



Impact of Dynamic Capabilities on Global Mind-set: The Case of ICT Start-ups in Sri Lanka

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ABSTRACT

The purpose of this study is to explore how firm-level dynamic capabilities influence the level of firms' global mindset in information and communication technology (ICT) startups in Sri Lanka. Based on the literature on dynamic capabilities and global mindset, the impact of dynamic capabilities on global mindset is tested empirically on a sample of 295 Sri Lankan ICT start-up firms using structural equation modeling (SEM) analysis technique to find whether if there is any difference of the impact from sensing dynamic capabilities, seizing capabilities and reconfiguration capabilities on the global mindset. The results show a positive significant impact of the sensing, seizing and reconfiguration capabilities on the global mindset in ICT startups in Sri Lanka. However, among three different but theoretically interrelated capabilities, seizing and reconfiguration dynamic capabilities have shown the strongest impact on the global mindset. This study contributes to the emerging literature of global mindset in the international business and to strategic management literature by understanding the global mindset through the lenses of dynamic capabilities as organizational level contingencies.

Keywords: *Dynamic Reconfiguration Capabilities, Dynamic Seizing Capabilities, Dynamic Sensing Capabilities, Global Mindset, ICT Startups, Sri Lanka*

1. INTRODUCTION:

Internationalization is important for any type of organization regardless of the size (Felício, Duarte, & Rodrigues, 2016; Kuivalainen & Sundqvist, 2007) or age (Zahra, Sapienza, & Davidsson, 2006) and is significantly important for the economy of a country (Paul & Gupta, 2014; Felício et al., 2016). Internationalization is considered important to helps firms to gain access to the new market and enhances competitiveness or exploit core competencies in new markets (Zahra et al., 2006; Kuivalainen & Sundqvist, 2007). Therefore, even new start-up firms attempt to conduct international business (Henisz, 2003; Oviatt & McDougall, 1997). Technological advances in information and communications technologies has been identified as a key driver for start-up firms to internationalize early as those technological advancements reduce transaction cost (Knight & Cavusgil, 2004). These internationalized start-ups are identified by their global mindset (Rennie, 1993; Knight & Cavusgil, 2004). It has been highlighted in the literature that the smaller size of young start-up firms, provides the flexibility for the global mindset (Knight & Cavusgil, 2004; Knight, Madsen, & Servais, 2004). Central Bank of Sri Lanka Annual Report 2019, indicating a technological advancement in information and communication technologies in Sri Lanka (Central Bank of Sri Lanka, 2019). Further, according to the Global Economy (2019) in terms of mobile network coverage and internet bandwidth Sri Lanka is leading the other countries in South Asia; India, Pakistan, and Bangladesh. However, there is a considerably laid back of new-ventures from going international in their inception in Sri Lanka (The Sri Lanka Association of Software and Service Companies, 2019; The Global Economy, 2019; World Bank, 2020) even though the majority of them represent technology-intensive ICT industry (The Sri Lanka Association of Software and Service Companies, 2019).

Globalizing the business is recognized to be the norm in the century. Owners and managers of those internationalized firms are called to challenge a world that is ambiguous, uncertain, unstable, and multicultural. In order to meet the challenge of being successful in this ever-growing multicultural and complex environment the significance of having and cultivating a global mindset is emphasized by both researchers and practitioners (Gupta & Govindarajan, 2002; Levy et al., 2007; Clapp-Smith & Lester, 2014). There is little consensus among researchers as to the structure, processes, and development of the global mindset that there are multiple conceptualizations and perspectives (Clapp-Smith & Lester, 2014). The global mindset is defined as a complex cognitive structure that consists of the predisposition,

understanding, and articulation of multiple cultural and strategic realities at the global and local levels (Levy et al., 2007). In the 2006 review of global leadership capabilities and global mindset, Osland et al. (2006) call for further efforts that identify organizational contingencies related to the global mindset. Nevertheless, they emphasize the exploration of different forms of the global mindset, their relationship with global strategies, and identification of organizational global mindset capability as fruitful points of departure for further exploration.

Several authors have tried to highlight the conditions leading to global mindset (Felício et al., 2015; Muñoz-Bullón et al., 2013; Felício et al., 2016; Kyvik, Saris, Bonet, & Felicio, 2013). There are more studies in terms of individual-level antecedence and fewer studies in firm-level contingencies (Felicio et al., 2012; Wójcik & Ciszewska-Mlinarič, 2020). Although this overall globalization is obvious, less apparent are the nuances in the differing forms of that globalization. Not every sector, business, or industry is globalizing, nor are they globalizing at the same pace (Javidan & Bowen, 2013). Therefore, it is important to identify which factors affect the global mindset of the organization managers specific to different industrial contexts. In the literature, many scholars have emphasized that dynamic capabilities are necessary for the existence of a firm under very dynamic international business conditions (Luo, 2000; Griffith & Harvey, 2001; Teece, 2007). As suggested by Teece et al. (1997), the dynamic capabilities provide a competitive advantage in increasingly demanding environments. Therefore, studying about global mindset through the lenses of dynamic capabilities may thus help the strategic management in the technology intensive ICT sector.

Telussa, Stam, and Gibcus (2006) underlined the need for dynamic capabilities for new firms since they usually encounter resource weaknesses. The extension of resource-based view, the dynamic capability view as it posits that the firm needs to develop new capabilities to identify opportunities and to respond quickly to them (Teece, 2014). The dynamic capability view has been using to discuss the rapid way of internationalization. There is an interplay between cognitive and behavioral components of dynamic capability that overall, positively affects the degree of internationalization (Wójcik & Ciszewska-Mlinarič, 2020). The long tradition of mindset research in strategic management (Bettis & Prahalad, 1995) and international business studies (Cahen, Lahiri, & Borini, 2016) has also been adopted by dynamic capability view scholars, this study is dedicated to examine the impact of the dynamic capabilities of the firm as firm level contingencies on the global mindset. Given that the global mindset is an emerging research line in international business there are very few studies examining the relationship between the global mindset and dynamic capabilities. Further in the Sri Lankan context, there

is no study discussing global mindset and the impact of dynamic capabilities has on the global mindset.

