damaturu, Yobe State, Nigeria

* Corresponding author: ysalisu76@gmail.com

Abstract

Small and medium enterprises (SMEs) in developing economies are striving to survive the challenges of globalization and liberalization of trade to achieve their micro and macroeconomics objectives. To effectively achieve these objectives, SMEs need to create best cost leadership, differential value and increase market size. Innovation capability is an essential capability which helps firm creates differentiation in terms of cost and customer values to enhance competitive advantage and improve performance. Therefore, the aim of this study is to examine the roles of competitive advantage on the relationship of SMEs innovation capability and performance. Consequently, data were collected from 216 SMEs operating in Yobe State, Nigeria. Partial Least Square Structural Equation Model (PLS-SEM, 3.0) was used to conduct the measurement and structural analyses. The results of the statistical analysis supported all the hypotheses. Specifically, innovation capability positively and significantly relate to SMEs competitive advantage and performance. Equally, competitive advantage positively affects SMEs performance and mediates the relationship between innovation capability and the SMEs performance. However, firm's innovativeness and competitive advantage are contextually sensitive; thus, the study recommends more future studies in different setup to support and validate the current findings.

Keywords: Innovation Capability, Competitive Advantage, SMEs Performance

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Introduction

Small and medium enterprises have been recognized as an effective strategy for economic transformation and development (Aminu, 2015, Hilman and Kaliappen, 2015). SMEs sector have been established at macro-level to generate substantial number of employment opportunities and enhance the utilization of local resources. Equally, it is an important factor in improving productivity and effectively responds to changing environment through flexible structure at micro levels. Nevertheless, SMEs are the most affected victims of macroeconomic challenges. The business environment is turning into a global village due to the development in technology and liberalization of trade. The beginning of this 21st century development create unexpected business opportunities in the market which is termed "global market place" where capital, goods and information move freely and increases unprecedented customers choices as well as opportunities for aggressive and progressive business firms (Longenecker and Ariss, 2002). However, dependence on external environment increase difficulties on SMEs to sustain and enhance their operation under changing macroeconomic conditions due to ineffective competitive advantage as a result of limited economic of scales (Li, Roca, and Papaoikonomou, 2011). These level of escalated competitive pressure force firms to resort to exploiting all available means for achieving sustainable competitive advantage (Longenecker and Ariss, 2002). Therefore, attainment of sustainable competitive advantage has for decades the major concern of business firms (Barney and Clark, 2007, Porter, 1985).

Achieving competitive advantage requires a better strategic factors which give business firm competitive to create differential performance (Areias and Eiriz, 2013). However, business firm is not necessarily required to be the best actor in the industry to enjoy competitive advantage, rather the needs to effectively create economic values (Ong, Ismail, and Goh, 2010). Accordingly Porter (1980) maintained that firm can effectively outperform competitors by creating cost leadership, differentiation and increase market size (Miller and Friesen, 1986). SMEs firm with unique and distinctive resources has the ability to generate higher economic values which competitors cannot easily obtained within the open market (Helfat and Peteraf, 2014). Such economic advantage thrives on innovation where technology and knowledge are essential factors which give the firms competitive advantage (Helfat and Peteraf, 2014). Innovation capability is an effective strategic capability which help firms create differentiation in terms of cost and customer values (Hitt, Hoskisson, Johnson, and Moesel, 1996), enhance competitive advantage (Norman et al., 2016) (Madrid et al., 2009) and improve performance (Yusr, 2016, Dadfar, Dahlgaard, Brege, and Alamirhoor, 2013). Brem, Maier, and Wimschneider, (2016) opined that there is potential connection between firm's innovation and performance and competitive advantage. However, the existing literature is far from enough to provide empirical research investigating the mediating effect of competitive advantage on the links between innovation capability and performance of SMEs firms. Therefore, this study aims to examine the mediating role of competitive advantage on the

relationship between innovation capability and the performance of SMEs.

