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# *Analysis of Financial Problems Faced by Small Business Enterprises*

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## **Abstract**

Take a small firm CGM as an example, Financial problems faced by small business enterprises were analyzed. Five of the biggest financial challenges should be tried to overcome, including of attracting capital, credit ratings, internet, managing the money and risks. So firstly it is necessary to strengthening cash flow management for a small firm, and cash flow plays a decisive role to the firm's survival and development. Then the small firm should avoid unforeseen expenses and catastrophic change. Small businesses may frequently run profitably only so long as unplanned events never occur. Lastly, the major resolution for all companies is identifying, assessing, and mitigating risks. Therefore Small business enterprises must have the modern management concept to face the financial problems, especially the awareness of modern financial management.

**Keywords:** Small Business Enterprises, financial problems, cash flow, financial management

## **1 Introduction**

Small businesses face a different range of problems than their larger counterparts, due to their inability to enjoy some of the same advantages in the marketplace. Most of these problems are due to revenue and cash-on-hand availability when the bills come due. But confronting these obstacles before they become a headache can help you to prevent them from becoming a major issue for the company.

Now we take CGM as an example, CGM was established in 2009. With well-experienced medical background and enterprise resources, it leads CGM to an outstanding and responsible manufacturer as well as a service provider. Today, in order to meet different health care requirements, CGM has been devoting into researching and developing medical diagnostic and monitoring devices, such as Doppler Ultrasound system, Non-Invasive Blood Pressure Monitor and POCT Blood Glucose Monitoring System, and also specializing in hospital equipments. CGM has been certified by ISO 9002. CGM's products are manufactured according to international standards/regulations and have been awarded the CE and FDA certificates. However, this firm is only one private enterprises with no more than 100 members.

## **2 Financial problems faced by small business enterprises**

The biggest problem faced by small firms is the surviving in the first year or two. So now CGM has past this process, but the situation is different today. CGM continues to face what remains the same is the complexity and challenges. Business has never faced the type of moral challenges that it faces in today's global economy. The economy is still trying to get to going after the big crash that started in 2009 and there are still some dark clouds ahead for small businesses. However it is possible to get past these hurdles, especially if CGM plans ahead and are well prepared. Here are five of the biggest financial challenges CGM should try to overcome.

### **2.1 Attracting capital**

Limited size of capital for small firms, which determines their ability to withstand the risks is weak. To small firms, the scale of capital is small, the internal management infrastructure is weak, products relatively simple, the market is very risk, so that a little carelessness will result in operating losses, what's worse will cause bankrupt.

As for CGM, there is still lack of financial management concepts. The firm operates mainly from the initial capital accumulation and personal loans to friends and family, which determines the managers are the owners. They use their money to run their business. So their firm's management process is often not taken by corporate management model but family management. In the employment context than from a professional point of view, do not have the modern management concept, the lack of awareness of modern financial management.

Therefore the biggest financial challenge that small businesses are still facing today is the lack of capital flowing towards them. It is currently very difficult to get cash injections to start-up companies, but without this capital new businesses won't pop up to help the economy get back on its feet. Thus CGM need to work hard at the start to guarantee cash flow to its business. Find ways to attract investment and be creative with the financing of its small business. Just make sure that CGM don't set it all up on a large amount of debt.

### **2.2 Poor credit ratings**

Small businesses are facing the above problem mainly because they often have poor credit rating. This can make attracting capital difficult and it is necessary you find ways to improve your credit rating. Always paying your bills on time and making sure your business regularly keeps an eye on the way the credit rating is evolving. This is essential so that you can keep taking the steps to improving it and can guarantee that you will be able to increase the cash flow.

Meanwhile, from the bank's view, to many small firms, the preferred financing is bank loan, the bank is in fact a more active position. A small firm enhances communication with the Bank, promptly to production, operating conditions and financial status information to banks, developing mutual understanding, achieving the information symmetry, establishing mutual trust relationship between the bank and the firm. This culminated in a win-win situation, one hand the small firm can credit from the bank loans, so that the firm's cash flow can be managed effectively, the other hand banks can expanded its profit sources.

For general small firms, the most important aspect for management is working capital management. From a theoretical view, in general, large firms are more effective than small firms on making use of credit and scale to survive. As small firms have few resources, few customers, low-credit, if cash flow is cut down or interrupted, they will face difficulties immediately.

Firstly, the reality faced by a small firm in China is small scale, low-credit, anti-risk ability, so that financing difficulties are inevitable. As the bank loans need to take into account risk factors, and other small firms had raised funds on its own for many years. Lack of contacting with banks and credit evaluation system for small firms are also far from mature. Therefore, although the government has some policy support, to solve this problem by banks is unrealistic in the short term. Secondly, nowadays, the value of RMB is rising so that export production costs increase, profits reduce or even loss. On the other hand, the labor has a substantial price increase in China, so that business risk and cost of employment also increase. Therefore, effort to improve the efficiency of funds is the right choice.

### **2.3 Using the internet**

There are now more and more businesses going on the internet and small businesses need to find ways for tapping into this as well. With the lack of resources it can often be a bigger problem for smaller companies but it need to focus a lot of time in making sure its business is using the [internet for financial gain](#).

### **2.4 Managing the money**

Just for CGM, the problems mainly focus on inadequate financial control and weak financial management. For example, the accountants have not been educated specialized and systematic. CGM pays less attention to financial accounting data, so that the financial data of the firm is a little chaotic. And sometimes the firm usually has no concept of financial control, it leads to poor assets management, such as: Firstly, poor management of cash assets, causing funds idle or insufficient. Secondly, accounts receivable turnover is slow, resulting in difficulties in the recovery of funds; Lastly, but not the least, weak inventory control results in financial slack.

For small businesses there are always problems with money management because they don't have the same resources available to them as big businesses. Once the business gets rolling the capital will flow to the business and the owner and [dealing with this](#) in the right way is crucial for success. Dealing money in terms of taxation, for instance, is one reason why it is important the firm [hires an accountant from companies](#) like Friendly Accountants who have experience in this area.

### **2.5 Insufficient understanding of risks**

Another challenge that small businesses face because of their smaller resources is the problem of understanding risks. [Internet Marketing Online writes](#) that small businesses are often lacking in understanding the financial risk behind their decision and they need to take steps to bring this under control. Therefore improving your own financial knowledge is crucial if you are a small business owner.

These five challenges are something that small businesses will need to currently learn to deal with. Planning and preparing are the most important aspects of running a business successfully. All those problems should be solved well through cash flow management and risk management.

### **3 The necessary of strengthening cash flow management**

The most important issue to any small business entrepreneur is cash flow. Cash is King! We've all heard this maxim and it is truer today than ever before. A healthy profit may look nice on your financial statements, but if capital expenditures or receivable collections are draining your cash, you won't be able to stay in business for long. Too often executives and small business owners fail to focus enough on cash flow generation. In order to head off this problem, businesses must either be adequately capitalized and must shore up cash reserves to meet all obligations as they are needed and to handle downturns and emergencies that may arise. Cash management becomes even more important during recessionary times when cash is flowing more slowly into the business and creditors are less lenient in extending time to pay. For small businesses, handling business accounting and taxes may be within the capabilities of the business owners, but professional help is usually a good idea.

#### **3.1 Cash flow management measures to strengthen a small firm**

Cash flow is the importance of a small firm. But there are a lot of cash flow formulas, and the Statement of Cash Flow is complicated. If a small firm operates well, how can the manager conduct cash management effectively? Once the manager did not realize the importance of cash flow, the firm would face survival crisis.

Cash flow refers to the amount of cash inflows and cash outflows of a firm in a period of time. For example: Sale goods, provide services, sale fixed assets, return investment, borrowing funds and so on, these form of the firm's cash flows; purchase goods, receive services, set up fixed assets, cash investments, repay debt and so on, these form of the cash outflow.

Conceptually, a firm should be worth the present value of the firm's cash flows. The tricky part is determining the size, timing and risk of those cash flows. Cash flow to the firm, likes blood to the body, only the blood flows smoothly and enough, that the body will be healthy. Positive cash flow can make the firm grows up healthily.

So a firm's daily operations are always inseparable from cash, and cash flow plays a decisive role to the firm's survival and development. If the firm's cash flow can be managed effectively, I think it can make a big profit and develop quickly.

#### **3.2 Cash flow management measures to strengthen CGM**

Firstly, for CGM, the effective measure makes the cash flow management stronger, keeping the cash flow of the firm smoothly needs to do these as follows. (a) Improve the corporate governance structure, establish a modern enterprise system. (b) Improve the quality of financial staffs, bring in financial professionals to enhance understanding of financial management. (c) Strengthen the management control of assets, which include cash plan, use the sources of funds effectively. Then strengthen receivables management, build efficient management system.

##### **(1) Sell old products by discount**

If the old products backlog, when the new products have been produced, Old produces should be sold by discounted, this is conducive to recycling funds, and keeping production continue.

##### **(2) Collect product accounts previously**

To our customers, if they buy our products first time, we must ask for prepaying the entire found. Then they can pick up the goods. And to keep records of all customer payments, make

appropriate payment terms. For good credit customers can reduce the proportion of advance payment, but not less than the cost. Once the customer had good credit default behavior occurs, we must immediately reduce their credit standards, immediately raise the proportion of advance payment. Thus, in order to alert customers, and can minimize the risk.

### **(3) Rent large production equipment or fixed assets**

If a small firm needs to take up huge fund and long period construction, large production equipment or fixed assets, we can try to rent. Thus, although the short-term fee of rent paid more, but to retain sufficient cash flow to support the firm to run healthy.

### **(4) Do not take orders which more than the firm's production capacity**

Sometimes, a big order can bring lots of profit and temptations. However, a huge cake enough to choke people. Of course, it not easy to tolerate lose a big order. At the moment, we can consider to transfer part of order subcontracted to reliable firms, so the risk of subcontracted out, eat the cake that we can be more sweet mouth easier to digest.

## **4 Avoiding unforeseen expenses and catastrophic change**

Start-up companies and small businesses frequently run close to the bone and may be profitable only so long as unplanned events never occur. A retail store which clears \$150,000 per year after expenses may seem to be in good shape, until a slip-and-fall lawsuit against the store awards the plaintiff \$2.3 million and there is no insurance coverage. Even smaller expenses, such as a one-time government levy on all businesses in a region, or a rise in the cost of goods, can cause a major change in the bottom line. Use your available credit when you need to tide over your short-term cash crunch, but keep a close eye on your long-term profitability to ensure that your overall liquidity is not threatened by the change in costs.

A large corporation will probably survive the loss of a key executive to a debilitating injury or death, but these things frequently close small businesses when that person represents a large chunk of the available labor force--especially when the entrepreneur herself is that person. Likewise, a natural disaster or other major disruption can close a business for weeks or months. Whenever possible, have cash on hand and business policies to ensure that you will be able to reopen as soon as possible, or weather the temporary loss of a key employee, and then check your business plan to see if any of your prior assumptions have been changed by the new circumstances.

## **5 Problem solving and risk management**

For over a decade, CGM will further demonstrate its ability on penetrating overseas markets through its range of well-qualified products, R&D OEM/ODM ability and outstanding service. To constantly expand CGM's overseas business territories and develop more global distributors, CGM will takes part in international medical exhibitions every year, and is also planning to participate in other medical events in different countries in the future. Additionally, CGM will support its constant distributors for local medical shows for enhancing the partnership.

A major challenge for all companies is identifying, assessing, and mitigating risks, including human and financial capital, in addition to the macro economy. The lack of a sophisticated problem-solving competency among today's business leaders is limiting their ability to adequately deal with risks facing their businesses. So what is the problem to be solved? We believe, to do well into the future, companies must resolve that problem solving is the key to business, then develop a robust problem-solving capability at all levels. As companies proceed to identify financial capital risks, they will then have the problem solving skills to know how to best mitigate them.

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# *A Semiological Analysis: The Evolution of the Architectural Façade*

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## **Abstract**

Architecture as a new type amalgamation of engineering and other actual scientific and artistic disciplines turned into a hybrid design performance for the new interfaces and their spatial in the 21st century. Today's architectural concepts such as virtuality, fluency, multi-functionalism create new potentials for the contemporary, variable (public) space. In this context, the architectural façade with multi-informative images has become a distinct component, which is separate from the building, the structure of the building and the physical conditions imposed by the interior space. The contemporary architectural façade is not the word for word translation of the (interior) space it is related with and it surrounds, but it further offers a sophisticated spatial and social vision for the public and the modern city or metropolis. The contemporary public façade as the product of interactive surface architecture gives the actual information to the citizens, entertains them and also creates a vigorous public space. It is a kind of anagram, an over-interpretation and can be again perceived as a texture or directly as a narrator as it was in the pre-modern times. The new façade invites people into a dream city again with its theatrical or cinematographic surface which is considered as a semiotic object in this paper. In this respect, this article offers a comparative semiotic analysis of the evolution of the architectural façade from the ancient pre-modern times to the present time under the light of the semiotic terms, methodologies and theories which have particularly been envisaged by Pierce, Jakobson, Genette, Tesniere and Barthes.

**Keywords:** semiotics, architectural façade, public space, spectacle, inter-textuality

## Introduction: Architectural Façade

“Facciata” -a word with a Latin origin- which was used to define that a building was in good condition in Italy during the Renaissance of the 16<sup>th</sup> Century evolved into the word “façade” in France, which became the leading country for architectural production towards the end of the same century. The word was used to define the entrance side, front side or the side of a building which overlooks a street or a square.

With reference to the Economic Encyclopedia Notes completed by Krunitz in 1773 (Braun, 2008), considers that architectural façade was perceived by the end of the 18<sup>th</sup> century as a vertical surface independent from the mass, which is sensed, watched and assessed from a garden, street, road or avenue; that is from outside.

The examination of the time course of architectural performance from the civilizations of Ancient Mesopotamia, India, Egypt and Ancient Greece to the present time, especially the interactive transformation or evolution of the entrance façades of urban public spaces and public buildings shows that the structure or structure group to which the architectural façade belongs to has become independent from interior design and the structural system phenomenon, and turned into a narrator *per se*, referring to the eyes and mind outside. Contemporary architectural public façade has evolved into a multi-dimensional and textured shell which creates a social, physical, or briefly a theatrical bound again with the outdoor public area, drawing the contours of the space adjacent to the structure rather than that of the structure to which it belongs as beyond the traditional and early modern period’s constructions; into an artificial plane with horizontal and vertical time-bound variability, and into a kind of body/chaos of symbols, signs or texts.

The aim of this article -adopting as a model the approach of perception acquired by (Barthes, 1989), who perceives a painting, a statue, fashion or an image and his all surrounding as signs or a text or a group of texts, and configured all his analysis and inferences according to this assumption- is to examine the transformation of the architectural public façade from a static, concrete and monumental structural element into a dynamic, abstract text during the time course of architectural production according to linguistic and semiotic manifests, rules and theories; to offer an analysis of form and context of the text by considering the architectural façade as a text, and also to question the interaction between the architectural façade as the narrator once more, and the city and public space especially within the context of the contemporary period’s concept of publicity and phenomenon of urbanism.

The method of handling the subject primarily includes the social and physical relation of the architectural public façade with the structure and public space it belongs to throughout the history, scrutinizing the public culture, and then the semiotic analysis of the evolutionary process of the architectural public façade and the assessments on the subject matter. In this context the theories, methodologies and analyses of modern linguists and semioticians such as Ch.S. Pierce, G. Genette, Vinay-Dalbarnet, P. Ricœur, R. Barthes, J.Derrida, L. Tesniere, M. Bakhtin and R. Jakobson comprise the scope of the article.

## Semiotic Analysis of The Architectural Transformation

Façades of the Archaic Greek period public structures include all signs of the set of quail-signs, sin-signs and legi-signs<sup>1</sup> which cover dependant and functional morphemes in terms of the reflection of the interior space and monumental, concrete, repetition-based bearer system setup to the

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<sup>1</sup> Signs can be divided into three triples (Peirce, 1978)

According to the first triple, a sign can be named as **quail-sign**, **sin-sign** and **legi-sign**:

**Quali-sign:** it is a sign which is quality: For example the tone of a voice, the scent that someone uses. **Sin-sign:** A sign of itself or something or an event which actually exists. **Legi-sign:** A sign which is law. This law is generally made by people.

façade. They bear the value of symbols *per se*, they are iconic and have indices<sup>2</sup> They have sentence value, they are the indicators of a real existence in addition to their symbol value from the point of the interpreter; they are dicents *per se*. They consist of arguments and related inferences<sup>3</sup>. That is, façade is mostly a symbol and it is a legi-sign as a symbol<sup>4</sup>; the geometrical rules that it depends absolutely determine the whole. As a result, archaic era's private or public structure façades remain as a front side forming plane within their decorative context and define just the varietal status of the façade which is interpreted as a text herein due to archi-textuality<sup>5</sup> they suggest, and they do not direct the expectation horizon of their reader. More clearly, in Ancient Greece without or with limited trans-textuality, the façade constructs contextual, mostly covert but simple, monumental texts on the particularities of the building that it belongs to, the interior space setup and scenario, the form and type of the space that the structure overlooks, and the holistic message that the building and the city gives.

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<sup>2</sup> According to the second triple, it can be defined as **icon**, **symbol** and **index** (Peirce, 1978):

**Icon:** It is a sign with a feature which makes it meaningful even if the object it signifies does not exist: For example a line drawn with pencil to represent a geometrical line. In other words, icon directly represents animates what it signifies. In this respect a picture, a design, a photograph possesses this kind of characteristic.

**Index:** A sign which immediately loses the characteristic that makes it a sign when its object disappears, but retains that characteristic when an interpreter does not exist. In other words, index is a sign determined by a dynamic object due to relation the sign builds with the object. Therefore index builds a relation of contiguity, closeness with the object it refers to. For example smoke is an index of fire, and cloud is an index of rain.

**Symbol:** A sign which would lose the feature that makes it a sign unless an interpreter exists. Or in other words, symbol is a sign which is identified by its dynamic object, only in the direction, in the meaning it would be interpreted with.

<sup>3</sup> According to the third triple, a sign can be defined as **rheme**, **proposition (dici-sign)** and **argument** (Peirce, 1978):

**Rheme or term:** It is a qualitative probability sign from the point of its interpreter; in other words, it may be conceived as the animator of any object.

**Proposition or dici-sign:** A real sign of existence from the point of its interpreter; it is a binary sign, a sign that communicates information; it has a sentence value.

**Argument:** It is a legi-sign from the point of its interpreter; animates its object from the point of its sign feature. It is required to be a symbol; and as a symbol, it must also be a legi-sign. It is a sign with three elements, or it is a reasonable dicent sign. It includes an *a priori* and a result, and it must create a change on the interpreter.

<sup>4</sup> Sebeok (1988) which designs a simile of the classification made by Pierce (1978) divided signs into six species. Accordingly signs are independent systems as signal, symptom, icon, index, symbol and name, separately.

<sup>5</sup> The inter-textualism concept developed by Riffaterre (1983) is a system of thinking built on Tesniere's (1976) approach. In this context, the theoretician Genette (1997) worked on story, narration, homo-diegetic, intra-diegetic, extra-diegetic, hetero-diegetic narrations, narration time and speed, and he has determined five types of trans-textuality including inter-textuality, para-textuality, trans-textuality, hyper-textuality with indirect and simple transformation, and archi-textuality with immanence or transcendence.

**Figure 1: Façade of the library building in the ancient Ephesus, Turkey**



The white writing and formalism theory of Barthes (1989), which is accepted as an indicator of an entire impartiality also identifies the main structure of the architectural façades of the pre-modern archaic period. As the text that creates the white writing, or the geometrical and social rules, negotiations and traditions in the background of the texts constitute the internal structure and energy of the text; likewise, they also setup the structure of the architectural façade which may be considered as a surface or volume in fact. The architectural façade, which merges the smallest morphemes and converts them into a language; that is, an abstract system to keep the social memory exhibits a system of rhythmical binary oppositions as also expressed by the linguist Jakobson (1986). The classical or antique architectural façade, which can be considered as negotiable and social, is arbitrary and linear. The binaries formalized by static linguistic theories find a tectonic opposition on the classical façade as fullness (wall, column, beam) / emptiness (window, door).

On the public structure façades of the Medieval Era, it is possible to read all unbound, bound and functional morphemes. In this sense, all signs which can be considered as quail-sign, sin-sign and legi-sign for periodical assumptions<sup>6</sup> are positioned on the façade. Contrary to the building façades of the antiquity, it is possible to see iconic signs (a pattern, text, statue or other signs) in this period. Rather than the signified, the signs and their abstract propositions create an authentic language which depicts a vertical, abstract meta-world on the façade. In this sense, the façade partially breaks off from the physical organization of the structure it belongs to; however, supports and intensifies the story of the structure, or so to speak, brings the story forward and in this sense turns into a narrator; therefore it can merely be considered as a re-structuring plane. Façades of the Medieval Age assert a hyper-textuality, though not trans-textuality with the para-texts they suggest in architecture in semiotic context.

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<sup>6</sup> Peirce (1978), who enabled the transformation of semiotics from a domain envisaged in linguistic during the first half of the 19<sup>th</sup> century to an independent branch of science, designed a theory of signs which covers all facts, and named this theory that he identified with logic, or more precisely 'the formal doctrine of signs' as 'semiotic'. The theoretician divided his envision of semiotic into three branches: pure linguistic; methodic and rhetoric (Rifat, 2000,). According to Peirce (1978), a sign is anything that substitutes something for someone from any aspect or for any designation. The sign depends on three things: basis, object, interpreter. In this sense, indicators can produce unbound, bound, predicative and functional morphemes.

