

# Do employees' attributes and capabilities matter the intention to become a supply chain manager? Structural model analysis

Employees'  
attributes and  
capabilities

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## Abstract

**Purpose** – This study aims to investigate how the employees' attributes, capabilities, behavioral control and behavioral intentions affect their intention to become a supply chain manager (SCM). The study also investigates how employees' capabilities mediate the relationship between attributes and intention to become SCM.

**Design/methodology/approach** – The purposive sampling frame is employed to collect the data, and multiple statistical tools and techniques are used for analyzing the data.

**Findings** – The findings reveal that attributes are the most crucial factor for the capabilities of employees to become successful SCM. Employees' behavioral intention and capabilities have a significant impact on intention, whereas perceived behavioral control has a significant negative impact on it. Also, the result finds that capabilities partially mediate the relationship between attributes and intention to become an SCM.

**Research limitations/implications** – The study extends the application of employees' intention to become a supply chain manager. The idea collected is based on Malaysia; thus, further study should be extended to assess the impact of employees' attributes, capabilities and behavioral control to become SCM as well as economic performance in other countries.

**Originality/value** – To the best of the authors' knowledge, this is the first empirical analysis on the relationship between employees' attributes, capabilities, behavioral control and intention to become SCM in the context of Malaysia. The findings will help the top management to select the right people as SCM and improve their attributes, capabilities and behavior so that they become an effective SCM.

**Keywords** Attributes, Capabilities, Behavioral intention, Behavioral control, Supply chain manager

**Paper type** Research paper

## 1. Introduction

Supply chain management is a crucial topic as it increases competitiveness and employees' satisfaction in business enterprises (Seuring *et al.*, 2019; Rahman and Zailani, 2017). It plays an integral part in the company's success, for example, an efficiently running SCM helps industries to rapidly deliver products to consumers at a low-cost price. Ellram and Murfield (2019) indicated that over the decades, the continuously changing design, technologies and globalization were not only shaping the SCM, but it made supply chain practice tremendously competitive. Besides, the rapid growth of globalization has made the conventional supply chain to be tremendously competitive and complex for many firms by connecting businesses



around the world (Nguyen *et al.*, 2018). The fast, efficient and dynamic growth is essential for maintaining the supply chain and supply chain leader for the future. To be competitive and be sustainable in the future, the organizations need to achieve efficiency and come up with innovations while keeping their reputation and ability to satisfy the employers and customers (Rahman *et al.*, 2015; Mishra *et al.*, 2018).

Copacino (2019) mentioned the numerous skilled professionals who are working in the functional departments of the supply chain and logistics; however, there is a lack of effective and efficient supply chain managers who can come up with better supply chain strategies and boost the performance of the supply chain manager. Luo *et al.* (2018) showed their concern to intensify the shock the demand of the supply chain managers and explained the quality supply chain managers with proper knowledge, competencies and attributes that are greatly lacking. Scheibe and Blackhurst (2018) argued that managers are one of the key factors for organizations to perform and for the success of the supply chain, but quality supply chain managers are considerably lacking. To make the best out of the existing supply chain, a business organization requires skilled and efficient supply chain managers with proper attributes, characteristics, behavioral intention and capabilities of a supply chain manager (Luo *et al.*, 2018). Thus, this study aims to investigate the critical success factors that affect employees' intention to become a supply chain manager.

The previous studies (Campos *et al.*, 2019; Wagner *et al.*, 2020) focused on the supply chain management, whereas the attributes and knowledge are needed to manage and enhance the capabilities of employees to become a future supply chain manager. Chopra's (2018) study postulated that managing the whole supply chain can be a very cumbersome and hectic job for the managers since it encompasses all the logistics, operational and cross-functional jobs that need to be taken care of – from the suppliers to the customers. Villena *et al.* (2018) suggested that to create a true supply chain manager, both the hard and soft skills are must-haves to perform better rather than focusing on academic knowledge.

## 2. Literature and hypotheses development

### 2.1 Employees' attributes and capabilities

The attribute is defined as the quality and skill of an employee. The right employee can change an entire team with their positive influence on the firm. Attributes and capabilities are a significant part of a good employer to become a successful manager in the organization (Akdogan and Demirtas, 2014; Essex *et al.*, 2016). The firms need to identify the employees' skills, creativity (Ogbeibu *et al.*, 2018), capabilities and competencies to develop supply chain management (Krajcsák, 2020). Hohenstein *et al.*'s (2015) study points out that a supply chain manager should have logistics skills, business skills and management skills. Mangan and Christopher (2005) explain the logistics and supply chain managerial attributes through a T-shaped model. Xu and Beamon (2006) highlight that employees' attributes are categorized into interpersonal skills, functional skills and management skills to become a good supply chain manager. Krajcsák (2020) postulates that employees' quality, performance, self-evaluation and behavior assist in becoming a good manager of supply chain management. Employees' quality, capability, skill, supply chain relationship and their technique of operations in an effective manner may result in high business turnovers for the firms (Nimmy *et al.*, 2019). Thai *et al.*'s (2011) study on supply chain logistics professionals in Australia focused on the importance of logistics skills and knowledge since these skills are related to the strategic-level capability that can assist in strategically managing the logistics process and risks.

