Call for Innovation-Driven Development: A Grounded Theory Study of Thai Export-Oriented Garment Industry Facing Competitive Challenges in the Context of Industry 4.0 Era

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Abstract: The importance of the export-oriented garment industry in the economy of Thailand is very high. Currently, this industry is facing great challenges with respect to its growth rate. Competition in international markets is high due to problems such as low productivity, the high cost of production due to better labour wages, limited capability for development, inefficient management structures, limitations in skills training and inefficient systems. To take advantage of global market opportunities in the context of the Industry 4.0 Era, actors in the sector should accurately identify all dimensions of competitive challenges facing them. This paper focuses on the analysis of the current situation of TEOG (Thai Export-Oriented Garment) industry with respect to its competitive challenges and attempts to develop a model for competitive challenges. It is useful for understanding the groupings of TEOG industry challenges and the related theoretical underpinning, which shows an interactive relationship between the various categories of competitive challenges that are encountered. Additionally, presentation is made of the possible innovation-driven approaches to be used by TEOG industry actors which are suggested for overcoming these competitive challenges.

Keywords: Competitive challenge; Innovation-driven; Garment industry; Thailand

JEL Classification: L80

1. Introduction

The global recession quickly spread to most developing economies, brought negative impact to the most industry. Garment industry is one of most global industries because the majority of developing countries produce for the international textile and garment market. Additionally, garment production is an important item for national development, and is the typical starter industry for developing countries engaged in export-oriented industrialization due to its low fixed costs and emphasis on labor-intensive manufacturing. (Adhikari & Weeratunge, 2006) The export-oriented garment industry has made considerable contribution to Thailand economy. Nowadays, TEGO industry is the second large exporting industry in Thailand GDP.

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The challenges that originate from changes of competitive environment in the global markets have posed various competitive challenges to the TEOG industry, are issues for crucial concern for TEOG industry. TEOG industry that is strengths of skilled labor force, integrated supply chain and available R&D support, but challenge is labor cost, no domestic branding. (K-research, 2016) Thailand needs fresh dynamism in its economy, the garment industry, too, need to develop new application and new business models in order to grow and maintain their competitive advantage for new opportunities and challenges. (Kittichai, Hodges & Copeland, 2010) It is necessary to shift to innovation strategies to maintain technological process, simply because the garment industry already apply best-practice technology and methods, and productivity cannot be improved by adapting existing technologies in the context of industry 4.0 era.

To better understand the points of view of the competitive challenges TEOG industry facing in global market. The author conducted in-depth interviews in Bangkok in November of 2017 with six senior managers in TEOG sector, and tried to understand their basic notions of competitive challenges that the industry facing.

The major objectives of the study are as follows:

To create TEOG industry competitive challenges model through constructivist grounded theory approach.

To discuss the innovation-driven accelerate the development of TEOG industry.

2. Brief Overview of the Garment Industry in Thailand

Over the years, the success of Thailand's garment industry can be attributed in large part to the country's comparative advantages in terms of labor and low-priced property, as well as the Asian economic crisis of the 1990s that made Thai products favorable to world buyers. Thai garment industry boost for industrial exports came after the mid-1980. It is typical export–oriented and labor-intensive industry. It was among the top ten exporters in the world from the mind-1980s to the mid-1990s, with strong growth of garment industry, up to 1.08 million works are employed directly in the garment production chain, and over 5,000 manufactures covering textile, fabric, printing, knitting and garment-making. However, almost 80 percent of the workers are in the garment industry. In the early 90s, with the globalization of economy, the Thai garment industry facing the difficulty of industrial up-grading due to competitive advantage erodes. Many of factories have moved out of Bangkok in search of more lower-cost countries, after that it started to decline. The share of Thailand in world garment exports declined from 3.2% in 1995 to 2% in 1998. The main reason for the decline was old-fashioned equipment, a shortage of technical personnel. Since 2005, Thailand has ranged between being the world's 11th and 13th

exporter of garments. After experiencing a higher growth in 2005, Garment exports displayed the growth rate fluctuated over a three-year period, increasing by 2.2 percent from 2005 to 2006, then declined by 5 percent from 2006-2007. (Thailand Textile Institute, 2009) In recent years, Owing to the reduction of order from major export markets, especially, main partner countries as Vietnam and China in 2015, Thailand's export-oriented garment industry has faced many challenges from export market decreasing gradually, shown in Figure 1.