**Figure 2: Main entrance of Notre-dame Cathedral, Paris, France**



During the period from Renaissance to the industrial revolution, the façade moved away from being a sin-sign, and evolved into an icon on which symbols are overlapped. The façade, which includes meta-textuality enriched by para-texts, is a kind of restructuring plane. The façade which appears as the actual image began to cover the actual image and as Zizek (2011) claimed, they came forward in the current century of the humanity with the décor – ornamentation, makeup, narration, fictionality, surreal realities came forward fully in this period with the use of existing object, that is the structural façade, as a background. The façade image, reinforced by unbound morphemes in addition to bound and functional morphemes, has begun turning into a textuality which exceeds binary oppositions system of the static linguistic<sup>7</sup> theories, and into a double articulation commodity<sup>8</sup>. The architectural façade of the Renaissance, Baroque, Rococo period, which obviously assumed sculpture and all decoration arts, is a representative of a verbal, narrative, communicative poetic language. Deep structural volume / façade of the antiquity transformed into a kind of synchronous surface architecture product. The “white writing” was replaced with conversational writing, and sin-signs were replaced with icons. If Pre-Renaissance architectural façade is a kind of literal translation (of the interior to exterior, exterior to interior or inside-out or outside-in), then the public structure façades during the post-Renaissance era until the industrial era are borrowings instead of literal translations (diegetic, intra-diegetic, self-diegetic or extra-diegetic)<sup>9</sup>. A kind of connection language in which symbols are densely preferred instead of indices with the implementation of metaphorical images such as patterns, statues constitutes the infrastructure of the Renaissance façade instead of the stemma of the Antiquity.

The architectural façade turned into a kind of sin-sign and legi-sign, unbound morphemes were lost on the façade, and they left their places almost entirely to unbound and functional morphemes. The architectural façade with simple arguments or inferences is a pure archi-textuality plane loaded with sin-signs and legi-signs purified from all icons, images and symbols. In this sense, conversational writing changed back into white writing, connexion into direct stemma, narration into literal translation (exact reflection of the interior space and structural setup of the building on the

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<sup>7</sup> They adopted the linguistic theory’s diachrony, statics and singularity laws; structuralist, functional, logical and mathematical assumptions of the Russian formalists as the basis for themselves (Rifat, 2000). This form of comprehension including arbitrariness, linearity, a strong grammar and stemma takes the relations between objects as the basis rather than the objects and suggests the linguistic and semiotic theory of the generative – transformational, evolutionary, and consequently diachrony and synchrony.

<sup>8</sup> It was re-interpreted by Jakobson (1986) who read the language and objects according to the system of binary oppositions and the understanding of dialectic infinity. In this context, a text, statue, painting or an architectural product is loaded with narrativity, emotion, connotative, literariness or poeticalness, meta-language, contact or reference functions.

<sup>9</sup> The text – text relation registered by Vinay and Darbelnet (1973) as indirect translation activities is analyzed as borrowing, calque, literal translation, transposition, modulation, equivalence, and adaptation.

façade). Architectural façade is a reduced meta-language abstraction which sets aside design, narrativity, emotiveness and poeticalness, reference and contact functions.

Early modern period architectural public façades defined with the structural codes and diagrams made up of the combination of certain geometrical repetitions and abstract codes actually consist of bound and functional morphemes similar to the Ancient Greek architectural structure façades. They do not possess iconic attributes. That is, as the signified which would continue making them meaningful disappears when the object it signifies does not actually exist, it will become meaningless similar to a chess piece which becomes meaningless when it is considered separate from the chess set. In this sense, they are mostly the planes of subsequent existence and appearance configured by the signified mostly. Early period of modern façades loaded with indices, rhemes, dicents, arguments instead of symbols actually form the first building stone of passage from architecturally to trans-textuality. They are archi-textual due to their position; however, the potential they have makes them trans-textual. “White writing” theory and stemma which include simple binary oppositions maintain their validity. As a social element that questions the mind, linguistic construct, impartiality and geometrical abstraction, replaced subjectivity and parole as the solid analysis of the static linguistic and semiotic theory. Proportional and singular, impartial and gradual design with missing or excessive elements now transforms the architectural façade into a hidden poeticalness, emotiveness; a meta-language with a disguised narrativity or to the entire event, story itself.

Functional and unbound morphemes represent a verb, a mode on their own. Façade is actually a kind of literal translation and a front side forming plane as it reflects the interior and structural construct of the building. The essence of content is on the foreplay rather than the essence of narration. Conventional design and application approaches have considered architectural façade in the context of time and space as a text which created a kind of story with the subjects that they more or less wear. Early modern period’s architectural façades are pheno-texts produced with the iconic solidness and inalterability they have<sup>10</sup>. On the traditional façade, rhetoric is important, while especially the early modern period architectural production dwelled on the form grammar.

**Figure 3: South Texas art gallery, Texas, USA**

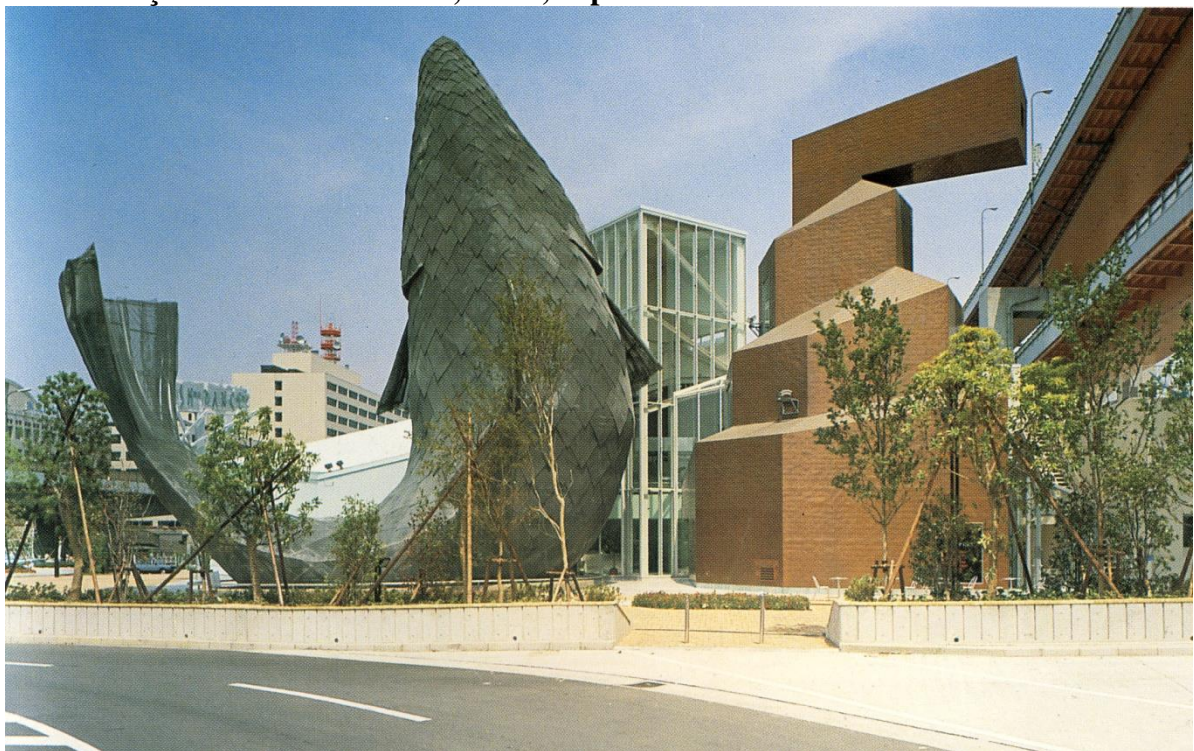


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<sup>10</sup> Bakhtin developed the concept of inter-textual relations (dialogism), and suggested a concept binomial: geno-text and pheno-text (Rifat, 2000). Bakhtin, who includes the chronotope or operational time concept in the interpretation while reading signs or inter-textual relations, was followed by Chomsky who defends the theory of distributional language and semiotic, Whitney and Courtenay who claim that language is a spiritual phenomenon, Barthes and Derrida who scrutinizes rhetoric / grammar opposition with a deconstructivist approach (Rifat, 2000) It has reinforced transformation from the manifesto of static language and semiotic to a productive – transformational and then distributional linguistic and semiotic theories such as the over interpretation developed by Umberto Eco (1996) or the synthesis in the hermeneutics constructed by Iser (1986), which is created by double articulation (mostly concretized by negotiations, rules and traditions of old – new text / image overlap) such as mentalist – mechanist.

The public buildings produced in the postmodern period and their architectural façades include metaphorical images produced by quail-signs that affect the set of sin-signs and legi-signs which yield bound-unbound morphemes rather than functional morphemes (historical, presentational, formal). Postmodern architectural façade has evolved into a three dimensional structural surface which exhibits retrospective iconic signs and symbolic elements in the understanding of synchrony independent from the physical conditions imposed by the interior space of the structure of the building. As a social and anonymous mechanism, instead of the systematic of language and its static grammar, representation of an individualism projecting on an almost entirely spiritual phenomenon, parole and morpheme and authentic but associative arguments are superior to all Cartesian and analytical evidences, the relation of cause and effect. And rhetoric is preferred to grammar or the formal grammar in the classical modern sense.

**Figure 4: Main façade of fish restaurant, Kobe, Japan**



The white writing as the sign of impartiality left its place to conversational writing, the static structuralism left its place to a postulant distributional linguistic. Owing to the double articulation provided by its para-textuality or inter-textuality, postmodern architectural façade received a kind of inter-textual position, and it is also the preliminary of the restructuring plane. The hermeneutics created a kind of object language or a meta-language.

With its dissertation of modulating the perspective, postmodern architectural façade has setup a kind of harmonization order as calque or borrowing plane instead of the literal translation (reflection of the interior and structure) which was preferred by the classical and even early modern period. The stemma, with a distorted and skewed value of perfection, left its place to a mere three-dimensional diegetic's (intra-diegetic or extra-diegetic) architectural performances. In this sense, postmodern building and its façade may be considered as both a pheno-text due to the relation it builds with the public space right next to it, and as a geno-text. As the final word, the building's façade becomes independent from the building again and turns into a narrator, though partially.

Having literally turned into a cinematographic performance in the late modern period of the 21st century, the architectural façade has become independent, broken off from the structure or group of structures that it belongs; and turned into a narrator once more.

Quali-signs have been overlapped on the sin-signs and legi-signs that it has. Together with the clothing and projection of icons on it, all indices merged with symbols and produced a new semanticity, new dicents. The architectural façade or façades which turn into the derivative of the integral, certainly possess the attribute of hyper-textuality with the secondary and intermediate texts it encompasses. In this sense, façade has evolved into a kind of restructuring plane, or an interface. The interface formed by double articulation produces a new world of material imagination where at least two images merge as Calvino (2004) expresses.

**Figure 5: Pompidou Culture Center, Paris, France**



**Figure 6: 3D Cinema Hall, Parc la Villette, Paris, France**



Having evolved from a diachronic performance to synchronic, time-spatial, distributional or generative – transformational activity which also includes hermeneutics, the "architectural" façade constructs a connective, calque meta-language. The core structure is broken with mentalist – anti-mentalist images. The time added with the operationally attribute into this system of infused functionality and communication represents the fourth dimension on the façade. Through metamorphosis or changing rhetoric, the contemporary "architectural" façade which breaks away from the interior space and the structural construct –that is the literary translation-, adopts the method of borrowing and calque and asserts modulation. Contrary to the constructivism of the previous periods, or as an entire revolution, it overlaps stemma and connexion. This approach is an approach



which merges the pattern and word, or the rhetoric and the grammar. In this sense, “architectural” façade may be considered as not a pheno-text, but a geno-text. With the current originality and the exclusive state of kinesis, it has promoted from the form of white writing to the conversational writing again, and gained an attribute of evidencing the personal history by merging the anonymous, social and impartial language system and the individual, partial parole with its entire exuberance and spontaneity. In this sense, the contemporary “architectural” façade went beyond being an interpretation of the public area, and turned into a kind of over interpretation<sup>11</sup>

**Figure 7: Video-mapping on the architectural façade, transformation of the façade, Valencia, Spain**



## Results

Upon the examination of the architectural and public façade from a semiotic point of view particularly from the Archaic Greek Period to the present, a transformation of the façade from a kind of front side forming plane to a successiveness plane, to a narrator and then again to a “dreamscape” producer has been identified. Overlapped images bring the façade to an inter-textual (hyper-textuality) position. The vertical plane jointly structured by the iconic rhetoric and structural or architectural grammar is not perceived as a pheno-text in this sense but as a geno-text. The impartiality of the early modern architectural façade; that is the state of being “white writing” has left its place to the conversational writing, which is the symbol of partiality. Contemporary architectural public façade; owing to its multi-facial, multipurpose character has evolved from a static sign to a dynamic group of signs. It is like it pursues a kind of narration loaded with information and spectacle for entertainment, a reference, and even a social or individual conative with the sin-sign, legi-sign but also quail-sign, iconic, symbolic, bound or unbound dicents and morphemes. During the process from the Archaic period to the 21<sup>st</sup> century late modern period, the semiotic analysis of the evolution of the architectural façade and assessment of the results is summarized in the following table.

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<sup>11</sup> It has reinforced transformation from the manifesto of static language and semiotic to a productive – transformational and then distributional linguistic and semiotic theories such as the over interpretation developed (Eco, 1996) or the synthesis in the hermeneutics constructed by Iser (1986), which is created by double articulation (mostly concretized by negotiations, rules and traditions of old – new text / image overlap) such as mentalist – mechanist.

**Table 1. Semiotic analysis of the evolution of architectural façade**

<b>ARCHI- TECTURAL FAÇADE</b>	<b>Ancient Greece Rome</b>	<b>Medieval Age</b>	<b>Renaissance</b>	<b>Industrial Revolution</b>	<b>Early Modern</b>	<b>Post – Modern</b>	<b>Late – Modern</b>
<b>Ch.S.Pierce Typology of Signs</b>	Qualisign, Sinsign, Legisign Iconic, Index Dicent <b>Functional Morpheme</b>	Qualisign, Symbol <b>Icon</b> <b>Bound Morpheme</b>	Qualisign, Symbol <b>Icon</b> <b>Bound Morpheme</b>	Simple Dicent Argument, Sinsign <b>Legisign Functional Morpheme</b>	Index Rheme Argument, Inference <b>Functional/ Unbound Morpheme</b>	Symbol, Qualisign Connotative Inference <b>Bound / Unbound Morpheme</b>	Sinsign, Legisign Qualisign Icon Index Symbol Dicent <b>Bound / Unbound Morpheme</b>
<b>G. Genette Transtextualit y Theory</b>	<b>Archi- Textuality</b>	<b>Inter / Para Archi- Textuality</b>	<b>Inter / Para Meta - Textuality</b>	<b>Archi - Textuality</b>	<b>Meta - Textuality</b>	<b>Meta - Textuality</b>	<b>Hyper- Textuality</b>
<b>Vinay - Darbelnet Translation Theory</b>	Literal Translation	Calque	Calque	Literal Translation	Literal Translation	Calque	Calque
<b>P.Ricoeur Triple Mimesis Theory</b>	Prefiguration <b>Plane</b>	Prefiguration Successive appearance Plane	Prefiguration Successive appearance Plane	<b>Pre configuration Plane</b>	Prefiguration Successive appearance Plane	<b>Successive Appearance Plane</b>	<b>Successive Appearance Plane</b>
<b>R. Barthes Writing Theory</b>	White Writing	Conversational Writing	Conversational Writing	White Writing	White Writing	Conversational Writing	Conversational Writing
<b>J.Derrida Rhetoric- Grammar</b>	Grammar	Rhetoric	Rhetoric	Grammar	Grammar	Rhetoric	Rhetoric / Grammar
<b>L. Tesniere Syntactic Theory</b>	Phenotext	Genotext	Genotext	Phenotext	Phenotext	Genotext	Genotext
<b>M. Bakhtin Semiotic / Semantic Analysis</b>	Static Syntax Stemma	Static Syntax Connexion	Static Syntax Connexion Borrowing	Static Syntax Stemma	Static Syntax Stemma	Static Syntax Connexion Borrowing	Dynamic Syntax Stemma Borrowing
<b>R. Jakobson Object Relations Theory</b>	Referential Literary Metalanguage Emotive	Conative Phatic Contact Reference Poetic Narration	Conative Contact Reference Poetic Metalanguage Narration	Literary Metalanguage	Literary Metalanguage Emotive	Poetic Contact Reference Narration Emotive	Conative Reference Literary Metalanguage Narration

## Conclusion

The contemporary space created by the architectural performance towards designing a multiple type performance-envelope rather than the static type turns into a spatial that proposes another coding, vocabulary or syntax (Calvino, 2004) with the chrono-topic time-space concept that it considers as the fourth dimension. Therefore, it is possible to describe the architectural façade designed as independent from and even despite the space that it belongs to as the multiple type performance-envelop, with the concept of “interface” formed by the spatial experience of the space’s temporality / and time’s spatiality paradigm (Aydinli, 2008). The concept of interface, which characterizes technology today, and space or architectural façade, may be considered as a momentary communication tool that connects the observer subject and the observed object to the same code. According to Lefebvre (1975), in an environment where the borders are removed, the borders turn into gates, and separating elements turn into contact; the space or façade infinitely regenerates itself.

The performance of architecture from the beginning of the 21<sup>st</sup> century has mixed with other artistic and scientific disciplines and varied towards hybrid architecture, surface architecture, diagram architecture, fluid architecture (Senturer, 2008) or towards virtual architecture concepts and approaches defined by Toyo Ito as “real architecture / potential architecture” in “spatial” and “interface” design process. During this process of variation, the architectural structure and especially the images such as video – cinema film, animation movie, photograph or moving visual design objects designed for the façade can meet at the building’s or group of buildings’ interiors, shells or façades. The moving images in question match with the architectural façade and provide a new façade map. Overlapping dynamic and static images, designs, colours created by means of video mapping can transform the modern city and its public place into a theatrical or cinematographic environment. On these moments of performance when surreal meets the real; the real can become the décor of surreal; the subject, that is the urbanite, can reconstruct the places successively but virtually during his or her daydream. In this detail, the dreamscape concept until the Medieval Age turns into a spatial) in the dream.

The architectural public façade which is reconstructed for the purpose of giving information or entertaining, the interface designed or open to be designed in interdisciplinary context absolutely leads to a nice dream though it does not produce the potential that Ito expects all the time; and that also means a good city connotation.

The permanent or variable images dressed on the architectural façade can also transform the façade and the interior or exterior space that the façade overlooks, the piece of city and even the city itself into a kind of commodity, a sacred illusion, a representative reality and again into a kind of spectacle or group of spectacles; and transforms the urbanite to a society of spectacle (Debord, 2010).

The spectacles overlapped on architectural façades can present themselves both as the community itself, as a piece of the community and as a tool for combination. In this sense, architectural performance seems as postulant to changing, transforming the existing model of the public and individual life in integration with other production disciplines of art and engineering. The contemporary architectural façades loaded with images formed by the understanding of “What appears is good, what is good appears” (Debord, 2010) are in the form of a kind of appearance of appearance with the double articulation characteristic they have. Modern architectural public façades, similar to the building façades which overlook to Medieval Age or Renaissance European city squares, are the décors of the spectacle which reverses the reality and that the late modern society favours again.

According to Debord (2010), spectacle is something which is irrelevant to peoples’ acts, it cannot be reconsidered and corrected by people’s deeds. Spectacle is a product of itself, it is a false

divine which makes its own rules. Spectacle is both merged and split like the modern society. Similar to modern society, spectacle also built its merger on breaking off.

The architectural façades, with the set of images embarked on them, transform into a kind of anagram and evolve from an interpretation to over - interpretation instead of being a reflector, or a word by word translator of the interior space and structure setups of the buildings that they belong. Having turned into a commodity in this sense, the contemporary architectural façade merges the separate as expressed by Debord (2010) for spectacle, but it merges them as separate. However, due to exactly this feature, the architectural façades as the narrators of the present time offer art and play to the actor who had lost his art, to the modern urbanite and to the public again due to the cinematographic or theatrical décor characteristics they represent, and reintroduces him the reality desired to be reached, which is more real than the daily reality. In this sense, with regard to the quality and quantity of the signs they have, late modern period architectural façades seem postulant to remain in much more relations with the public area and people and to change the structure or transform publicity as Habermas (2005) expressed particularly since the heavy industry revolution.

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# *Standardization of the Amount of Green Areas on Buildings and Sites*

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## **Abstract**

Nowadays, when the need for urban green areas rapidly increases, new solutions are sought for the problem of green areas that people cannot easily reach without covering long distances and spending a lot of time. Among these solutions the concept of the building design with the green areas is becoming important. Planting on the floors, roofs, interior and the site of the building, energy control, visual control, noise control, air cleaning, etc. with the use of green is in a way within the concept of the “green architecture”.

The approach of keeping the amount of the planting in the project to be used in building design adds an effective dimension to the above-mentioned concept of “green usage on building and site”. When we consider the benefits of green with regards to environmental factors, it is natural that in situations where there is an adverse change in the environmental conditions such as building density, urban activity and climate, planted areas increase and when favorable conditions increase, planted areas will decrease. Based on this principle, determining the necessary amount of green area on the building for the benefits of the building and the city is accentuated. Therefore, it is necessary to select the factors revealing the positive and negative conditions in question, and then set a standard determining green usage on buildings based on these factors.

In this paper, green area standards based on the goal and systems of green usage on buildings and site are defined and how they change according to which conditions, what their share on the building, inside the building and on the building lot should be and how this will be calculated will be indicated. It is also emphasized that these standards should be reflected on the building laws as a structuring condition.

**Keywords:** Green area, green area standards, green architecture, green usage on buildings, green building

## **1. Concept of Green Usage on Building and Site**

Until present, the approach to use plants at buildings was partially within the concept of green architecture due to its benefits for the building. It has gradually gained importance with respect to environmental factors. This is rapidly becoming widespread in both literature and application. Therefore, the development of this approach that brings a new design concept to architecture is gradually reflected on city planning. It can be evaluated within the context of the improvement of the urban landscaping and ecology. This channels designers to the concept of “green usage at building and site” where all green areas on the building lot, including both the plants on the building and the plants on the natural ground of the building lot, are handled together. Therefore before deciding on the area size of green usage on the building, it is important to consider the framework for the reasons, goals and systems that it will be used for.

### **1.1. Reasons for Green Usage on Building and Site**

For neighborhoods with dense building and no green areas, the deterioration of the urban climate and ecology due to environmental pollution such as air, view and noise, increase of disasters such as landslide, erosion and flood, increase in needs such as moving close to nature, turning to human scale and nostalgia, and also gradual decrease in social open spaces, lack of open green areas to be protected from natural disasters, socio-psychological deterioration including vandalism are continuously burning problems.

