

The Mediating Impact of Gender in the Relationship of Leadership and Supply Chain Management of Textile Industry in Indonesia

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Abstract-The current study purpose is to examine the mediating impact of gender in the relationship of leadership and supply chain management of textile industry in Indonesia. For this purpose, the data was collected from the 350 middle managers by using a simple random sampling technique which yield a 50 percent response rate. The Structural Equation Modeling (SEM) of the study has shown that leadership has a positive and significant relationship with the supply chain management and gender. In addition, the gender also has a positive and significant relationship with the supply chain management. On the other hand, the indirect effect of the study also shown that gender is significantly and positively mediates in the relationship of leadership and supply chain management. Therefore, this mediating effect is considered to be a big contribution of the study which could become a new area of research in future. The research limitations and future directions of the study also stated at the end of the study.

Keywords; *leadership, gender, supply chain management, Indonesia, Textile Industry*

1. Introduction

The pressure on firms is increasing to minimize the cost of supply as suppliers are needed to be leveraged to bring innovation. Meanwhile, risks related to the safety of consumers, reputation of the company and earnings related to corporations is becoming apparent in terms of poor management [1]. The unpredictable challenges, disruptive technologies and competitive pressure are heightened by the volatile commodity pricing. Furthermore, there is also changes in the leverage of the supplier as compared to new opportunities, new challenges and risks. Moreover, there is a need to develop negotiation strategies and make efforts in order to develop and sustain partnership with the supplier [2].

Current research has highlighted how globalization has led to the extension of supply chains (SC) to involve both customers and suppliers worldwide. Whilst initial gains from firm's going global were realized, these gains were not sustainable. There is no doubt that the impact of the recent economic crisis has been considerable, however another challenge for most organization's is the effectiveness of the managerial decisions within organization's as the nexus of their SC networks [3]. Sachdeva [4] asserts that many companies struggle to effectively optimize their SC and attain superior performance.

SCs are a network of several companies manufacturing, handling or distributing certain product and/or service. Thus, a SC involves multiple companies, and it encompasses the steps different companies take to source goods and/or service from suppliers and sell them to their customers [1]. Both industry and academic research communities have a growing interest in the intersection between globalization and SCs. This reflects the need for businesses to compete using SCs rather than exclusively autonomous units [5]. The members of the SC have abilities to align their capabilities in order to respond towards changes into the supply as well as demand of services and goods [6]. Additionally, in order to accomplish of competitive benefit in the fluctuating environment, it is important that firm's must be aligned with customers and suppliers so that operations can be coordinated in a collective way and gain a level of agility beyond that of its rivals [7].

The key challenge for firms is how to make a success out of globalization and SC operations [8]. In their view, firms particularly need to leverage their management and leadership capabilities and be more responsive by bleeding out inefficiencies and

injecting continuous improvements into their SC offerings. Achieving this superior performance, SC relationships proves a considerable and complex challenge to most firms, in general [3]. Firms have encountered serious challenges as they seek to develop innovative processes to identify, articulate, and address such issues in order to sustain high performance within their SCs. Such complex innovations often rely on management's leadership capabilities to set and meet challenging organizational objectives through the effective deployment of resources across the different SCs for multiple product and service portfolios [9].

The future of every firm is dependent upon the development and retention of good leaders. Further, no standard model of the SC exists. Leadership vision is developed by the effective leadership because externals and internal root causes for challenges and risks can easily be identified by them. To acknowledge the capability of the leader is the major challenge for the firm and a pre-requisite in order to sustain the firm performance (FP). The difference between superior performance and failure to perform can be related to firm's leadership and decision-making capabilities at senior management levels. Thus, managerial and leadership capabilities is key to effectively manage different SCs competing for resources within one firm and across organization's in the SC network, with available resources to be shared or pooled among SCs [10].

Over the last three decades, the notion of supply chain management (SCM), as a philosophy for integrating SC activities and firms achieving better performance in competitive economies, has been progressively developed. This, along with considerable research, focused on understanding how globalization has increased adverse pressures firm's and their SCs, has led to calls from governments, academia, industry and commerce for business managers to rethink the way they conduct their businesses. However, there has been limited empirical research on how managers decision-making and leadership capabilities should be developed to improve SC performance and effectiveness [11].