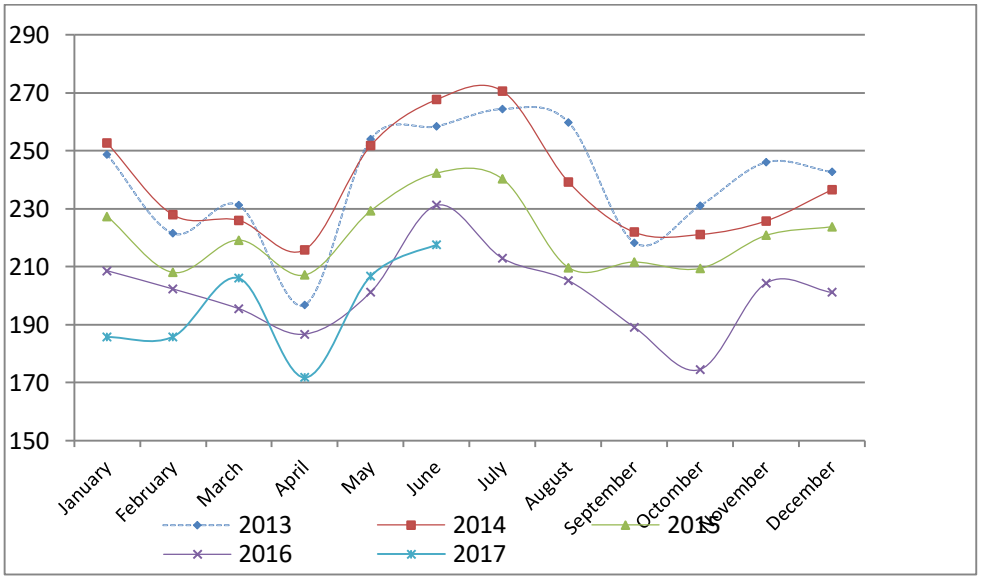


Figure 1. Thailand Garment Country Export: Value MU$

Source: Industrial economic information center, office of industrial economics

The top five market of Thailand garment industry, with a total value of $ arrange from USA, EU, ASEAN, Japan and China($849.56 million, $513.73 million, $369.2 million, $128.24 million, $152.83 million in 2016,respectively) Since 2013, Thailand's exports to the US EU, ASEAN, Japan market have steadily declined.

However, exports to the China have steadily increased. China market showed the highest growth rate at 15.4 percent (see Table 1)

Table 1. Top Major Markets: Thailand Garment Country Export: Value MU$

Rank	Group countries	2009	2010	2011	2012	2013	2014	2015	2016
1	USA	1174.47	1262.47	1142.48	1016.94	1017.52	999.87	952.98	849.56
2	EU(28)	-	-	-	-	687.01	675.71	556.05	513.73
3	JAPAN	227.04	252.98	325.33	368.41	390.67	397.52	383.32	369.2
4	ASEAN	-	-	-	-	175.6	152.83	143.44	128.24
5	China	49.07	63.58	91.17	100.4	106.81	122.75	132.42	152.83

Source: Thailand textile institute, 2016 ttis textile digest, 2017

Despite several factors that have negatively affected the Thai garment industry in the past few years (e.g. reduced total productivity, Increased competitiveness and fluctuating world economies). Table1 indicates that the Thai industry has been performing relatively well. However, the value of garment export is predicted to increase in this year, a trend that seems to slow improvement in the Thai economy.

3. Rationale for Using Grounded Theory for Research

According to Urquhart, Lehmann, & Myers (2010), grounded theory is a qualitative research method in which is well fitted for the study social science attributes. For social science research various areas, including various procedures, peoples' viewpoint or other relevant issue, explains pattern in behavior, behavior phenomena, information system, psychological perception, technology and data. Urquhart (2010) also asserts that grounded theory is a systematic approach that can help in generating theory in specific area of inquiry of theoretical foundations. He details the framework for theorizing in grounded theory studies, such as the development of formal concept, substantive focus, memo writing and theoretical, can focus to increase the degree of conceptualization or other relevant research issues. Byant and Charmaz (2007), argue that grounded theory approach attempts to understand the nature of the people's experience with the identified problem or to obtain details of a complex phenomenon. Grounded theory as research approach is an inductive and comparative method that provides us with guidelines on how to analysis our data, identify categories, concern with the processing of manufacture and build the relationship between them. The industry is crucial need for developing theoretical framework, the author hope that using a number of coding approach, including comparative analysis and theoretical sampling which would help the development of a theoretical framework for TEOG industry.

Strauss and Corbin (1990) indicated that use face to face interviews and interaction as systematic data collection and analysis of data to explore a particular research

phenomenon are some of important principals of the method which are beneficial for specific industry research. Due to the importance of emergence of concepts in the context of big data era, the author noted the relevance of the approaches for specific industry research. However, there is no literature indicate which of the three grounded theory methods best suit for TEOG industry research.

I think the important themes to recognize is that the classic grounded theories such as Glaser suggest that the researcher keeps some distance not to set bias and assumption into the interviewee's responses. Later grounded theorist, as contrasted with this objectivist, especially Charmaz (2006) debates in grounded theory and indicates ways to move the approach further into social constructionism, She argue that the researcher in order to discover a new vision that interviews cannot be neutral through engaging discussions during the interview process, idea are generated, discussed and knowledge is mutually constructed.

In this study the issues include the erode of competitive advantage that cause problems of international purchase order reduction and high labor intensive cost caused by the lack of innovation driven between technology and data information. According to Mills, Bonner& Francis (2006) refer to the researcher's level of insight into the research field, is provided the freedom to reflect on his/her viewpoint and perspectives in other conversation and discussion through open interchange ideas and negotiation. As well as allowing the voices of the participants, it is enable participants to express themselves openly and without constraint.

In recognition to the existence of various interpretations about research objects, the paper takes a social constructivist approach and interpretive processing paradigm.

In addition, to the use in export-oriented garment industry, the issue of research approach is relatively under-developed and thus there is absence of scarcity theories. Thus the grounded theory approach is considered appropriate. Through the identification of the three approaches to grounded theory, Charmaz's constructivist approach was considered fitting for this study. Adopting constructivist grounded theory approach, the author are able to gather views and viewpoint, through interactive interplay and in-depth with garment senior managers, and allows mutual co-constructions through making arrangement for the interview process. It also allows the author to analyses and comment upon the impression of participants through identification of concepts and categories from the data collected. In additional, and expect to help to form a theory that build the concepts and categories derived from the data collected.

4. Literature Review

A literature review of labor-intensive industry competitive challenges identified a number of barriers that it face compared to another filed. The three main types of industry challenges discussed in the literature review including an overall lack of resources, lack of dynamic capacity and competence. The configuration of resources challenge can be better understood by evaluating the resource view theory. The dynamic capability challenges can be better examining the dynamic capabilities theory which applies to labor-intensive industry, such as garment industry.