It is becoming more and more difficult to allocate green areas of required size and accessibility due to limitations such as high ground rents of urban green areas, geographical structure and natural environment of the city location, conditions of the preservation areas such as historical fabric. This situation results in an integrated green installation solution where in addition to the urban green areas, planted areas on buildings and sites are designed to contribute to the urban green reflecting from the building to the whole of the city.

With the relationship of the garden on the building that we see in the Hanging Gardens of Babylon in old times (1.pp 78-79), we can say that the first steps of this approach was taken.

### **1.2. Purpose and Systems of Green Usage on Building and Site**

The approach of green usage on buildings aims to use the green as an element of the building in architectural design. Some different combinations occur between the green area on the building that is an element of the building and the building itself. The location of the planted areas on building and site and the consequences of this on design in relation to constructive form and application differences are evaluated in addition to analyzing the practices and designs worldwide and the combinations in question are classified as follows under the heading systems of green usage on buildings (2.p.40).

Green Usage Systems for Buildings:

- Green Usage Systems on Site

Gardens around the building: like many types of gardens around the building (3).

Central courtyards: like typical brick building in Madrid as vernacular architecture (4.p.336).

- Green Usage Systems on the Building

Green usage directly connected to exterior environment

- \* Green usage on building floors above ground

Roof gardens, terraces, balconies open to people: like a renovation of residential building constructed in 1912 in New-York (5).

Green roofs closed to people: like Pool House in Westlake Hills of Texas (6).

- \* Green usage on building floors above ground

Green platform created above first basement: like some top garden platforms of the at Horizon Serano in Geneva (7.pp. 104-112)

Green usage on buildings tops for buildings half below ground: like Mets House in New Hampshire (8.pp.138-144).

Green usage systems indirectly connected to external environment

\* Courtyards with transparent roofs:like New Parliamentary Building in London by designed Michael Hopkins and partners (1.pp.58-59).

\* Green house : like Plaza Mikado in Tokyo (9.p.98)

\* Other indoor green arrangements

As a result of the above-mentioned classification, nine different green usage systems on buildings are determined: central courtyards, gardens around the building, roof gardens, terraces, balconies open to people, green roofs closed to people, green platform created above first basement, green usage on buildings tops for buildings half below ground, courtyards with transparent roofs, green house and indoor green arrangements. (2.p.40). However, when designing a building more than one of the systems in questions can be used together and different combinations of different type of plants can be developed. There is a typical example as Brooks Avenue House in Venice of LA, California design by Bricault Design (10).

The green usage on the outer surfaces of the buildings that nowadays is being used more and more can be added to the systems directly connected to the exterior environment within this classification. Some typical examples of this practice are the Caixaforum Vertical Garden in Madrid designed by architect Patrick Blanc (11.pp.90-93), and Sportplaza Mercator in Amsterdam (12.pp118-125). There is also detailed information on climbing and shrub plant species and characteristics (13. pp. 162-163). However, as the processes for setting standards of plant usage on buildings that will be explained in coming paragraphs are based on usage areas of site and building vertical surfaces are excluded from these calculations. Still, as these plant systems support the essential systems in relation to building-green combinations and especially the green roofs closed to people they are to be used in any case.

These systems are effective to fulfill certain objectives for buildings. These objectives that can be called objectives of green usage on buildings can be sorted according to their relationships with the building design decisions as follows (2. p.117):

- Provide visual appeal
- Control solar radiation
- Energy control
- Eliminate undesirable images
- Space perception
- Wind control
- Noise control
- Provide security
- Provide privacy
- Control air purity
- Emphasize scenery
- Control obscurity
- Secure bioclimatic balance
- Ecological harmony



## 2. Analysis of Parameters of Green Usage on Building and Site

It is important to allocate enough space on the building for green usage systems in terms of performance according to their objectives when making decisions about green usage during architectural design.

In this regard it is necessary to determine a control parameter to be used to choose green area sizes in question on buildings and convert it to a standard value to be used in practice. Therefore parameters for green usage on building have been firstly analyzed.

### 2.1. Parameters for Green Usage on Buildings

It can be said that parameters playing a role to determine the amount of green area on buildings are based on the below factors:

- Characteristics of the area and environment where the building is located
- Characteristics of the building and its site
- Characteristics of the plants based on different functions and their variety
- Socio-psychological characteristics of the users

Sub-factors based on these factors are determined and the relationship between these sub-factors and the purpose of green usage on buildings are introduced (Table 1). Sub variable groups that can be evaluated within each factor groups that vary according to these relationships are also introduced. These sub variable groups are analyzed and evaluated according to the main factors that represent their groups and these sub variable groups are transformed into main variables that green usage in buildings are based on. Following main variables are determined based on evaluations according to those phases:

- **Area types:** Main variable representing the sub variable group based on the main factor group “Characteristics of the area and environment where the building is located”.
- **GCR (Ground Coverage Ratio) and FAR (Floor Area Ratio):** Main variable representing the sub variable group based on the main factor group “Characteristics of the building and its site”
- **Plant types:** Main variable representing the sub variable group based on the main factor group “Characteristics of the plants based on different functions”.
- **User preferences:** Main variable representing the sub variable group based on the main factor group “Socio-psychological characteristics of the users”.

User preferences are treated as personal comments and requests. Studies are carried out on the grouping of plant types according to very detailed plant characteristics. Therefore, it is appropriate to classify the plant types according to intended purposes prepared in the light of information and classifications published until present (2. p.159).

For the GCR and FAR values of buildings low, medium and high values that are usually used for building areas and master plans are accepted. The area types are determined using the factor analysis method based on the 12 variables characterizing the building area.

### 2.2. Determining Area Types with Different Characteristics According to Variables Based on the Building Environment

SPSS/PC software belonging to the R type factor analysis method is used as a statistical method for determining the area type main variable that the green area requirement on buildings is based on (14).

15 districts of Istanbul were used as a basis for this study. Variables related building environment were used as data for the method. These values are shown in Table 2 (2. pp.163, 164).

Correlation matrices are calculated based on the correlation coefficients between variables. Following the evaluation of these matrices in accordance with the steps of the method, three main factors that are effective in defining the regional differences are determined. These factors are:

- Environmental pollution (F1)
- Climate and flora (F2)
- Density of transport network is (F3) and area types that are the environments of buildings are defined according to these factors. Four different area types that are determined according to their characteristics and their suitability to the green usage requirement for buildings are shown in Table 1.

**Table 1:** Relationship between factors and the purposes of green usage on buildings.

PURPOSES		1	2	3	4	5	6	7	8	9	10
		Visual	Solar	Wind control	Noise control	Energy	Air pollution	Space	Security	Ecology	Bio climatic
FACTORS											
Environme	A Ecological conditions		A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>6</sub>			A <sub>9</sub>	A <sub>10</sub>
	B Green areas in land	B <sub>1</sub>		B <sub>3</sub>	B <sub>4</sub>	B <sub>5</sub>	B <sub>6</sub>	B <sub>7</sub>		B <sub>9</sub>	B <sub>10</sub>
	C Population	C <sub>1</sub>			C <sub>4</sub>		C <sub>6</sub>				
	D Traffic	D <sub>1</sub>			D <sub>4</sub>		D <sub>6</sub>		D <sub>8</sub>	D <sub>9</sub>	
Building	E Building type	E <sub>1</sub>		E <sub>3</sub>		E <sub>5</sub>		E <sub>7</sub>			
	F Building function	F <sub>1</sub>			F <sub>4</sub>		F <sub>6</sub>				F <sub>10</sub>
	G Number of users						G <sub>6</sub>	G <sub>7</sub>			G <sub>10</sub>
	H Land topography	H <sub>1</sub>		H <sub>3</sub>				H <sub>7</sub>		H <sub>9</sub>	
UsPlant species	I Trees and shrubs properties	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>	I <sub>6</sub>	I <sub>7</sub>	I <sub>8</sub>	I <sub>9</sub>	I <sub>10</sub>
	J Bushes properties	J <sub>1</sub>		J <sub>3</sub>	J <sub>4</sub>	J <sub>5</sub>	J <sub>6</sub>	J <sub>7</sub>	J <sub>8</sub>	J <sub>9</sub>	J <sub>10</sub>
	K Flowers and vines properties	K <sub>1</sub>	K <sub>2</sub>		K <sub>4</sub>	K <sub>5</sub>	K <sub>6</sub>			K <sub>9</sub>	K <sub>10</sub>
Us	L Properties of grass and ground cover plants	L <sub>1</sub>	L <sub>2</sub>		L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>7</sub>	L <sub>8</sub>	L <sub>9</sub>	
	M Properties of water and chasmophytic plants	M <sub>1</sub>						M <sub>7</sub>			M <sub>10</sub>
	N Users income education, age, gender, status and traditions.	N <sub>1</sub>						N <sub>7</sub>			

**Table 2:** Values of Variables related building environment according to the districts of Istanbul.

Regions (Events)	Quality (Variables)	GAPT	TFA	GD	OAC	NMR	ATN	SO2	ARY	AFD	ATY	AVS	AWF
		Green area per person in town (m <sup>2</sup> /person)	Total brest and other green areas (ha)	Gross density (person/ha)	Open carpark capacity (park place per car)	Number of main roads (number/road)	Average of traffic noise in district (dBA)	Amount of SO <sub>2</sub> in air (ug/m <sup>3</sup> )	Average of total rain per year (mm/year)	Average of foggy-days in year (day/year)	Average temperature in year (°C)	Average wind speed in year (m/sn)	Average number of wind flood in year
1	ŞİŞLİ	1,40	10	374	3145	38	72	277	759	19	13,3	2,3	975 <sup>K</sup>
2	KARTAL	0,50	50	37	990	27	65	149	625	6	14,6	1,4	2383 <sup>KD</sup>
3	FATİH	0,80	0	448	3077	48	67	653	625	9	14	2,4	1401 <sup>KD</sup>
4	ZEYTİNBURNU	0,24	3	136	775	33	64	176	685	9	13,9	2,4	1401 <sup>KD</sup>
5	BAKIRKÖY	0,75	223	77	3650	78	60	193	684	9	13,7	2	1401 <sup>KD</sup>
6	BEŞİKTAŞ	221	100	111	455	28	71	299	1074	19	12,8	2,2	2287 <sup>KD</sup>
7	BEYOĞLU	1,14	10	281	400	59	72	290	1074	19	12,8	2,2	975 <sup>K</sup>
8	PENDİK	3,00	0	16	500	20	64	150	680	6	15	2,9	2383 <sup>KD</sup>
9	EMİNÖNÜ	2,50	0	187	2530	53	70	227	1074	19	12,8	2,2	2287 <sup>KD</sup>
10	EYÜP	0,60	0	37	250	46	58	256	691	9	13,7	4,1	1401 <sup>KD</sup>
11	KADIKÖY	0,70	15	163	1255	49	67	256	673	10	14	3	9532 <sup>KD</sup>
12	SARIYER	14,00	236	8	0	25	66	100	1074	19	12,8	2,2	2287 <sup>KD</sup>
13	ÜSKÜDAR	1,90	88	88	300	30	66	259	673	10	14	3	9532 <sup>KD</sup>
14	GAZİOSMANPAŞA	0,10	0	60	600	22	66	256	691	9	13,7	4,1	1401 <sup>KD</sup>
15	BEYKOZ	5,80	313	21	50	19	54	100	818	28	13,2	1,7	2145 <sup>KD</sup>

### 3. Developing Standards

When we look into worldwide applications it is seen that a clear approach, which argues that green usage on buildings, is a requirement and that it should be treated as a structuring condition during building design and standardized does not exist. What is important here is there is not a quantitative or a qualitative criterion set forward that can be used to control the green usage on buildings.

Green usage on building is defined according to two main factors:

- 1) Amount of green usage on buildings (quantitative factor)
- 2) Form of arranging plant on buildings (qualitative factor)

We can determine which variable will control the green usage on buildings when we determine according to which criterion the choice based on quantitative and qualitative factors will change. The values of the main control variable that will be determined are standards that are structuring conditions that influence the design of the requirement of green usage on buildings.

#### 3.1. Definition and Formulation of the Main Control Variable

There is no doubt that both the function of green usage in the building and the required spatial size from the point of improving the city will change according to the size of the building when all other factors are the same. Then, the part of the amount of green usage on building that falls on to the unit building size can be taken as a basis to determine the main control variable.

Based on the quantitative and qualitative factors of green usage on building, and evaluating variables such as “total floor area”, “total building volume”, “total planted area on building”, “total area of leaf surface of plants on building”, the main control variable can be defined as “**planted area on building falling to unit floor area**”. According to this definition the coefficient that will be

derived by the following ratio can be used as a structuring condition for quantitative planted area on building that is **coefficient of green usage of building (CGUB)**.

$$\frac{\text{Total Planted Area on Building and Site (TPAB)}}{\text{Total Floor Area (TFA)}} = \text{CGUB} \quad (1)$$

The qualitative factor that is the arrangement style of plants on buildings is the green usage systems mentioned in Section 1.2 and the combinations created by them on the building. This qualitative factor is important for the performance of the green usage on building and can be put forward as the **plant arrangement style** that can affect the control variable in a qualitative manner.

### 3.2. Parts of the Main Control Variable

Green usage systems on natural ground that are independent from many of the green usage conditions and limitations is the most useful plant arrangement style with respect to green usage purposes on building. When we consider this, one part of the control variable set forth as CGUB must be on the building site and one part must be on the building. Then, these parts of the CGUB control variable can be explained as:

- 1- Part on the site indicated as  $(CGUB)_S$ ,
- 2- Part on the building indicated as  $(CGUB)_B$ .

$$\text{Then: } \text{CGUB} = \text{CGUB}_S + \text{CGUB}_B$$

On the other hand, as the planted areas on the building contribute to the urban climate and landscape, they are directly related to the conditions of the natural environment. In other words there are two different arrangements, one outside the building and the other inside the building to improve the bioclimatic comfort conditions within the building. Then the  $(CGUB)_B$  part can also be divided into two parts:

- 1- Outside the building indicated as  $(CGUB)_{Ob}$  and
- 2- Inside the building indicated as  $(CGUB)_{Ib}$ .

Therefore,

$$(CGUB)_B = (CGUB)_{Ob} + (CGUB)_{Ib}$$

Due to these parts of the main control variable and according to formula (1), the total planted area on building and site TPAB can be further divided into parts as follows: total planted area on around of building site =  $TPAB_S$ , total planted area on building surfaces =  $TPAB_B$ , total planted area on the exterior surfaces of building =  $TPAB_{Ob}$ , and total planted area inside of the building =  $TPAB_{Ib}$ .

### 3.3. Dependence of the Cgub Main Control Variable and Its Parts on the Main Green Usage on Building Variables

- **CGUB and Area types:**

CGUB main control variable will have different standard values according to the green requirement of the four different area types shown in Table 3. Different CGUB values that the area types whose characteristics change according to three main factors determined by the Factor Analysis Method explained in Section 2 will be explained in Section 4.

- **Values of CGUB and GCR and FAR:**

The dependency of the CGUB main control variable on GCR and FAR main green usage variables is as follows due to the definitions of these coefficients:

$$\frac{\text{Building Footprint Area}}{\text{Site Area}} = \text{GCR} \qquad \frac{\text{Total}}{\text{Site Area}} = \frac{\text{Floor}}{\text{Area FAR}}$$

According to formula (1):

$$\text{TPAB} = \text{CGUB} \times \text{TFA}$$

$$\text{TPAB} = \text{TPAB}_{\text{Smax}} + \text{TPAB}_{\text{Bmin}}$$

$\text{TPAB}_{\text{Smax}}$  = Maximum value of the total planted area on building and site on the site. It is not related to CGUB. Theoretically,

$\text{TPAB}_{\text{Smax}}$  = Site area-building footprint area. Therefore,

“ $\text{TPAB}_{\text{Smax}} = (1 - \text{GCR}) \times \text{site area}$ ” and the amount of this value that falls on the unit footprint area is the maximum part of the CGUB on the site and is indicated by  $\text{CGUB}_{\text{Smax}}$ . This value can be written according to GCR and FAR formulas:

**Table 3:** Region types

Region	Region characteristics	Degree of compliance
$F_{1B}F_{2A}F_{3B}$	.Low air and noise pollution .Rich in vegetation .Rare transportation network	.Low density population .Temperate climate 4
$F_{1B}F_{2B}F_{3B}$	.Low air and noise pollution .Week vegetation .Rare transportation network	.Low density population .Hot-dry climate 3
$F_{1A}F_{2A}F_{3A}$	.High air and noise pollution .Rich in vegetation .Dense transportation network	.Dense population .Temperate climate 2
$F_{1A}F_{2B}F_{3A}$	.High air and noise pollution .Week vegetation .Dense transportation network	.Dense population .Hot-dry climate 1

$$\text{CGUB}_{\text{Smax}} = (1 - \text{GCR}) / \text{FAR} \qquad (2)$$

$\text{TPAB}_{\text{Bmin}}$  = minimum value of the amount on the building of the total planted are on building and site (TPAB). It is related to CGUB.

$\text{TPAB}_{\text{Bmin}} = \text{TPAB} - \text{TPAB}_{\text{Smax}}$  and the amount of this value falling on to the unit footprint area is CGUB’s minimum part on the building and is indicated by  $\text{CGUB}_{\text{Bmin}}$ .

$$\text{CGUB}_{\text{Bmin}} = (\text{CGUB} \times \text{FAR} + \text{GCR} - 1) / \text{FAR} \qquad (3)$$

$$\text{CGUB} = \text{CGUB}_{\text{Smax}} + \text{CGUB}_{\text{Bmin}} \text{ and } \text{TPAB} = \text{CGUB} \times \text{TFA}.$$

Therefore,

$$\text{TPAB}_{\text{Smax}} = \text{CGUB}_{\text{Smax}} \times \text{TFA} \qquad (4)$$

$$\text{TPAB}_{\text{Bmin}} = \text{CGUB}_{\text{Bmin}} \times \text{TFA} \qquad (5)$$

According to these, building and site parts of the “Coefficient of Green Usage of Building” CGUB will change according to GCR and FAR. This change is shown by the graphic in Fig.1. In the formulation indicated as  $\text{CGUB}_{\text{Smax}}$  and  $\text{CGUB}_{\text{Bmin}}$ , the main reason behind the terms maximum and minimum is the requirement the plants on the natural ground must be as much as possible and when the plants on the natural ground is not sufficient, the plants on the building must be as little as possible.

Planted areas on the exterior surfaces of the building and inside the building that will be determined by the  $CGUB_{Ob}$  and  $CGUB_{Ib}$  parts of  $CGUB_B$  are similarly the values  $TPAB_{Obmin}$  and  $TPAB_{Ibmax}$ . Their formulas will be:

$$TPAB_{Obmin} = CGUB_{Obmin} \times TFA \quad (6) \text{ and}$$

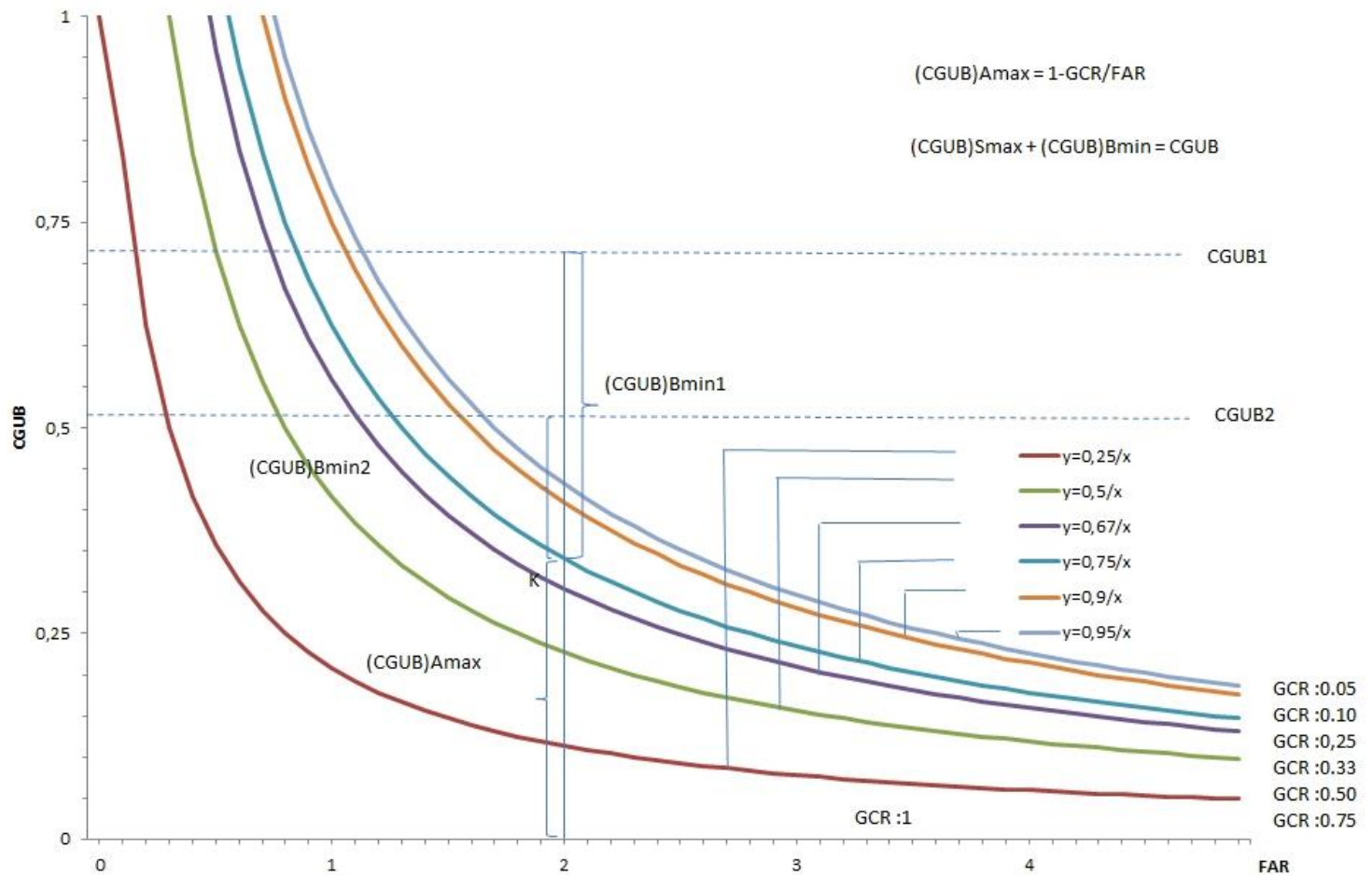
$$TPAB_{Ibmax} = CGUB_{Ibmax} \times TFA \quad (7).$$

- **CGUB and plant types:**

Total planted area falling on the unit floor area of the building changes in line with the effectiveness of the plant types to be used. Presently there is not a finalized study on the amount of plants specified according to green usage purposes of all plant types in buildings. Besides, purpose of green usage on buildings is generalized according to the characteristics of the region types by three main factors, which are the climate created by conditions varying according to regions, environmental pollution and density of transportation area. Green areas fit for green usage purposes whose degree of importance changes for each building and the change of these areas according to the type of plants creates an unpractical diversity for setting the  $CGUB$  value and also damage the unit impact for its contribution to the city. So, with respect to its contribution to the city, “ability of plants to create oxygen” variable is chosen and a mixed green area determined by the mixture of trees, bushes, grass and ivy is accepted.