Companies have been managing equal opportunities for at least three decades, but we still see only a handful of exceptional women at the top of firms. The business case is getting stronger, but it isn't enough just to declare that the company values

gender diversity, there needs to be a SC in place. Absolutely, key to a successful gender diversity SC is a genuine willingness to address the gender issue [12]. But this requires vision and leadership, as well as a partnership based on the interdependence between leaders, HR, line managers and women. A very senior champion with a small task force headed by a proactive delivery-oriented leader can drive it forward, with targets and timeframes specified, and support visible. Getting the women together to hear their views, and genuinely supporting a women's network can help the initiative get off to a good start. It is useful to identify what managers perceive to be the barriers for women, so that interventions can be designed to address their views as well as those of the women [13].

Although SC integration can resolve most poor performance factors, the need for superior managerial and leadership capabilities remains a prerequisite for the efficacy of SC performance [12]. This article will draw on SCM concepts to discuss managing gender diversity. The contribution of the paper will be in the investigation of SCM literature through the lenses of SC leadership and the role of gender in the relationship of the SC and leadership relationship. Through this study a model can be provided for the development of theory towards the learning of the SC. There are a number of studies concerning the leadership of firms but there are very few studies concerning the SC of the firm [14]. This research could potentially enrich our understanding the mediating impact of gender in the relationship of leadership and supply chain management of textile industry of Indonesia.

2. Literature Review

Various previous research which is conducted on the leadership, that all studies it as a behavior as well as individual features. Furthermore, its influences on the colleagues and firms are also examined. This is mostly assumed that a leadership always play very essential role in firms success and attaining of competitive advantages [15]. Because of leadership is basic method to achieve work done by others and that is also gentler manner. Various researchers have described leadership as "the process of directing and guiding the behavior of the people in a certain work environment" [16]. As per this leadership definition, firms are observing in various means. The reason is

that; leadership could not describe as a single variable. Actually that is very helpful for understanding about adapting of firm's metaphors. In addition, leadership is a method which have capability to enhance others value as well as can deliver them followers towards attaining of firms objectives [11].

At the current era several challenges which are faced by firm's leaders. Such as, assets innovation, usage of information, capital belongings, mass markets, and must change firms' leaders. That is not a significant answer towards implementation of leadership for the above smart administrators. For the purpose to compete into this ages, firms should progressively depend on the judgment, information, experience, and capabilities of peoples. Build a combination and establishment of innovative knowledge, as well as improvement should be stimulated. These type of firms also have information about how they can compete into the place of market [17] At the current stage of globalization, employees remain measured as a key part of the firm. They are considered as an important element of the success in this way performance of the employees increased through the power, stimulation and employees creativity [18]. As a result, that is very essential towards harness of employee's capabilities for attaining objectives of the firms. A successful leadership is considered as key determinant for the success of the firm. Therefore, establishment these types leadership is very challenging for the firms [19].

Leadership is considered as a key aspect for motivation. Leadership provides administrators capability towards affect the activities of the employees inside of firm. According to the previous discussion, motivated personnel remain a very essential outcomes of the successful leadership, in addition, in this way effective managers also exist as the successful leaders the reason is that they have significant impact on their personnel which provide help to achieve objectives of the firms [20]. Understanding about the leaders' behavior is very difficult for the firms. Such as, providing programs of leadership training for upcoming leaders to enhance leadership capabilities and through delivering contextual limited conditions which are essential for these types of leadership.

For the purpose of enhancing FP as well as reduce that activities which are did not added the value; SCM is the methodology based on groups [21]. Therefore, SCM play a very important role to enhancing FP. In the current studies this concept is useful in the SC and logistics management. This idea is not considered to be a new in the field of SC competes along with other SC. In addition, there are presented a numerous literature about SCM. The developing SCM practices involve in information sharing, maintainable practices as well as distribution of the innovative ideas by SC. Thus, it have impacts on the big companies [22].

The activities which convert raw material to the final goods and are involved in delivering the goods to the end user, are involved into the SC. There are various stages in SC in which customers, retailers, distribution centers, warehouses, manufacturers and suppliers are involved. The marketplace of today is very complex and competitive in which a company needs to develop a very effective and efficient SC for the purpose of achieve competitive benefits. Therefore, SCM is considered as a means of the competitive benefits in which organizations can survive in the marketplace [23].