4.1. Configuration of Resources Challenge

Gruber (2010) suggests that a sector's configurations of resource underlie it ability to achieve competitive advantage. Wernerfelt (1984) and Barney (1991) argued that industries should invest related assets and resources that will best assist them in successfully earn a sustainable competitive advantage. Resources have been defines as "assets of available factors that are controlled by the sectors". (Amit & Schoemaker, 1993) The industry can keep a competitive advantage based on its unique systematic resources compare with its competitors. (Clarke & Turner, 2003; Black & Boal, 1994) The industry's resources comprise its physical resources, human resources, and organizational resources. (Barney, 1991) The knowledge-based view theorists argued that related knowledge generation transfer and applied rather than other non-knowledge resources as the important driven of competitive advantage for industry's development. (Grant, 1996; Boner & Bansal, 2007; Clark & Turner, 2003) The configuration of resources is more useful framework with which to evaluate industry's competitive challenges. The configuration of resource view as a framework theory to explain why there has been an increasing trend of businesses around the world increasing their collaboration and other partnering activities. (Crant & Badden-Fuller, 2004) The labor-intensive industry, such as garment sectors, have fewer resources, they mostly have lower economic scale and scope. (Gnyawali & Park, 2009) and generally have smaller customer bases, less sustainable supply chains Lee. et al., 2010)

However, from competitive perception, to enable industry to sustain a competitive advantage, its resources should integrated, just like, Barney (1991) argued that an industry's initial source of competitive advantage fostered through those that are valuable, rareness, imitable and capability of organization, so call VRIO framework. Consequently, Teece & Pisan (1994) argued that organization will only obtain a stable competitive advantage if they can organize a set of systematic competence that can be consistently implemented, and competitors are hard to imitate. (Barney, 1991; Prahalad & Hamel, 1990) The true value of industry's resources is in the actual combination and capabilities and the strategic match with its external environment.

(Gruber al., 2010)

4.2. Dynamic Capabilities and Competence-Based Theory

The second theoretical underpinning in the literature is dynamic capabilities and competences theory. Compare with configuration of resources aspect which is more static in nature, the dynamic capabilities and competences theories are strategic management framework. The dynamic capabilities models argued that the industry can maintain competitive advantage in the short term with sufficient resources unless it is able to build and integrate dynamic evolution of capability in its internal and external environment. (Teec, 2007; Kolk, 2008) Not like capabilities of resources, dynamic is the concept that define the industry's capabilities should not be static, but should constantly improve and adapt to changeable environment. (Gronlund et al., 2010) Teece (2007) defined the dynamic capabilities as corporate agility: (1) to sense and shape opportunities and threats, (2) seize opportunities, and (3) maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets. The dynamic capabilities theorist also argues that the possession of unique resources itself cannot develop a competitive advantage, but that strong dynamic capabilities are also needed to effective transform the resources into profitable outcomes. (Kolk & Puumann, 2008; Teece & Pisano, 2004)

While the dynamic capabilities theory view is concerned with both intangible assets, the competence-based view concern about the existence, structure and boundaries of the industry, which are in some way fostered and maintained by that organization. (Hodgson, 1998) The central idea of competences provides the basis for evolution are and non-equilibrium theories of industrial competition and development. Competence refers to industry capacity to deploy resources in combination and organizational processes, for the purpose of achieving a particular end result. (Amit & Shoemaker, 1993) Each competence is developed by the skills, knowledge and experiences of employees, and deployed in combination with specific organizational processes and resources. (McGrath et al, 1995) Furthermore, the competence-based approach links with similar approached in a number of allied fields, such as technology studies and international business. (Cantwell, 1989; Dosi et al., 1988; Rosenberg, 1994) By contrast with the other set of theories, the competence-based frequently described as contractual theories of the industry. (Coase, 1937)

Capability is a higher level construct than a competence. (Stalk et al, 1992) More particularly, the literature identifies dynamic capabilities as a key driver of success for labor-intensive industry that call for innovation-driven, because these industries need to continually develop their collaboration and partnering capability. (Kolk & Puumann, 2008) Without dynamic capabilities, a labor-intensive industry will not be able to successfully leverage or expand on innovations from its internal and external environments. (Teece & Pisanno, 2004) Access to resources does not benefit labor-

intensive industry, such as garment sectors since they generally lack the capabilities to effectively develop those resources. (Biancha et al., 2010)

5. Methodology

5.1. Constructivist Grounded Theory

Charmaz (2006) supported the notion of co-construction of interpretations between researcher and participant and asserts that the constructivist grounded theory provides an interpretive method that the creation of knowledge in equally shaped by the participant and researcher rather than by the researcher developing preconceived hypotheses. Through active arrangements during the interview process, ideas are promoted, discussed and knowledge is mutually constructed. (Mills, Bonner & Francis, 2006) According to this view, the researcher and the participants co-construct data in the process of open interchange of ideas and negotiation. The researcher also has opportunity to express his/her viewpoints and perspectives. It is the emphasis which places on multiple version of social constructed knowledge that rearranges constructivist grounded theory with the conceptual underpinning of symbolic interactionism. (Charmaz, 1990) Hence, the researcher is an interpreter of data, re-describing the phenomenon through the co-construct meaning. (Charmaz, 2006) Generally speaking, constructivist grounded theory identify the "truth" through reciprocally sharing meaning between researcher and participants. Further, constructivist grounded theory develops the notion of multiple realities, seeking consensus across multiple individual narratives. (Charmaz, 2006)

Relate to the study, such perspective have been taken from the sophisticated managers of sectors and setting to understand the central meaning "competitive challenges" with value chain in Thai export-oriented garment industry. The constructivist grounded theory approach was identified as appropriate of explore insight into how garment sectors survive from fierce competitive global market, and try to develop competitive challenges model as the TEOG industry facing.