Supply chain logistics professionals have the capabilities and logistic skills to operate the organizations. The previous studies (Tatham and Spens, 2011; García-Sánchez *et al.*, 2019; Ju *et al.*, 2019) suggest that logistics knowledge and information are crucial resources that affect

logistics capabilities. Particularly, knowledge of logistics plays a pivotal role in resource integration capability. To enhance the organization's capability and serve customers globally, employees' logistics skills, capabilities and supply chain relationships are important for future successful managers of supply chain management. [Jim Wu et al. \(2013\)](#) believe that employees' logistic skills are more crucial compared to the overall educational background of supply chain management. The general managerial skills are strategically important for a company as they are directly connected to the management-related capabilities. The managerial capabilities, initiative, responsibility and management skills make an employer capable to operate a firm effectively ([Karttunen, 2018](#)). [Jin et al. \(2010\)](#) postulate that general management skills are positively connected to the capabilities of employees. Human interaction is an integral part of the supply chain, and higher performance of the supply chain is supported by interpersonal skills. Managerial interpersonal skills facilitate different capabilities of the managers. Previous studies ([Karttunen, 2018](#); [Zaman et al., 2019](#)) show that different interpersonal skills such as emotional and political skills contribute to managerial capability. [MencI et al. \(2016\)](#) find that the employees' emotional intelligence, leadership skill and interpersonal skills enhance managerial capability. Therefore, employees' attributes may reflect capabilities to become a future successful leader of supply chain management. We postulated that:

*H1.* Employees' attributes have significant relationship with capabilities.

### *2.2 Capabilities and supply chain manager*

Employees' capabilities play a crucial role in improving supply chain management ([Chirico and Nordqvist, 2010](#)) and become a successful supply chain manager in the firm. The failure or success of a supply chain depends on the employee's capabilities in the functional departments of the organization ([Fawcett et al., 2019](#)). The previous studies ([Richey et al., 2006](#); [Pettit et al., 2019](#); [Williams et al., 2019](#)) indicate that investing in technology comes up with few benefits, although the technologies are quite available and open to everyone. The employees need the capability to use those technologies to attain a competitive advantage for their firm. It is important for firms to gain an understanding of the supply chain managers' capabilities and how they can influence the organization's performance. [Essex et al. \(2016\)](#) find that there is a significant relationship between the capabilities of the supply chain manager and their performance in the organization. Employees' dynamic capabilities play a crucial role in their intention to become a successful manager of supply chain management. [McNamara et al. \(2003\)](#) argue that due to the constant encountering of new challenges, there is a need for the supply chain manager to adjust and update their capabilities. Employees' intention to become a supply chain manager and their success in the long haul can be attributed to their dynamic capabilities ([Wu, 2006](#); [Villena et al., 2018](#)). [Essex et al. \(2016\)](#) show how managers can utilize the attributes to modify over time, which will enhance their performance and make them capable to gain a unique advantage, which, in turn, may assist them to become a successful supply chain manager. In line with this discussion, we hypothesize that:

*H2.* Employees' capabilities have significant impact on the intention to become a supply chain manager.

### *2.3 Behavioral control and supply chain manager*

Employees' perceived behavioral control describes the perceived likelihood of challenges that are expected to be encountered while executing certain behaviors ([Ajzen, 1991](#); [Montano and Kasprzyk, 2015](#); [Lee et al., 2020](#)). The employees' behavioral control is defined for this study to predict the responsibilities and capabilities of employees to operate the firm ([Armitage and Conner, 2001](#); [Hansen et al., 2018](#)). [Mohamed et al. \(2011\)](#) show that perceived behavioral control

is measured by the individual's perceived time loss and psychological risk. The employees' perceived behavioral control can be measured by the resources, responsibility, work-life balance, training, skill development, family time and workload in the business organization. According to [Trafimow et al. \(2002\)](#) and [Zhu et al. \(2019\)](#), perceived behavioral control is the multidimensional determinant that influences supply chain professionals' intention to become a successful supply chain manager. When an individual perceives to hold a higher degree of control, they usually engage in a specific behavior which may reflect them to become a supply chain manager. [Ajzen and Madden's \(1986\)](#) study suggests that behavioral control can be measured by resources, opportunities and difficulties in the firm. Perceived behavioral control may affect the employees' intention to become a supply chain manager ([Kashif et al., 2018](#)). [Dalila et al. \(2020\)](#) find that perceived behavioral control has significant impact on intention. Thus, we postulated that:

*H3.* Perceived behavioral control has significant influence on employees' intention to become a supply chain manager.

#### *2.4 Behavioral intention and supply chain manager*

Behavioral intention refers to a behavior where an individual has a strong intention to execute an action ([Rahman et al., 2014, 2018](#)), the likelihood of performing the behavior and in this case to become a supply chain manager ([Montano and Kasprzyk, 2015](#)). Perceived behavioral intention is an important dimension of [Ajzen's \(1991\)](#) theory of planned behavior (TPB). [Ajzen's \(1991\)](#) TPB provides the perception of control of a person over a specific performance and works as a behavioral indicator. The perceived behavioral intention of the employees might be measured by the opportunity and knowledge to see how they affect their behavior toward the intention to become future supply chain manager ([Park and Park, 2016](#); [Liu and Lin, 2018](#)). In this study, the researchers investigate how employees' perceived behavioral intention affects their intention to become a successful supply chain manager in the firm. The employees will receive a supply chain manager position if the firm offers benefits and the firm has excellent growth, market share, as well as payback.

The supply chain management is facing some severe issues in terms of putting correct and capable employees in the proper place to operate the supply chain management. [Fawcett et al. \(2008\)](#) postulate that the supply chain manager is not a functional position. It is defined by the skills and a strong mindset that includes functional skills, building collaborative relationships, executing discipline, exemplifying leadership and dealing change management. Hence, this study highlights how employees' skills and behavioral factors affect intention to become a good supply chain manager in the firm. The firms need the right employees to be appointed as the supply chain manager to better execute the plan and strategies. A manager position will be successful if the manager has the vision, determination and humility and accepts changes whenever necessary and when the company places the right people in the right place. The supply chain works as a wheel, and the supply chain manager is the center of the wheel that holds all the guidelines together. The biggest challenge is the need to find and place the right people as a manager to transform supply chain management. Based on this discussion, we hypothesize that:

*H4.* Employees' behavioral intention has significant influence on their intention to become a supply chain manager.