- **CGUB and user preferences:**

Variables based on the social and psychological characteristics of the users specified to reflect the user preferences for the green usage on building may be personal and uncontrollable. Therefore, they must rather be specially specified for each building to be designed. The  $CGUB$  value that is determined like this and changes according to the building may be higher or lower than the  $CGUB$  value determined according to region types. Therefore,  $CGUB$  values determined with regards to the contribution of the green area to the city according to region types are accepted as minimum values also keeping in view the user preference (Figure 1).



**Figure 1.** Relationship between the parts of CGUB values on the building and the site and GCR and FAR.

#### 4. Determining Values (Standards) That Will Be Acquired By the Main Control Variable

In this section some approaches are set forward with regards to the benefits of green areas to determine the values of CGUB which is set as the main control variable of the green usage on buildings. The change in the values determined by these approaches due to region types and GCR and FAR variables are shown by curves.

##### 4.1. The Approach to Improve the Natural Atmospheric Conditions

It can be said that the most important sub goal for the improvement of the natural environment conditions is providing oxygen. Therefore the following approaches may be used for calculating the green area that is based on the oxygen requirement of a person:

##### - Setting standards in terms of the annual oxygen requirement of people

Plants used on buildings are accepted as mixed plant types. In that case it is accepted that the oxygen amount produced by a total of 150-m<sup>2</sup> leaf surface (15-20 forest trees) compensates the annual need of a person (15, p.145) and when this need is converted to the surface of a plant that produces oxygen 30-40 m<sup>2</sup> green area is necessary to fulfill the oxygen need of a person (16, p.74). According to these assumptions 35 m<sup>2</sup> of green area per person is required and based on this a calculation is made for the part of this amount that cannot be made and an approximate average

value is obtained by dividing the uncovered and green area per person in the city is divided by the total floor area per person:

$$\text{CGUB} = \frac{1}{2} \quad (8)$$

As the present or planned green area per person in the city approaches 35 m<sup>2</sup>, the CGUB value will decrease; when 35 m<sup>2</sup>/person is reached CGUB will be 0. However, the value of CGUB from the point of view of other goals in all cases will be bigger than 0.

#### **- Setting a standard with an ecological approach**

This approach is based on the understanding that gives the green area destroyed by the urban fabric back to nature by creating it on buildings. All built-up areas except the green areas destroy green areas as large as the area they cover. In this respect, comparing the total of these areas to the total floor areas of all buildings may yield the CGUB standard value as an ecological approach. Thus, for a dwelling unit with a population between 20.000-50.000, the following value is achieved by the calculations made according to different population and FAR values in terms of average total housing and equipment areas:

$$\text{CGUB} = 0,50 \quad (9)$$

This value is the same with the value (8) calculated by the approach of oxygen need.

For the approach based on oxygen need, CGUB standard may change according to regions because the present green areas of the city are held within the total green area required by the oxygen need of the city because green area capacity of each region is different and affects the specification of the region types. CGUB standard value determined by the ecological approach is independent of all the regions. That is, it has the same value. Thus, this value is appropriate for most negative zone. (CGUB = 1/2) For region types where lower CGUB standard values are determined according to the oxygen requirement approach, the fixed value of CGUB = 0,50 of the ecological approach will not change. Therefore, the ecologically necessary green area amounts for these regions will be insufficient. However, for regions with few negative conditions the absolute necessity of gaining back the exact amount of green area lost to built-up areas is open to discussion.

#### **4.2. Approach of Providing Social and Psychological Satisfaction**

Among the goals of using plants on buildings, the sub goals to provide social and psychological satisfaction are specified as image control, perception of space and provision of security. The goal of image control has the following sub goals: provision of visual appeal, provision of privacy, eliminating unwanted images, emphasizing scenery, and controlling obscurity (2, p.116). All these goals are related to all architectural design decisions that are determining open-air recreating sites, arrangement of social activity areas and children's play areas and creating open-air sports areas. However, the green usage requirement that is related to these design decisions that can be summarized as open area arrangement related to building and aimed at providing green usage goals mentioned above will vary according to the function of the building. Besides, variables related to this matter are difficult to measure and have personal relativity. Thus, a standard specifying the amount of planted areas on the building necessary to provide social and psychological satisfaction can be determined mainly by the evaluation of the changes of the amount of open areas on the building and the site.

The change in the amounts of open areas on the building is analyzed by a statistical analysis method. 18 buildings among present practice and design samples were chosen (1, p.209) and open areas per unit floor area were calculated. The dispersion of these values over the sampling group was analyzed according to the "Frequency Analysis of Small Samples" method (17, pp.76-78) and the



arithmetic mean of the cumulative frequency dispersion of the open area ratios per unit floor area of buildings was calculated as  $X = 0,65$  (2, pp.210-211). This value represents all open area ratios.

Net green area of building  $\leq$  Open area of building

This is a high probability. As a consequence of evaluations made in this respect, it is clear that it is above the value of  $CGUB = \frac{1}{2}$  that is suitable for improvement of the natural environment conditions. However, it can be close to this value. Therefore, the value  $CGUB = \frac{1}{2}$  can be accepted for all approaches.

With this sampling the suitability of the  $CGUB = \frac{1}{2}$  value in terms of the requirement of open areas in buildings is controlled. However, during this control the functions of these buildings are not distinguished. Only an evaluation aimed at widely improving the inconvenient environmental conditions is made. However in regions where environmental conditions are more positive, there will be less need for improvement. Thus  $CGUB = \frac{1}{2}$  value will be smaller. Therefore,  $CGUB = \frac{1}{2}$  value specified as the biggest value will gradually become smaller with respect to regions with better environmental conditions. However it will not fall below a certain value in relation to the goal of achieving social and psychological satisfaction.

### **4.3. Evaluation of the Cgub Standard Value According To Region Types and Gcr and Far**

#### **Main Variables**

The value of the  $CGUB$  control variable will change depending on region types and  $GCR$ ,  $FAR$  main variables. These varying values will be accepted as standard values of green usage on building.

#### **4.3.1. $CGUB$ standard value and region types**

As seen in Table 3, the most inconvenient region with fidelity of 1 is the  $F_{1A} F_{2B} F_{3A}$  region. This region type is appropriate for dense city centers and is accepted consistent with the  $CGUB = \frac{1}{2}$  value that is determined independently from the building function. The most inconvenient region is the  $F_{1B} F_{2B} F_{3B}$  region. This type of region is fit for housing areas and  $CGUB$  must be  $< \frac{1}{2}$ . Following analysis have been made to clarify the value of  $CGUB$  below  $\frac{1}{2}$  belonging to the  $F_{1B} F_{2B} F_{3B}$  region:

- 1)  $CGUB = 0.30$  is obtained as follows: Using the green area requirement approach to improve the natural environment conditions, present green area per person in housing areas are accepted as  $25 \text{ m}^2$ . The shortfall of  $15 \text{ m}^2/\text{person}$  ( $35-20$ ) green area with respect to  $35 \text{ m}^2$  that is a requirement per person in the city is proportioned to the total floor area per person ( $50\text{m}^2/\text{person}$ ) in the city and  $CGUB = 0.30$  is obtained.
- 2) 107 terraced house type housing project (2, p. 215 Table 4.3) chosen from the housing areas in accordance with this type of region were analyzed. In this study open area ratios per unit floor area was calculated and evaluated statistically by the "Frequency Range of the Large Samples" method. In the cumulative frequency histogram related to the dispersion of the open area ratios per housing floor area average  $X$  value is calculated as  $0,35$ . This value was examined according to the possible green area amounts of the open area amounts in houses and  $0,20$  that was the highest frequency value (mod) was chosen and  $CGUB = 0,20$  was accepted.
- 3) Several samples and evaluations chosen among the literature were evaluated taking into account the climatic characteristic of the open area requirement for houses. These samples and evaluations are explained below:
  - In Basingstoke, in the Oakridge I quarter built as town houses (18, pp.140-141)  $78\text{m}^2$  private garden for each house was planned.

- In Bombay while the ratio for the in-house actions to take place in the open air is 75%, this ratio becomes 50% during the period outside the monsoon rains. Therefore in Bombay open spaces are required as much as closed spaces (19), (2, p.183).
- The “Lim House” in Kuala Lumpur designed by Architect Jimmy Lim for himself under hot and rainy conditions, is a sample for the “Eco house” that was built without cutting any trees. The ratio of the open spaces of this house to its closed spaces ( $531\text{m}^2/884\text{m}^2$ ) is about 60% (20, pp. 316-317).
- Professor Nilüfer Agat, in her paper titled “Konutta Açık Mekan Gereksinmesi” (Requirement of Open Spaces in the House), states that the period of using open spaces vary according to climatic regions. It is 4-5 months per year in mild climate regions and goes up to 9-10 months in warm climate regions (21,pp.128-129).
- According to Professor Besalet Pamay a small garden area for a house is  $5\text{ m}^2/\text{person}$  (22, p.29).
- Professor Ayten Çetiner mentions that in a warm climate  $100\text{-}110\text{m}^2$  atrium type house a courtyard of  $45\text{-}50\text{ m}^2$  is necessary (23, p.126).

When we analyze the above mentioned open space requirements, in the  $F_{1B} F_{2B} F_{3B}$  region, for a warm dry climate the ratio of the open areas in houses to the closed areas is accepted as 0,50. However as a result of evaluations made taking into account that the possibility of green areas  $\leq$  open areas is high,  $CGUB = 0,40$  is selected.

For the region type  $F_{1B} F_{2B} F_{3B}$  the average of the three different  $CGUB$  values obtained and  $CGUB$  is accepted as 0,30.  $CGUB = (0,20+0,30+0,40)/3 = 0,30$

As seen in Table 3, for the most inconvenient region that is  $F_{1A} F_{2B} F_{3A}$  (fidelity=1)  $CGUB = 0,50$ ; for the region  $F_{1B} F_{2B} F_{3B}$  (fidelity = 3)  $CGUB = 0,30$  is determined. Following the interpolation between these regional values,  $CGUB = 0,40$  and  $CGUB = 0,20$  is accepted for the interim regions  $F_{1B} F_{2A} F_{3B}$  (most convenient region) and  $F_{1A} F_{2A} F_{3A}$ .  $CGUB$  values determined for all regional types are shown in Table 4.

**Table 4 :**  $CGUB$  values according to the regions

Regions	Degree of compliance	$CGUB$
$F_{1B}F_{2A}F_{3B}$	4	0,20
$F_{1B}F_{2B}F_{3B}$	3	0,30
$F_{1A}F_{2A}F_{3A}$	2	0,40
$F_{1A}F_{2B}F_{3A}$	1	0,50

#### 4.3.2. $CGUB$ standard value and variables of GCR and FAR

It was explained in section 3.3 that  $CGUB$  that is the “Coefficient of Green Usage of Building” is related to region types, whereas its part on site and building is related to GCR and FAR variables.

The formulas (2), (3), (4) and (5) belonging to  $CGUB_{Smax}$ ,  $CGUB_{Bmin}$ ,  $TPAB_{Smin}$  and  $TPAB_{Bmin}$  values are valid only in limiting states when theoretically the area of the building outside the area where the building is located on the site can be totally a green area. However in all cases there is a certain area loss that is non-green and is allocated for some functions related to the building (transport, sports, etc.). Therefore this loss must be handled as the equipment ratio, and it is necessary to determine limit values for  $CGUB_{Bmin}$  and  $CGUB_{Smin}$  in application and explain them as lowest values possible. Thus if we take the equipment ratio on the site as  $y$ , it is necessary to make  $y$  corrections in the formulas (2), (3), (4) and (5). For this below ratios given for green elements and non-green elements of the plantal arrangements are taken into account:

- For the large landscaping planning areas 85% is plantal area, 15% is roads and structural elements.

- For smaller spaces this changes according to conditions but still in a garden for example, 65% is plantal area, 35% is roads and structural elements (22, p.74).

According to these ratios, the y ratio that is the area outside the green usage area inside the area outside the building footprint area can be chosen as 20%. Thus in the formulas (2) and (3) the y ratio and the lowest value possible are readjusted and the following formulas are obtained:

$$\mathbf{CGUB_{Smin} + CGUB_{Bmin} = CGUB} \quad (10)$$

$$\mathbf{CGUB_{Smin} = 0.80 (1-GCR) / FAR} \quad (11)$$

$$\mathbf{CGUB_{Bmin} = (CGUB \times FAR + 0.80 (GCR-1))/FAR} \quad (12)$$

Total of these values is CGUB.

Using the above formulas (11) and (12) limit values for  $CGUB_{Smin}$  and  $CGUB_{Bmin}$  changing according to different FAR and GCRs are calculated for all region types with different CGUB values shown in Table 4. The variations of these values according to different GCR and FAR for each region type are shown in Figs. 2, 3, 4 and 5. In addition, these values are calculated for each region type specified and different GCR and FAR values chosen. They are shown in tables (2. pp. 233-2) (Figure 2, 3,4,5).

For the  $CGUB_{Ob}$  and  $CGUB_{Ib}$  parts, as seen in Fig. 1, as the  $CGUB_{Bmin}$  values reach high values when FAR and GCR have high values it can be determined according to the following assumptions:

- 1) When high values of FAR ( $FAR > 3$ ) is in question:

For low values of  $CGUB_{Bmin}$  ( $CGUB_{Bmin} < 0.25$ ):

$$CGUB_{Ob} > \frac{1}{2} CGUB_{Bmin}$$

$$CGUB_{Ib} < \frac{1}{2} CGUB_{Bmin}$$

For high values of  $CGUB_{Bmin}$  ( $CGUB_{Bmin} > 0.25$ ):

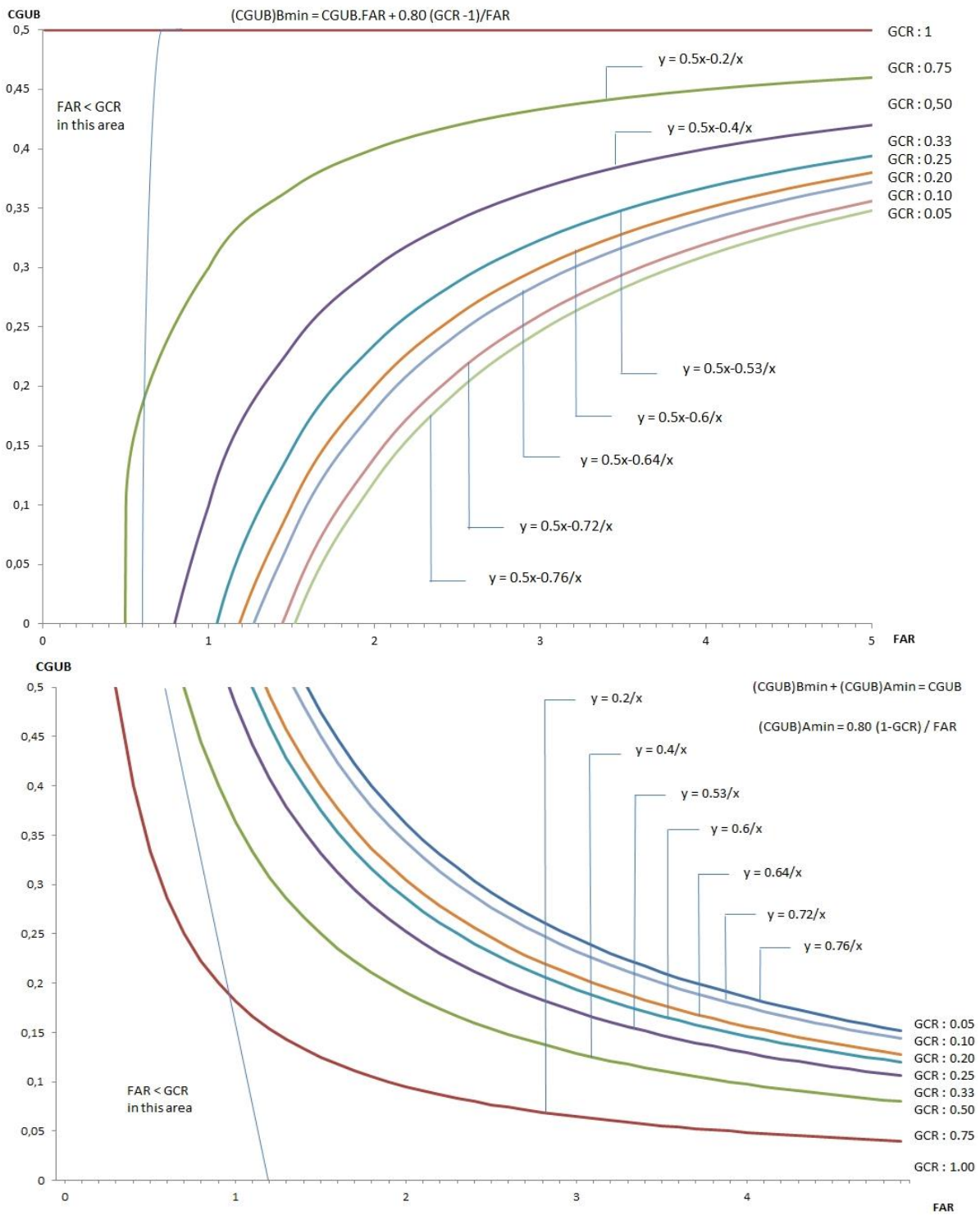
$$CGUB_{Ob} < \frac{1}{2} CGUB_{Bmin}$$

$$CGUB_{Ib} > \frac{1}{2} CGUB_{Bmin}$$

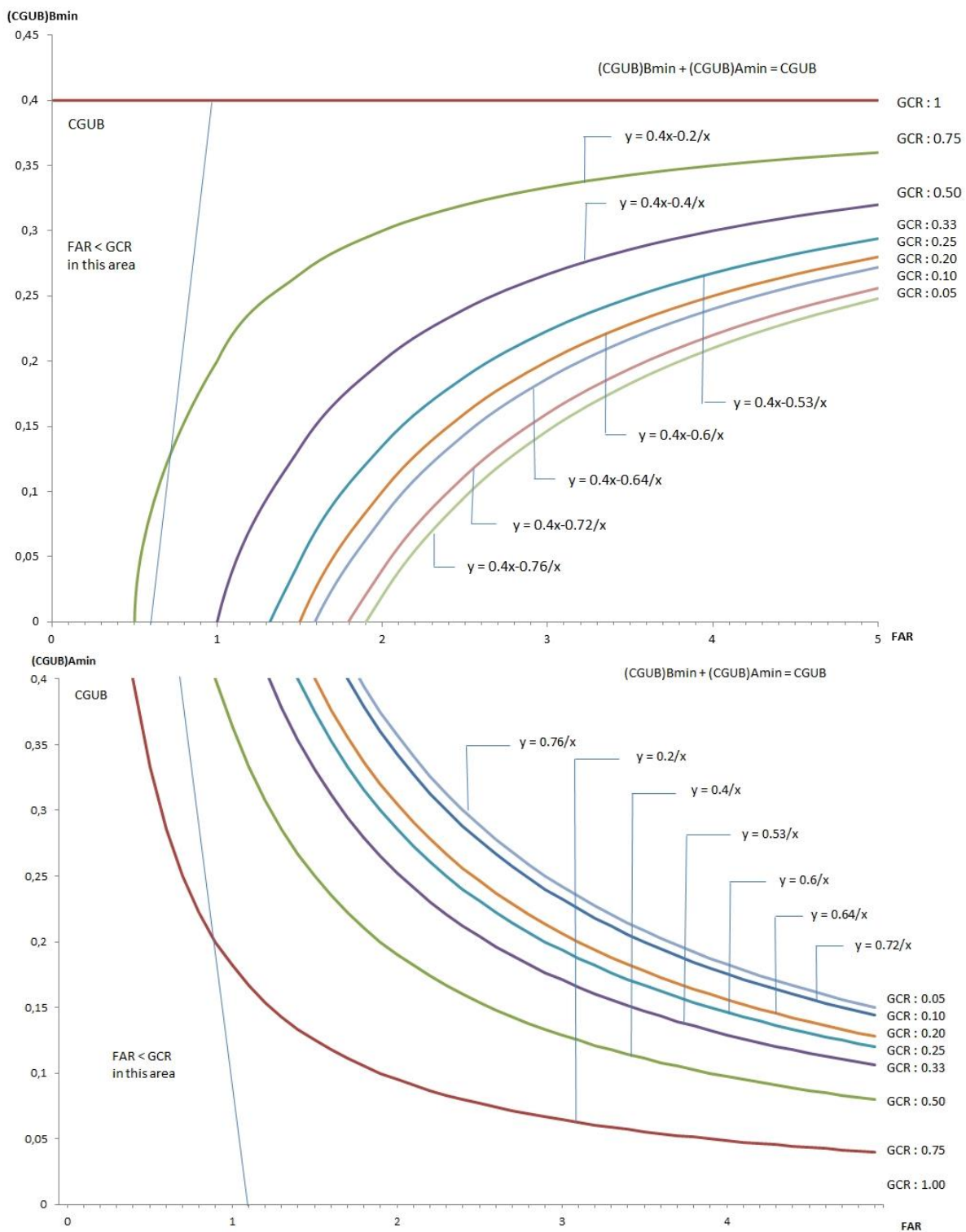
- 2) When FAR have low values ( $FAR < 3$ ):