There are three typical characters of the constructivist methodological design was attached to research processing. Firstly, interaction between researcher and participants was facilitated by sharing data interpretations to generate the reconstruction of knowledge; secondly, strong relationships implicit in research were acknowledged from an ethical perspective; and thirdly grounded theory is often criticized for lack of rigor, is often cased on its inability to judge how the theory emerged. (Cooney, 2011) So that, it is necessary to practice reflexivity in respect to one's own memo writing and field notes to maintain transparence. (Mill & Francis, 2006) The following sections detail the design and methods that brought about these characters.

5.2. Research Question

As demonstrated by the scoping review, the concept of engagement is an ambiguous term, lacking clarity or shared consensus. Assumptions of what competitive challenges the garment facing, what actors in the value chain can influence the surviving was known by participants. It seems no direct research that develops the TEOG industry competitive challenges model. At present, the few investigations have been conducted into this industry and have focused on the theoretical model as an outcome measure. Current approaches to be identified the industrial competitive challenges developed by resource based view theory and dynamic capabilities theory; however it could be suggested that a limitation with exiting measures is focus on internal factors with not enough analysis the competitive challenges in the context of industry 4.0 Era.

With qualitative versus quantitative approach, Creswell (2007) formulated qualitative research maintains wide ranging perspective, raising exploration of multiple factors and perspective that present the central phenomenon. The central question for this study was supported by two research aims, all of which are defined as follows.

The Research Question used in interview is:

What competitive challenges the Thai export-oriented garment industry facing in the current situation?

Research Aims:

To explore what the competitive challenges the TEOG industry facing?

To examine what actors are involved? What role do they play? How do they interact?

Sampling

In most quantitative research, sampling is preferably gather information from large number of random samples, and the results can be generalized to large population. (Bowlinh, 1997; Creswell, 2009) In contrast, the qualitative approach seeks to access the thoughts and feeling of participants, which can enable to explore the personal experiences o in order to understand their perspective for research. In implementation of participant recruitment in qualitative research is to make information rich, and sample sizes are often small in compare with quantitative research.

It is not problem since the process of data collection and preliminary occurs simultaneously, the data collection continues until no new themes emerge during the analysis, also known the point of saturation. (Chamaz, 2006) In view of this perspective, it might be importance of selecting relevant sampling objects, seeking

to discover rich original narratives and understand a phenomenon. The next sections detail the sampling method used in the study.

5.3. Data Collection

The constructivist grounded theory method adopted in this research recommends that the interview process be open-ended, face to face, and mutually constructed. One part of participants were recruited for the study are sophisticated senior managers with over 10 years of experience in the TEOG industry and have managed mid-size sectors, another part participants are from trading company, hence it ensures in-depth, richness and rigor. Due to the on-site presence maintained on research sites, can raised follow-up on concepts within senior manager's interviews. As this allows participants to set direction and context within the interview, and allow the researcher to analyses and interpret the phenomenon grounded in the participants' real world perceptive. (Bryant & Charmaz, 2010) Following Charmaz (2006), this research followed the procedures in the Research Design diagram, shown in Figure 2.

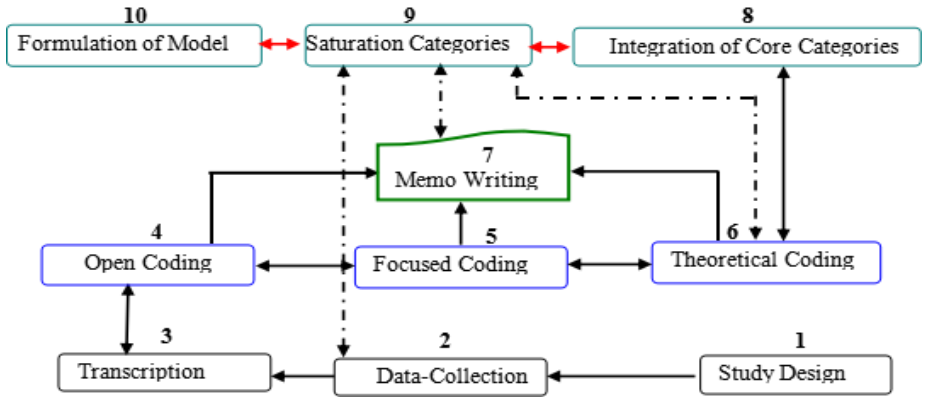


Figure 2. Research Design

The whole definitions of the research procedures described in the Research Design Figure which form the element of the Constructivist Grounded Theory method. Charmaz (2006) indicates the in-depth interviewing technique was chosen, in order to enable the researcher to ask for more specific question, repeat important view points and request for more explanation. In line with the Constructivist Grounded Theory method, the recruitment of participant was made purposive, the process was interactive. The sets of interviews were transcribed, reflected through memo writing, and then used for categorizing, abstracting and focusing and getting the improvement of interviewees. The participants in the study represent different experiences, authority and expertise in the field of TEOG industry both supply and demanding chain so as to gather as rich and diverse viewpoints as possible from him. In the

present, interviews' working place included the private garment sectors in the Bangkok and trade corporations in China. Due to geographical remote, 2 interviews were conducted by cell phone; another 4 of the interviews were conducted face to face. Meanwhile, interviews were made purposefully conversational, in order to encourage active participation.

5.4. Data Analysis

Coding is basic step in data analysis in the grounded theory of proceed of interchange, memo writing is a vital part of this process. (Charmaz, 2006; Strauss & Corbin, 1998) During coding, the researcher generates the framework of analysis which will be integrated for identifying concepts and categories as well as for developing theory subsequently. There are three stages of coding have been adopted in this study: open coding, focused coding and theoretical coding are illustrated as followed Figure 3.