#### *2.5 Mediating effect of capabilities*

Capability is the ability of an entity in the system, department or organization to attain its objectives, particularly with its overall mission. Employee's capability represents performing and achieving certain actions or outcomes in terms of the connection between capacity and

ability. [Essex et al. \(2016\)](#) examine the direct connection between attributes and capabilities, but no study has examined the mediating effect of capacities that has a relationship between attributes and intention to become a supply chain manager. This study proposes that capability may mediate the relationship between employees' attributes and their intention to become a successful supply chain manager in the firm. [Ologbo et al. \(2015\)](#) indicate that capability is a routine or practices that enable employees or firms to utilize their resources efficiently to attain a particular goal. The long-term success can be attained by the dynamic capabilities of the organization ([Wu, 2006](#)). Prior studies show that managerial attributes have a significant impact on the performance of the supply chain. [Bowersox et al. \(2002\)](#) find that managerial characteristics can influence supply chain performance. [Akdogan and Demirtas \(2014\)](#) argue that the employees' attributes should be counted as part of the supply chain processes. Based on this discussion, we have proposed that:

*H5.* Employees' capabilities mediate the relationship between attributes and the intention to become a successful supply chain manager.

### 2.6 RBV and TPB

This study is intended to fill up the gap in the body of knowledge by improving the understanding of the employees' attributes, capabilities and intention of the professionals working in the functional field to become future supply chain managers through the adoption of the TPB ([Ajzen, 1991](#); [Ajzen and Madden, 1986](#)) and resource-based view (RBV) ([Barney, 1991](#)). The RBV has supported to place employees and the human resources to bring into the light. [Argote and Ingram \(2000\)](#) state that employees' dynamic capability, knowledge, leadership and learning organizations can create a competitive advantage and generate sustainable competitive advantages for the firm. The RBV theory presents a wider foundation to examine the influence of employees' attributes to become a successful supply chain manager. It is predicted that the employees' capabilities can create a wider frame of the organizational systems, processes and, eventually, develop the competitive advantage ([Wright et al., 2001](#)). Therefore, a firm's ability to generate a competitive advantage depends on the supply chain managers and the level of their attributes ([Essex et al., 2016](#)).

Although TPB is generated in the domain of psychology, it has been implemented quite frequently in other domains. The previous studies ([Swaim et al., 2016](#); [Wu and Chuang, 2010](#)) show the inadequate application of the TPB in the domain of supply chain management and people management part of the supply chain. The TPB comes up with a controlling factor to predict the behaviors. If more opportunities and resources are perceived by employees, they have a higher perceived behavioral control. [Ajzen and Madden \(1986\)](#) postulate that when a person believes and holds a higher level of control, they usually engage in a specific behavior.

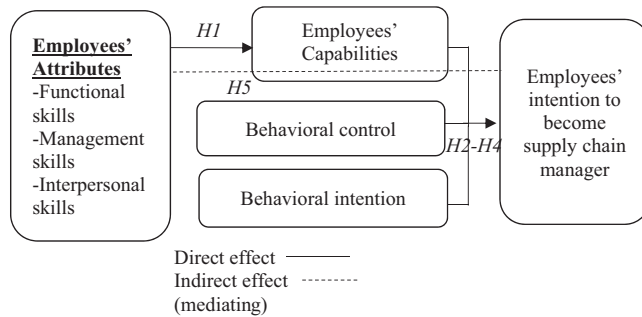
The study aims to identify to what extent the employees' intention to become a supply chain manager is related to the perceived behavioral control, capabilities and behavioral intention. Also, the study intends to show the mediating effect of employees' capabilities which mediate the relationship between attributes and the intention to become a supply chain manager. This study has been investigated in this particular area to analyze the connection between the requisite attributes of employees and their intention to become a future supply chain manager by using the TPB (e.g. employees' intention comes from TPB) and RBV (e.g. supply chain managers' attributes and capabilities come from RBV). Based on this discussion, [Figure 1](#) shows the conceptual model of this study.

## 3. Research methodology

### 3.1 Research design and sampling technique

[Hair et al. \(2000\)](#) pointed out that a suitable research design depends on the objectives of the study. This study conducted among the working professional groups who are working in or

Figure 1.  
Conceptual model



worked before in any functional department in a for-profit supply chain company. The chosen groups were supply chain managers who have at least an undergraduate or bachelor's degree and minimum work experience. Hypotheses testing has been undertaken to find out the variance in the dependent variable, to examine the association between the independent variables and mediating and the dependent variables. This study uses a purposive sampling method since it took the whole population from the supply chain company, but the respondents were chosen using a convenient sampling technique as the groups of people were the managers of the supply chain company that is convenient enough in terms of data collection. The study was a cross-sectional research using the primary data, and the instrument used to test the stated hypotheses was the survey method.