Literature Review

Innovation Capability and Performance

Innovation entail the process of transforming idea and knowledge into new or improve valuable product, service, process and method (Ferraresi, Quandt, Santos and Frega 2012). Bakar and Ahmad, (2012) postulated innovation to involves developing and adopting new process, product, service or procedure by individual, within a group, a firm or the society to enhance competitive advantage and performance. Thus, Alexe and Alexe, (2016) described innovation capability as the firm’s ability to identify, acquire and transform external and internal resources to produce new or improve product that meet up the current expectations of the target market. It demonstrates firm’s capacity to acquire, operate and convert given technologies, knowledge and ideas into particular business activities which help firm innovate effectively (Zawislak, Alves, et al. 2012). Equally, Meier, Fadel, Wälchli, Kobe and Johns (2004), postulated innovation capability as firm’s organizing, resources, method, processes, culture and tools to expedite innovation success.

Innovation capability is the most effective firm’s strategic capability that improve product innovation performance at the market place (Abu Bakar and Ahmad, 2012). Therefore, Bukhamsin, (2015) urged that nowadays business enterprises persistently struggle to develop and improve innovative capability so as to achieve superior performance in in terms of higher and qualitative outputs target and profits. Innovation capability plays strategic roles in enhancing firm’s market competitiveness and better performance (Aini, Chen, Musadieg and Handayani, 2013). Innovation capability accelerates the process and the mechanism firms employ to respond effectively to the emerging market demands and improve competitive position (Auken, Madrid-Guijarro and Garcia-Pérez-de-Lema, 2008). Innovation capability is an excellent strategic capability for achieving persistent product, process, market and administrative innovations (Nijhof, Krabbendam, and Looise, 2002) which empower firms to produce the right product at the best quality and price that satisfy the need of the changing market demands and firm’s objectives of profitability and growth (Buergin, 2006). It an essential determinant factor in achieving firm’s success (Assink, (2006).

Innovation is obviously valuable constituent of firm’s competitive strategy bounded in the firm’s structure, resources, product and processes (Azubuike, 2013). Hence, to survive and prosper in meeting the ever-changing customers’ needs in today’s competitive operating environment, SMEs must effectively develop and uphold innovation capability. Innovation capability enhances firm’s market and financial performance by enabling firms to introduce new and improve product and process better than competitors (Jiménez-Jiménez and Sanz-Valle, 2011), therefore, without innovative ability failure in the attainment of firm’s objectives is inevitable (Hamel, 2002). Innovation capability is essential in achieving growth by expanding market share and improving market competitive position (Azubuike, 2013). It enhances firm’s growth objective, activities, competitiveness and productivity (Dalotă, 2011). Therefore, through innovation capability, SMEs firm efficiently minimizes the risk create by the turbulent environment to effectively outperform competitors (Kraus, Rigtering, Hughes and Hosman, 2012). In this regard Shefer and Frenkel, (2005) maintained that through innovation capability, SMEs firms can effectively expand their market share, increase productivity, achieve greater production efficiency and improve revenue stream. Innovation allows business firms to create better variety of unique product which increases firm’s competitiveness and performance (Zahra et al., 2000, Keizer, Dijkstra and Halman, 2002).

H1: Innovation capability positively relates to SMEs performance

Innovation Capability and Competitive Advantage

Achieving sustainable competitive advantage is not only limited to firm’s financial and physical resources, but also the firm’s ability in channeling unique invisible resources (Sigalas, 2015) Thus, firms create competitive advantage effectively with better ability to produce new product or discover new process and administrative techniques (Passemard and Kleiner, 2000). Thus, innovation capability is a strong strategic competitive resources which enable SMEs firms adequately response to customers demand for quick response, better quality product, new product utilities and prompt delivery in this changing global operating environment (Abereijo, Adegbite, Ilori, Adeniyi and Aderemi, 2009). Therefore, this rapid changes in customers preferences and taste and general market condition entails that achieving sustainable firm’s competitive advantage and growth depends on innovation capability (Yusr, 2016, Iddris, 2016).

Innovation capability enable SMEs firms create better quality product and services, reduce production and operation cost, minimizes losses of resources, improve sales, increase employee’s job satisfaction and enhance efficiency and productivity (Farrokhian and Soleimani, 2015). The ability of SMEs firms to develop unique product and values determine its chance of developing sustainable competitive advantage in the market (Barney and Clark, 2007). The ability of firm to effectively organizes and execute its activities plays crucial role in determining competitive position (Passemard and Kleiner, 2000).