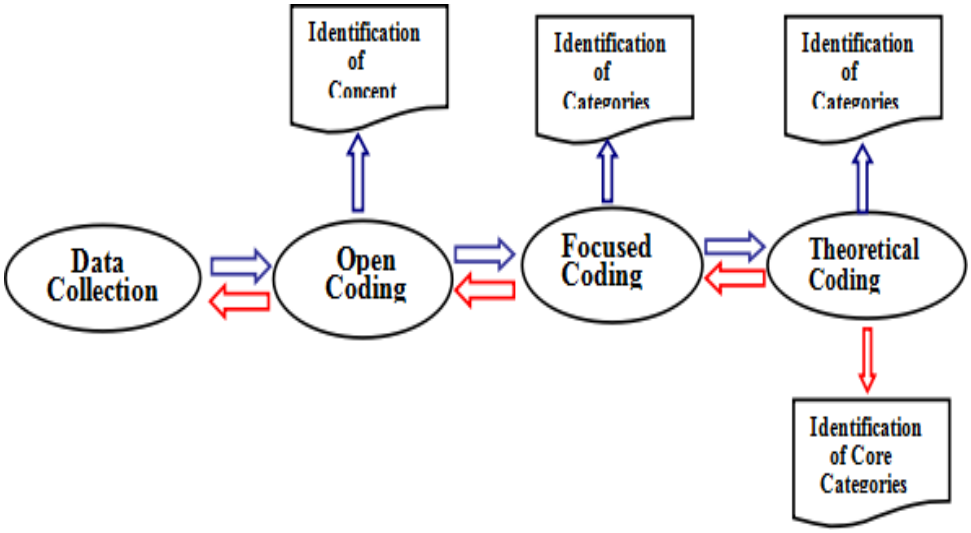


Figure 3. Process of Coding Analysis

5.5. Open Coding (Identification of Codes and Concepts)

Open coding is the beginning stage of data analysis, includes the establishment of codes and concept generated that were relate to the data collected, where labels are signed to collected data to allocate units of meaning. Charmaz (2006) indicated the method of line by line analysis to participant narratives with label, highlighting the meaning would normally escape the researcher's attention. Initial labels were descriptive, describing the narrative word in concise terms. This provides a second layer of analysis to explore implicit meaning derives from the interview context.

Table 2 shows example of open coding process in this study

Table 2. Examp of Open Coding Process

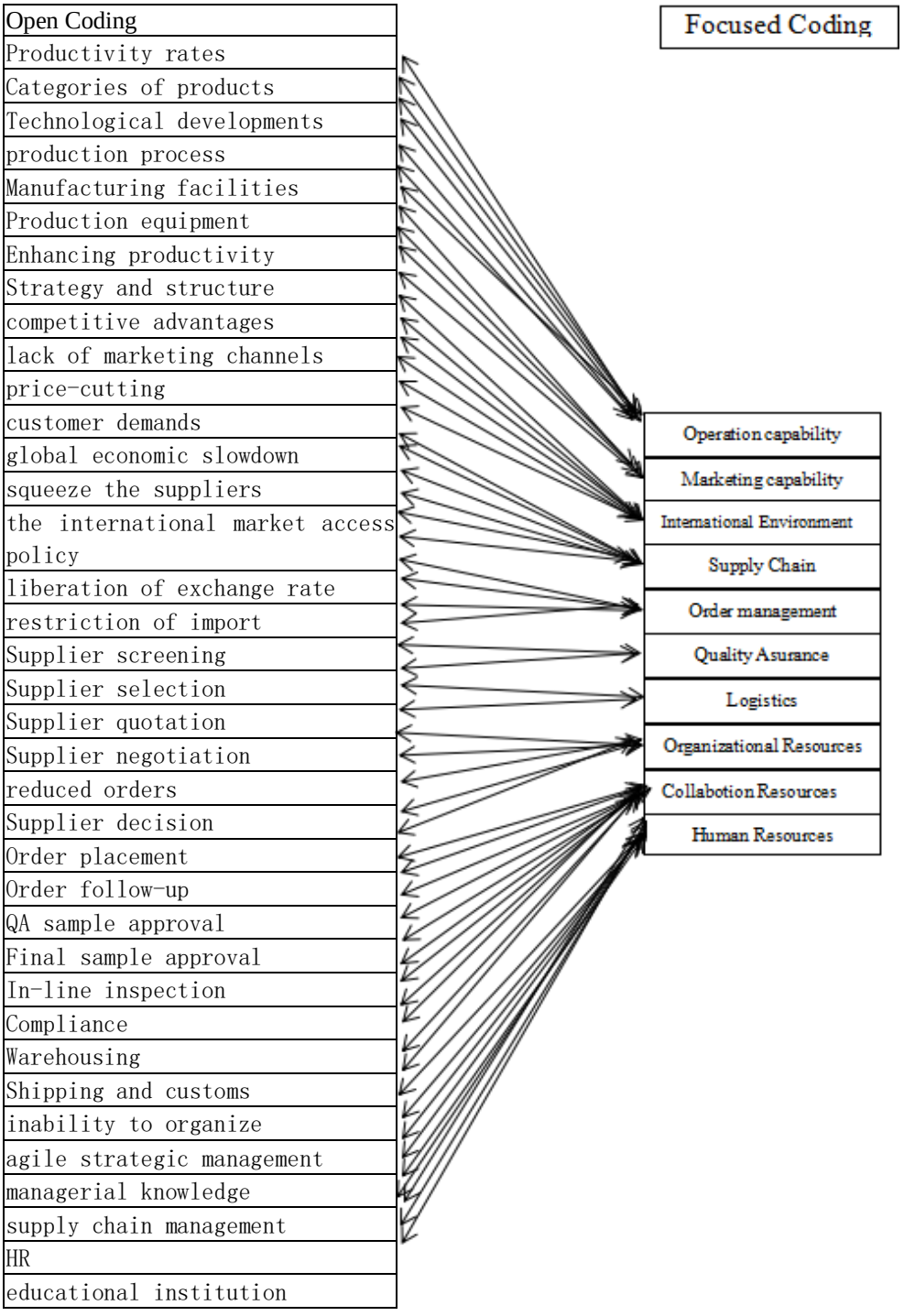
Interview Transcripts	Open Coding
Our company based in Bangkok, we produce commodities entirely in Thailand, here is our head- quarters, several out-sourcing sectors locate in rural area [....] we are managing the business We train them work assignment to finish each export orders. And they are required to know the whole business procedures [...].the categories of product is not complicated so the equipment is enough for it [....] manufacturing facilities also enough, but productivity should be improved for international since the clothing is seasonal product, we are always intensive time [...]	Categories of products
	Technological developments
	production process
	Manufacturing facilities
	R&D
	Production equipment
	Enhancing productivity
We started off our business by selling these product in local foreign tourist market and our main customer are from America market [...]we have expanded our product categories to female market [...] our product have been extended to many Asia markets [...] China, Malaysia, Vietnam and Taiwan, all of those region are our market. The competitive advantages in our sectors of technological design and better quality [...] what we should do is reduce product costs [...] financing also is problem for raw material purchase [...]We have lend a loan project for improving efficiency of production [...] the bank of Thailand allocated money lend to private sectors. Export-import bank of Thailand [...] we have approved loans for many factories to upgrade their machined and technology [...]	Strategy and structure
	competitive advantages
	lack of marketing channels
	price-cutting
	Information technology applications
	Technical design
	better quality
	Product design
	Raw materials sourcing
	product structure
	lack of ability to find partners
	capital intensive
	Small scale segment
	less access and availability of money
I think in terms of technology, what another country has we also have it, The technology in this industry is not poor. We don't think we are inferior to any other countries [....] the problem is we have no price advantage, information system is not enough too. So we are slowly to market response [...] the delivery of duce	capability gaps
	Difficulty dealing with growth surges
	original equipment manufacturing
	Capabilities tend to be more specialized so
	lack of outsourcing capabilities
	less efficient processes