2. RESEARCH PROBLEM AND RESEARCH QUESTIONS:

Javidan and Bowen (2013) argued that there are differences in the way firms globalize. Not every sector, business or industry is globalizing, nor are they globalizing at the same pace (Javidan & Bowen, 2013). Because, some business units may be domestically oriented, while others may be quite globalized According to their findings firms in the telecommunications industry have the highest average score on global mindset. In the 2006 review of global leadership capabilities and the global mindset, Osland et al. (2006) call for further efforts that identify organizational contingencies related to the global mindset. Furthermore, Jones, Coviello, and Tang (2011) argued that, despite claims that the field of international entrepreneurship is growing, the literature lacks in relation to global mindset and calls for further integration of international business and strategic management (Coviello, McDougall, & Oviatt, 2011; Terjesen, Hessels, & Li, 2016). In particular, little effort has been made toward more comprehensive conceptualizations of how and why managers differ in relation to the identification, evaluation, and exploitation of opportunities that cross international borders. Nevertheless, they emphasize the exploration of different forms of global mindset, their relationship with global strategies, and identification of organizational global mindset capability as fruitful points of departure for further exploration. In small firms, and particularly in knowledge-based companies the global mindset of the decision-maker is considered an intangible, idiosyncratic and difficult-to-trade dynamic capability (Kyvik, 2018) determining how the CEO or manager perceives international opportunities and threats. In response, this study attempts to examine how dynamic capability can be used to explain the global mindset of the Sri Lankan technology intensive ICT sector. Global mindset lets international firms seize international business opportunities (Bowen & Inkpen, 2009; Nadkarni, Herrmann, & Perez, 2010). Thus, the properties of the global mindset are depicted in terms of high cognitive abilities and information processing capabilities that allow managers to understand complex global dynamics (Tichy, Brimm, Charan, & Takeuchi, 1992). Nummela et al. (2004) and Harveston et al. (2000) demonstrate that managerial global mindset follows strategy, rather than the other way around. Accordingly, the proposed study sets forth to examine the following three research questions;

- *Research Question 1:* Do sensing dynamic capabilities have an impact on the global mind-set of Sri Lankan ICT start-ups?
- *Research Question 2:* Do seizing dynamic capabilities have an impact on the global mind-set of Sri Lankan ICT start-ups?
- *Research Question 3:* Do reconfiguration dynamic capabilities have an impact on the global mind-set of Sri Lankan ICT start-ups?

3. RESEARCH OBJECTIVES:

Accordingly, the study concentrated on achieving the following research objectives;

- *Research Objective 1:* To investigate the relationship between the Dynamic sensing capability and the global mindset.
- *Research Objective 2:* To investigate the relationship between the dynamic seizing capability and the global mindset.
- *Research Objective 3:* To investigate the relationship between the Dynamic reconfiguration capability and the global mindset.

4. LITERATURE REVIEW:

4.1. Global Mindset:

The concept of global mindset can be traced back to Perlmutter (1969) who distinguished three types of mindsets that influence the way managers to decide on their international strategy: ethnocentric, which views the world from the home country perspective; polycentric, which views the world from the perspective of the host country; and geocentric, which views the world as a whole and is the type most commonly related to the global mindset. The definition of the global mindset provided by Levy et al. (2007) includes two primary dimensions: cosmopolitanism and cognitive complexity, each of which emerged from a separate, yet related, a stream of literature within the field of international business. The concept of cosmopolitanism emerged from the cultural stream of research and includes “a state of mind that is manifested as an orientation toward the outside and which seeks to reconcile the global with the local and mediate between the familiar and the foreign” (Levy et al., 2007, 240). Cognitive complexity, on the other hand, emphasizes the importance of managing environmental and strategic complexity and integrating geographically dispersed operations

(Levy et al., 2007). However, while global mindset has both a cultural dimension (cosmopolitanism) and a strategic dimension, which relates to cognitive complexity (Levy et al., 2007; Miocevic & Crnjak-Karanovic, 2011), the literature on SME internationalization tends to emphasize the dimensions presented by Nummela, Saarenketo, and Puumalainen (2004), which include proactiveness, international commitment, and vision. For example, Miocevic and Crnjak-Karanovic (2011) used measures based on Nummela et al. (2004) and examined born-global firms, and those that adopt a more incremental approach to internationalization, and found that global mindset is directly and positively related to performance outcomes. Miocevic and Crnjak-Karanovic (2011) found that global mindset mediates the relationship between market orientation and export performance. In a later study, the authors concluded that a global mindset contributes toward SMEs' export performance outcomes; however, they acknowledged their focus on the strategic dimension only as a limitation (Miocevic & Crnjak-Karanovic, 2012). More recently, Kyvik et al. (2013) identified the following characteristics of the global mindset: a positive attitude toward international business opportunities, openness to learning and developing international ideas, and a willingness to spend time planning the international process. The findings of Kyvik et al. (2013) show the multidimensionality of global mindset. However, they too tend to emphasize cosmopolitanism in their definition and operationalization of the global mindset. Furthermore, their operationalization was based more broadly on the related concept of the global orientation. As noted by Nummela et al. (2004), it is essential to separate the global mindset as a distinct characteristic that is different from global orientation and other related terms such as international orientation and global vision. The literature on SME internationalization suggests that taking into consideration cognitive complexity is important. By drawing on the dynamic capabilities perspective, this paper aims to extend this literature to explore how the global mindset shapes the process by which international opportunities are identified by firms in technology intensive ICT sector.

4.2. Theory of Dynamic Capability:

Eriksson (2014) highlights the fact that dynamic capabilities have their roots from a resource-based view of the firm which is Penrose's (1959) work. The resource-based view (RBV) is a theoretical framework in the field of strategic management that is used to understand the firm's competitive advantage and its sustainability over time (Barney 1991; Barney et al., 2001). The RBV is introduced by Penrose (1959) in her "theory of the growth of the firm", in which it

presented that resources developed are paramount to a firm's growth. Wernerfelt (1984) extended this concept with his proposal that competitive advantages are derived from a firm's resources rather than its product strategies. Barney (1991) later defined criteria a resource had to have in order to be able to build a sustainable competitive advantage. Namely the resource must be valuable, rare, imitable, and non-substitutable. The RBV was unable to interpret the development and redevelopment of resources and capabilities to adapt to rapidly changing environments (Winter, 2003). A rapidly changing environment means, in one side market transitions have created more opportunities for entrepreneurship (Peng, 2001). On the other side globalization, rapid technological development and the opening up of global trade, businesses have to challenge the increasingly volatile environment and the propositions of the RBV were inadequate to explain competitive advantage in dynamic markets (Eisenhardt & Martin, 2000; Mudalige et al., 2016). The RBV recognized firm (processes) may contribute to the performance of the firm (Penrose, 1959; Rumelt, 1984; Teece, 1984; Wernerfelt, 1984), but does not attempt to explain the nature of those mechanisms and how they enable entrepreneurial rents and competitive advantage to be sustained (Teece et al., 1997). Then the dynamic capabilities come into play. Dynamic capability theory goes beyond the idea that sustainable competitive advantage is based on a firm's acquisition of valuable, rare, inimitable, non-substitutable resources, as presented by Barney (1991). Definition of dynamic capabilities is developed by Teece and Pisano (1994) and then refined by Teece et al. (1997), Eisenhardt and Martin (2000), Lawson and Samson (2001), Jantunen et al. (2005), Zahra et al. (2006), Cepeda and Vera (2007), and Jiao et al. (2010).