$$CGUB_{Ob} > \frac{1}{2} CGUB_{Bmin}$$

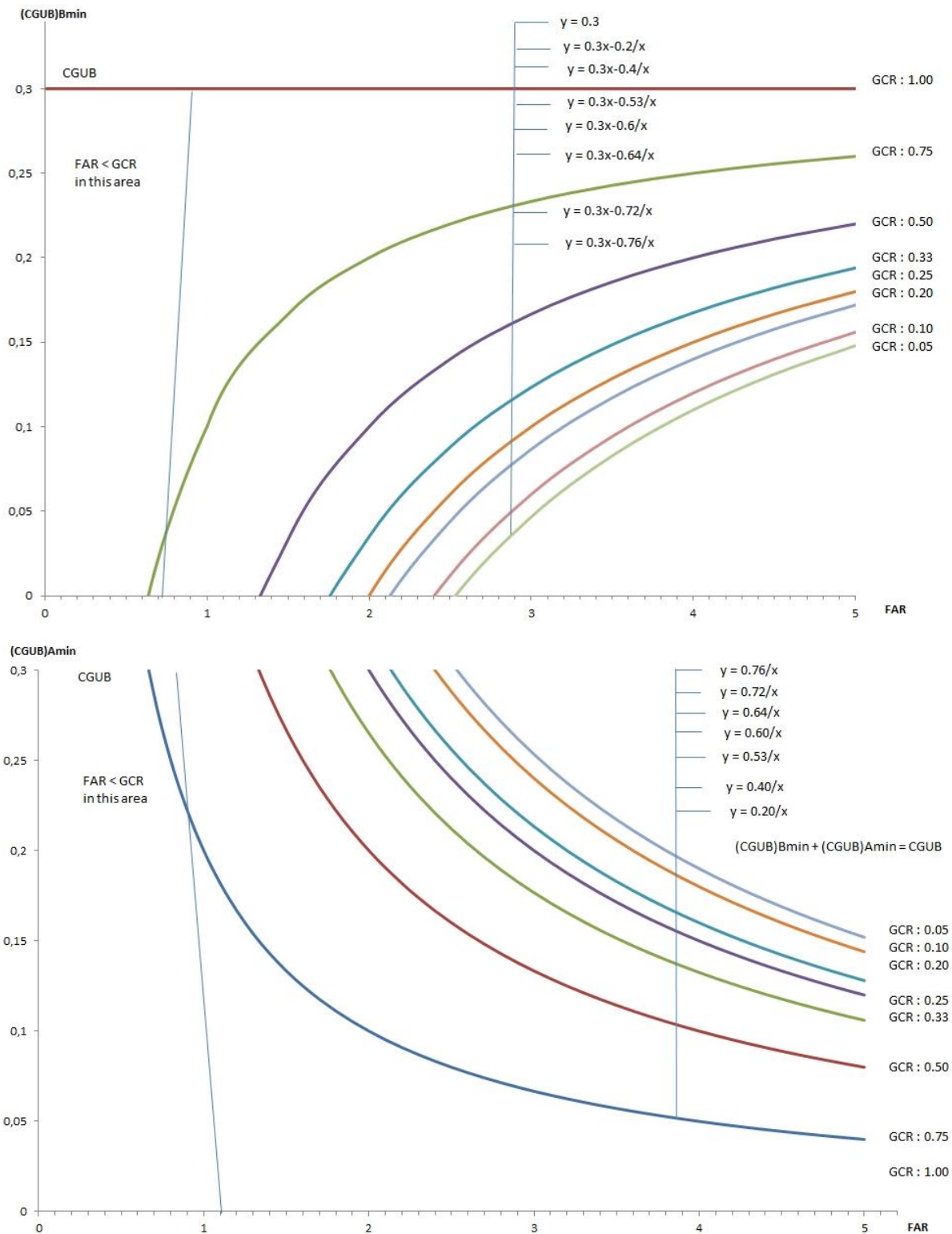
$$CGUB_{Ib} < \frac{1}{2} CGUB_{Bmin}$$



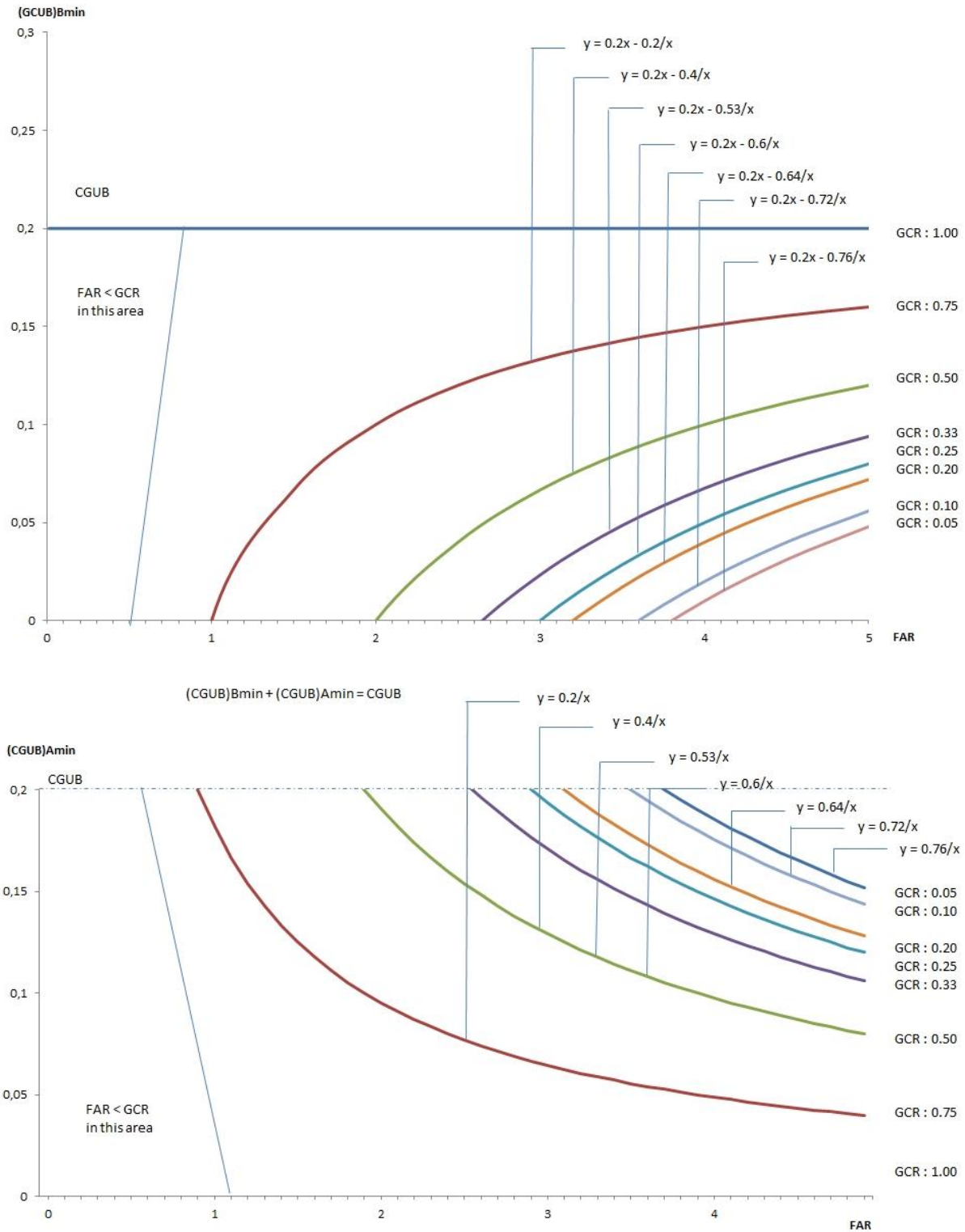
**Figure 2.** Change of CGUB and CGUB Bmin values according to GCR and FAR for the region  $F_1AF_2AF_3A$ .



**Figure 3:** Change of CGUB and CGUB Bmin values according to GCR and FAR for the region  $F_1AF_2AF_3A$ .



**Figure 4.** Change of CGUB Smin and CGUB A min. values according to GCR and FAR for the region  $F_1BF_2BF_3B$ .



**Figure 5:** Change of CGUB and CGUB B min. values according to GCR and FAR for the region  $F_1BF_2A F_3B$ .

## 5. Findings and Evaluation

When Figs. 2, 3, 4 and 5 which are the results of the study are analyzed, following data is achieved:

- For each area there is a different FAR value that initiates critical conditions:  
FAR > 1,5 for areas with CGUB = 0,50  
FAR > 1,9 for areas with CGUB = 0,40  
FAR > 2,4 for areas with CGUB = 0,30  
FAR > 3,6 for areas with CGUB = 0,20

For the above conditions, it is clear that there is a certain  $CGUB_{Bmin}$  value for each value of GCR. This means that whatever the GCR value is green usage area on the natural ground is insufficient and it is clear that green usage on the building is necessary. Thus for the values of FAR below these limit values for certain GCR values it is possible to have  $CGUB_{Bmin} = 0$ ,  $CGUB_{Smin} = CGUB$ . In this case green usage systems suitable for the plant arrangement style on the ground and in the form of gardens around the building will be sufficient to achieve the CGUB value.

- Similarly, it is seen that green usage on the building when compared to the green usage on the natural ground of the site is bigger, that is for regions with CGUB = 0,50 FAR > 3
- for regions with CGUB = 0,40 FAR > 4
- for regions with CGUB = 0,30 FAR > 5
- for regions with CGUB = 0,20 FAR > 10
- It is clear that  $TPAB_{Bmin} > TPAB_{Smax}$ .  
In this case for each value of GCR there is a need for a green area both on the building site and the building itself. Therefore, in this case all types of green usage systems can be used for the building.
- As the GCR values increase,  $CGUB_S$  decreases and consequently green area on the natural ground,  $TPAB_S$  also decreases. When GCR = 1  $CGUB_{Smin} = 0$ . This means  $TPAB_S = 0$  and  $CGUB = CGUB_{Bmin}$ ,  $TPAB = TPAB_{Bmin}$ . In this case since there is no green area on the natural ground, only the green areas on the building itself, and consequently the green usage systems only on the building are valid.
- When determining the  $CGUB_{Ib}$  part inside the building and the  $CGUB_{Ob}$  part outside the building of the  $CGUB_{Bmin}$  value used to determine the amounts of the total planted area on building and site it is clear that high FARs and high  $CGUB_{Bmin}$  values are important. It is as follows:
- For high FARs, TFA increases, and planted area inside the building ( $TPAB_{Ib}$ ) increases when compared to buildings with lower FARs. When compared to a building with the same value for  $CGUB_{Bmin}$  value with a lower FAR, its  $TPAB$  and  $TPAB_{Ob}$  will be more. On the other hand the horizontal exterior surfaces of the building do not increase at the same rate. For this reason, it is suggested that for high  $CGUB_{Bmin}$  values at high FARs, the  $CGUB_{Ob}$  parts should be kept lower than the  $CGUB_{Ib}$  parts. Based on the related diagrams for high FAR values 3 and larger than 3,  $CGUB_{Bmin}$  values higher than half of the highest CGUB value is accepted as high;  $CGUB_{Bmin}$  values lower than half are accepted as low. According to these assumptions it is also suggested that  $CGUB_{Ob}$  and  $CGUB_{Ib}$  parts can be chosen as higher as or lower than half of the  $CGUB_{Bmin}$  value.



## 6. Discussion

In this paper when introducing the subject the term “Total Planted Area on Building and Site” is used. There is a reason for this. Plants are used not only on and inside the buildings but also on its site as well. In other words, the building and its lot as a whole is understood when the issue is planting.

As “plant types” and “user preferences” that are among the main variables of green usage on building and site will present many changes with small differences according to many different plants and users, to avoid too many issues of relativity when specifying the standard for the CGUB main control variable, a mixture of trees, bushes, grass and ivy is generalized. As the standards of the CGUB main control variable specified here is presented as minimum values, it is accepted that user preferences below this will not be evaluated and the use of values above this will not cause a problem.

The  $CGUB_{Ib}$  and  $CGUB_{Ob}$  that will be used in determining the green usage areas inside the building are below and above certain values and are approximate and are suggestions. There is not a precise generalization because these ratios may change for each building mostly according to the function of the building, user preferences, etc. The definition of these proportional values without changing  $CGUB_{Bmin}$  and especially according to building function groups may be another research subject.

The region types that are among the most prominent main variables of green usage on the building and site are defined in four different numbers according to three factors obtained by the factor analysis method. If the regional characteristics of the region classifications made according to these factors are worked through, these region types defined in this paper may be broken down to sub regions. Therefore the CGUB values defined for each region may also be broken down to sub values as well.

The proportional values obtained in this paper and belonging to CGUB and its parts form the housing conditions that define the green usage areas on the building and site. Therefore, they must be supported by the development plan law and regulations and must be included in the development plans together with other housing conditions. It is proposed that the green usage areas on the building and site calculated by CGUB values except the green areas inside the building should be excluded from the TFA in practice. As we know, green areas on the building site determined by the  $CGUB_s$  proportional values are automatically excluded from the TFA. Therefore practices of green usage on the building and site do not limit the use of GCR and FAR values presented in zoning status. Additionally, due to the importance of green usage on the natural ground of the site, new adjustments may be made at the development plan law and regulations to ensure that functions such as parking, storage, etc. that do not primarily require daylight to planned below ground level and be excluded from the TFA.

Due to the importance of this issue from the point of view of mental health, for practices above the necessary minimum values of the CGUB, incentives like tax reductions can be implemented by local administrations.

Green areas on the building and site are a whole with the building and its site and they have many benefits reflected on the city. Thus to ensure the sustainability of the performance of these areas, it is very important to maintain and protect them. This issue can be handled separately within the framework of zoning law with regards to executive sanctions by the local authorities.

## 7. Conclusion

A balanced distribution of the green areas of the urban fabric within the city and to reach the necessary amount according to the developing living conditions is becoming more difficult due to economical, geographic, historical, etc. reasons. The approach of “green usage on building and site” can provide new and supportive solutions.

The approach of green usage on building and site provides versatile benefits to both the buildings and the cities. It is important that plants while being used on buildings in accordance to the expected goals also contribute to overcoming the lack of green areas in cities and thus play an important role in the improvement of the landscape, ecology and climate of the city. In this approach there are nine different “green usage system”s classified according to the combinations created by the planted areas on the building and site and the building itself. Green usage on building and site, depending on the relationship between the goals to be achieved and the factors of plant usage in architecture; vary according to 4 different main variables: region types, GCR-FAR, plant types and user preferences. Region types among these main variables are classified with the method of factor analysis used depending on environmental relations variables and four different region types are selected. To be able to standardize the amounts of planted area on building and site, “Coefficient of Green Usage of Building” CGUB that is the ratio of necessary total green area on building and site to the total floor area is used as the main control variable. CGUB values valid for the four region types are set as  $CGUB = 0,50$ ,  $CGUB = 0,40$ ,  $CGUB = 0,30$  and  $CGUB = 0,20$  using the oxygen requirement, ecological and socio-psychology oriented open space requirement approaches. CGUB Main Control Variable is evaluated according to GCR and FAR which are main variables of green usage on building and site and  $CGUB_{Smax}$  as the minimum part of CGUB on the site and  $CGUB_{Bmin}$  as the minimum part of CGUB on the building are defined. According to these definitions following formulas are presented:  $CGUB_{Smin} = 0,80 \times (1-GCR) / FAR$  and  $CGUB_{Bmin} = CGUB \times FAR + 0,80 (GCR-1) / FAR$ . According to these formulas, the changes according to GCR and FAR main variables in  $CGUB_{Smin}$  and  $CGUB_{Bmin}$  that are calculated separately for four region types are shown with graphs. It is indicated that multiplying CGUB and its parts with the total floor areas TFA of the buildings will yield respectively Total Planted Area on Building and Site (TPAB), Total Planted Area on Around of Building Site  $TPAB_S$ , Total Building Area on Building Surfaces  $TPAB_B$  amounts. In addition, it is shown that  $TPAB_{Ob}$  and  $TPAB_{Ib}$  areas can be calculated by the parts of  $(CGUB)_B$  depending on GCR and FAR. These parts are  $(CGUB)_{Ob}$  that sets the size of the total planted area on the exterior surfaces of the building and  $(CGUB)_{Ib}$  that sets the total planted area inside the building. All abbreviations used in this paper are shown in Table 5.

**Table 5:** Explanation of the symbols

Symbol	Stands for the symbol
TPAB	Total Planted Area on Building and Site
TPAB <sub>S</sub>	Total Planted Area on Around of Building Site
TPAB <sub>B</sub>	Total Building Area on Building Surfaces
TPAB <sub>Ob</sub>	Total Planted Area on the Exterior Surfaces of Building
TPAB <sub>Ib</sub>	Total Planted Area Inside of the Building
CGUB	Coefficient of Green Usage of Building
CGUB <sub>S</sub>	Coefficient of Green Usage on Building Site
CGUB <sub>B</sub>	Coefficient of Green Usage on Building
CGUB <sub>Ob</sub>	Coefficient of Green Usage on Out Surfaces of Building
CGUB <sub>Ib</sub>	Coefficient of Green Usage Inside of Building
TFA	Total Floor Area
GCR	Ground Coverage Ratio
FAR	Floor Area Ratio ( Floor Space Index)
BFA	Building Footprint Area
SA	Site Area (Plot Area)

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# *Experience on teaching Chinese as a foreign language: Narratives of a Teacher*

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## **Introduction**

It is well known that Chinese language has already become a dominant language nowadays. For example, the UK government has already modified its foreign language education. Third-year students will begin to learn Chinese as a compulsory subject in 2014 (Fazhi Evening News, 2012). The Ministry of Education in Taiwan has indicated that over 30 million foreign learners who are from different countries have come to Taiwan to learn the Chinese language (cited in Hsiao & Chang & Chen & Wu & Lin, 2013). However, Chinese language teaching and learning has its own feature. Teachers of Chinese as a foreign language, both in Chinese context and non-Chinese context, have been focusing on teaching pronunciations, grammar and students' academic achievement. CFL teachers often pay attention to their textbook, not students' real skills like listening and speaking (Wang & Byram, 2011).

All these features bring many challenges and difficulties to students of learning Chinese as a foreign language (Hsiao & Chang & Chen & Wu & Lin, 2013). Although Many scholars have already paid attention to conceptions of intercultural pedagogy and intercultural competence in teaching and learning Chinese as a foreign language (Moloney, 2013), we still need to know more factors which will influence the effect of teaching Chinese as a foreign language. In foreign education, teachers and students look for ways to understand the other at the other side of the border. At that time, teachers and students can benefit from different experiences and also need to try to make up the gap and overcome the culture barriers (Getty, 2011 & Jones & Grenfell, 2012).

The present article aims to show a deeper understanding of CFL teacher's perception on teaching Chinese to foreigners in non-Chinese context, namely Thai context and UK context, relying on the differences of learning culture, school values and teaching skills between Chinese context and non-Chinese context.

In this paper, using the narratives of the native Chinese teacher who taught Chinese in Chinese context and non-Chinese context, we planned to understand the differences of learning culture between these two different contexts.

The Thai school where the teacher worked for is a public school including primary and secondary. The school is located in Bangkok, Thailand. The other non-Chinese context school is a British school which is an international school in Beijing. The school is as same as the local British school. It adopts the British school curriculum, the local British teachers and all the school hardware and software construction. The British school has two campus, Early Year campus and Primary campus. The school is located in Chaoyang District, Beijing, China.

## **Research Method**

The aim of this paper was to study one teacher's experiences in teaching Chinese to foreigners and attempt to learn from the participant in this educational setting. The study was on the qualitative aspect of the personal experience. Narrative inquiry-based approach can help to explore an educational research problem by understanding the experiences of an individual. As a research methodology, this approach requires a phenomenological viewpoint where an experience is studied as a phenomenon (Clandinin, Pushor, & Orr, 2007, cited in Attaran, Siraj & Alias, 2012). It means that it not only help us get the meaning from these experiences (Wang, 2011), but also help pre-service and in-service teachers improve their professional development (Conle, 2000, cited in Kim, 2010).

Narrative inquiry focuses on people, places, and things, all of which are in intellectual and moral relationship (Clandinin and Connelly 1995, 2000, cited in Craig, Zou & Poimbeauf, 2013). In narrative inquiry research method, individuals interact with diverse people, places or things and stories people live in and by. Narrative is not only a research method, but also the form of our research result (Connelly and Clandinin 1990, cited in Craig, Zou & Poimbeauf, 2013). Conle (2000,

in Craig, Zou & Poimbeauf, 2013) emphasizes that stories “are not so much a means to an end as they are part of the ends achieved” through rigorous inquiry.

The narrative inquiry-based approach, as one of the qualitative research, has some characteristics like its emphasis on natural setting and interest in conception and understanding and so on. The only difference between the narrative inquiry-based approach and other qualitative research is that narrative researches always publish longer stories from individuals’ narratives (Chase, 2011, cited in Attaran, Siraj & Alias, 2012).

Face to face interviews and informal conversations were conducted with the teacher to collect the data. The interviews were about one hour each time. It was totally about six hours. After collecting all the data, the data was transcribed and coded manually. The original Chinese quotes were translated and transcribed into English and reviewed all the quotes to make sure it is correct. Then it was segmented into themes which showed depth-understanding with the participant’s experiences. In order to the accuracy of the research, the final report was checked by the teacher.

## **Results**

### **New learning culture**

Nowadays culture has been considered by education scholars as one of the essential factors of educational system and curriculum in recent decades. According to Bruner, culture cannot be separated from education. Joseph et al. believe that culture has a deeply effect on curriculum. Bruner and other scholars address that culture could help curriculum development, implementation and assessment become productive (Bruner, 2007, Joseph, Bravmann, Windschitl, Mikel & Green, 2011, cited in Attaran, Siraj & Alias, 2012). The relationship of culture and language education has been concerning in the modern age. It has already been an importance part of the study of language (Wierzbicka, 1992, Byram, 1991, Harrison, 1990, Robinson, 1988 & Valdes, 1986, cited in Atay, 2009).