### 3.2 Operationalization of constructs

The constructs used in this study are measured from the literature in the context of this study. The scale development for these constructs and its measures is adapted from the well-established theories of TPB and RBV. Multi-measurement items for all the constructs are used to overcome the limitations of a single item. A single item may retain a high rate of measurement error because it is too specific. For the measurement of attributes, 18 items have been adopted from Mangan and Christopher (2005). Nine measurement items are used for behavioral intention and four items are used for perceived behavioral control, which is modified from Fishbein and Ajzen (1977). Based on Essex et al. (2016), four items are adapted for employees' capabilities, while three items are modified from Fishbein and Ajzen (1977) to evaluate the employees' intention to become a supply chain manager. To estimate the respondents' opinion, they were asked to indicate their level of perceptions on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

### 3.3 Survey administration and sample

This study employed a survey method, using questionnaires to test the conceptual model and developed hypotheses. The sampling frame of this study consisted of general employees and executives of the firms who are currently working in different supply chain and logistics industry in Kuala Lumpur in Malaysia. The supply chain and logistics companies were contacted for permission to survey their premises. The potential respondents were chosen randomly. This procedure helped the researchers of this study to access a sufficient number of potential respondents. The prospective participants were politely approached in person between the period of December 2018 and March 2019 by the researchers of this study and sought their support to participate as respondents. The researchers assured the participants that the data collection would be used for research

purposes only and their responses were anonymous and voluntary. The questions were translated from the English version into Bahasa Malay language. Two sets of questionnaires were distributed to respondents. The respondents completed the questionnaire and handed it to the authors of this study.

A total of 400 complete sets of questionnaires with a cover letter were distributed with 293 being returned, indicating a return rate of 73.25%. Six returned questionnaires were partially completed and were thus not useable for this study. The useable response (a total of 287) rate was 71.75%. G\*Power 3.1.9.2 statistical method was used for measuring 287 useable samples. The result indicates that a significant value of 0.05 yielded a strength of 0.93, which was greater than 0.80 and implied an acceptable level of sample power in this study (Chin, 2001).

#### 4. Analysis and findings

The partial least square (SmartPLS 3.0) method is applied to assess the conceptual model of the study. This method is suitable as the sources of poor model fit can be recognized without difficulty. We have used a four-step method for data analysis. In the first step, we have examined the pilot study. In the second step, the study has examined the respondents' demographic profiles using the Statistical Package for the Social Science (SPSS) software 22.0 version. The measurement model assessment is evaluated in the third step to identify the factor analysis. Finally, we have tested the hypotheses to confirm the path coefficient from the direct and indirect relationship of the structural model.

##### 4.1 Respondents' profile analysis

The demographic findings reveal that the number of male and female respondents is not significantly different, because out of 287 respondents, male and females are 57.3 and 42.7%, respectively. This shows that from the gender perspective, the survey was equally responded. In terms of ethnic background, 22% of respondents were Chinese, followed by 39.3% Malay, 20.7% Indian and the rest 18% from other races. The majority of the respondents are below 30 years old (44.7%), and the second majority age group is aged from 31 to 35 years (30%). The level of education of the respondents shows that 53.3% of them have a bachelor's degree and 46% of them have a master's degree. This dictates that even after having a master's degree, 46% of people are again coming to for an MBA for career development. Now in terms of the functional departments, most of the respondents work in accounting and finance (15.3%), admin and HR (8.7%), sales and marketing (24%) and SCM and logistics (14.6%), project management (8%).

Respondents were asked if they had a prior professional degree or training on supply chain management, and it turns out that 46.7% of them have some sort of prior knowledge on supply chain management. The majority of the respondents belong to the lower management (36.7), middle management (28.7) and executive level (21.3). In terms of the working experience, most of the respondents have 01–06 years of work experience, which is 48.7% of the sample, 35.3% of them have an experience of 07–13 years of working and the remaining 14.7% have 14–21 years of working experience. Table 1 summarizes the whole respondents' profile.

##### 4.2 Measurement model analysis

For measurement model evaluation, we employed two types of validity: convergent validity and discriminant validity. After executing the PLS algorithm on the conceptual model, the results of the outer loading confirmed that for most of the items, the factor loading values are quite high in terms of their corresponding constructs. The lower factor loadings items less

Characteristics		%	Characteristics		%
Gender	Male	57.3	Age	Below 30	44.7
	Female	42.7		31–35	30.0
Ethnic background	Chinese	22	36–40	14.0	
	Malaysian	39.3	41–45	10.0	
	Indian	20.7	Above 45	1.3	
	Others	18	Level of education	Bachelor's degree	53.3
				Master's degree	46.0
Functional department working into	Accounting and finance	15.3	Position in current organization	Other	0.7
	Admin & HR	8.7		Top management	8.0
	Sales and marketing	24		Middle management	28.7
	SCM	11.3		Lower management	36.7
	Logistics	3.3		Executive	21.3
	Import and export	0.7	Others	3.3	
	Info. & tech	6.7	Professional degree/training	Yes	46.7
	Production and planning	4.7		No	53.3
	Procurement	4.7	Work experience	01 year to 06 years	48.7
	R&D	2.0		07 years to 13 years	35.3
	Project management	8.0		14 years to 21 years	14.7
Others	9.3				
	System	1.3			

**Table 1.**  
Respondents' profile

than 0.50 are excluded from this study. For example, a total of six items are dropped from the construct of employees' attributes: items fs1 (I have a good understanding on "Inventory and Asset management"), fs7 (I am not in favor to be appointed as SCM manager as it involves lots of critical decision-making), gms1 (I believe my finance and accounting knowledge are good enough), gms6 (I believe I am good at formulating "strategies"), gms9 (general management skills: I believe I am well adept at "Supplier relationship management") and ips1 (I believe I have good "Written communication" skills) have been dropped from the factor analysis. Here, access the convergent validity, the average variance extracted (AVE) is calculated. [Table 2](#) exhibits the AVE values for the latent variables, and the values are found to be more than the prescribed value of 0.50 and therefore establish convergent validity ([Hair et al., 2013](#)). The composite reliability (CR) was measured using factor loading, ranging between 0.586 and 0.887, which is sufficiently high, as suggested by [Bagozzi and Yi \(1988\)](#). The findings indicate that the minimum threshold point of Cronbach's alpha is 0.815, whereas a maximum is 0.958, which indicates the internal consistency of this study. The result of the average variance extracted (AVE) was between 0.582 and 0.744, which implies that convergent validity was achieved, as suggested by [Hair et al. \(2013\)](#).