efficient should be improved [...] Price competitiveness is sharp competition, new skill and resource normally the customers ask [...] out-sourcing is normally problem, especially, limit from size-related at rush season, it was hard to look for cooperator […] some of purchase order demand specialty that our skill group are no able to solve those problem so, lose opportunity […]	Speedier delivery
	quality and complexity
	new skills and resources
	Lack of adequate safety in the workplace
	Price competitiveness
Today's our customer are so much demanding [...] they are not only demand for high quality, but functional purpose as well, the more function demanding the more cost generate during producing [...], thus, we need to focus on product development [.....] use our innovative driven otherwise we cannot compete in the international market [....] the purchase orders always from old clients, we really have no market strategy for international market [...] also, less know international commercial rules [...] every year we will participate some of relative exhibition or commodity fare, so that we can earn some of order from there [....] different customers from different countries, have different quality demanding, our commodity chain is unstable and the tariff, trading restriction also different […]	international tourist market
	higher value-added
	production quality
	global markets
	Foreign buyer
	international market
	lack of marketing strategy
	fabric
	policies in exporting garment products
	international commercial law
	small scale
	international commercial laws
	reduction of tariffs
	Global commodity chains
	tariff
	restriction
	duty-free import
We are searching for skilled workers by making them a good offer, the loan cost raised about 20%, compare with 2010, even this, still hard to ask them join us [...] you know, it is really difficult to find good maker especially cutter, and pattern-makers, even they always keep considerable salary [.....]. you know most of garment factory workers are girls, we supply good condition at present time, big fan in workshop, Air-condition in office [....]The amount we pay for these labors is more than worker who stay rural area sectors. Also we should worry about their hosing and living expense [...] we employ about 400 workers in factory.	unskilled and semiskilled labor
	labor costs
	rural laborers
	sophisticated
	Difficulty with recruiting/retaining talent and other resources
	wages and working conditions
	sewing skills
	cultural work patterns
	Supervisor and managers.
	levels of knowledge

5.6. Focused Coding (Identification of Categories)

Focused coding is repeating process that tends to identify the potential themes within the study and aim to a higher level of abstraction. (Charmaz, 2006) In this stage, the researcher is demanded to abstract analysis to explain larger segment of data. (Charmaz, 2006) The conceptual categories from open coding are used to form categorized data in order to judge their utilization at an analytical level. (Charmaz, 1995) Through the process of constant comparison, these concepts are used into categories, and categories against newly-refined categorized until can ensure their worth to analytical. (Charmaz, 2006)

The early labels in this study were contrasted against new data through transcribed interviews to develop categories and examine the perspectives of senior manager's experiences. Those focused coding continued through constant comparative analysis and was maintained until theoretical categorized were identified. An example of how the interview data is coded into open coding is shown in Figure 3.


Open Coding
Productivity rates
Categories of products
Technological developments
production process
Manufacturing facilities
Production equipment
Enhancing productivity
Strategy and structure
competitive advantages
lack of marketing channels
price-cutting
customer demands
global economic slowdown
squeeze the suppliers
the international market access policy
liberation of exchange rate
restriction of import
Supplier screening
Supplier selection
Supplier quotation
Supplier negotiation
reduced orders
Supplier decision
Order placement
Order follow-up
QA sample approval
Final sample approval
In-line inspection
Compliance
Warehousing
Shipping and customs
inability to organize
agile strategic management
managerial knowledge
supply chain management
HR
educational institution
Focused Coding
Operation capability
Marketing capability
International Environment
Supply Chain
Order management
Quality Asurance
Logistics
Organizational Resources
Collabotion Resources
Human Resources

Accessories factory
significant role
university faculty
trading company
cotton importers
forming business alliances
OEM
raw materials
interdependent economic agent
out-sourcing
unskilled and semiskilled labor
labor costs
rural laborers
Sophisticated manager
wages and working conditions
sewing skills
cultural work patterns
Supervisors and managers.