Researchers have defined SCM as a management of the upstream as well as downstream association between consumers and suppliers for delivering value towards customers in less cost of the whole supply chain [24]. In the definition of [25], SCM is undertaking of assimilating units of the firms along with SC and organizing material, knowledge plus financial flows for the purpose of meeting demands of customers with objectives of enhancing entire competitiveness of the SC.

There are three levels of hierarchy regarding the activities of supply chain management; namely operational level, tactical level and strategic level in which time is involved from hours to a number of years [26]. Long term decision making is involved at the level of SC in the strategic management level in this way goals of SC remain measured as well as means are arranged for accomplish that aims of the firms [27]; such as, design of SC network [28] and location of facilities [29].

Medium term decisions are involved in the tactical level of decisions regarding the way to conduct the supply chain to ensure efficient and effective resource utilization from the decisions of the strategic

level. The time period involves updating the decisions of tactical level over a few weeks to a few years. These decisions involve inventory policies and distribution planning [30, 31]. Short term decisions are involved at the operational level in which high details of tasks and operations are involved to achieve the tactical level objectives. The time period of tactical level varies from a weekly basis to a daily basis and activities involve scheduling of transport and production [32].

Leadership and supply chain

The leadership structure is characterized as a component of the SCM [33, 34]. Researchers revealed that business must face the circumstances of risks and disorders if they not applied leadership at the stage of making strategic decision [35]. Leaders of a SC can be identified by their comprehension of trade franchise, customer patronage, financial strength and range of the internal firms associations [36]. On the leadership of individual leadership theory, a number of studies regarding framework of SCM are developed. Thus, it has been argued that a successful leadership inside the network of SC administrators to determine the behavior complexity, described as a capability to perform cognitively difficult strategy through performing various even competing, strategies in the more integrated as well as complementary method [37].

There are the leadership-emphasized literature or research defined a successful leader which someone who is: 1. serves the interests that are best for self and organizations 2. Constantly develop best practices and good behavior 3. Create and seize opportunities 4. Capture the important information and act on it 5. Build the partnership 6. Bring and promote the change 7. Create the vision and promote it [38]. The leader performs all of these tasks towards establishing and understanding the vision of SC which undertaken the firm's objectives and strategy, that constantly enhance as the leader, as well as establishes capabilities and upcoming SC leaders. This ability plus objective offer a career lane of the SC leader. Firm's culture is not measured all firms identify the requirements for effective organizational leaders plus leadership. The leader of SC modify his and her methods towards the firm being helped [36].

A number of studies [1, 39] asserts that leadership ability is a main challenge for businesses and a basic

requirement to sustain FP and competitiveness in the market. There is a growing recognition that improving leadership needs to extend beyond firms to collaboration across the wider system, network or value chain they are inextricably linked to. There are several past studies showing a significant relationship between leadership and the SC, in social science research [38, 40].

The leaders of a SC increase productivity, performance and drive improvement and change by bringing changes in whole the extents of a SC from process towards design, bringing innovation in processes, overcomes weakness, growing loyalty of the team, good timing, careful planning, insight, helping the SC in the adoption of new patterns though trust among people and improvement of relations, using existing resources, opportunities as well as talent to carry out the mission of firms are accountable for its vision and execution [41].

In past literature there exist a lack of understanding among leaders and scholars regarding the behavior of leaders towards the SCM which are bring success for the organizations. The success of a firm is measured through achievements of set goals [42]. Numerous studies which are conducted for investigate relationship of the SCM and the leadership roles with the impact of gender on the mentioned relationships.

Thus, whether one sees leadership as part of a set of managerial capabilities (at the individual, organization and inter organizational (network) levels) necessary for SCM or in addition to these, the need for the development of a shared mindset [43] through communication of a shared vision, the facilitating the building of social capital (trusting interpersonal relationships) is at the core of ensuring SC effectiveness [44] and superior SC performance [45]. Moreover, [36] argues that SC leadership is a core component of SCM.

Gender, Leadership and Supply chain

As mentioned by WHO, the roles which are socially constructed are referred to as Gender. It also includes attributes, activities and behaviors' which a given society perceive appropriate for women and men [46]. Among the constructs, gender is a multidimensional one in which different limitations, responsibilities, experiences and roles are referred to an individual on the basis of Gender or sex. Researchers have defined gender as a ramification of

biological sex [47, 48]. Generally, the gender is observed by the behavior of women and men or by simply asking whether they are female or male [49]. A number of theories are produced by the researchers regarding the difference in leadership between women and men.