Discriminant validity refers to the degree to which a variable is different from the other variables. This validity is tested in regard to how much the indicators describe particularly one single variable and how much a variable is associated with other variables. In this study, the criterion and cross-loading scores of [Fornell and Larcker \(1981\)](#) criteria are applied to determine the discriminant validity. Moreover, all the individual loadings of the indicators were found out to be greater than their corresponding cross-loadings. [Figure 2](#) graphically



Constructs and items	Drop items	FL	AVE	CR	Alpha
<i>Employees' attributes: I will take up a supply chain manager position because...</i>			0.582	0.96	0.958
[fs1] I have a good understanding of "Inventory and Asset management"	[fs1]	–			
[fs2] I have good knowledge of "Warehousing"		0.783			
[fs3] I have a good understanding of purchasing and procurement		0.818			
[fs4] I have good "forecasting" skills using data analysis tools		0.808			
[fs5] my "Port/airport management" knowledge is good		0.783			
[fs6] I have a good grip when it comes to learning logistic information system (ERP, SAP)		0.788			
[fs7] I am not in favor to be appointed as SCM manager as it involves lots of critical decision-making	[fs7]	–			
[fs8] people who influence my behavior think that I should take up the supply chain manager position some day		0.761			
[gms1] I believe my finance and accounting knowledge are good enough	[gms1]	–			
[gms2] I believe I am well adept in "Information Technology" and I catch up fast		0.717			
[gms3] I believe "Change Management" is not so challenging to me as I am very adaptable and flexible		0.759			
[gms4] I believe my "Marketing" knowledge is up to the mark		0.679			
[gms5] I believe my "Project management" knowledge is up to the mark		0.754			
[gms6] I believe I am good at formulating "strategies"	[gms6]	–			
[gms7] I believe my "Customer relationship management" knowledge is good		0.767			
[gms8] I believe I am well adept at "Supplier relationship management"		0.846			
[gms9] general management skills: I believe I am well adept at "Supplier relationship management"	[gms9]	–			
[ips1] I believe I have good "Written communication" skills	[ips1]	–			
[ips2] I believe my I am quite adept in "People Management"		0.586			
[ips3] I believe my "Negotiation" skills are good enough		0.784			
[ips4] I believe I can manage "Stress" quite well		0.824			
[ips5] I believe people take my "Leadership" and act upon it		0.711			
[ips6] I believe my finance and accounting knowledge are good enough		0.795			
<i>Behavioral indentation: I will take up the supply chain manager post in an organization if...</i>			0.602	0.93	0.917
[bi1] I have the knowledge necessary to use to make the supply chain more effective and efficient		0.805			
[bi2] the supply chain manager's responsibilities fit well with my work style		0.768			
[bi3] given the resources, opportunities and knowledge it takes to use, it would be easy for me to be a supply chain manager		0.755			
[bi4] I will take up the supply chain manager position if the payback is better compared with other manager positions in the market		0.776			
[bi5] I will take up the supply chain manager position if it offers other benefit packages better		0.855			
[bi6] is famous for its brand name		0.828			
[bi7] has excellent growth and market share		0.727			

(continued)

**Table 2.**  
Factor analysis and convergent validity

Constructs and items	Drop items	FL	AVE	CR	Alpha
[bi8] offers qualifications that will be recognized by most of the employers		0.714			
[bi9] is well known for the quality of the expertise of its staff		0.745			
<i>Capabilities: If I have the required skills and behavioral. . .</i>			0.744	0.92	0.886
[cb1] I believe the appropriate attributes will help me to be more capable to manage the supply chain of a company.		0.887			
[cb2] I will be able to adopt new and better practices to respond to market changes		0.869			
[cb3] I will be able to reconfigure (combine/release) resources to respond to market changes		0.863			
[cb4] develop competences and skills to respond to market changes		0.830			
<i>Perceived behavioral control</i>			0.709	0.91	0.871
[bc1] I am not sure that I will have the time needed to complete the dynamic responsibilities of a supply chain manager		0.842			
[bc2] I am very concerned about the availability of training, required new skills or other resources on a timely basis		0.859			
[bc3] I am afraid that the supply chain manager position will take too much of my time away from my family		0.852			
[bc4] If I take the role of a supply chain manager I will have less free time		0.814			
<i>Intention to become a supply chain manager</i>			0.728	0.89	0.815
[sc1] I intend to be a supply chain manager		0.886			
[sc2] I do believe that I am qualified to be a supply chain manager		0.805			
[sc3] I might consider to take up the post if been given the opportunity		0.867			

Table 2.

illustrates the path analysis results using the beta coefficients to show the direction of the relationship is within the variables.