According to Peteraf, Di Stefano and Verona (2013, as cited in Rodrigo-Alarcón, García-Villaverde, Ruiz-Ortega, & Parra-Requena, 2018) literature on dynamic capability has been contributed by mainly two papers; Teece et al. (1997) and Eisenhardt and Martin (2000). Teece et al. (1997) introduced dynamic capabilities as the skills of the firm at integrating, constructing, and reconfiguring both internal and external competencies to face dynamic environments. Eisenhardt and Martin (2000) introduced the dynamic capabilities as processes of the firm that use the resources especially the processes that integrate, reconfigure, increase the value of and free up resources to adjust or even to create changes in the market. According to Rodríguez-Serrano and Martín-Armario (2019), the two views are similar. According to Mudalige et al. (2016), dynamic capability is the capability of an organization to purposefully adapt an organization's resource base. Jiao, Alon, Koo, and Cui (2010) refer the dynamic capabilities as firm-specific capabilities that can be sources of advantage. The term 'dynamic'

refers to the capacity to renew competencies so as to achieve congruence with the changing business environment; certain innovative responses are required when time-to-market and timing are critical, the rate of technological change is rapid, and the nature of future competition and markets challenging to determine (Teece et al., 1997). Meanwhile, the term ‘capabilities’ emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competencies to match the requirements of a changing environment (Teece et al., 1997). Therefore, Teece et al. (1997) propose the definition of dynamic capability as *“the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments”*. However, as cited by Li and Liu (2014), as a field of research domain, dynamic capabilities research is still in its infancy (Helfat & Peteraf, 2009).

The definition of dynamic capability adopted in this study is Teece’s (1997) definition of dynamic capabilities as *“A firm’s processes that use resources specifically the processes to integrate, build, and reconfigure their resources and competencies and, therefore, maintain performance in the face of changing business environments.”* Because, Teece’s (2007) study makes a major contribution to dynamic capability theory in presenting the micro-foundations for each of the three “sensing”, “seizing” and “reconfiguration” capability (Bigler & Hsieh, 2016; and Čirjevskis, 2016; Bleadly, Ali, & Balal, 2019).

Ellonen, Jantunen, and Kuivalainen (2011) refers sensing capability to the building the partner and industry contact network. Jiao et al. (2013) refers sensing capability to as opportunity-sensing capability and it involves top managers and technical experts deeply understand market development opportunities. According to Karagouni et al. (2016) sensing capability (market and technological adaptation) as the firm’s activities in scanning and monitoring changes in operating environments and the capacity to identify new market and technological opportunities. According to Jiao et al. (2013) opportunity-sensing capability has significant impacts on new venture performance. Once opportunities are properly sensed and calibrated, they need to be seized (Al-Aali & Teece, 2014). Seizing capability refers to the refinement of the decision-making protocols, new partnerships and platforms (Ellonen et al., 2011). According to Teece (2012) seizing refers to the mobilization of resources to address needs and opportunities and capture value from doing so. Similarly, Ellonen et al. (2011), the capabilities behind seizing involve identifying; establishing control, or influence over; then coordinating complementary assets by building a global supply chain, establishing alliances and joint ventures, and much more. The seizing of new business opportunities requires the firms to

quickly test, then update or replace ideas and business models that do not work (Ries, 2011). ‘Seizing’, which indicates mobilization of resources to address an opportunity and to derive the benefits from it, and has a significant influence on firms’ success, especially for innovative e-business start-ups (Čirjevskis, 2017; Bleadly et al., 2019). Teece et al. (1997) refer the reconfiguring capability to the capability to integrating, innovating, and updating operational processes. Jiao et al. (2013) has used items such as; sufficient support for innovation activities, encouragement of innovative culture, sufficient stimulations and rewards to employees with innovative capabilities, adventuring and initiating spirit of employees to measure the reconfiguration capability. According to Jiao et al. (2013) reconfiguration capability has significant impacts on new venture performance. According to Wilden et al. (2013) the effects of reconfiguration capability on the firm’s sales growth and financial solvency also becomes positive when dynamic capabilities are embedded in a more organic structure in Australian medium scale organization.