Moreover, Bruner advocates the idea that educating is a complicated task instead of a technical task. It entails adaptation to the receiver’s needs. He believes that the circumstances for students’ learning and education would improve if we know their contexts of learning (Bruner, 1997, cited in Attaran, Siraj & Alias, 2012). When teachers work in different contexts, the intercultural awareness becomes very crucial. If teachers and learners have the intercultural awareness, they would benefit a lot from this awareness (Dasli, 2011). For example, the role of intercultural awareness in language education could let learners use the local ways to communicate with others. They are just like the native speakers. If teachers and learners have the intercultural awareness in their language teaching and learning, they would construct a harmony relationship between each other as they could use this chance to know and accept another language and its culture (Lawrence, 2013) .

Meanwhile, culture and education is interacted. Bruner believes that acculturation is one of the key functions of education (Bruner, 1997, cited in Attaran, Siraj & Alias, 2012). As we mentioned above, culture should be associated with language education (Byram, 2012). So Modern language education should give learners valuable access to try to feel and understand the culture of a certain country (Dasli, 2011). The story of the teacher narratives could help us find this reality.

When listening to the teacher’s stories, the teacher finds that it is quite different teaching Chinese as a foreign language in Chinese context and non-Chinese context. What the teacher impressed most was the different learning culture.

At the beginning, the teacher was very confident as she has many teaching experiences in Chinese context. She applied several familiar and regular teaching methods and teaching materials to



teach Chinese as a foreign language. Students' academic achievements, however, could not live up to her expectations. After working in a non-Chinese context several weeks, she realized she ignored the unique learning culture in non-Chinese context, including learning environment, strict discipline and teaching methods. As the teacher says:

“It is not enough if you only know yourself. You must understand your students. You know nothing about your students. How could you teach them well? If you do not know the student's characters, their background and their learning styles and you only use your way to teach them, you absolutely cannot teach them well.”

In Chinese context, the students' learning environment is very serious. It is generally known that examination-oriented educational system is used in China. As a result, academic achievement is the top important thing in this context. Teachers try to use every minute to teach, teach and teach (Neumann, 2013). Existing research shows that teachers are regarded as the source of authoritative knowledge. In order to get higher grades, Chinese students at primary and secondary school are used to repeated practice and memorization (Salili, 2001, cited in Webster & Yang, 2012). The common model is that the teacher ask questions and students answer. Teaching methods of Chinese teachers were usually stereotyped. Students focus on memorize knowledge. They only accepted information and knowledge for their teachers (Kormos & Csizér & Iwaniec, 2013). Teacher is the core of process of teaching and learning. They provide students with information. What the students only need to do is to take these information and try their best to memorize it (Neumann, 2013). It is kind of teacher-centered learning in China. Most Chinese students seldom express their real opinions. They just listen to what the teacher says. Even when they have different opinions, they still do not have the habit to raise a query which could be thought as an offensive behavior (Getty, 2011).

In Thai context, their educational system was deeply influenced by the western educational system. In Thai and UK context, teachers prefer to teach communicative oral work first instead on rote knowledge. They encourage interactive activities. Interaction between students is ideal way to construct knowledge (Kormos & Csizér & Iwaniec, 2013). Teachers usually give more chances to students which could help them construct knowledge by themselves during this kind of learning process. Student-centered learning is usually used in western context (Neumann, 2013). In this learning environment, teachers listen most of the time. Students can express what they are thinking and their ideas. Teacher only scaffolds their students' learning. As a result, they use student-centered education both in Thai and UK context. Neumann (2013) states that student-centered learning into three contours: learning contexts that center in students, and that center on students, and that center with students. The key element is students themselves. As the teacher said:

*“There are too many strict rules in Chinese classroom. Students are asked to sit nicely and listen to the teacher carefully. The teacher likes the “KING” in the classroom. However, no matter when I teach Chinese in Thai context or UK context, they use western educational model. All the teachers, administrators and principle all try to create a very relaxing and cheerful learning environment for their students. They do not strict teaching methods. They prefer to let their students construct knowledge by themselves. Teacher only scaffold them, not forcing them to do anything.*

Culture difference is a crucial point we need to mention when teaching Chinese as a foreign language in a non-Chinese context. Researchers and language teachers have become increasingly aware that the different culture should be considered when a language is taught or learnt (Wang & Byram, 2011). Every country has its own history and unique cultural atmosphere. As the teacher said,

*“After working and living here for a period of time, you will know it really quite different between these two countries. Nowadays many people mentioned put the culture into your teaching. However, we are in a real foreign language. Should we put ourselves into their culture and their context first?”*

Faced with an unfamiliar learning culture, culture shock is followed for both teachers and students. Culture shock may occur when people experience two crossing national boundaries (Getty, 2011). Teachers and students sometimes feel nervous and fatigued when they met culture shock (Gu & Maley, 2008). Lewthwaite (1986) argues that the experience of crossing cultural borders is a learning process in which there are many obstacles to overcome. Culture differences and culture shock also bring teachers and students a lot of inconvenient time. Language teachers in a foreign environment at least need to understand some educational, moral and political matters of the environment (Getty, 2011). Different learning culture convinces the teacher to rethink about her teaching method and teaching conception. As the teacher said:

*“I really like the job. However sometimes I also feel confused about how to treat students. I do not know what the standard is. I sometimes even not sure do I need to give a mild punishment when they did something. You know something is accepted in Thai, but not in China. Anyway I would like to integrate into their local community and help students learn Chinese well. So I learnt their language and communicate with my local colleagues. I also catch every chance to observe their lessons and join into every activity. I think it is the fastest way helping me into their community and learn the students’ learning culture. What I am so excited to found some characteristic about their cultures of learners which are really quite different with Chinese, like they give students more freedom in the class. Meanwhile, they also have strict discipline.*

Although learning environment is more relax in Thai schools, it does not mean that students can do anything they want. In Thai, they have very strict punishment. Since 2000, the Ministry of Education of Thai has announced that the corporal punishment was forbidden. The Ministry of Education expressed that teachers should induce students and implant high ideals in children. The evidence showed that there was useless and no any good effect on students through corporal punishment. However, part of teachers and parents felt very disappointed about this decision. They thought that cancelling corporal punishment would connive at some students. A local media reported that one principle said students would not respect to their teachers. Another principle expressed that corporal punishment was essential. Only warning could not correct students’ misbehavior. A mother said corporal punishment is a must which could monitor students to study hard (Chinese News, 2000) .

But some schools still extend this unwritten custom. Some teachers can still use corporal punishment when students’ behavior cannot be acceptable. The teacher recalled:

*“Children are not allowed to use the computer lab during the lunch break time. However, some children usually sneak in the lab. So I sometimes see that these naughty boys are slapped on their hands or their bottoms hardly by using wooden sticks.”*

Many local teachers told the teacher to use corporal punishment when students behave badly. The teacher said:

*“There are always some naughty boys in the class. And I am a foreigner for them and I do not look like that “evil” (laugh). Some of them plays or speak loudly. The class teacher and other subject teachers help me to manage the class. But they told*

*me I should use wooden stick. Then they won't behave like that. They even gave me a stick and asked me to take it when I had lessons."*

In summary, all these related information could add up to a clear picture that she needs to put the unique learning culture into consideration when she teaches Chinese as a foreign language in non-Chinese context.

### **Edutainment as a main element of education**

Many educators have documented that play could serve many functions in young children's learning and development. As a result, play is becoming more and more important role in educational system and curriculum all over the world both in the classroom and outdoor play. The role of play is crucial from childhood to adulthood.

Many countries have focused the role of play on their curriculums, especially the basic Early Years' curriculums. Play has been recognized as an effective form of pedagogy to promote learning in the early years (Fung & Cheng, 2011). For example, play has integrated into the core areas of the pre-primary curriculum in Finland (Hyvönen, 2008). In Hong Kong, learning through play in preprimary school has been a key feather of curriculum.

In Chinese context, an academic achievement is put the first place. Although educators have pointed out that structured play could promote students various skills (Neumann, 2013). Some schools plan to implement the play-based teaching and learning, they still faced some barriers as play-based curriculum has not been worldwide used in China.

On the other hand, many western educators have already admitted that learning through play as an effective teaching method in the classroom (Fung & Cheng, 2011). Play-based curriculum is very popular in western context. Most parents, teachers and principals are likely to place emphasis on develop students' emotional, social, moral skills (Hyvönen, 2008).

Playing games are often implemented in the real classroom in Thai and UK context. Children have already adapted to the play-based curriculum. The teacher said:

*"The children always asked me whether they can play games or not. They often begged me to play some games when we had lessons."*

The teacher recalled that when she attended a national training before coming to Thai, all the lectures remind them that playing is quite important in Thai class. The teacher also said:

*"In order to know better about their culture, I observed my local colleagues let students draw a molecule after teaching that topic. Once I asked them to draw their family number and write sentences next to the picture when we learnt how to introduce themselves and others. They are very happy and finish the homework quickly. They do not like only writing homework."*

Teachers implement this principle to organize their extracurricular activities. A Playful Learning Environment (PLE) is also designed for supporting students' physical activities outside of the classroom (Hyvönen, 2008). As the teachers said:

*"My school organized Boy Scout when I came to Thai. As I had not learnt too much Thai and I could not communicate with them, so my school just arranged me to follow other teachers. This is the first time I could be a totally observer. It impressed me deeply again. At first, all the teachers played music and sang songs by using different musical in the front of students. Everyone cannot help moving your body and everyone is heartfelt cheer. After warming up, they began to do the real Boy Scout. Every teacher teaches one practical survival tips, like using two ropes*

*from one tree to another tree and how to make a fire outside by using small woods and other things. Actually it was like playing games together. They even had some activities at night. The whole process is really practical, useful and cheerful. I reflected what our children did in the Jun Xun (like Boy Scout) in Chinese context. They focus on cultivating children's perseverance by practicing bald standing and walking which means children try to stand and walk like a real perfect soldier under strict rules. Their whole learning environment is nice and I thought if I were a child, I also would like this atmosphere more."*

### **School Values and Teaching Aim**

In Thai context, schools always encourage students to exhibit themselves and to establish confidence through exhibiting their strengths and advantages. There is no discrimination within the school. As the teacher said,

*"There are some lady-boys in my school. But you cannot see that people look down upon them. For example, if you are good at singing and dancing, all school numbers like teachers, students, and principles will praise you and claps to be proud of you. They will not look down upon you only because you have very poor academic achievement. They always encourage student to exhibit themselves. If you like dance, just dance."*

In Thai and UK context, there is a world of difference in the course goals and teaching aims. In China context, students' examination result is the priority. Examination - oriented education system plays a vital role in our country. A Chinese education schema places value on the authority and knowledge of the teacher, serious and diligent application by students, and attention to success in written examinations (Leng, cited in Moloney, 2013). In Thai context, however, they focus on children's interests, which could be the key point of enhancing children's learning motivation. As the teacher in our research recalls,

*"Learning Chinese means nothing to students in Thailand. Learning Chinese is just a government policy. It is a top-to-down decision. Being a part of the government action, How to motivate students to learn is the key of teaching Chinese. The results are less important."*

They even develop children's interests since they are in Early Years in UK context. They never force children to do anything. They seldom use one single standard to request every child. Individual differences have been placed importance. Teachers' job is to assist student to reach the goals which is within the "zone of proximal development". As the teacher said:

*"For Early Year children, they focus on the process of spontaneous playing. Spontaneous playing means that teaching targets are not set in advance. These targets depend on the process of playing. Teachers help children use their own ability to get certain targets and construct their knowledge. For example, when a nursery girl was coloring, her class teacher asked: 'Carla (a girl in nursery), shall we make a pattern together?' The girl said: 'I don't know.' Her class teacher responds, 'Do you remember how to make a pattern? If I make blue here, what color do you need to do next?' Then the girl remembered how to make the pattern as they have learnt before. When she finished the pattern, her class teacher let her try to label her name to her paper work at last. Her classroom teacher later explained that Carla is one of the children who could write letters in her class. Letting her label her name is just a kind of practice."*

Another feature is the teaching aims. In China, the government use examination-oriented educational system. However, their educational Ministry encourages teachers to follow the process of learning. The process of thinking and learning is much more important than the answer of questions. As the teacher tells:

*“In Chinese lesson, we often use circle time to summarize what we learnt today. Usually there is a standard answer in the teacher’s mind. At first, I focus on whether they remember the words and sentences we learnt today. However, their teachers focus on what they are thinking and what they want to express. Because only when you listen what he is saying, you will have a chance to know what he is thinking. The answer actually is not as much important as we thought.”*

So far, we mentioned several factors which influence the teacher’s conception of teaching Chinese as a foreign language in non-Chinese context. The teacher should put the new learning culture into her teaching. She also applies the edutainment into her teaching process. Student-centered learning is another characteristic in non- Chinese context.

## **Conclusion**

In this article, we tried to describe and analyze the differences of teaching Chinese as a foreign language which the teacher faced between in Chinese context and non-Chinese context (Thai and UK context). New learning culture, using edutainment as a main teaching method and different school values were her main challenges. We explained and analyzed her situation and experience with regard to the context of Thai and UK and their learning culture. Some major constraints in teaching Chinese as a foreign language in non-Chinese context include culture of learners, involvement of playing in teaching method and incompatibility of Chinese school values and teaching aim and Thai and UK context. Some researchers have tried to solve these problems that CFL teachers have in non-Chinese context. Some researchers encouraged CFL teachers to integrate intercultural pedagogy into their teaching (Moloney, 2013). Some researchers call for improving culture awareness in foreign language education. The relationship of culture and language has already been an importance part of the study of language in the modern age (Wierzbicka, 1992, Byram, 1991, Harrison, 1990, Robinson, 1988 & Valdes, 1986 cited in Atay, 2009). Nonetheless, these suggestions are not enough to change the awkward situation.

As the teacher has stated, what we need is to distinguish the differences of teaching Chinese as a foreign language in Chinese and non-Chinese context first. We only recognize the new learning culture and educational needs. Then we would take the effective measures to solve problems that create many challenges for teaching. It is very essential to pay attention to culture differences. Most CFL teachers focus on teaching Chinese itself when teaching in a different context. They ignored many aspects which are the real useful elements on teaching a foreign language. CFL teachers should know their students first, including their characters, learning strategies, learning styles and so on. Only when you understand your new students, your new school and new culture, you could choose more appropriate teaching method and practical curriculum to begin your teaching journey.

In addition, edutainment plays an important role in Thai and UK context. Adopting playing into the CFL teachers’ teaching plan is necessary. Whenever students do the writing or reading practices, they feel boring. They are even reluctant to finish their homework. The local teachers usually use coloring and play games in almost every subject. Regarding this unique learning feature, it seems that the native Chinese teachers’ traditional conception is incompatible with Thai and UK learning style. CFL teachers should think about new teaching methods and plan to apply them into their real teaching in these two contexts.

Knowing what students are thinking is the core of learning and teaching process. CFL teachers should place value on the students’ interests, motivations and participation. Students in Thai

and UK context have more freedom and chances to express what they are thinking and what they want to do. They could spend more time to listen to their students. They also need to encourage students to show themselves. By decreasing the value on teachers' authority, rote learning and teaching and academic achievement could help the native speaker teacher of Chinese get better teaching results.

More related training and resources could be useful for CFL teachers who have not had too much working experiences in non- Chinese context. The national office could organize some workshops and invite professional teachers who have overseas working experiences to give lectures. In this way, the CFL teachers will not feel confused and will more confident to overcome these challenges in teaching Chinese as a foreign language in non-Chinese context.

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# *Exploring the role of social studies education in preparing a global Omani citizen*

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## **Abstract**

Students in the Sultanate of Oman live in an increasingly globalized age; they therefore have a clear need for global citizenship education. The present study set out to investigate the state of global citizenship education in the teaching of social studies by analyzing the content of social studies textbooks in Oman from Grade five up to Grade twelve. The findings show that environmental issues are much more highly emphasized than political issues such as human rights, democracy, and war. In addition, although social studies textbooks do focus on some issues related to global citizenship, they still do not meet the requirements of the subject as it is defined in the educational literature. The study concludes that Omani education needs to adopt different approaches if it is to provide its students with the skills and values needed to guarantee human rights, peaceful resolution of conflicts, humanitarian norms and sustainable development.

Key words: global education, global education in Oman, social studies in Oman, Omani education, Social studies textbooks.

## Introduction

Since the early 1990s, the discourse of citizenship has witnessed a clear shift, with political and technological transformations resulting in a new world order. One aspect of this was the spread of democracy in Eastern and Central Europe; since then, many other peoples around the world have begun to struggle for democracy and civil society, a trend which has brought the language of human rights into prominence. Another factor is the spread of advanced technologies such as the internet, satellite and mobile phones, which have also established an unprecedented global connectedness and a new context of globalisation. This has also led to a shift in the discussion of citizenship. In the past, the notion of citizenship was confined within the boundaries of the nation-state, which was for a long time regarded as the formal context in which the rights and duties of citizenship should be exercised. With globalization challenging this strong bond between citizenship and the nation-state, terms such as 'European citizenship', 'ecological citizenship' and 'global citizenship' became common in both political and academic discourses of citizenship.

Globalisation has been defined by Croucher (2005) as:

*'A cluster of related changes that are increasing the interconnectedness of the world. These changes are occurring in, but not limited to, economic, technological, cultural, and political realms. Furthermore, globalisation is not restricted to merely enhancing the interdependence of already existing entities or the intensification of established networks or flows, but is also creating or facilitating the creation of new ones' (quoted in Gans, 2005, p.1).*

According to Gans (2005), it is globalisation that has gradually broken down the traditional understanding of citizenship, which was seen in terms of the relationship between the nation-state and its citizens, and which created a national identity and a sense of belonging. This change can also be attributed to the movement of people, ideas, and goods across national boundaries, with people moving either to live or to work. This globalised context has also led to the establishment of many transnational and multinational organizations, which put explicit pressure on the sovereignty of states. As a result, national identity is threatened and a re-thinking of the concept of citizenship becomes necessary.

In some cases, states may revert to a defensive drawing in on themselves. The USA is seen by Gans (2005, p.11) as an example of this process:

*'Threats to civic homogeneity brought citizenship and American identity to the forefront of national political debate. Political leaders, in response to fears and hopes that the tremendous changes of the era produced, found that they could gain support by promising to guard Americans against the new dangers from within and without via policies of restriction, exclusion, and mandatory assimilation'.*

Globalisation, then, is regarded as the most significant force behind the breaking of the link between citizenship and the nation-state and the development of transnational citizenship. Its influence has been documented by several scholars, such as Painter (2000, p.3), who points out that it has challenged the nation state in two ways:

*'First, globalisation undermines the capacity of nation-states to exercise the conventional sovereignty even within their territorial boundaries. Second, there are countervailing pressures towards localisation and reorganization, involving demands for recognition, autonomy or secession from culturally distinct groups.'*

Habermas (1994) argues similarly that globalisation increases the movement of people and goods across the boundaries of nation states, resulting in a situation where national citizenship is no longer sufficient to express what occurs on the ground.

Another factor that has affected the transition toward transnational citizenship is the adoption of universal human values in the aftermath of the cold war period. Some scholars discuss the influence of globalisation on citizenship as a shift from national identity to human rights, which also marks a sign of weakening of the sovereignty of nation states. Turner (1993), in his attempt to outline a theory of human rights, stated that the current emphasis on rights has led to a crucial shift in the notion of citizenship. In his analysis, the 'nation-state is not necessarily the most suitable political framework for housing citizenship rights' (Turner, 1993, p.178). Citizenship in its modern form is more related to a welfare state while human rights, as has been reflected in the United Nation Charters, are universal. One function of the emphasis on human rights is to prevent the state from violating the rights of its citizens:

*'The struggle over rights has become an increasingly important feature of the global political order. However, within the nation-state itself, there are constant political processes which erode the rights of citizens and as consequence appeals to courts outside the state are important for the protection of individuals and groups against enhanced state power' (Turner, 1993, p.187).*

Another term related to transnational citizenship is ecological citizenship. The move towards a more globalised world, alongside an increase in the negative effects on the environment, has led to a new linking of environment to citizenship. The link is expressed in different conceptual frameworks, such as 'ecological citizenship', 'environmental citizenship', 'green citizenship', 'sustainability citizenship' and 'environmentally responsible citizenship'. Sáiz (2004) argues that the current environmental problems have global effects and no nation-state alone has sufficient ability to solve them. Therefore,

*'The environmental challenge constitutes one of the main problems of the global governance, it opens the possibility of the construction of a global civil society, as a consequence of the need for a global answer for environmental problems, but it also needs a more determined collaboration of the states' (Sáiz , 2004, p.21).*

This statement is further supported by Lee (2002, p. 51), who claims,

*'One nation can no longer so readily realise its particular aims without the approval or support of other nations' (p.51).*

According to Melo-Escrihuela (2008), focusing on ecological citizenship results in a concept of 'environmental citizens' who 'are conceived as citizens of planet Earth; their first duty should be to promote environmental global justice' (Melo-Escrihuela, 2008, p.117).

The popularity of the idea of transnational citizenship has fluctuated according to world political conditions. After the Second World War, for instance, the term was not widely used, but surfaced again after the breakdown of the Soviet Union and the appearance of many democratic states, developments which marked a new era characterised by a new world order and globalisation.

The advocates of transnational citizenship have built their arguments on the transformation that has taken place in the world in the last decade. From their point of view, this transformation has created a new world that is characterised by transnational organizations, issues, and solidarity. However, for critics of transnational citizenship, the concept has limitations that must be taken into account if we are to see and understand the whole picture.