#### 4.3 Structural model analysis

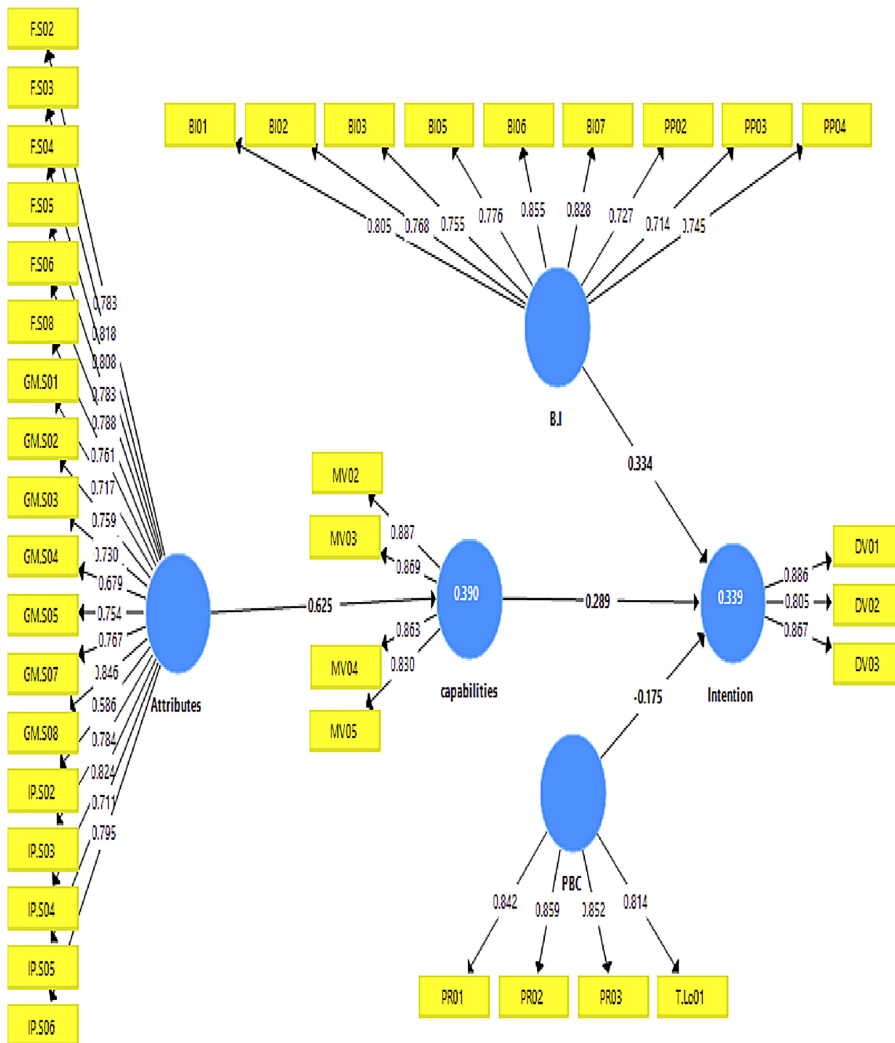
The validity and reliability of the latent variables are confirmed. The structural model is assessed which is used to examine the relationship amidst the independent and dependent variables. The assessment of the structural model incorporates the path coefficients to assess the relevance and significance of the relationships of the structural model.  $Q^2$  values are used to estimate the predictive relevance of a model, and the  $R^2$  values are used to estimate the predictive accuracy of a model. The path coefficient is drawn from the path algorithm to analyze the direct and indirect relationships among all the variables. The findings indicate

Latent variables	(1)	(2)	(3)	(4)	(5)
Attributes/ (1)	<i>0.763</i>				
Behavioral intention (2)	0.626	<i>0.776</i>			
Intention to become SC manager (3)	0.629	0.482	<i>0.853</i>		
Perceived behavioral control (4)	-0.141	0.064	-0.194	<i>0.842</i>	
Capabilities of SC manager (5)	0.625	0.554	0.498	-0.138	<i>0.863</i>

Table 3.

Discriminant validity

Note(s): The square root of AVE values in italic on the top columns is greater than the inter-construct correlations, which eventually establish the discriminant validity



**Figure 2.** Measurement model (PLS algorithm)

that there is a higher significant relationship between attributes/attribute and intention to become SC manager (0.523,  $p < 0.01$ ), followed by behavioral intention and intention to become SC manager (0.334,  $p < 0.01$ ) and the relationship strength between capabilities and intention to become SC manager (0.289,  $p < 0.01$ ). The relationship between perceived behavioral control and intention to become SC manager is medium and negatively significant ( $-0.175$ ,  $p < 0.05$ ). These findings indicated that **H1**, **H2**, **H3** are positively significant, and **H4** is negatively significant. Moreover, the mediating variable employees' capabilities have a partial mediating relationship between employees' attributes/ and intention to become SC managers, whereas **H5** is supported (Table 4).

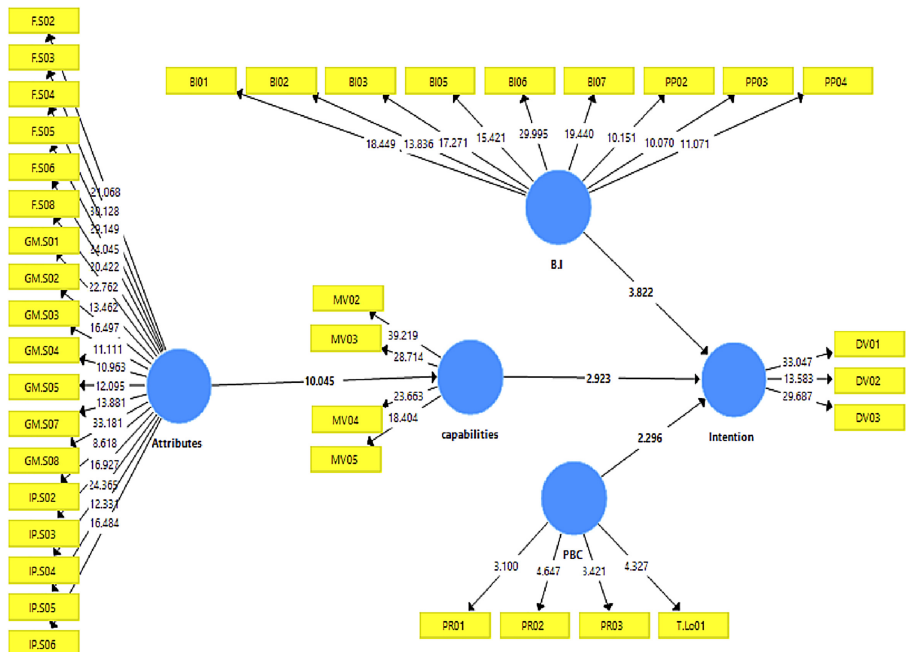
In this study, the bootstrapping method is a resampling method where random samples are extracted with replacement within the data set. This method utilizes the extracted