Figure 4. Example of Focused Coding

5.7. Theoretical Coding (Identification of Categories and Integration of Core Categories)

Theoretical coding process is the last stages of coding, enables the saturation of the core categories, and provides an insight into relationship between concepts for the development of the integrated categories. (Charmaz, 2006) The characteristic of this stage is constant comparative analysis, the use of memos and constant comparison between focused codes were instrumental to ensure understanding into social process. Within the context of this study, analysis explored the perspective of sophisticated senior manager's experience and compared these to the expectation they formed about current situation. Focused coding and concept associate to identify emerging core categories which are shown in Figure 4. The analyses resulted in the emerging of five core categories for this study, these core categories are the themes concerned by the participants and utilization in Thai export-oriented garment industry. Each core category is abstracted from categories which associated with concepts. Furthermore, the relationships among these five core categories are depicte

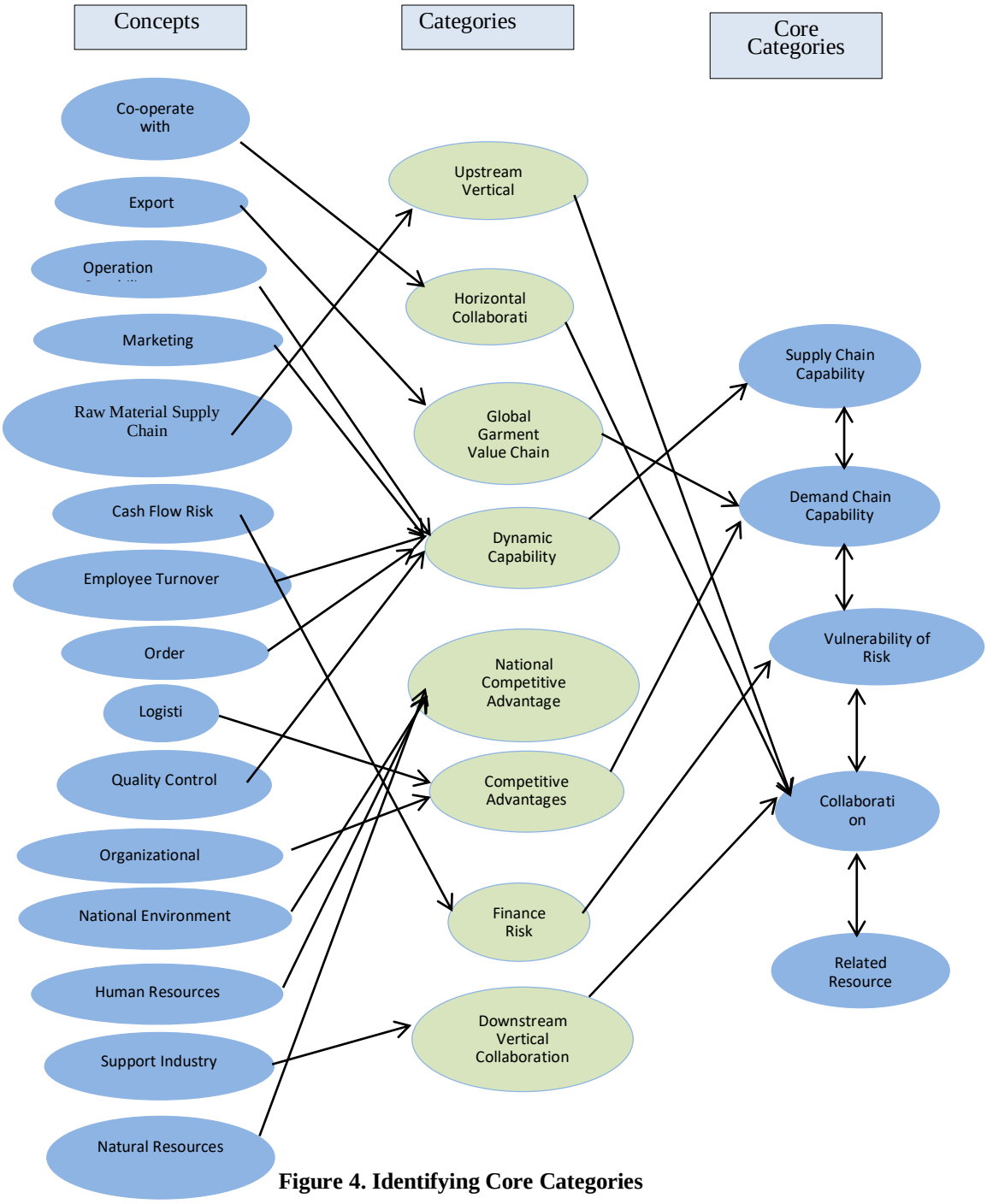


Figure 4. Identifying Core Categories

6. Finding and Discussion

The purpose of the study putted forward by research question and the qualitative methodology used to collect the data through purposeful sampling from each participant. The result of this study explored and generated a competitive challenges model in the TEOG industry. This model identified the competitive challenges in the TEOG industry facing. The constructivist grounded theory methodology chose for this qualitative study, as tool of getting to the data obtained from participants face-to-face interviews participants who had processed the over 10 years rich experience of TEOG industry. The participants were able to provide the needed reasons for developing a competitive challenges model base on constructivist grounded theory method where information emerged from the data itself. By creating TEOG competitive challenges model based on supply and demand chain capability, collaboration capability related resource and vulnerability of risk, the study generate the model shown below in Figure 5.