H2: Innovation capability positively relates to SMEs competitive advantage

Competitive Advantage and Performance

Competitive advantage has been described as the firm’s ability to achieve above industry average in terms of exploitation of market opportunities and counteraction of competitive threats (Sigalas and Economou, 2013). The ultimate goal of every competitive advantage is improvement in overall firm’s performance (Grandy and Wicks, 2008). Competitive advantage creates opportunities for firms to reduce cost, provide better differentiated quality product to the customers (Kamukama, Ahiauzu, and Ntayi, 2011). Martinette and Obenchain-leeson, (2012) in their study demonstrated the significant positive influence on service firm’s performance. López-Gamero, Molina-Azorín, and Claver-Cortés, (2009) reported that competitive advantage influences firm’s financial performance in service sectors. Competitive advantage is critical to the survival and improve performance of SMEs firms (Ong, Ismail, and Goh, 2010). Competitive advantage that reduces cost, built reputation increases performance in international markets (López-Gamero et al., 2009). Zainol and Al Mamun, (2018) confirmed the significant positive impacts of competitive advantage on the performance of microenterprises.

H3: Competitive advantage positively relates to SMEs performance

H4: competitive advantage mediate the relationship between innovation capability and SMEs performance

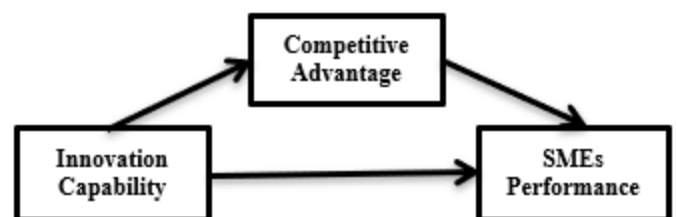


Fig. 1. Conceptual Framework

Methodology

A quantitative research design was adopted in this study. Consequently, survey questionnaire was developed to collect the data. A total of 358 questionnaires were administered personally on owner/managers of SMEs operating in Yobe state Nigeria. 223



questionnaires were retrieved; however, physical examination does not identify any questionnaires as incomplete and not suitable for the study. Thus, 223 valid questionnaires were keyed into a Statistical Package of Social Science (SPSS 24.0) for evaluations of potential outliers. The analysis of the univariate outliers reveals seven (7) potential outliers as their Z-scores are equals and greater than ± 3.29 , consequently, these outliers were removed. Nevertheless, the multivariate analysis did not show any potential outlier; hence, the remaining 216 valid questionnaires data were taken to the Partial Least Square Structural Equation Model (PLS-SEM, 3.0) for further analyses. PLS-SEM was used in both the measurement and structural models. The analysis of the measurement model evaluates the reliability, convergent validity and discriminant validity. While, the hypothesized relationships of the variable understudy were evaluate in the structural model. Specifically, the coefficient of determination (R^2) and the direct and indirect relationship were tested.

Construct Measurement

The items measuring the survey variables were adapted from previous studies. Precisely, SMEs performance were measured with 6 items adapted from (Aminu and Shariff, 2015). Similarly, 10 items were adapted from Ibrabim, (2016) to measure competitive advantage (COMD), likewise, 8 items used to measure innovation capability (INNOV) were adapted from Juho-Petteri, et al., (2010).

Firms Performance

- Compared to three years ago, our products/services reach a wider market
- Compared to three years ago, our enterprise sales volume has increased
- Compared to three years ago, our enterprise profits have increased
- Compared to three years ago, the level of complaints from customers has decreased
- Compared to three years ago, the number of employees has increased
- Compared to three years ago, the number of our customers has increased

Competitive Advantage

- Our products are difficult for competitors to copy.
- Our product designs are unique.
- Our ability to track changes in customer needs and wants is good.
- Our surveillance of competitors is good.
- Our collection of strategic information about customers and competitors for use with strategic planning is good.
- Our company has quickness of response to meeting changes in customer needs and wants
- Our company has being response adequately to customer complaints
- Our firm has made efforts to make product/service changes to overcome customer dissatisfaction with existing products.
- Our company has speed of dissemination of information in-house about competitors.
- Our firm has response to competitive moves in the market place

Innovation Capability

- Our company regularly tries available new ideas.
- Our company looks for new ways of doing things.
- Our company is innovative in its operational methods.
- Our company is consistently the first to market new products
- Innovation is perceived as too risky in our company and is resisted.
- Our company have increase the rate of introducing new product
- Our company frequently develops new products that meet the customer’s needs.
- The new products developed by our company continually stir imitation from competitors.