samples to determine the path model numerous times. However, this is done with a lightly altered data constellation. Referring to the analysis of [Vinzi et al. \(2010\)](#), in this study the nonparametric bootstrapping is applied to the sample of 287, using 1,000 sub-samples. The foremost objective of this method is to estimate the standard error of coefficient estimates to measure the statistical significance of the coefficient. [Figure 3](#) illustrates the level of significance of the model graphically.

To estimate the structural model, researchers use the  $R^2$  value, and it is used to analyze how accurate the model is in terms of predictive accuracy. The  $R^2$  values describe the extent of variance in the dependent variables defined by all of the independent variables associated with it. This also explains the combined effects of independent variables on the dependent latent variables. The Q-square values were calculated to measure the predictive relevance of the model using blindfolding method, as it should be greater than zero ([Geisser, 1974](#); [Stone, 1974](#)). The findings reveal that Q-square values ranged from 0.15 to 0.45, which indicating

Hypothesis relationships	Beta ( $\beta$ )	T-value	Comments
<i>Direct effect</i>			
H1 Attributes/ → Capabilities of SC manager	0.625	10.045	Significant
H2 Behavioral intention → Intention to become SC manager	0.334	3.822	Significant
H3 Capabilities → Intention to become SC manager	0.289	2.923	Significant
H4 Behavioral control → Intention to become SC manager	-0.175	2.296	Significant
<i>Indirect effect (mediating)</i>			
H5 Attributes → Capabilities → Intention to become SC manager	0.541	Partial mediation	

**Table 4.**  
Hypothesis testing



**Figure 3.**  
Structural model  
(bootstrapping)

above zero, thus, the model has predictive relevance. This technique is applied with an omission distance of 7 yielded cross-validated redundancy to get the  $Q^2$  values. In this study, the endogenous variables, namely, capability and intention to become an SC manager, have  $R^2$  value 0.390 and 0.339, respectively. And the respective  $Q^2$  values are 0.249 and 0.211, and since all the  $Q^2$  values are  $>0$ , it confirms the fact that the PLS structural model has predictive relevance. In a nutshell, as per the  $R^2$  value, the independent variables can explain the dependent and mediating variable 34 and 40%, respectively, which is a very decent level of predictive accuracy of the model.

## 5. Discussion

The structural model analysis indicates that six items have been dropped from the measurement model due to their lower factor loading. A total of 38 items were found have significant factor loading in terms of their corresponding constructs. To evaluate the validity and reliability of the model, this study tested convergence validity, internal consistency and discriminant validity. All of these tests establish that the model has significant internal consistency, discriminant validity and convergent validity. While evaluating the structural model, the  $R^2$  and  $Q^2$  values are analyzed to figure out the accuracy of the model in regard to the predictive accuracy. The  $R^2$  values (0.390 and 0.339) and the  $Q^2$  values (0.249 and 0.211) confirm that the model has predictive relevance. Employees' attributes explain 39% of variance, whereas employees' behavioral intention, capabilities and perceived behavioral control explain 33.9% of the variance, which is a decent level of predictive accuracy of the model.

The empirical results indicate the extent of the relationship between the employees' attributes and their capabilities to become a supply chain manager. The findings show that employees' attributes have a significant impact on capabilities. This finding is related to the previous studies (Mangan and Christopher, 2005; Minocha *et al.*, 2018), whereas employees' attributes have a positive impact on capabilities in the setting of supply chain management. This result suggests that employees' attributes are an important factor of capacities for the manager of successful supply chain management. There is a higher significant relationship between employees' attributes and capabilities at 95% confidence interval. The structural model results evidence that behavioral intention has a positive and significant relationship with the intention to become a supply chain manager. This result is similar to the finding of Lam *et al.* (2007) that focused on employees' behavioral intentions toward adoptions of information technology. The result indicates that behavioral intention is important for supply chain management because employees' intention to become a successful supply chain manager is reflected by their behavioral intentions.

The findings show that employees' perceived behavioral control has a negative significant impact on intention to become a supply chain manager. This finding is similar to the result of Fishbein and Ajzen (1977) and McCarthy *et al.* (2010) who explain the employees' attributes and behavior in work-life balance policy and practice in the business firm. Although the result shows a negative effect of employees' behavioral control, it is important for a successful supply chain manager in the firm. Employees' behavioral control leads to assist right and direct control of how the worker of the firm does the work. Employees' perceived behavioral control is an important factor for the business firm because the business firm has the right to direct and control the worker. In this study, employees' behavioral control shows a negative impact on the intention to become a successful manager of the firm because there is perhaps a lack of dynamic responsibility and training facilities of the firm. Besides, in the context of Malaysia, most of the employees are female, and they may be afraid that the manager's post takes too much time away from their family. This study has examined the mediating effect of employees' capability that mediates the relationship between the attributes and the intention to become a supply chain manager. The results illustrate that employees' capability is mediated by the attributes and intention to become a supply chain manager in the firm. The

variation accounted for (VAF) is calculated to assess the level of mediation, and the results show that there is a partial mediation effect of employees' capabilities.