4.3. Theory of Dynamic Capability and Global Mindset:

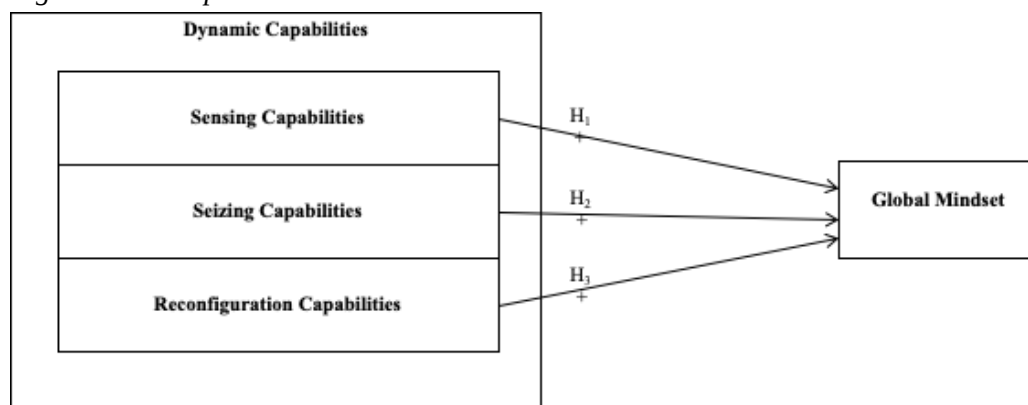
Teece (2007) makes a special reference to the international business environment and highlights the importance and relevance of dynamic capabilities in internationalization. A number of past studies have used the theory of dynamic capabilities to understand the internationalization of start-up firms (Mudalige et al., 2016; Griffith & Harvey, 2006; Luo, 2000; Sapienza et al., 2006). The literature suggests that dynamic capabilities encourage and facilitate internationalization (Griffith & Harvey, 2000). Luo (2000) argues that dynamic capabilities are necessary for the existence of a firm under very dynamic international business conditions. Griffith and Harvey (2001) refer to ‘global dynamic capabilities’ as the resource adaptation, integration, and reconfiguring competencies by which a firm can achieve both coherence on a global level as well as adequate recognition of the specifics of the environment of each country. According to Evers (2011), Jantunen et al. (2008), Jiao et al. (2013), Knight and Cavusgil (2004), Lanza and Passarelli (2014), Sapienza et al. (2006), Weerawardena et al. (2007) the ideas of Teece et al. (1997) perspective of dynamic capability allows to; “capture the nature of born-global SMEs and their successful expansion into dynamic, global markets, as the entrepreneurial nature of these firms in the search and exploitation of opportunities is determined by the deployment of dynamic strategic capabilities”. According to Rodríguez and Martín (2019), dynamic capabilities allow the born-global SMEs to align themselves with the specific resources of the firm to satisfy the needs and opportunities of the business

environment, considering three groups of activities; identification and evaluation of an opportunity (sensing); mobilization of resources to face up to an opportunity and to capture its value (seizing); and, finally, continuous renewal (transforming). According to Teece et al. (1997), dynamic capabilities are most important in technology-intensive ICT sector. Mudalige et al. (2016) has studied the dynamic capability framework to analyze the antecedents of SME internationalization in Sri Lanka. According to Mudalige et al. (2016), recent literature suggests that contemporary firm internationalization is not associated with traditional factors such as financial or physical assets or infrastructure. According to Mudalige et al. (2016), successful internationalization seems to be associated with directly unobservable owner and firm factors that are rooted in dynamic capabilities. In seeking to solve the paradox of dynamic capabilities, reflected by two contrasting interpretations represented by micro-foundational (cognitive) and organizational-level views, they offer an integrated multi-level theory, whereby individual capacities translate into firm-level actions. Hodgkinson and Healey (2011) have stated that the fundamental capabilities of sensing, seizing, and transforming require firms to exploit the cognitive abilities of individuals and groups. Arndt et al. (2018) have argued that behavioral elements in dynamic capabilities are reflected in sensing, as it implies cognitive processes and bounded rationality indirectly creating heterogeneity in firm performance (Wójcik & Ciszewska-Mlinarič, 2020).

5. RESEARCH DESIGN AND METHODOLOGY:

5.1. Conceptual Framework:

Figure 1: Conceptual Framework



Source: Researcher's Construction

5.2. Research Hypotheses:

Fernhaber, McDougall, and Oviatt (2007) have tested whether networking has an impact on start-up internationalization. Cao and Ma (2009) also analysed the relationship between networking capability and start-up internationalization and found it is positive. According to Chirico and Nordqvist (2010), sensing capability has a positive effect on expansion into new markets. According to Mudalige et al. (2016), sensing capability positively affect the internationalization and international orientation of SMEs in Sri Lanka. Thus, it is hypothesized that;

H₁: Dynamic sensing capability has a positive effect on the global mindset.

According to Cui and Jiao (2011 as cited in Bleadly et al., 2019), seizing capability has a positive effect on rapid response to the market and innovation speed. According to Chirico and Nordqvist (2010), seizing capability has a positive effect on the expansion of new markets, and the adoption of new technology. According to Mudalige et al. (2016), seizing capability effect positively affect the internationalization and international orientation of SMEs in Sri Lanka.

H₂: Dynamic seizing capability has a positive effect on the global mindset.

According to the findings of Jantunen et al. (2005), the role of reconfiguring capabilities in the firm's expansion into new, in this case foreign, markets are established. According to Cui and Jiao (2011), seizing capability has a positive effect on rapid response to the market and innovation speed. According to Chirico and Nordqvist (2010) reconfiguration capability has a positive effect expansion of new markets and the adoption of new technology. According to Mudalige et al. (2016) reconfiguration capability positively affects the internationalization and international orientation of SMEs in Sri Lanka.

H₃: Dynamic reconfiguration capability has a positive effect on the global mindset.

5.3. Sampling, Data Collection and Data Analysis:

This paper is based on a sample of 295 startups in Sri Lanka from technology-intensive ICT sector. The data collection was undertaken in 2020 from March to August. The firms in the sample were the startups registered on the “StartupSL” website (Digital Infrastructure and Information Technology Division, Ministry of Defense, Sri Lanka, 2020). Startup Sri Lanka was an initiative by the Ministry of Digital Infrastructure and Information Technology and is

currently being operated under the Digital Infrastructure and Information Technology Division, Ministry of Defense, Sri Lanka. This platform is the single largest online platform for startups and freelancers in Sri Lanka, connecting them to thousands of other startups, as well as other key stakeholders such as investors, mentors, and incubators. There were 380 startups registered in the website by 2020 March. Out of which only 310 startups were fell into the category of technology-intensive ICT sector. The definition of technology-intensive ICT industry is based on the definition of Kuivalainen, Sundqvist, and Servais (2007).

This study used the survey strategy in cross-sectional survey research and used questionnaires as the main data collection technique, as this study is a quantitative study where the data collected on all variables comprise primary data. The research questionnaire was developed from reliance upon the prior related literature and most recent empirical research. It consisted of two sections. The first section included the questions that measured the demographics of the respondents and the second section included the questions to measure the dimensions of dynamic capabilities; sensing capability, seizing capability, reconfiguration capability, and global mindset. All the research questionnaire items were measured and assessed through seven-point Likert scales ranging from ‘strongly disagree’ to ‘strongly agree’. (strongly disagree, moderately disagree, slightly disagree, uncertain, slightly agree, moderately agree, strongly agree). The study administered the questionnaire through an electronic form (email).