6.1. Understanding of TEOG Competitive Challenges Model

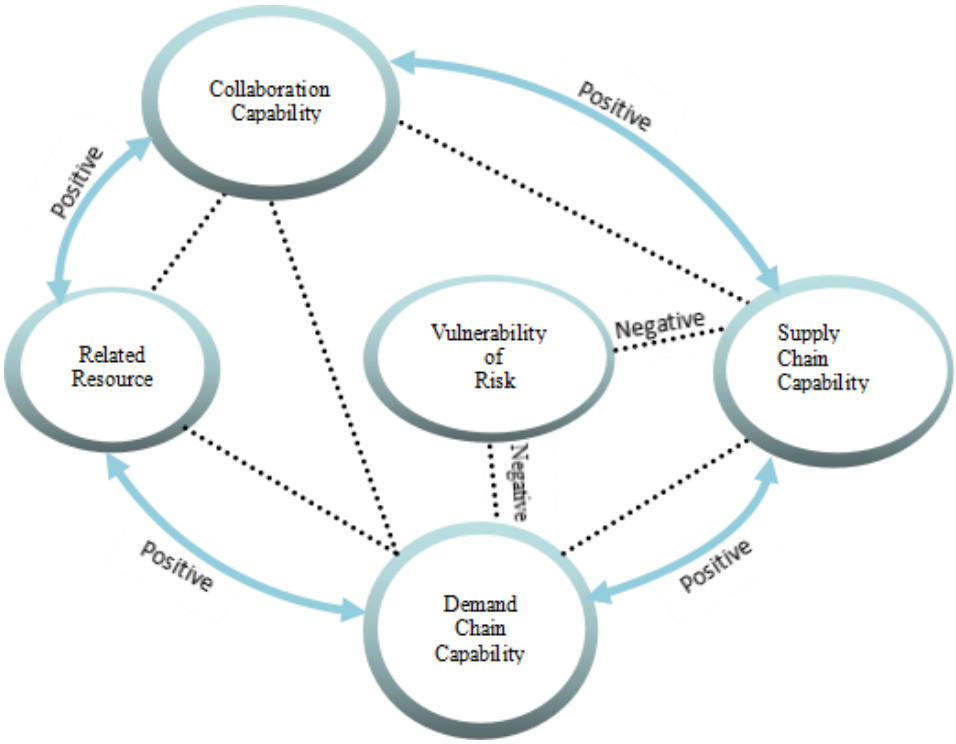


Figure 5. TEOG Industry Competitive Challenges Model

Figure 5 presents the TEOG competitive challenges model, this model interprets the relationships and interactions between the categories supply and demand chain capability, risk related resource, related resource that TEOG industry facing in current situation. This model is refined by core categories by constructivist grounded theory research, the concepts in the model is useful for understand the grouping of TEOG industry competitive challenges and the related theoretical underpinning. TEOG industry competitive challenges model as cycle diagram model is showing the interactive relationships between the various categories of competitive challenges that TEOG encounter. The interaction among supply and demand chain capability, collaboration capability, related resource and vulnerability of risk showed in this model lead to interpret this paper's question. Firstly, a positive relationship between supply and demand chain, enhancing industry's supply chain capability will compete more purchase order in global market as one of participants stated "The USA customer pay more attention supply chain capability, they usually decided to place order after visiting the sector site in person". Second, higher collaboration capability is able to improve supply chain capability, especially, for small and middle size sectors, lack of supply chain capability, they should enforce collaboration group and integrate related resource with relative partners. Third, vulnerability of risk will generate negative impact both in supply and demand chain. This model also implicit that the utilization of innovation-driven strategies can potentially enhance the industry's supply chain capabilities and increase it is access to demand chain.

6.2. The Need for Innovation-driven

Participant interviews identified the need for support of innovation-driven through enhancing the both supply and demand chain capability of TEOG industry. Some of international famous buyers such as ZARA, GAP, H&M, demand very short lead time for keeping its agility and flexibility in retail market. Participant statements detailed the need for managerial innovation when taking risk, one participant stated, "innovation-driven such as data-driven on the process of purchase order follow-up, will be good way improve the efficient and reduce mistake and produce cost" Another statement indicated to the enforcement of collaboration also can foster competitive advantage with innovation-driven.

Emphasis of the need for innovation-driven in TEOG industry is not simply improve management skill in sectors only, both supply chain and demand value chain should be considered. Discussed with participants and highlighted the competitive challenges the garment industry faced, have stimulated the senior managers concerning more about the concept of innovation-driven. Call for innovation-driven, maybe it is crucial need for TEOG industry overcoming competitive challenges in the context of industry 4.0 Era.

6.3. Limitations

The purpose of this study was to explore the competitive challenges model in the TEOG industry. The constructivist grounded theory methodology satisfied the purpose of the study with the data itself providing emerging themes. Though, the research participants consist of senior managers with over 10 years of management experience who had possessed in the TEOG industry, it was inevitable the limitations exist when conducting research but are still manageable through procedures control and qualitative research training. (a) The author obtained training in qualitative research method in the educational process, the ability of core categories refining is limited. (b) The size-related can become a limited factor of study, all of garment sectors the author visited are middle size scale. However, the constructivist grounded theory methodology supports the sample sized due to reach saturation. (Charmaz, 2014) So that, the goal of better understanding the TEOG industry competitive challenges was achieved from purposefully sampling senior managers in the TEOG industry. The author's extensive experience within the industry interviews using face to face enabled participants to express and interactive with researcher and participants provided broad perspective for various competitive challenges with garment industry.

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