There exist some serious discussions regarding the topics of leadership and gender because of personal, social, political and professional realities, of the current era. For this reason, a number of researchers have reported significant relationship between these two variables [50-52]. Some style, perception, substance or reality based [52]. Several researchers provide argument that there is a biological difference between women and men. For this reason, past research has investigated whether there exists a difference in men and women. Researchers have demonstrated that there exist similarities in leadership styles regarding men and women which are much higher than the differences. Additionally, their leadership styles are equally effective [52].

Therefore, the issues regarding gender and SC has been given less attention. It is surprising because women are playing a key role in the development. There may be less conflicts, low level of group

cohesiveness and less breakdown of communication due to which the members of the group can discuss stuff openly and clearly, thus having an overall impact on the FP [21]. From the past literature it's evident that there is evidence of the link amongst moderating part of the gender on relation of leadership as well as SCM. Though there exists a lot of literature regarding the impact of human interaction through diversity of gender [53], there are few research regarding influence of gender at the practices of SCM. According to limited examination on the multiplicity of the gender into the SC, this study adopted for the purpose of increasing current understanding at this current stage. So, context of the study is presented into the figure 1.

H1: Leadership has the positive and significant influence on the supply chain management.

H2: Leadership has the positive and significant influence on gender.

H3: Gender has the positive and significant influence on the supply chain management.

H4: Gender mediates the association between leadership as well as supply chain management.

The research framework of the study has formulated below based on the above discussions.

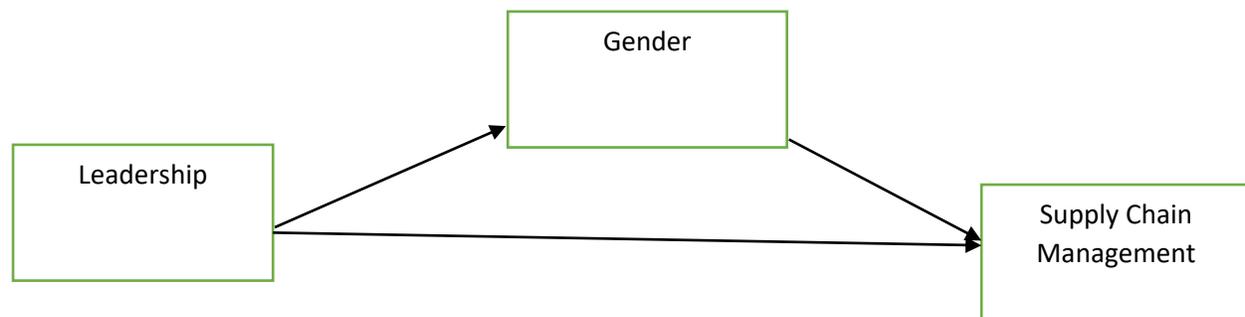


Figure.1 Research Framework

3. Research Methodology

The research design of the current study has applied as per the objective of the study. The present is consist of quantitative research approach, cross sectional research design and is correlational in nature. Moreover, the current study data is collected through the primary source by using a self-administered questionnaire. The questionnaire was distributed to 700 middle managers by using a simple random sampling technique. Among of them 350 questionnaires were returned back which yield a 50

percent response rate. The research instrument of the study was adopted from the previous studies where this instrument was already used and tested. Therefore, the reliability and validity of the current instrument is more as compare to others. For the current research instrument, three items for the gender, five itmes for the leadership and eighteen items for the supply chain management are adopted from the study of [14]. The current istrument was measured by using a five point Likert Scale which is

ranged from 1 which denotes strongly disagree and 5 which denotes strongly agree.

Data Analysis and Discussions

The current study has applied the Structural Equation Modeling (SEM) for the analysis along with the various reasons. The SEM is considered to be important because it has the ability to take the analysis along with the multiple and linear regression that assumes that variables are being to be evaluated along with no errors. There are number of reasons which make PLS-SEM a popular approach among researchers. Several arguments about the reasons of employing PLS by researchers and scholars were assessed (Urbach & Ahleman, 2010). According to Hair et al. (2016), the PLS approach is useful especially when the sole purpose of using structural modelling is to obtain explanation and prediction about the constructs. For this study, the PLS-SEM technique is employed assuming it to be more flexible, demands less in terms of the sample size, and has an ability to handle multiple structural modelling. Moreover, the model is constituted of reflective and formative constructs. The study aims to reflect prediction between the constructs. Hair et al. (2016) also supported the reasoning for employing the Partial Least Square method. The SEM-PLS approach involves two models i.e. the structural

model and the measurement model. These two models are being discussed below.