Table 1: Summary of the Questionnaire

Description	Source
Six questions about sensing capability	
Four questions about seizing capability	Nedzinskas et al. (2013)
Four questions about reconfiguration capability	
Six questions about global mind-set	Felício et al. (2016)

Source: Researcher constructed

Collected data were transcribed into SPSS software for an initial screening, cleansed by treating missing values, and screened for the presence of outliers. Thereafter, descriptive analysis was undertaken. Using statistical techniques such as measures of central tendency and measures of dispersion, and the preliminary descriptive analysis was conducted. Then the data was checked for multivariate assumptions such as normality, multicollinearity, and homoscedasticity prior to testing for the hypotheses. After the data was purified to ensure the appropriateness of data,

Structural Equation Modelling (SEM) was applied for the present study. Following Kline (2011), SEM was used in the present study as it is superior to the traditional multiple regression. In this study, PLS-SEM is used for a statistical model to analyse SEM model for this study.

5.4. Data Analysis:

A total of 310 technology-intensive ICT start-up firms were surveyed from which we received 299 valid responses, a response rate of 96%. Out of 299 respondents, 93 (31.7%) respondents are founders, 49 (16.4%) respondents are chief executive officers, 157 (52.5%) respondents are senior managers. The univariate statistical table obtained using SPSS shows that no missing values are presented in the data set for scale variables. Then box plot analysis was carried out item wise to diagnose the scores which are unusually high or low compared to all the others in a particular set of data. Based on the box plot analysis, four outliers were identified. Then four outliers were removed from the data set after outlier designation, outlier description and profiling. As a result, there were 295 responses for the final analysis.

Table 2: Univariate Analysis

Univariate Statistics					
	N	Mean	Std. Dev	Missing	
				Count	Percent
Dynamic capabilities					
Sensing Capability	295	5.3216	1.29494	0	0
Seizing Capability	295	5.4398	1.47850	0	0
Reconfiguration Capability	295	5.1279	1.52157	0	0
Global Mindset	295	5.0240	1.48472	0	0

Source: Survey data, 2020

As per the visual histogram tables of the variables (Appendix 1.1, Appendix 1.2, Appendix 1.3, Appendix 1.4, and Appendix 1.5) the researcher identified that the data is not-normally distributed. The scatter plots for all the variables are obtained and presented in shows the linearity of variables.

Table 3: Multi-collinearity Coefficients

Variables	Coefficients	
	Collinearity Statistics	
	Tolerance	VIF
Dynamic Capability		

Sensing Capability	0.363	2.753
Seizing Capability	0.376	2.658
Reconfiguration Capability	0.463	2.162
Dependent Variable: Global Mindset		

Source: Survey data, 2020

Table 1.2 highlights that the tolerance values are greater than 0.2 and VIF values are less than 10 for every single variable of this study. Therefore, it can be concluded that there is no multi-collinearity in existence. Table 6.8 confirms that, the Kaiser-Meyer-Olkin value is $>.5$ as acceptable. Therefore, it can be concluded that factor analysis is appropriate for this data set. Moreover, for this data set, Bartlett's test is highly significant ($p < 0.05$), and therefore, factor analysis is appropriate.

Table 4: Test of Adequacy of Sample

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.911
Approx. Chi-Square		3241.117
Bartlett's Test of Sphericity	Df	406
	Sig.	0.000

Source: Survey data, 2020

According to the theoretical prediction, dynamic capabilities are measured with three scales; sensing capability, seizing capability, and reconfiguration capability. The researcher used the same scales to measure dynamic capabilities. As per the results, generated (Table 5), dynamic capabilities have been loaded into three factors however the factors loaded differently for three dimensions. When considering the factor loadings, all factors are above 0.5.

Table 5: The EFA Results for Dynamic Capabilities

Rotated Component Matrix			
	Factor		
	1	2	3
DS1	.520	.197	.516
DS2	.697	.368	.220
DS3	.809	.303	.207
DS4	.749	.382	.102
DS5	.505	.207	.664
DS6	.617	.343	.382
DZ1	.683	-.011	.372
DZ2	.367	.187	.761
DZ3	.093	.355	.726
DZ4	.238	.398	.647

DR1	.199	.671	.413
DR2	.352	.769	.205
DR3	.215	.827	.169
DR4	.237	.716	.334

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Source: Sample Survey, 2020

According to the theoretical prediction global mindset is measured with one scale. As per the results generated (see Table 6), the global mindset has been loaded into one factor. When considering the factor loadings, all factors are above 0.5.

Table 6: The EFA Results for Global Mindset

Rotated Component Matrix

	Factor
	1
GM1	.761
GM2	.726
GM3	.769
GM4	.827
GM5	.809
GM6	.749

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: Sample Survey, 2020

Table 7: Results of the Reliability Analysis

Constructs	Cronbach's Alpha	No of items
Dynamic Capability		
Sensing Capability	0.905	6
Seizing Capability	0.808	4
Reconfiguration Capability	0.808	4
Dependent Variable: Global Mindset	0.893	6

Source: Survey data, 2020

According to Peterson (1994) coefficient alpha developed by Cronbatch (1951) is used as a generalized measure of the internal consistency of a multi-item scale. According to Davidshofer and Murphy (2005) coefficient alpha value below 0.6 indicating an unacceptable level, 0.7 indicating a low level, between 0.8 and 0.9 indicating a moderate to a high level, and above 0.9 indicating a high level. In this study, the Cronbach's alpha coefficient for each construct was above the threshold level of 0.70. Therefore, the constructs in this present study reflect a good degree of reliability. As shown in Table 7, the AVE for each construct was higher than the square of the correlation between that construct and other constructs. Moreover, the

correlation coefficients among the study constructs do not exceed 0.85 (Kline, 2011). Thus, all the constructs in the study represent different concepts and there are no problems with discriminant validity.