These limitations arise when we compare the idea of national citizenship with that of transnational citizenship, a transformation that poses a question of identity. Although Turner (1990) regards globalization, along with localism, as the two social processes that structured the contemporary world, he regards global citizenship as still under construction:

*'We do not possess the conceptual apparatus to express the idea of global membership, and in this context a specifically national identity appears anachronistic. Indeed the uncertainty of the global context may produce strong political reactions asserting the normative authority of the local and the national over the global and international' (Turner, 1990, p.212).*

Transnational citizenship creates a tension between the plurality of social identities and the singular identity implied by citizenship, that is, between the universalism of the former and the particularism of the latter. In addition to the challenge of identity provoked by transnational citizenship, both globalisation and liberalization increase inequalities, especially in the developing countries. The liberalized market has decreased the ability of the nation-state to provide its citizens, particularly the poor, with basic rights. Kagwanja (2003, p121), speaking about the African context, underlines the point that

*'Globalisation has undermined a whole range of rights in Africa, including the rights to food, education, employment, shelter, health, clean environment, the security of the person and to democratic choices. It has undermined the state's capacity to guarantee the right to development.'*

However, regardless of whether globalization is seen positively or negatively, it must be acknowledged that it has already had an impact on every aspect of society: culturally, economically, technologically and educationally. It is therefore essential to consider what will best help us to meet the challenges of globalization, and this requires that we focus on teaching our students about the world as a whole. Historically, it has been assumed that schools bear the responsibility of transforming individuals into productive citizens, and building a national identity continues to be a major aim of formal schooling in general and of the social studies curriculum in particular. However, in this globalized and digital age, social studies needs to shift its focus from teaching national values to teaching subnational and supranational ones. Recent research suggests that, in several countries, educational reforms have made global citizenship an integral element of schooling (Edge, Khamsi & Bourn, 2009; Bourm & Humt, 2011; Drennanjett, 2013). A review of the literature also makes it clear that, while global citizenship has been studied intensively in the West, it has not yet received similar attention in the Arab world. What is not clear at present is how global citizenship can be introduced into the Arab world, especially in countries like Oman that are still building up their national citizenship. The present study addresses this gap in the literature, and does so by studying the state of the idea of global citizenship in Oman's social studies textbooks.

### **Global citizenship in Omani social studies education**

Scholars agree that the main responsibility of social studies is to develop citizens who can act both locally and globally (Compston, 2004; Yeager & Van Hover, 2004; Merryfield & Wilson, 2005). The National Council for the Social Studies (2001) states that today's challenges require citizens who can tackle them by coming together despite their differences. These citizens require social studies education that not only increases their knowledge about global issues but also provides them with opportunities to take appropriate action to advocate in the global arena. However, since social studies has until now primarily emphasised the development of nationalism and national pride (Richardson, 2002), the question is whether - in an age of globalization - it can now teach students to see themselves acting as involved and committed global citizens.

The last major educational reforms in Oman did take into account the fact that future Omani citizens will be living in an increasingly interconnected and interdependent world (Al-Maamari, 2009) and are therefore required to develop a global perspective that will help them to better understand the world (White & Opendhaw, 2002). However, Omani education still needs to incorporate the notion of global citizenship into the syllabus in general, and into social studies

textbooks in particular, as this notion is seen as most closely linked to this subject area. The present study aims to review the status of global citizenship themes in current Omani social studies textbooks. Findings show that themes of global citizenship have gradually received more attention, especially since the 2000s, and textbooks are becoming increasingly learner-centered in order to prepare citizens who can compete in the 21st century. However, it is themes of national citizenship, not international or global concepts, which remain the strongest core elements.

Omani scholars working in the field of social studies have conducted a number of studies related to issues of global citizenship education. Al-Dfaae (2005) discovered that social studies textbooks were weak in their inclusion of material about human rights while Al-Amri (2007) found that tolerance as a universal value was emphasized more in Omani society than in social studies textbooks. Al-Rabani (2009), studying the inclusion of global issues in social studies textbooks (3-12), found that all issues were included, with the exception of political ones. Similar conclusions were reached by Al-Rabani and Al-Salmi (2010) in their study on the inclusion of information about the world as a whole. They discovered that most of the information was about Asia and that while attention was paid to economic, historical, natural, and human information, much less was paid to political and environmental issues. In another study, Al-Hinai (2010) investigated the textbooks' coverage of the principles of international education, finding that there was a high level of attention to the concept of interdependence. More recently, Al-Sarmi's 2012 study about Omani social studies teachers' perspectives on the reality of education for global citizenship found that social studies textbooks have a strong focus on environmental issues but pay only moderate attention to global issues.

This review of the recent literature related to the status of global citizenship education in Omani social studies textbooks leads us to a number of conclusions. First, social studies remains the main subject in the Omani schools that can and should deal with global citizenship education. This means that the social studies syllabus, and the textbooks, need to face the challenge of balancing the national and the global dimensions, especially at this point where the country is making strong and peaceful bonds with most countries in the world. Specifically, social studies as a subject needs to shift from its currently exclusive focus on the national dimension to one that is more global. In addition, the social studies teachers need to adopt an enquiry-based rather than a didactic approach, in order to give students the skills needed to deal with constantly-shifting global issues. However, other key elements remain to be investigated, particularly the role and attitudes of teachers. While the studies reviewed so far, including the current one, have focused only on the textbooks, it is also crucial to examine the attitudes of social studies teachers towards global citizenship, as well as their own experiences with global citizenship, and what opportunities and obstacles they see in the teaching of a broad subject. Global citizenship awareness can also be developed by cultural, ecological and sporting events organized in collaboration with the local community.

### **Global issues in social studies textbooks**

In order to identify the current state of global citizenship education, the researcher reviewed the contents of social studies textbooks from Grades five up to twelve, with the results shown in Table (1) below.

Table (1) Topics related to global issues as included in Omani social studies textbooks Grades 5-12

Grade	Part	Unit	The topics
5	2	Social concepts	The importance of cooperation among nations and countries.
6	2	Biosphere and ecosystems	Ecosystems in the world. Global concern for the environment.
7	1	Population geography	Population problems

			World Food Day
8	1	Weather and climate	Climate regions in the world
8	2	Water Aspects of modern European history	The water problems in the world The Industrial Revolution Geographical discoveries European renaissance
9	1	Oman in its Islamic and international surroundings	Oman's relationship with different world countries
9	2	The modern and contemporary history of Asia	Islamic Republic of Iran Republic of India Japan Malaysia
10	2	Environmental problems and threats	Global warming Desertification Tropical cyclones Earthquakes and volcanoes
10	2	Economic blocs and forces in the world	United States of America Japan China The economic blocs in the world
11		The influence of Islamic civilization on Europe	Aspects of European civilization influenced by Islamic civilization
11	Economic geography	Natural resources	Depletion of natural resources The distribution of metals in the world The sustainability of mineral resources and soil The production of energy in the world Sustainability and management of energy resources
		Transportation, communications and international trade	International Organization for Civil Aviation Modern means of communication International Trade
11	This is my Homeland	The modern state	Oman's relationship with the other states
12	This is my Homeland	The History of Oman	Omani culture: originality and universalism
		Omani environment: population growth and development	The global environment
		Omani youth: citizenship and globalization	Omani youth and international factors
12	The world Around me	Our world  Our world: diverse cultures and renewed ideas  The inevitability of dialogue: I and the others	The revolution of IT knowledge The world of tomorrow: hopes and challenges Culture - between global and local Cultural diversity in the information age Global culture: experiences and exchanges We and others: continuing participation The diversity of world cultures Dialogue and international cultural communication.

From Table 1 it can be inferred that the dominant issues in the social studies textbooks are environmental issues, those related to population, global warming, desertification, tropical cyclones, earthquakes, volcanoes, water, global warming, energy, and the depletion of natural resources. The textbooks also emphasize such historical areas as geographical discoveries, the European renaissance, the Islamic Republic of Iran, the Republic of India, Japan, Malaysia, and the aspects of European civilization that were influenced by Islamic civilization. Also covered are such cultural aspects as cultural diversity in the information age; experiences and exchange in global culture; us and others; continuing participation; the diversity of world cultures; and dialogue and international cultural communication. Finally, the textbooks include a number of economic issues such as the Industrial Revolution, international trade and the economic blocs in the world.

However, what was not evident in these textbooks was due attention to political issues such as war, conflict, democracy and human rights. A more recent study conducted by Al-Zaabi (2013) regarding the level of awareness of social studies teachers about one of these issues, human rights, revealed that teachers depend mainly on the media to obtain information about human rights, which is of course a much-discussed global issue. Studies conducted in other Arab states suggest that this is not confined to Oman, and the political issues are also problematic in other Gulf contexts. In the Kingdom of Saudi Arabia, Al-Subaih (2005) found that political issues were excluded from the content of Patriotic Education, and that there was a resultant lack of interest in politics among the students. Likewise, Al-Ameer (2005) pointed out that Saudi students prefer to keep away from politics. There were similar findings in Lebanon too. Frayha (2002), in his study of the effectiveness of the school in developing citizenship education in Lebanon, found that students showed little interest in politics and were politically alienated. He attributed this lack of interest to students' feeling that they had no influence on how the government was run. However, these attitudes might be changing after the advent of the Arab Spring, as the events have led to intensive political discussion in the region, involving many who were little concerned before.

All in all, although the social studies textbooks do focus on some issues that are related to global citizenship, they still need some development to be able to prepare Omani students to become global citizens as defined by Oxfam (2006). Oxfam's criteria for global citizens are as follows. He/she:

- Is aware of the wider world and has a sense of their own role as a world citizen.
- Respects and values diversity.
- Has an understanding of how the world works economically, politically, socially, culturally, technologically and environmentally,
- Is outraged by social injustice;
- Participates in and contributes to the community at a range of levels from local to global;
- Is willing to act to make the world a more sustainable place;
- Takes responsibilities for their actions.

While the Omani textbooks do put some emphasis on the value of diversity, and on teaching how the world works economically, culturally and environmentally, they still need to meet the outcomes described above by Oxfam, and to study topics which will help the students to be aware of their actions in the world. It will be a significant challenge not only to help them learn how the world works politically, socially and technologically but also to make them willing to take action both locally and globally. Developing a sense of belonging to the world requires therefore that we revise the social studies syllabus according to the Oxfam (2006) definition, which can serve as a guide for social studies curriculum developers.

### **Challenges and obstacles**

As we have seen, Omani schools are focusing both explicitly and implicitly on global citizenship education; this takes place both within social studies courses in the curriculum, and also through a number of programs and initiatives are run by some Omani schools in collaboration with international organizations such as the UNESCO (see Al-Maamari, 2014). However, different elements must be considered if we are to build a genuine sense of belonging to the world. Firstly, students need to be provided with real opportunities to practice the universal values they learn in theory. Davies (2006) suggests that “if pupils are to be educated in and for global citizenship, this suggests that they should experience democracy and human rights in their daily lives at school and not just be told about it” (p.16). This means that a transformation is required not only in the curriculum but also in pedagogical practice, so that schools can develop competencies that will allow students to be active globally. At present, social studies courses merely focus on teaching students theoretically about the world, but this is not sufficient to create reflective and conscious global citizens. Education for global citizenship in Oman requires the process described by Noddings (2005); if we are to be able to assess the effectiveness of any curriculum we develop, we must first identify the knowledge and skills that we intend students to develop. Until now, there has been no framework of global citizenship such as that proposed by Oxfam (2006), a framework that can be used to incorporate global issues systematically into the social studies curriculum.

Another challenge comes from the nature of the social studies teacher, who is still employing teacher-centered methods that are at odds with methods needed to develop global citizenship skills (Al-Maamari, 2009). The literature also shows that teachers encounter a number of barriers in their endeavor to teach global citizenship. These include lack of preparation, lack of time to implement the necessary changes, resistance from other teachers, lack of support from parents/guardians, the effect of parents’ attitudes to other cultures, and lack of financial resources (Al-Sarmi, 2012). However, if these barriers can be overcome, it will help to make social studies education more effective, and Omani students will be able to develop a sense of belonging to the global world.

### **Conclusion**

We see from this review that the educational system in Oman must put more emphasis on the teaching of global citizenship so that it can prepare present and future Omani generations to live in the twenty-first century. However, developing a sense of belonging to the world is not the responsibility of one school subject, social studies, alone. It should be the aim of the whole school, which needs to formulate a clear vision of the nature of global citizenship education and how it can be put into practice. Omani education needs to adopt a variety of approaches if it is to provide students with the skills and values they need to play their part in promoting human rights, peaceful resolution of conflicts, humanitarian norms and sustainable development.

Moreover, as education for global citizenship is still being developed in Oman, further research is required to address teachers’ attitudes toward such education. Teacher training is another important issue that must be explored if we are to successfully design and implement these programs, and create global citizens fit to play their part in the globalized world.



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# *Factors Influencing Relationships in Malay Family*

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## **Abstract**

The discussion in this paper focuses on the factors that influenced family relationships in Malay society. There are six major factors identified namely: age, seniority, power and authority, gender, collateral distance, marriage, residential patterns and family obligations. Emphasis is given to the role of Islam and Malay kinship system in determining the nature of those relationships. Islam is the core element of Malay culture, and Islamic principles have become the guiding principles for social organizations, activities, and relationships, including family relationships among the Malays. Kinship system also provides the basis for family organizations and relationships, but its principles should not contradict those of Islam. Otherwise both sets of principles are allowed to co-exist.

## **Key words**

Family relationships, Islam, kinship system, age, seniority, power, authority, gender, marriage, family obligations.

## **Introduction**

Generally, relationships within the family system involve three categories of relatives, namely, blood relatives (consanguineous kin), relatives by marriage (affinal kin), and those who are recruited into the family system through adoption (adoptive kin). There are different sets of rules and principles to be observed when a person interacts with family members from different categories of relatives mentioned above. In Malay society, these rules and principles of family relationship are determined to a large extent by Islam and the kinship system practiced by the society.

## **Factors Influencing Family Relationships**

The following discussion focuses on the factors that influenced family relationships in Malay society which include age and seniority; power and authority; gender; collateral distance; marriage; residential patterns; and family obligations.

### **Age and Seniority**

Within the Malay family circle, a person is respected not so much on account of his social standing, but on the basis of his position in the family system. It has always been the norm in Malay society for younger family members to respect their elders and to make the first move in any form of interaction between both parties. For example, courtesy calls and family visits on festive occasions should first be made or initiated by a junior family member to a senior one, and not vice versa even though the senior member does not occupy high position in society.

Respect towards the elders may take various forms which include: non-intervention by the young in adult discussions, deference, proper manners and body positions, the use of low-toned language, and the use of proper terms of address towards the seniors in daily communications. To the [traditional] Malays, young people are presumed to be lacking in knowledge and not having mature thoughts and ideas. Respect and deference towards senior members of the family are also manifested in the usage of language as well as in body positions shown while communicating with them in person.

### **Power and Authority**

The superior position of husband-cum-father in the family system and also in society in general, is the norm in almost all cultures. In Muslim societies including Malay society, the dominant position of husband in the family system leads scholars to categorize it as being patriarchal (Winstedt, 1956). However, being head of the family and a person with authority, it does not mean that the husband could exercise absolute authority over his wife and children to the extent of enslaving them for his personal gains. In Islam, women also have conjugal rights, and they would not have to submit totally to their husbands' demands if those demands were beyond limits allowed by Islam.

In Malay society, it is regarded shameful for a person to live under his wife's control. The Malays regard such phenomenon as, 'hidup di bawah telunjuk isteri' (literally: to live under wife's pointing finger). Any man who is under his wife's control is said to be lelaki dayus, i.e., a weak husband with no dignity. However, studies by Firth (1963) shows that in matters pertaining the family's economy, it is usually the wife who acts as the banker. In any economic transaction, the husband would always refer to the wife. Djamour (1959), also points out that bitter conjugal quarrel would occur if a man spent a large share of his earnings without his wife's approval. Husbands who attempt to cheat by keeping some money for their personal use were severely reprimanded by their wives for deceit and selfishness. Banks (1983) also reports that women have an important say in all of the major decisions that their husbands make. Through their passive role, they will have the prerogative of criticizing bad decisions made although they should never do this in public.

Power and authority in the Malay family system is not only confined to that of a husband over his wife but also of parents over children and of elder siblings over the younger ones. The father

being head of the family has full right and authority over his children from the time they were born until they come of age to start a family of their own. During that period the welfare of his children is entirely his responsibility.

In Malay-Muslim society, the father is the rightful wali (guardian) who legally gives his daughter's hand away in marriage. He has the power to stop his daughter from marrying a person whom he dislikes. The majority of Muslim scholars agreed that the approval of the guardian is a condition, without which the marriage contract would become null and void. The most senior paternal uncle has authority over a person's life when his father or his paternal grandfather dies. The paternal uncle would also be the rightful guardian or wali who gives away his niece's hand in marriage. However, in matrilineal Malay society, the reverse scenario occurs when maternal uncle has more right on a person's life than the paternal uncle. Maternal uncle known as *buapak kedim* holds authority over his sister's family, and it is him who decides upon matters of importance that involve the life and welfare of his maternal nephews and nieces.

The Malays also recognize the high position or status of elder siblings in the family system. Upon the death of the father, the eldest brother (*abang long*) would assume responsibility as family head. He is the center of authority (*kepala kuasa*) who commands respect from the younger siblings. Important family matters are mostly referred to him for advice and consent. Unmarried sisters would submit to his authority and if there were no senior paternal male relatives around, the eldest brother would be the legal guardian or wali who would give away his sister(s) in marriage.

#### Gender

Gender is an important factor that determines the nature of family relationships in the Malay family system. This involves the issues pertaining to gender differentiation, gender inequality, and gender discrimination. The Malays in general emphasize role expectations in relationships between males and females in the family system. The husband is assigned the instrumental role of breadwinner, whilst the wife is assigned the role of homemaker. The Malays regard the wife as *ibu rumah* or the nucleus of the family. The nickname of *orang rumah* or the person who manages the house given by the husband to his wife explicitly explains the expected role position a woman should undertake when she gets married. Malay parents also give the nickname of *orang dapur* (literally: the kitchen-person or the person who manages the kitchen) to their new-born baby girl, as opposed to the nickname of *orang balai* (literally: the hall-person or the person who waits in the hall) to their new-born baby boy.

Traditionally, it has been the society's perception that a woman's place is always in the home, as expressed in a Malay saying, "*biar tinggi mana pendidikan bagi anak perempuan, akhirnya beliau ke dapur juga*" (no matter how educated a daughter is, she eventually ends up in the kitchen). Only lately (after Independence)<sup>12</sup>, that Malay parents give equal opportunity to their daughters to acquire good education alongside with their male siblings, which later enable them to move out from their traditional private domain, which is the home. Even so, their movement as well as their involvement in the public domain is relatively restricted compared to males.

Relationship between husband and wife in Malay society is generally cordial although they seldom express it openly especially when other peoples are around. In public, their relationship tends to be a bit formal when the wife or the husband address each other by the name like "Ahmad" or "Aminah" and not by the affectionate name like *sayang*, meaning "dear" or "darling" which they otherwise would do in private. Generally, the wife would address her husband by using the term *abang* (literally: brother), and the husband would just address his wife by her name, like "Mah" (short of Fatimah). The tendency for both of them to behave formally in public is also shown by a degree of social distance that exists between them, meaning by their not being physically intimate

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<sup>12</sup> Malaysia achieved its Independence from the British on August 31, 1957 after more than 200 years of colonial rule.

with one another like holding hands or sitting very close to one another. By doing so it would create an impression that they were being “too much” or *melampau* which is considered improper. Nevertheless, Kuchiba et al., in their observation on relationship among married couples in Malay society say, “the social distance between them is not as great as in Japan, whereby formerly a couple would avoid even walking together. The Malay couples’ outward appearance is one of conjugal harmony” (1979:46).

An interesting phenomenon which is least discussed on the relationship between husband and wife in Malay society is sexual relationship. Although sex is most fundamental in any marriage, it is even so among the Malays when it becomes the subject of gossip in society. This is especially so when sex is associated with impotency for men and with barrenness for women. It has become the yardstick for a successful marriage if the couples could have at least a child after years of their being together. However, if the marriage is not blessed with any child, it would be seen as either the husband as impotent or *mati pucuk* or the wife as *wanita mandul* or a barren woman. Both *mati pucuk* and *wanita mandul* are labels embedded with negative connotations that affect the couples’ social standing in the eyes of the public.

Another important aspect related to sexual relationship between married couples in Malay society is the religious law that governs it. Under normal circumstances, it is obligatory for the wife to submit to her husband’s request for sexual favors, rejecting it is improper, and at the same time sinful from the point of view of Islam. A man could also make excuses to take another wife if he felt that his present wife is sexually inactive due to illness, or if she is proven to be a barren woman. Nevertheless, if the husband intended to enter into another marriage, he is required to submit a formal application to the religious authority in his domicile state for approval. Only upon verification of relevant documents including the written consent from the wife, that permission to contract a second marriage will be granted by the religious authority to the applicant.

Besides rules, procedures and norms to be observed by married couples in family relationship discussed above, there are also unwritten rules along gender line in parent-children relationship. For example, when a girl is still a minor, there is not much barrier in her relationship with her father, but when she comes of age and reaches maturity, the gap between them both is quite pronounced. Under most circumstances, the grown-up daughter would use the mother as intermediary to communicate with her father, especially when she would like to seek permission to go out with her friends or to ask for cash for her personal expenses. In situations when the mother is not around, because of death or of long absence due to sickness or due to her presence being needed somewhere else, for example to attend to her folks in her natal family, the grown-up daughter would be asked to stay temporarily either with one of her aunties, with any married sister of hers or with any female cousin until her mother comes back. It is regarded improper for the father to be accompanied only by his grown-up daughter, when the wife-cum-mother is not around. Nevertheless, relationship between a mother and her son(s) is relatively intimate compared to that between a father and his daughter(s) even though the son has come of age and reaches maturity. It seems that the mother is the person whom her children, irrespective of sex interact closely with, and it is the mother who pays more attention to her children’s needs and their welfare. However, this does not mean that the father is less concerned about the welfare his children, only the nature of his not being at home during their waking hours, leads to the situation where the wife has to bear the brunt of the burden of childcare.

Relationship between siblings of opposite sex is intimate when they are still small. They are even allowed to sleep together in the same room, but not the case when they come of age. If there were a number of boys and girls in the family, the brothers would be sharing room among them, so would be the sisters. However, the physical structure of traditional Malay houses does not provide compartments or rooms to house the males and females separately. Under these circumstances,

parents would normally sleep in one section of the house, female children in another section, while male children would sleep together in another section of the house, probably in the living hall.