Treatment of Common Method Variance

The study uses self-reported data collection technique for both the criterion variable (SMEs performance) and the predicting variables (competitive advantage and innovation capability), thus the possibility that the validity of the data may be affected by common method bias. Common method bias has been the potential problem in social science research nowadays. However, Podsakoff, MacKenzie, Lee, and Podsakoff, (2003) demonstrated that the effects of common method bias can be eliminated or minimizes by the use of some procedural and statistical techniques. Therefore, the study adequately ensure the elimination of ambiguity in wordings and guaranteeing the anonymity of the study respondents (Chang, Van Witteloostuijn, and Eden, 2010, Podsakoff, et al., 2003). Equally, Harman’s single-factor test was use to statistically examine the effects of common method bias. The analysis of the result indicates 8 factors which jointly explained 78% of the entire variance, with the strongest predictor accounting for 25.964% which is substantially below the 50% (Kumar, 2012), hence no single factor explained majority variance (50%) (MacKenzie and Podsakoff, 2012, Kumar, 2012). Therefore, potential problem of CMV is not an issue in the reliability of the data in this study.

Results

In this section the data collected were analyze and evaluated from the measurement and structural models perspective. The measurement model deal s with the reliability and validity of the measurement items, while in the structural model the extent of the relationship of the variables investigated were analyzed.

Reliability Test

Reliability test indicate the degree to which the result from the study instrument is consistent over time. The internal consistency (reliability test) of research instruments are generally evaluated with either or both the Cronbach’s alpha and/or composite reliability. The acceptable threshold of Cronbach’s alpha is 0.6 and above (Hair, Black, Babin, and Anderson, 2010). Similarly, 0.7 and above is normally advocated to be the acceptable threshold of composite reliability of survey measurement. Accordingly, average variance extracted (AVE) value is usually employ to assess the convergent validity of survey measurement items. The minimum acceptable AVE value for convergent validity is 0.5 (Hair, Tomas, Ringle, and Sarstedt, 2017). Form the table 4.1 below it can be clearly observed that the requirement for both Cronbach’s alpha and composite reliability for the variables under study have been satisfied. The values of the Cronbach’s alpha of the variables range from 0.77 to 0.879, while the composite reliability value range from 0.81 to 0.88. Similarly, convergent validity of the variables studied has been established as indicated by the AVE values of the variables in table 4.1 below. None of the variables has less than 0.5 acceptable thresholds for convergent validity.

Table 4.1 Reliability and Convergent Validity Test

Variables	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted (AVE)
INNOV	0.836	0.888	0.644
COMD	0.879	0.811	0.639
PERF	0.770	0.848	0.533

Note: PERF = SMEs Performance, INNOV = Innovation Capability, COMD = Competitive Advantage

Discriminant Validity Test

To ensure that each of the variable under study represent distinct phenomenon, discriminant validity were examined. Generally, Fornell-Lacker criterion and cross-loading are the two important techniques used to evaluate discriminant validity. In this study the Fornell-Lacker criterion was adopted to evaluate the discriminant validity. It examines the variance extracted value of the variable under study with the square root value between variables. The criterion established that the variance value of particular variable must be higher than the value of correlated variable. Table 4.2 below indicates



the value of discriminant validity based on Fornell-Lacker criterion, with value in bold representing the average value of the variable. Each of the variable has value higher than the corresponding correlated variables, thus the requirements for discriminant validity in this study were satisfied.

Table 4.2: Discriminant Validity

Variable	COMD	INNOV	PERF
COMD	0.799		
INNOV	0.731	0.802	
PERF	0.630	0.618	0.730

Hypotheses Test

To statistically test the hypotheses established for the study, a bootstrapping techniques of PLS-SEM was used. 5000 bootstrapping sampling of 216 cases was used to test the relationship of the hypotheses established. To evaluate the hypotheses established in this study, a bootstrapping procedure of PLS-SEM were employed. The analyses of the statistical results reveals a supports for all the four (4) hypotheses tested, as indicated in table 4.3 and figure 4.2 below. Specifically, the result indicates that innovation capability positively and significantly relates to SMEs firms competitive advantage ($\beta = 0.73$; $t = 18.159$; $P < .000$). Equally, innovation capability substantially and positively impacted on SMEs firms performance ($\beta = 0.621$; $t = 10.618$; $P < .000$). Accordingly, competitive advantage positively and significantly enhances SMEs performance ($\beta = 0.391$; $t = 3.416$; $P < .000$). Furthermore, competitive advantage was established in this study to mediate the relationship between innovation capability and SMEs performance ($\beta = 0.288$; $t = 3.283$; $P < .001$) as demonstrated in table 4.4 below.