Measurement Model

The measurement model of the study has shown that model is able to take the further structural analysis. For this purpose, the convergent and discriminant validity of the model has used. The convergent validity of the model could be assessed by the following values, Cronbach value that should be greater than 0.7, composite reliability that should be greater than 0.7, factor loadings that should be greater than 0.5 and average variance extracted should be greater than 0.5 [54]. The Table 1 has shown that all of these values are fulfill the criteria that shows model has the convergent validity. On the other hand, the discriminant validity of the model could be assessed by using a Fornell & Lacker and HTMT. For the discriminant validity, all the diagonal values in the model should be greater values, while other for the discriminant validity, the HTMT correlational values should be less than 0.85. All of the following values for the convergent and discriminant values are suggested in the extant literature stream in the following studies [55, 56]. The values for the convergent and discriminant validly are predicted in the following Table 1, Table 2 and Table 3.

Table 1: Reliability and validity of the model

Constructs	Items	Loadings	Alpha	CR	AVE
Gender	GEN1	0.714	0.907	0.931	0.729
	GEN2	0.788			
	GEN3	0.653			
Leadership	LEAD1	0.326	0.905	0.934	0.78
	LEAD3	0.809			
	LEAD4	0.820			
	LEAD5	0.789			
Supply chain management	SCM1	0.975	0.869	0.902	0.607
	SCM2	0.683			
	SCM3	0.949			
	SCM4	0.856			
	SCM5	0.834			
	SCM6	0.823			

SCM7	0.856
SCM8	0.816
SCM10	0.785
SCM11	0.789
SCM13	0.901
SCM14	0.731
SCM15	0.672
SCM16	0.780
SCM18	0.821

Note: SCM- Supply chain management, GEN-gender, LEAD-leadership.

Table 2: Fornell & Lacker Criterion

	GEN	LEAD	SCM
GEN	0.808		
LEAD	0.071	0.760	
SCM	0.562	0.119	0.90

Note: SCM- Supply chain management, GEN-gender, LEAD-leadership.

Table 3: HTMT Criterion

	GEN	LEAD	SCM
GEN			
LEAD	0.062		
SCM	0.465	0.419	

Note: SCM- Supply chain management, GEN-gender, LEAD-leadership.