## 6. Implications

The practical application of this study is the influence of employees' attributes on capabilities and its impact on their intention to become a successful manager of supply chain management in the firm. This provides a supply chain manager with insight that simply intending to become a successful manager of supply chain management is not enough to guide their employees. Employees' attributes along with their capabilities and perceived behavioral tools may offer better solutions to the employees' intention to become a good supply chain manager in the firm. This finding may help policy and strategy advisors of the supply chain management and logistics industry in designing a suitable managerial role according to employees' diverse attributes of functional skills, management skills, interpersonal skills, capabilities and behavioral factors. The theoretical implications of the study bring about a unique concept of employees' managerial role in supply chain management by coming up with a conceptual research model from the concept of the TPB and competitive advantage of the RBV. Supply chain management can play a crucial role in the combination of the TPB and RBV. The theoretical contribution stretches to use and combine the RBV and the TPB in the domain of supply chain management. The findings of the study can holistically contribute to the body of knowledge of the employees' management in the firm. The TPB and RBV theory has been applied on numerous occasions in the field of business and operation management. However, by implementing this RBV and behavioral theory in the field of supply chain management, this study presents a substantial contribution to academic researchers. The earlier study (Seuring *et al.*, 2019) reports that more than 300 studies were conducted on sustainable supply chain management, and out of that pool, only 36 used a quantitative approach. The specific area of supply chain managers' capabilities and performance-related prior studies also used a lot of exploratory methods rather than a cause-effect relationship-based approach by using the theory or a holistic approach. A series of studies were done on the theory of RBV and other models generated from RBV theory; since the RBV theory is easily connected to supply chain management. This study is done on a causal relationship among the factors such as employees' attributes, capabilities, behavioral intention and behavioral control, as well as employees' intention to become a successful supply chain manager of the firm.

The major findings of this study will benefit the managers of supply chain management to understand the significance of employees' attributes, skills, capabilities and behavioral control. An enhanced conceptualization of employees' intention and the factors determining the behavioral intentions will help the managers to concede the possible improvements, opportunities and other profits sprouting from the conceptual model and findings of the research. The adoption of the conceptual framework of this study will assist in clarifying the perception of the top management to understand the importance of employees' capabilities and behavioral intention to become future supply chain managers. The study will contribute to the employees' attributes, competencies, behavioral control, attitude and subjective norms that shape the employees' intention to become a future supply chain manager which can be assessed using the research framework. The top management of the firm can use these findings to create future supply chain managers for the organization. The study will bring benefits to managers and policymakers through the creation of new knowledge in the domain of employees' attributes, capabilities and behavioral intentions to become a successful manager of the firm. The study also fills up the research gap in the field of employees' management part of supply chain management. There were a few studies that focused on the supply chain manager. The employees' attributes can play a significant role in supply chain management to provide a good manager in the firm. The employees' attributes in supply

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chain management can help to develop supply chain-based competency (e.g. to develop training or programs for the institutions to teach and create capable supply chain manager), and link the supply chain manager's capabilities to individual performance. The supply chain manager's attributes and other behavioral factors combined can influence employees' intention to become an effective supply chain manager for the future.

### 7. Limitations and future study

There are several limitations in this study that are required to be presented for further research. One limitation involves the scales used to estimate the key independent variables (i.e. managerial /characteristics, perceived behavioral control and company practice.) All of these variables are operationalized by using the highest-loading value items from their corresponding scales. Nonetheless, one risk of this method is that the items included in the respective variable can be omitted. For instance, it was discerned that "attitude" and "subjective norms" which were taken from the TPB model, and "problem-solving skills" which is taken from Christopher's *t*-shaped model, are withdrawn from the "managerial/ characteristics" variable after PLS-SEM outer loading analysis. The measurement scales recognized in this research need to be observed as preliminary and considered as the direction for the future study where more suitable scales will be generated and validated.

Another limitation of the study is the data collection and analysis are administered by gathering data from a close group of people from the supply chain industry with minimum job experience in a functional department. Therefore, the findings of the study may not be widely generalized to the entire country. Furthermore, the purposive sampling method can be stated as another limitation. This sampling method has resulted in the majority of the respondents being from sales and accounting and finance background, totaling to more than 40% of the respondents. To generalize and obtain the correct expression, passion or intention of employees to be a supply chain manager, more respondents from the supply chain and logistics background would be better. Moreover, the results of the hypothesis test showed only five hypotheses are supported. Therefore, more studies need to be conducted to estimate the relationship between moderating variables and the determinants that can influence the intention to become a supply chain manager. Further studies need to be done using the full range of antecedents of the behavioral theories and combining new attributes and characteristics of the supply chain managers to investigate the relationship among the determinants and the mediating effect and moderating effect on the intention of the employees to become a supply chain manager. More studies should be carried out using data that are more equally distributed among various industries and focused on getting data from supply chain and logistics management professionals.

### 8. Conclusion

The findings of this study revealed that employees' attributes, perceived behavioral control and behavioral intention are determinants of the intention to become a supply chain manager. The capabilities of the supply chain manager factor work as a mediating factor between the employees' attributes and their intention to become a supply chain manager. The employees' attributes and capabilities have a significant positive relationship with their intention to become a successful supply chain manager, while employees' perceived behavioral control has a significant negative relationship with the intention to become a supply chain manager. By having a good understanding of the important determinants and the strongest predictor of the intention to become supply chain management, as well as the mediating effects of employees' capabilities, the priorities and appropriate action plans can be set by the companies with the goal to increase the profit by increasing the efficiency of the supply chain, creating effective supply chain managers and focusing on the strong predictors that influence the prospective functional professionals' intention to become a supply chain manager.

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