Table 8: Convergent Validity

Construct	Measurement	Convergent Validity	
		CR	AVE
Dynamic Capability			
Sensing Capability	DSC	0.926	0.679
Seizing Capability	DZC	0.927	0.637
Reconfiguration Capability	DRC	0.875	0.523
Dependent Variable: Global Mindset	GM	0.921	0.757

Source: Survey data, 2020

Table 9: Square of Inter-Construct Correlations and the AVE for All Constructs

Construct	Measurement	DSC	DZC	DRC	GM
Dynamic Capabilities					
Sensing Capability	DSC	0.824			
Seizing Capability	DZC	0.773	0.798		
Reconfiguration Capability	DRC	0.705	0.698	0.870	
Global Mindset	GM	0.435	0.514	0.530	0.844

Source: Survey data, 2020

The path coefficients are associated with standardized values ranged from -1 to +1 (Hair et al., 2014). The values closer to +1 indicates a positive strong relationship between the variables, whereas closer to -1 indicates a strong negative relationship (Hair et al., 2014). Path coefficient is assessed using bootstrapping in PLS-SEM (Hair et al., 2011). In order to conduct bootstrapping in PLS-SEM, a minimum number of 5000 bootstrap samples are required and a number of cases is required to be equal to the number of observations in the original sample (Hair et al., 2011). Since the current study consists of reflective-reflective higher-order constructs, the repeated indicator approach can be used to analyze the structural model (Hair et al., 2019). The path coefficients among the variables and the significance of them with relevance to the current study have been assessed.

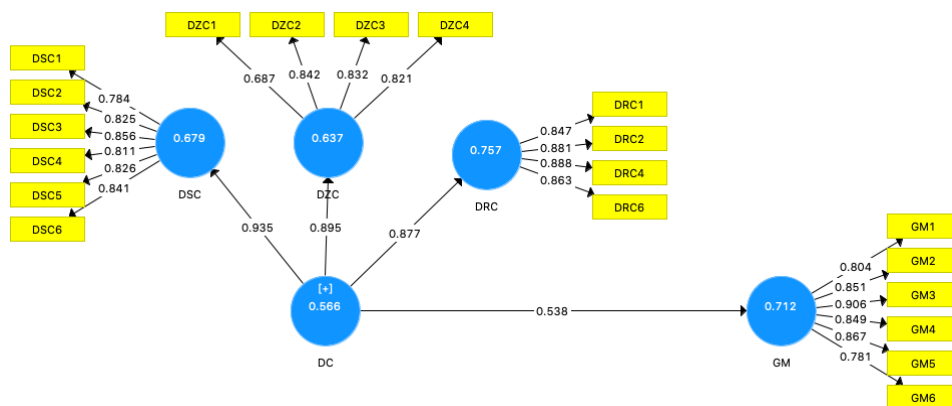
Table 10: Path coefficients

Hypotheses	Path	Path Coefficients (β)	T Statistic	P Values	Decision
H ₁	DSC → GM	0.175	1.779	0.000	Supported
H ₂	DZC → GM	0.380	4.265	0.000	Supported
H ₃	DRC → GM	0.396	4.710	0.000	Supported

Source: Survey data, 2020

The results of the model with the effects of dynamic sensing, dynamic seizing, and dynamic reconfiguration capability indicate that the greater the dynamic sensing, dynamic seizing, and dynamic reconfiguration capability, the greater the global mind-set. The results, demonstrated significant paths from dynamic sensing (DSC) to global mindset (GM) ($\beta=0.175$, $p < 0.05$), dynamic seizing (DZC) to global mindset (GM) ($\beta=0.380$, $p < 0.05$) and dynamic reconfiguration capability (DRC) to global mindset (GM) ($\beta = 0.396$, $p < 0.05$). Therefore, H₁, H₂, and H₃ hypotheses are accepted.

Figure 2: Structural model



Source: Survey Data, 2020

6. DISCUSSION:

The results from the analysis of the data collected through questionnaire survey allowed us to make some important observations regarding the global mindset and the impact of dynamic capabilities among Sri Lankan ICT start-ups.

As compared to large corporations, start-ups are typically regarded as resource-constrained. There is a general belief that resource scarcities limit the possibilities of small firms to act upon identified opportunities in foreign markets to make these firms more exposed to risks or to the potential negative effects of internationalization (Lu & Beamish, 2001). Nevertheless, numerous authors have shown that even small resource constraint firms may succeed in international markets, particularly if they are capable of accessing valuable and rare resources through social network relationships (Coviello et al., 2011; Coviello, 2015). Contributing to these arguments, findings of this study has shown that even start-up firms are globally oriented and are high with the scores of global mindsets. This finding even aligns with Javidan and Bowen (2013), as they have claimed that telecommunications industry has the highest average score on global mindset.

When considering research objectives addressed by the hypotheses to examine the impact of dynamic sensing, dynamic seizing, and dynamic reconfiguration capability on the global mindset, the findings revealed important phenomenon. Among the surveyed ICT start-ups, the impact of sensing capability on global mindset recorded lowest than seizing and reconfiguration capabilities. According to Oviatt and McDougall (2005) and Yeoh (2004), market knowledge and the ability to assimilate information which is sensing capability of an organization, are important components of a firm's internationalization process. Cao and Ma (2009) found a positive relationship between sensing capability and early internationalization decision. According to Freeman, Edwards, and Schroder (2006), technology provides a competitive advantage for the firms in ICT sector in a way of networking competencies to develop a range of alliances and collaborative partnerships to sense opportunities. However, in Sri Lanka, regardless of the advancement of technology, the use of technology is not being the same as other countries in the region. As the firm learns about how to deal with their international markets, they improve not only their prior knowledge about international markets and reconfigure their existing substantive capabilities but also recognize the value of new knowledge acquired through new social networks. This implies the firm's ability to recognize the value of new, external information, assimilate it and apply this learning to consumer needs. This is what several authors term "sensing capability" (Cohen & Levinthal, 1990; Lichtenthaler, 2009; Zahra et al., 2006). Ultimately, the firm may decide not to explore these new opportunities, particularly if it has no prior experience or sufficient know-how (Cohen and Levinthal, 1990). The results support the argument that SME international expansion does not always come from formal search, analysis and selection, rather it is often based on an interaction between entrepreneurs and their social and business networks (Fu et al., 2006; Zhang et al., 2012). In addition to knowledge acquisition, international networking is an essential channel for the firm to expand in a wider range of market for Chinese SMEs (Park & Luo, 2001; Fu et al., 2006). In line with previous studies such as Reuber and Fischer (1997), George et al. (2005) and Ruzzier et al. (2007) the correlation test results also indicate that firm size was not significantly related to global mindset, international knowledge acquisition and international networking. SMEs, therefore, may effectively utilise niche strategy (Majocchi & Zucchella, 2003) to compensate for small size and address the resource constraints through networking (Musteen et al., 2010; Yukhanaev et al., 2015).