Table 1: Table 4.3 Direct and Indirect Relationship

Hyp	Path	B	SE	T-value	P-Value
H1	INOV → PERF	0.621	0.058	9.085	0.000***
H2	INOV → COM	0.734	0.040	18.159	0.000***
H3	COM → PERF	0.391	0.012	3.416	0.000***
H4	IN → COM → PF	0.288	0.085	3.283	0.001***

Note: *** indicates significant at 0.01

Coefficient of Determination

The R^2 demonstrates the coefficient of determination or the extent to which the predicting variable explain the changes in the criterion or dependent variable (Hair et al., 2017). Even though the acceptable coefficient value of R^2 is subjected to debate in research context, Cohen, (1988) suggested that 0.02, 0.13 and 0.27 be consider as small, modest and large coefficient values respectively. From the figure 4.1 above and table 4.5 below, it is clearly understood that innovation capability explains 54% of changes in SMEs competitive advantage. While, innovation capability and competitive advantage accounts for 45% changes in the performance success of SMEs in Nigeria as indicate in table 4.5 below and figure 4.1 (see appendix below).

Table 4.5 Coefficient of Determination (R-Square)

Paths	R^2	Decision Based on Cohen (1988)
INNOV -> COMD	0.535	Substantial
INNOV -> COMD -> PERF	0.450	Substantial

Discussion

The statistical result indicates that innovation capability positively enhance SMEs performance ($\beta = 0.621$; $t = 10.618$; $P < .000$). This means that innovation capability is essential dynamic capability which allow SMEs to effectively adjust to all changing requirements from the operating market to achieve and sustain superior performance. Hence, to survive and prosper in meeting the ever-changing customers’ needs in today’s competitive operating environment, SMEs must effectively develop and uphold innovation capability. Innovation capability enhances firm’s market and financial performance by enabling firms to introduce new and improve product and process better than competitors. Without effective innovative capability failure in the attainment of firm’s objectives may be

inevitable. Thus, SMEs in developing economies must consider innovation capability as essential capability in achieving growth by expanding market share and improving market competitive position. It is the crucial capability which can effectively enhances firm’s growth objective, activities, competitiveness and productivity. Therefore, through innovation capability, SMEs firm can efficiently minimizes the risk created by the changing environment to effectively outperform competitors.

Accordingly, innovation capability is crucial to the improvement of SMEs competitive advantage as indicated by the statistical findings of this study ($\beta = 0.734$; $t = 18.159$; $P < .000$). Thus, innovation capability is a resilient firm’s strategic competitive resources which enable effective response to customers demand for quick response, better quality product, new product utilities, and prompt delivery. Innovation capability empower SMEs firms create better quality product and services, reduce production and operation cost, minimizes losses of resources, improve sales, increase employee’s job satisfaction and enhance efficiency and productivity better than competitors. Hence, the ability of SMEs firms to develop unique product and values determine its chance of developing sustainable competitive advantage in the market. Furthermore, the results of the statistical test demonstrate a significant positive relationship between competitive advantage and SMEs performance ($\beta = 0.391$; $t = 3.416$; $P < .000$). Thus the ability of SMEs to differentiation, reduce cost and effective market sensing are essential in enhancing performance. Similarly, competitive advantage mediate the positive relationship between innovation capability and SMEs performance ($\beta = 0.288$; $t = 3.283$; $P < .001$). Therefore, competitive advantage is not only significant factor that improve performance, but also crucial element that enhance the positive impacts of firm’s strategic capabilities like innovation capability. The positive impact of innovation capability on SMEs performance is better explained with intervening role of competitive advantage.