Structural Model

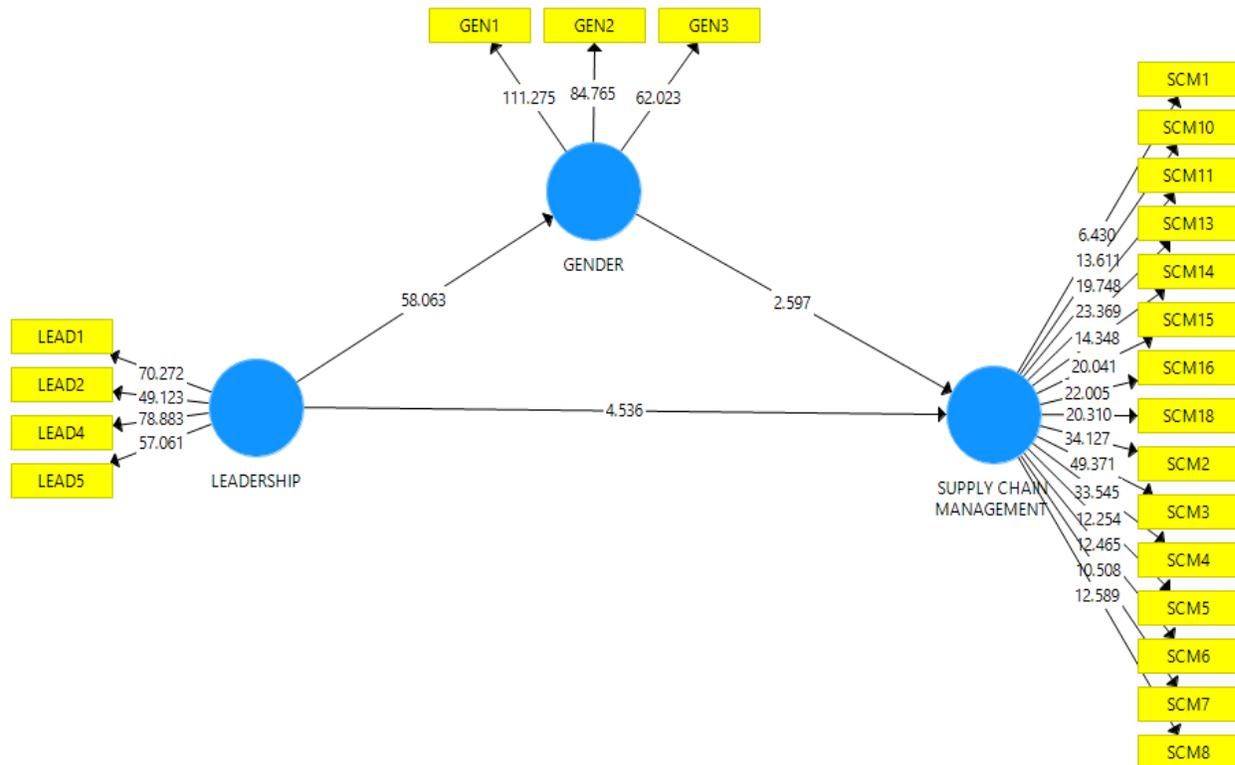
After testing the measurement model of the study, the current study has applied the structural model by using a bootstrap 500 sample. The key findings of the study have shown that leadership has a positive and significant relationship with the supply chain management. In the same vein, leadership also has a positive and significant relationship with the gender. In addition, the gender also has a positive and significant association along with the supply chain management. These direct effect findings of the study have shown that textile industry of Indonesia has a good level of leadership which provide help to increase the supply chain management. On the other hand, the indirect effect findings of the study also shown that gender is significantly and positively mediates in the relationship of leadership and supply chain management. This shows that gender is considered to be an important mediator which shows

that leadership did not only effect to supply chain management directly but also effects indirectly to the supply chain management. Therefore, it could be explained that textile industry of Indonesia has a greater level of leadership which could provide help to increase the impact of gender on the supply chain management. All of these findings are predicted in the Table 4.

Table 4: Direct and indirect model result of the study

	Beta	S.D	T Statistics	P Values	Results
LEAD->SCM	0.484	0.107	4.536	0.000	Supported
LEAD-> GEND	0.881	0.015	58.063	0.000	Supported
GEND-> SCM	0.274	0.105	2.597	0.010	supported
LEAD->GEND->SCM	0.281	0.065	5.122	0.000	Supported

Note: SCM- Supply chain management, GEN-gender, LEAD-leadership.

**Figure.2** Structural Model

4. Conclusion

The main objective of the study is to investigate the mediating effect of gender in the relationship of leadership and supply chain management of textile industry of Indonesia. For this objective, the research hypothesis of the study was formulated. The data was collected from the middle managers by using a simple random sampling technique. The Structural Equation Modeling (SEM) of the study has shown that leadership has positive and significant relationship with the supply chain management and also has a positive and significant relationship with

the gender. In the same vein, the gender also has a positive and significant relationship with the supply chain management. On the other hand, the gender is significantly and positively mediating in the relationship of leadership and supply chain management. Therefore, this mediating effect considered to be a big contribution of the study. The empirical research could add a body of knowledge in the extant literature which could become a new area of research in future. The key findings could also provide help to the policy makers and owners to know about the importance of a good leadership to increase the supply chain management of the

organization. Along with these significant contributions, the current study still has some important limitations which could provide help to conduct a research in future. Firstly, the study was limited on mediating effect, there are some other moderating variables which can moderate among their relationship. Therefore, a future research could be established along with the moderating variable. Secondly, the study was limited on one industry, a future research could be established on more industries to increase the study generalizability. Thirdly, the study was limited on cross sectional research design in which data is collected first time, a future research could be done on longitudinal research design. Fourthly, the study was limited on quantitative research design, there is also a qualitative research design. Therefore, a future research could be established on mixed method to increase the study generalizability.

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