Considering the seizing capabilities, the results revealed that the presence of seizing capabilities in Sri Lankan ICT start-ups, significantly impact on improving global mindset of

those firms. However, the results are not surprising compared to the previous studies as they also found that seizing capabilities has a positive effect on an expansion of new markets (Chirico & Nordqvist, 2010; Bleadly et al., 2019; Čirjevskis, 2017). According to Teece et al. (2016), the capabilities behind seizing involve identifying; establishing control, or influence over; then coordinating complementary assets by building a global supply chain, establishing alliances and joint ventures, and much more. In relation to the ICT industry, Hsu and Wang (2012) and Sher and Lee (2004) also stated that organizational processes and IT facilitate knowledge accumulation and utilization, through an organized and established way. Therefore, these ICT start-up firms may use their IT infrastructure better to coordinating complementary assets by building a global supply chain.

The results of the examination of the relationship between the reconfiguration capability and global mindset reveals that reconfiguration capability reinforce the global mindset. According to Teece et al. (2016), transformation involved in reconfiguration processes is hard for established enterprises but relatively easy for start-ups as these small new firms has minimum bureaucratic (and power) relationships. However, smaller firms are less able to absorb the financial consequences of failed ideas than large firms and, therefore, must choose their initiatives carefully (Li, Maksimov, & Anitra, 2014).

7. CONCLUSION:

The internationalization of new ventures especially from the ICT sector has received considerable attention in both academic and business environments. Those start-up ICT firms take the advantage of technological advances in information and communication technologies. These internationalized new ventures are identified by their global mindset. However, in relation to the Sri Lankan technology ICT sector, there has been discussed about the inadequacy of representation of those firms in the global market compared to other countries in the region. This study attempted to examine the factors affecting global mindset among technology intensive ICT start-ups in Sri Lanka using and dynamic capability theory.

The study attempted to answer the questions; do the three dimensions of dynamic capabilities impact on the global mindset. The study was conducted using 295 technology-intensive ICT firms in Sri Lanka using survey strategy and the data collected was analyzed using PLS-SEM analytical method to identify the causal relationship between variables. Results of the analyses revealed a significant positive relationship between dynamic sensing capability, dynamic

seizing capability, and dynamic reconfiguration capability with the global mindset. However, among three different but theoretically interrelated capabilities seizing and reconfiguration dynamic capabilities have shown the strongest impact on the global mindset.

8. IMPLICATIONS:

The owners of those ICT start-ups in technology intensive industries may understand the importance of determining the capabilities of the company. Moreover, start-ups are the firms to be developed in the future to the level of small and medium-size companies that are expected to contribute to the economic development in their home countries, allowing the international transference of knowledge, promoting activities high in added value, developing new global industries and making a country a more attractive place for commerce and investment. For firms located in small economies with small domestic markets like Sri Lanka, rise of new businesses and business models are an important opportunity for growth and value creation (Lu & Beamish, 2001). Therefore, the results of study will provide great insight. Specifically, technology intensive industry is a powerful wealth creator. It has experienced unrivalled job creation, extraordinary growth, and accelerated product cycles in any country (Li, Shang, & Slaughter, 2010). Given the contribution from technology intensive for the economy and in particular to the wealth of the country and according to Sri Lanka Export Development Board (2020), this study provides implication for the policy makers to better understand technology intensive sector in Sri Lanka.

As previously discussed, internationalization is an inevitable trend for all firms; in view of this, entrepreneurs of start-ups in Sri Lanka should be aware that their firms have high potential to be global even without sensing capability if the firm practices entrepreneurial processes along with seizing and reconfiguration capability.

9. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS:

One limitation is that, considering the literature support of the key constructs of this study, there are very few numbers of studies in which considered the global mindset; as a cognitive aspect of early internationalization decision used in this study has less empirical support from the literature.

This study particularly aimed at the firms who are service oriented and engage in technology intensive industry sectors. Therefore, the results could not be useful for generalizability across

industry sectors. The extension of this study can be conducted into other industry sectors as well.

In this study, the primary data was collected from the listed start-ups in the website directory of “StartupSL” website (Digital Infrastructure and Information Technology Division, Ministry of Defence, Sri Lanka, 2020). Due to the unavailability of a list of all the startups in Sri Lanka, the sample selected based on these two directories is expected to limit from accessing the technology intensive firms not registered in the website of Sri Lanka. The extension of this study can be conducted using other start-up firms not registered in the aforementioned website but relevant for this study.

The final limitation is that; this study is based on the context of Sri Lanka. This means that the findings may have limited generalisability to other countries. Countries differ in relation to various aspects, including culture, demography, social elements, economic elements, and others, thereby highlighting that the conclusions generated from this study may not be applicable to other countries.

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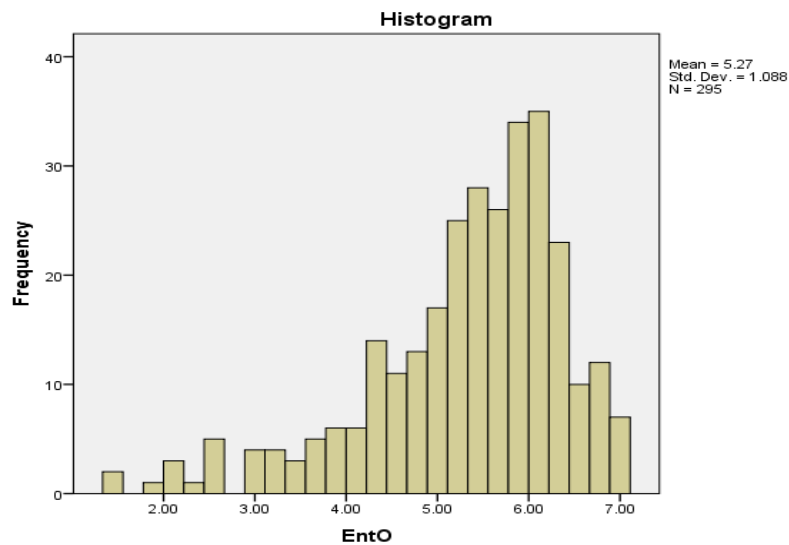
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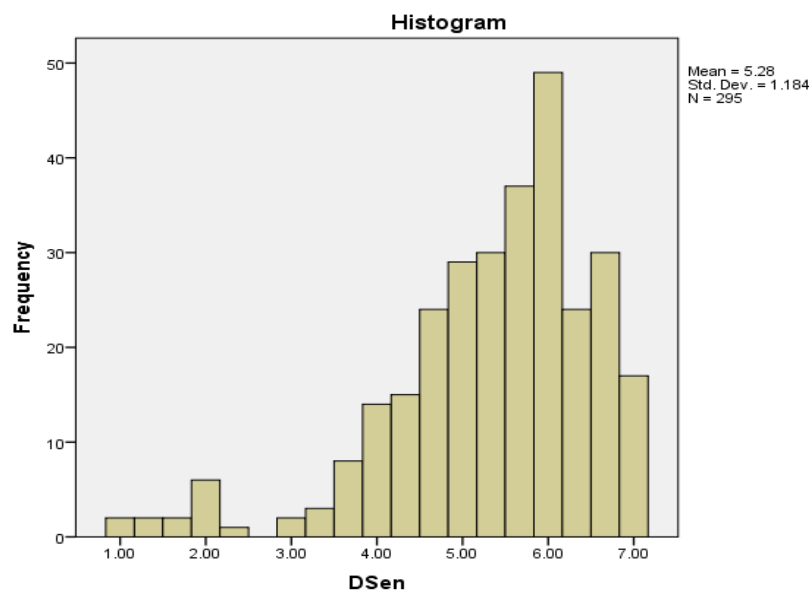
11. ANNEXURES:

Annexure 1.1: Histogram for Normality Test of Entrepreneurial Orientation.



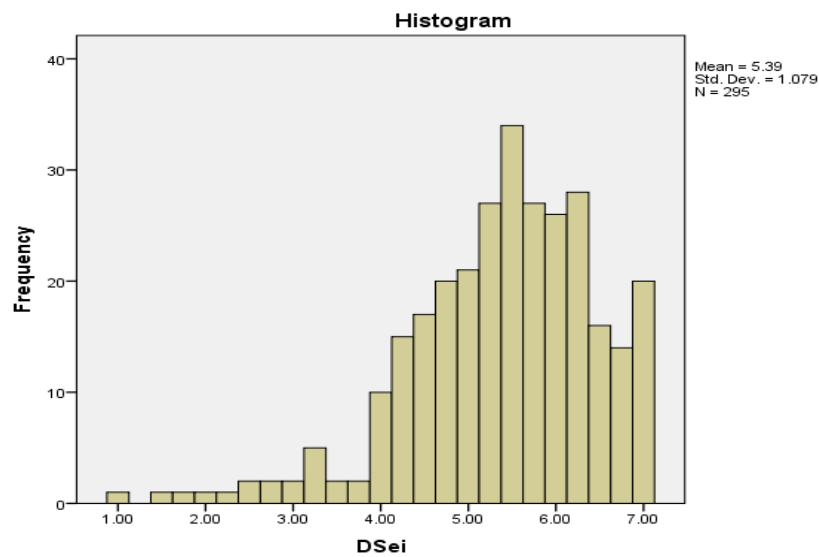
Source: Survey Data, 2020

Annexure 1.2: Histogram for Normality Test of Dynamic Sensing Capability.



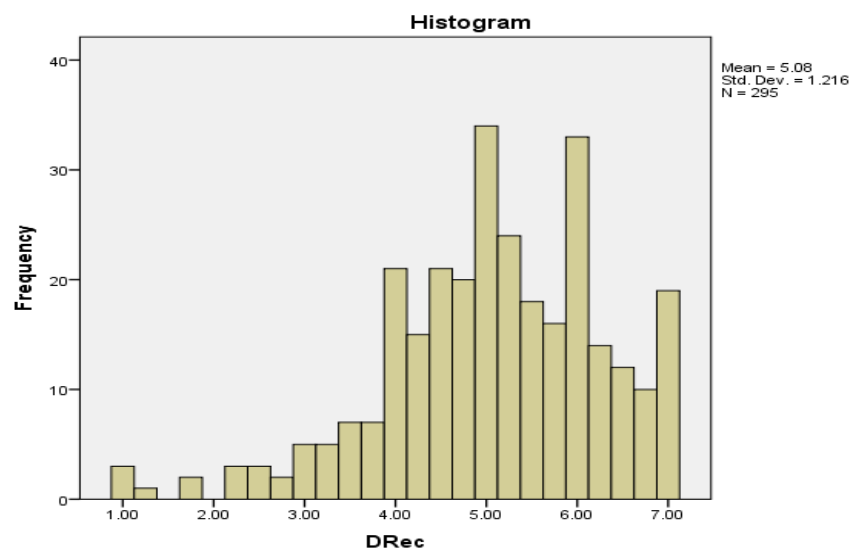
Source: Survey Data, 2020

Annexure 1.3: Histogram for Normality Test of Dynamic Seizing Capability.



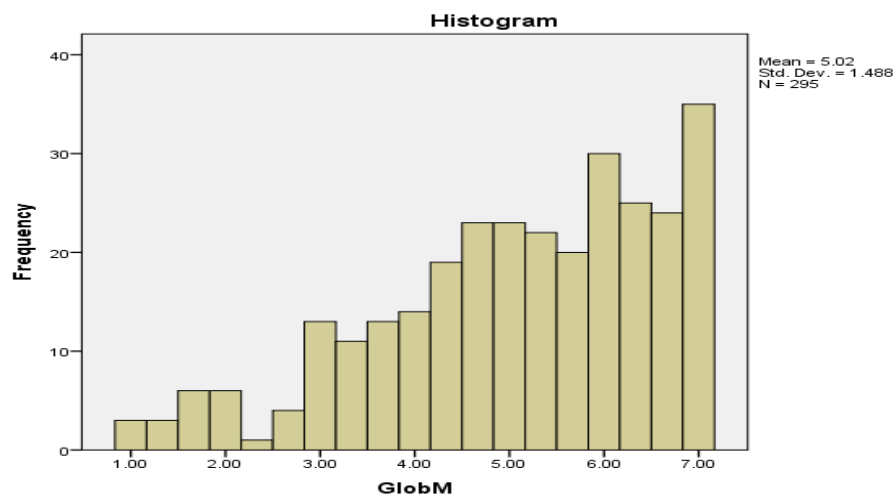
Source: Survey Data, 2020

Annexure 1.4: Histogram for Normality Test of Dynamic Reconfiguration Capability.



Source: Survey Data, 2020

Annexure 1.5: Histogram for Normality Test of Global Mind-set.



Source: Survey Data, 2020