Conclusion

Innovation capability is essential in achieving growth by expanding market share and improving market competitive position. It enhances firm’s growth objective, activities, competitiveness and productivity. Therefore, through innovation capability, SMEs firm efficiently minimizes the risk create by the turbulent environment to effectively outperform competitors. Through innovation capability, SMEs firms can effectively expand their market share, increase productivity, achieve greater production efficiency and improve revenue stream. Innovation allows business firms to create better variety of unique product which increases firm’s competitiveness and performance. Similarly, competitive advantage empower SMEs firm in achieving the above industry average in terms of exploitation of market opportunities and counteraction of competitive threats.

The aim of this study is to examine the impacts of innovation capability on SMEs competitive advantage and performance. Even the findings of this study supported all the hypotheses developed; the success of innovation activities and the effect of competitive advantage on firm’s performance are contextually sensitive. Therefore, findings of this study should be taken with care when relating to different cultural environment. Thus, extend the generality of this finding, similar study in different cultural environment is of paramount importance. The data of this study were collected at once; consequently, the effects of time lag may affect the strength of the significance relationships of the variable understudy. Hence, future study should consider longitudinal data in evaluating the relationships of these variables. Similarly, this study used self-reported technique to collect the data from single source, thus future study, should consider collecting data from multiple sources.

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Appendices

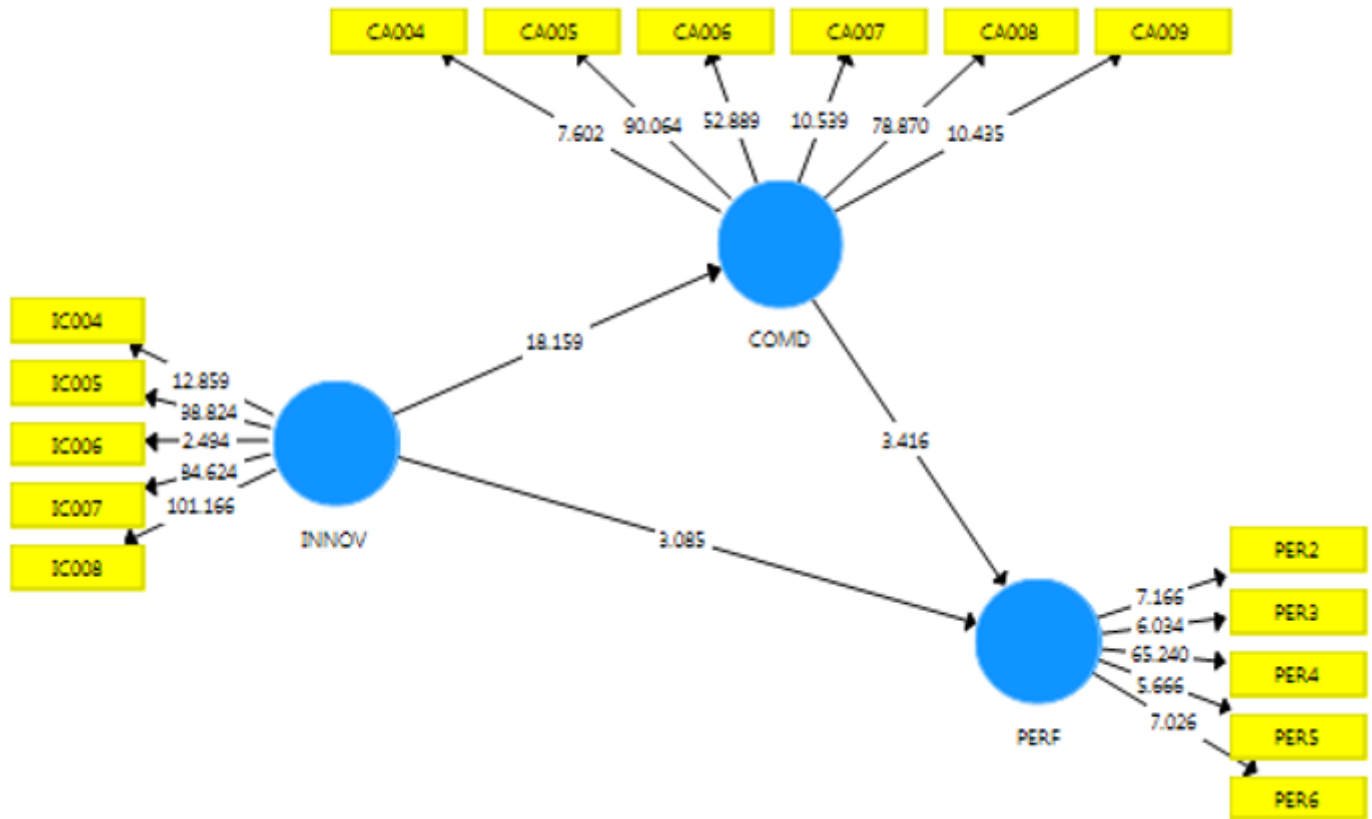


Fig. 1. PLS Bootstrapping

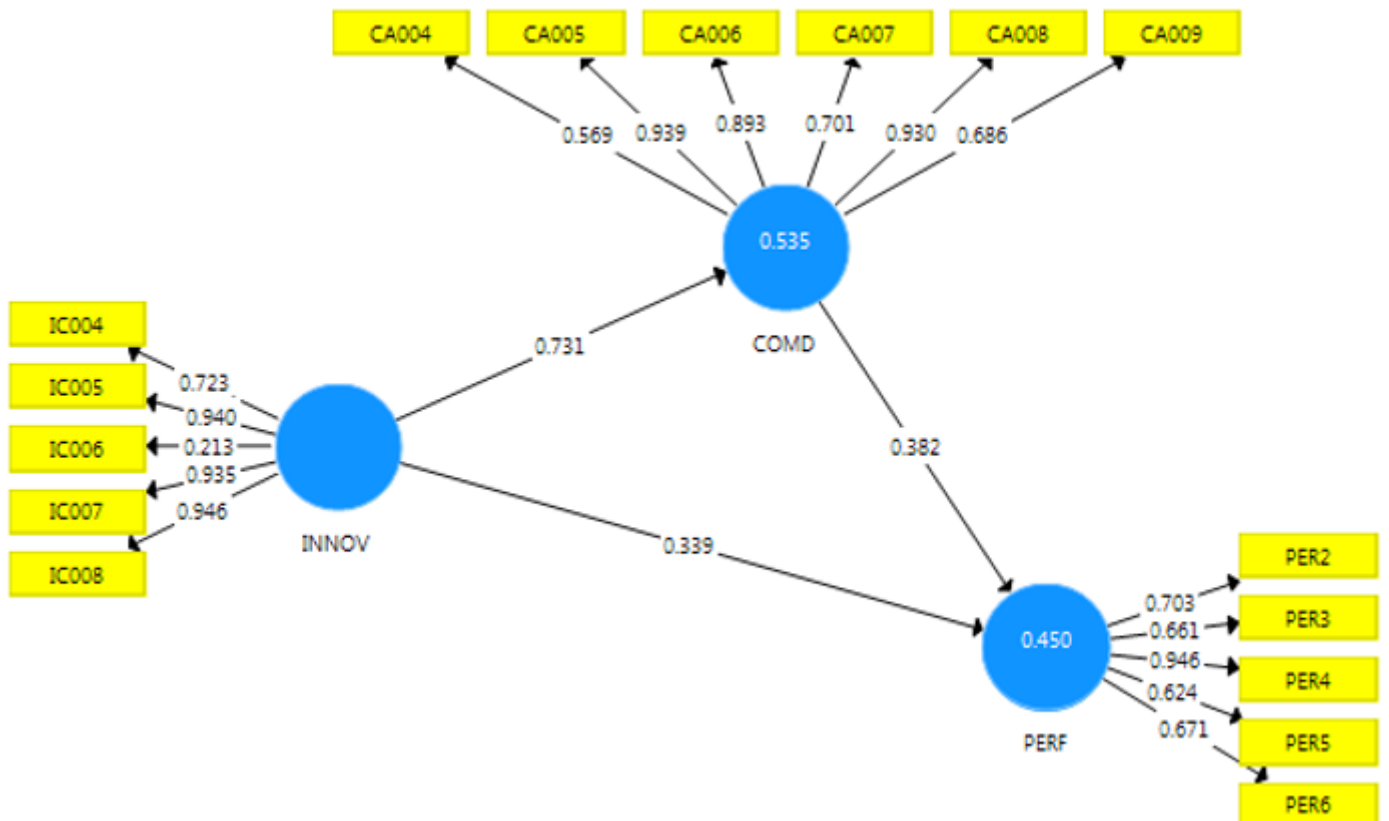


Fig. 2. PLS Algorithm