### Collateral Distance

There are three sub-categories of relatives in Malay family system, the division of which is based on account of collateral distance or the degree of blood relationship one has with those relatives. The categories are: close relatives (*saudara dekat*), distant relatives (*saudara jauh*), and the more-distant relatives popularly referred to as *bau-bau bacang* (literally: the scent of horse-mango fruit). Close relatives comprise members of one's immediate family including parents and siblings; parents' siblings and their descendants; grandparents; and grandparents' siblings and their descendants. Distant relatives on the other hand comprise those who are related to a person by blood within the range of third to fourth cousins, while the more-distant relatives (*bau-bau bacang*) comprise those who are related to the person by blood within the range of fifth to sixth cousins. Those beyond the range of sixth cousins are normally regarded as strangers or *orang asing*. Banks (1983) says, "blood or *darah* falls or comes through layers (*lapis*), and by counting the number of layers one is related to another, one may gauge closeness".

Relationship with close relatives other than with members of one's immediate family is normally cordial, especially if they were staying together in the same village. Normally, there would be a lot of cooperation and support from and among close relatives in family activities such as family gathering accompanied by feasts (*kenduri*) to commemorate various events, for example, wedding, safe delivery of a new-born child, festive celebration after the fasting month of Ramadan (*Hari Raya*), success in getting jobs, success in getting a place in universities, safe return from the Hajj, recovery from illness, funerals, etc. In major family events, notably weddings and funerals, close relatives who stay in places near and far would be invited. Even those who stay abroad would come back to be together with the family on such occasions. They would regard themselves as being rejected by the family circle if such important events mentioned above were organized without their knowledge. However, distant relatives do not exert much influence on a person's life and vice-versa, unless they happened to be staying within the same locality. In most cases, distant relatives especially those who stay in places further away, where communication with them is minimal, are regarded as least important. It is very unlikely for a person to invite them to participate in major family events mentioned above. They also would not feel offended if they were left out for obvious reasons, that they too did similar thing to him. In reality, the nature of relationships with distant relatives is not much different from that with strangers.

Among close relatives, cousins especially first cousins (*saudara pupu*), are the people that one establishes frequent contact with. In the extended family system, relationship with cousins is as close and intimate as that with siblings. Cousins probably grow up together under the same roof, under close supervision and care from their common grandparents. In matrilineal Malay society of Negeri Sembilan, uterine parallel cousins, i.e., children of two sisters who are members of the same lineage group (*perut*) are also entitled to inherit the landed property (*tanah pesaka*) commonly owned by the females of the lineage. Because of their common descent, uterine parallel cousins are prohibited by the *Adat law* to marry one another. Breaching the law is tantamount to committing incest. In the past, it was punishable by death or outlawry. However, marriage between cross-cousins is most preferable, because the couples belong to different lineages and clans. A maternal uncle (*buapak kedim*) is more than happy to have his maternal nephew as son-in-law, because the marriage between his daughter and his nephew would bring the two lineages closer, i.e., the lineage he and his nephew belong to and that of his wife's and daughter(s)'. It is also his nephew-cum-son in-law who would inherit his position as the lineage head upon his death.



## Marriage

In Malay society, marriage is an important factor for group cooperation, relationships and group unity. Marriage between relatives within the same kindred is preferable as it helps strengthen bonds between kin and family members. To the [traditional] Malays, marrying someone who is not related by blood, though permissible, would result in “blood ties becoming thinner” (*ikatan darah menjadi kian cair*) [Djamour, 1965].

To the Malays, marriage is not only contracted between two people, but also between two family groups. Compatibility between the two family groups is often regarded as more important than compatibility between the married couples themselves. Couples who come from diverse family backgrounds and cultures may face problems of getting support (financial, emotional and others), from kin and family members, and there is a possibility that they may not be invited to participate in important kin and family functions. To avoid the risk of being left out by the family circle, one normally conforms to the (traditional) patterns and practices. Viewed from this angle, in-group marriage is functional in fostering close relationship and unity within the family group even though there are scholars who believe that in-group marriage in Malay society would result in purebred Malays (Mahathir Mohamed, 1970).

The mechanism practiced by the Malays to preserve close family relationship through marriage is the institution of *ganti tikar* (literally: to change the mat). *Ganti tikar* is a version of sororal marriage which allows a person to marry one of his sisters-in-law upon the death of his wife. The marital link that exists between the two family groups remains intact despite the death of the female spouse. The man's relationships with his parents-in-law (*mertua*) and with other affinal kin would not be affected by the new marriage. However, his [new] wife has to readjust herself and realign her position with regards to her relationship with the members of her husband's natal family. It would not be a difficult task for her though, because she practically knows almost every member of her husband's (former brother-in-law's) family and relatives.

## Residential Patterns

Another factor that influences family relationships is residential pattern. When family members stay together under the same roof, or in places close to one another, they interact more often and do many things together. Among the traditional Minangkabau Malays of Negeri Sembilan, members of an extended family (*rumpun*) stay together under the same roof in a big house known as *rumah gadang*. When daughters got married, they would be given separate dwelling units within the *rumah gadang* or *rumah minang* where they would stay together with their respective husbands, and raise their children. This pattern of residence is specifically meant to maintain close family relationship and to preserve family unity.

In bilateral Malay society, however, there is no specific residential rule for married couples. They could choose either to stay with the husband's family (in patrilocal or virilocal residence), or with the wife's family (in matrilineal or uxori-local residence), or reverse their decision later for pragmatic and practical reasons. Unless both sets of parents were staying in the same village or *kampung*, the couples could physically belong to only one family group, and it is with this group that they identify themselves, or establish close relationship with.

Generally in the rural areas when married couples decide to stay together either with the husband's family, or with the wife's family, they do so during the first few years of marriage. Later, they normally move to stay in their own house, erected a few meters away from the parents' house in the same compound. Over the years, when all the other siblings get married, and they may also choose to stay close to their parents' house within the same compound, then there would be a cluster of houses (3-8 houses), forming what is known as compound households (Kuchiba, et al, 1979.)

In many instances a Malay *kampung* (village), besides being a territorial unit is also a kinship unit. This is due to the fact that most of the peoples staying in the village have blood ties between them. Traditionally, a Malay village was once founded by a person, and over the years, the number of its residents who have genealogical connections with the founder member, multiplies. The members of a Malay village normally have a strong attachment and sense of loyalty to the village. It is their place of birth, and it is also the place where they would want to be buried when they die.

It is true that a person will be physically detached from his family circle when he moves to stay in a new place far from home. His contact with relatives also becomes less frequent. However, relationship with parents and siblings does not change much due to physical separation, especially when there are easy means of communication available. For example in peninsular Malaysia, a person could reach home in just a matter of hours by road. Some people (especially those with ready cash or those having transport of their own) would visit folks in their home-towns more often than they would have visited other relatives who stay nearby. Besides, in the present context, communication via telephone, e-mails and SMS (short message services) is also within everybody's means.

### **Family Obligation**

To the Malays, maintaining close relationships with kin and family members is not only a family obligation, but also a religious and moral duty. Islam prohibits quarrels or feelings of hostility between family members. Values that emphasize kindness, close family ties, fulfilling family obligations, etc., show that the religion (Islam) places great importance on the family relationship. A person is not considered faithful to the religion if he neglected his kin and family members, especially if he neglected his parents and turned them down in times of need and desperation. Only in the absence of son(s), grandson(s) or other close relatives who is able to bear the cost of maintenance of his parents or grandparents, may the burden be thrown on to society (Muhammad Abdul Rauf, 1994).<sup>13</sup>

In Malay society, especially in the rural areas, one is expected to inform his kin and family members of any important activity to be held. He could not act alone, for fear of creating tensions in his relationships with his family and kin groups. It is normal for every family member to know what the other members are doing, to get involved in their activities, and to offer assistance if necessary. Decisions on important matters are often made collectively or upon consultation with family members. A person who disregards his family would be branded as *lupa asal usul* (forgets his origin). To live alone (*sebatang kara*) with no family to turn to for help, for advice, or for emotional comfort, is no less than being dead.

There are numerous Malay sayings and proverbs that foster family goodwill, cooperation, mutual help, and above all family unity. Among the popular ones are: '*cincang air tidak akan putus*' (literally: water could not be cut into pieces); '*cubit paha kanan paha kiri akan terasa*' (literally: when the right thigh is pinched, the left thigh also feels the pain); '*biduk lalu kiambang bertaut*' (literally: when a canoe passes by, the water lettuce merges back); '*ludah ke langit jatuh ke batang hidung sendiri*' (literally: if one spits up to the sky the saliva will fall onto his own nose); and '*carik-carik bulu ayam, lambat laun bertangkup kembali*' (literally: a split in chicken's feather, in no time it would merge back)

The most important family obligation is the provision of care for the aged and the infirm. Finch (1989) says biology seems to be the foundation of social obligation most obviously in the case of parents and children. Offering support to parents or children is just part of human nature.

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<sup>13</sup> The Prophet (PBUH) said, "I am the guardian of him who is with no guardian, and the state is the guardian of whoever has no guardian" (Ahmad Ibn Hanbal, c.f Muhammad Abdul Rauf, 1994:101)

Generally the Malays are concerned about the welfare of their parents. Seldom do we hear cases of Malays sending their parents to welfare homes to be cared by strangers. Siblings would normally take turn to accommodate their elderly parents in their homes and also would contribute to take care of their hospital bills and other related expenses. In whatever circumstances children still feel that they have an obligation and a moral duty to support aged parents as a way of expressing their thanks and gratitude for what the parents have done for them over the years. In fact, most elderly parents do not need much active care. They are quite capable of managing for themselves as they have done throughout the life-course. Graham Allan says, "they may be that much frailer and find some activities harder to complete, but they generally have no desire to be seen as dependent on their children" (1996:63). However, there are limits to this. If both parents become infirm, then at least one child, particularly the one who is staying nearby, would become more involved in providing care and a level of support.

### **Conclusion**

Family relationship is key relationship in society, and it is the strongest compared to other social relationships one engages in. Elements of favoritism and even nepotism in society are manifestations of strong ties that exist among family members. To the Malays, fostering close family relationship is part of their religious duties, and to disregard it, is morally and religiously wrong. As discussed above, the nature of family relationship in Malay society is determined mostly by factors strongly influenced by Islam and Malay kinship system. Both Islam and kinship system emphasize values such as respect, obedience, fidelity, authority, sincerity, solidarity, and morality in family relationships. However, most of these values have been eroded by the processes of change. Nevertheless, the Malays in general still strongly uphold Islam. Its principles still exert strong influence on Malay society and culture, including on Malay family organization, particularly on the nature of relationship among family members which forms the subject of discussion in this essay.

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# *The Global Value Chain for Indonesian Coffee*

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## **Abstract**

The objective of this research is to understand the global value chain of Indonesian coffee. This research is a qualitative descriptive research applying in-depth semi structured interview and participant observation, with key informants, including smallholder farmers, development agency (ICCRI), government, traders, exporters, exporters association and NGOs in collecting the data. A field visit was conducted in July to September 2013. The results show that the structure of Indonesian coffee value chain is influenced by the end of the ICAs. Further, this has led lead firms to conduct direct sourcing coffee. This has increased farmers' access to knowledge, technology and financial.

## **Introduction**

Coffee has been globally traded for centuries and has played an important role in human society and culture. Drinking coffee is important in numerous traditions and cultures worldwide. Hence, coffee is now a significant beverage in most cultures around the world. Coffee is perhaps the most important agricultural export from the developing world. On the other hand, coffee is consumed by the wealthiest countries.

The International Coffee Organisation was established in 1963 and was responsible for operating the International Coffee Agreements (ICAs). The agreements were for both producing and consuming countries and successfully regulated the world coffee trade through the application of a quota system, thereby successfully controlling coffee prices in producing and consuming countries. According to analysts, although the quota system had several limitations, this system was successful in stabilizing and improving coffee prices (Ponte 2002). However, in 1989, the quota system was terminated because of the rapid growth of coffee production in new non-member coffee producing countries, such as Vietnam, and the unwillingness of major consumers, such as the United States, to continue supporting global commodity regulation.

The end of the ICAs in 1989 had led to several impacts in both producing and consuming countries. Firstly, the coffee prices decreased dramatically and impacted significantly on the livelihoods of household farmers in producing countries. Secondly, the specialty coffee market, particularly in the consuming countries has increased significantly. Further, this has led to a boom in differentiated products, such as several single origin coffees and certification coffee (Neilson, 2007). According to Neilson (2004), an increasing number of coffee roasters and retailers, mostly based in developed countries, are increasingly trading coffee on the basis of its 'geographical specificity'. This new marketing strategy has been applied by roasters and retailers to promote their coffee through the image construction of coffee location, coffee production system and coffee taste characteristics. In recent years, geography specificity marketing strategy has successfully captured the awareness of worldwide consumers to appreciate the different cup tastes of coffee from various coffee producing areas. The end of the ICAs has led the specialty coffee industry become the most significantly growing industry in the international coffee market (Ponte, 2002).

Specialty coffee can also refer to certified coffee, such as organic, Fair Trade and C.A.F.É Practices, which aims to protect the social, economic and environment sustainability. These certification schemes require certain international standards to be fulfilled by coffee producers. The raising of such differentiated market has shifted the relationships between actors along the coffee chain because more international buyers' source coffee directly to coffee growers in developing countries (Gereffi, 2014), which has encouraged upgrading activities in developing countries. The end of the ICAs has thus been associated with the changing of the structure of trade and the relationships between actors within the coffee chain.

The study aims to provide a description of global value chain for Indonesian coffee. In order to do this, the key research questions will be explored in this study is what the relationships between coffee farmers and lead firms in a chain?

## **History of Indonesian Coffee Production**

In Indonesia, coffee was introduced by the Dutch in the 17<sup>th</sup> and 18<sup>th</sup> centuries through Batavia, now known as Jakarta. In the same period, the Dutch expanded coffee plantations in Java, such as West Java, Central Java and East Java, Sumatra and Sulawesi. Coffee plantations expanded considerably to successfully fulfill the demand of the European market in 1711 by supplying 'Java coffee' which makes the VOC monopolize the coffee trade from year 1725 to 1780. Further, this has influenced to worldwide production of coffee commodity. In addition, it leads Java and Sumatra becomes popular as the coffee producing regions in Indonesia. In the 19<sup>th</sup> century, The Culturstelsel

system of forced cultivation was applied by the Dutch government to substantially increase the scale of coffee production, particularly in Java, West Sumatra and North Sulawesi.

For nearly two centuries, Arabica coffee was the only type of commercial coffee grown in Indonesia. However, the development of Indonesia's Arabica coffee cultivation suffered because of the leaf rust disease (*Hemileia vastatrix*), which entered into Indonesia since 1876. Consequently, only Arabica coffees were planted at an altitude of 1000 m above sea level which can survive. The remains of Arabica coffee plant is still found in the highlands of Ijen (East Java), Tanah Toraja (South Sulawesi), the upper slopes of Bukit Barisan (Sumatra), such as Mandhailing, Lintong and Sidikalang in the highlands of North Sumatra and Gayo in Nanggroe Aceh Darussalam.

The next venture of the Government of the Netherlands is to bring Robusta coffee (*Coffea canephora*) in 1900, which turned out to be resistant to leaf rust disease. This type of coffee is easier to maintenance, while the production is much higher. Therefore, Robusta coffee is grown significantly for replacing Arabica coffee, especially in the areas with an altitude below 1000 m above sea level and began to spread across the region both in Java, Sumatra and to the eastern Indonesia. Smallholder Robusta cultivation expanded rapidly across southern Sumatra in the 1920s, with exports growing from around 14,892 tons in 1921 to 64,563 ton in 1932 (based on by Huitema, W. K. 1935) – *de Bevolkingskoffiecultuur op Sumatra, met eeninleiding tot hare geschiedenis op Java en Sumatra*. Proefschrift land bouw Hoogesch, Wageningen, p. 33-214.)

This period of growth established the current pattern of national coffee production in Indonesia, where

Robusta coffee accounts for approximately eighty percent of production and Arabica coffee the remaining twenty percent. The majority of Robusta coffee is produced in Lampung, Bengkulu and South Sumatera, while Arabica coffee is produced in Aceh, North Sumatra, East Java, Bali, Flores, South Sulawesi and Papua.



Figure 1. Map of Indonesia's coffee producing regions

Map source: Provided by ICCRI



Gereffi (1994) states that there are at least four dimensions on chains, they are ‘an input-output structure, a territoriality, a governance structure and institutional context’. The first and second of these dimensions are more descriptive, while the government and institutional settings are ‘more analytical’, fundamental and moderately abstract (Neilson and Pritchard, 2009).

### Input – Output Structure

In 2013, Indonesia was the world’s third largest coffee-producing country (Table 1). The International Coffee Organization (ICO) recognizes four basic types of coffee in international trade: namely Colombian Milds, Other Milds, Brazilian Naturals and Robustas. Indonesia is one of the main Robusta coffee producing countries, while the Indonesian Arabica coffee is classified as ‘other milds’ coffee. These types are influenced different taste of coffee that impacted by the various geographical, climate and soil conditions and processing method.

Table 1. Coffee exporting countries in 2013

Country	Coffee (60-kilo bags)	Arabica/ Robusta
Brazil	31,393,784	Arabica/ Robusta
Vietnam	18,396,936	Robusta
Indonesia	10,897,078	Robusta/ Arabica
Colombia	9,670,019	Arabica
India	5,389,705	Arabica/ Robusta

Source: ICO (2014)

In Indonesia, there are two coffee processing methods; namely dry and wet process methods. Indonesian Arabica coffee is mostly processed by the wet coffee processing method that consist of wet-hulled and full-washed methods, while robusta coffee is mostly dry-processed (Appendix A). As mentioned above that Indonesia mostly produces robusta coffee, thus most Indonesian coffee is produced through dry process.

Indonesian Coffee and Cocoa Research Institute (ICCRI) has been responsible for promoting the fully-washed method to Arabica-based farmer groups in order to obtain a higher quality of coffee, and is mainly applied by groups that are involved in various intervention program initiated by the GoI. These coffees can be sold to specialty coffee markets that require higher quality coffee, with lower defect rates. These systems involve greater selectivity and sorting of coffee, including the exclusive harvesting and use of red cherries, and the floating and removal of defects. This is conducted to reduce the defect rate of coffee, which can influence physical and cup characteristics and ultimately the price of the coffee.

Coffee commonly moves through several hands before being received by consumers (Ponte, 2002: 1101). There are many actors involve in the Indonesian coffee chain, such as smallholder farmers, collectors, centralized mills, exporters, traders and roasters.

The end of the ICAs has shifted the input-output structure of Indonesian coffee, particularly in relation to the specialty coffee sub-sector where much more tightly-coordinated value chains have become more common. There are many local variations in value chain structures across Indonesia, but there are four basic coffee marketing models.

Firstly, coffee farmers sell *asalan* coffee to collectors. *Asalan* coffee refers to green bean coffee, either robusta or Arabica that processed either with dry process or wet-hulled process

methods produced by smallholder farmers that sold without sorting and sizing coffee. Farmers sell *asalan* coffee is mainly to collectors. Through the village collectors, *asalan* coffee moves through several traders before being received by consumers. *Asalan* coffee is commonly identified as low quality coffee because there is no selecting coffee. This is caused by the Indonesian coffee farmers require fast cash flow to fulfill their basic needs. This model is primarily can be encountered in robusta coffee producing areas, such as Lampung and South Sumatera, while in Arabica coffee, this model can be encountered in Flores and East Java.

Secondly, smallholder farmers sell semi-dried parchment coffee to centralized mills. The semi-dried parchment coffee is processed through wet-hulled method, which includes pulping, fermenting, washing and drying only one day (water content 30%). Then, before being delivered to local exporters and local traders, the semi-dried parchment coffee is hulled and dried (until the water content is 12%) by the centralized mills. This model is mainly encountered in Arabica coffee producing regions, such as Aceh, North Sumatera and South Sulawesi.

Thirdly, smallholder farmers sell red cherries coffee to UPHs. UPHs were established in several Arabica coffee producing areas, such as Kintamani, East Java, Flores and Enrekang. The UPHs only purchase the red cherries with minimal 95% ripeness. In UPHs, red cherries are processed into full-washed coffee processing method (Figure 2.). The UPHs have been facilitated by the GoI on providing coffee processing machines, such as pulpers, washers, drying racks, and hullers. Initially, UPHs were designed to sell green beans coffee form. However, nowadays, more exporters purchase semi-dried parchment from UPHs. This leads exporters more easily to sell coffee to global buyers and produce more profits. In addition, buying this coffee form is more effective in order to control the quality of coffee. Therefore the exporters are able to sell the high quality coffee and produce more profits.

Fourthly, smallholder farmers sell red cherries to private sector. This can be encountered in Kintamani (PT TAM), East Java (PTPN), and in Flores (Bene Milo). These private sectors commonly require a higher quality coffee. The direct source operating of these private sectors has increased the competition among buyers. This has led the higher farm-gate price and labour saving.

### **Value Chain Governance**

This study adopts a GVC approach to understanding the current global system of coffee production and trade. According to Gereffi, Humphrey, & Sturgeon (2005), the GVC can be used for analyzing the various aspects of chain governance and coordination.

Governance, put very simply, is the framework and institutional structures by which rules (which include laws at one extreme and norms at the other) are set and implemented. (Nadvi, 2008 : 324)

According to Gereffi (2014, p. 13), 'governance is a centerpiece of GVC analyses'. This analysis can be used to understand the operations of lead firms and how they distribute the profits and risk exposure along the chain. Challies and Murray (2011) claim that governance and institutional settings are crucial for explaining the global value chains' organization. The governance has introduced producer and buyer driven (Ponte, 2002).

In the buyer driven commodity chains, lead firms have more power to govern other actors along the value chain to fulfill the lead firms' demand, relating to quality, quantity and time delivering, although the lead firms based in far distance and not becoming directly involved in the production process and without owning sites of primary production, The lead firms of the global coffee industry are roasters and retailers, such as Sara Lee, Starbucks, Lavazza and Nestle. Furthermore, recent developments in the global coffee industry have led to many international 'mid-sized traders either went bankrupt, merged with other companies or taken over by major coffee companies' since they were unable to compete with the international major coffee companies

(Prudential Securities Futures Research: Coffee, June 28, 2000 *cited in* Ponte, 2002, p. 1107). Thus, the global coffee market has become more concentrated with highly-capitalized roaster and retailer companies.

High-capitalized roasters companies, such as Starbucks, are able to exert pressure on local coffee exporters and traders in Indonesia to source on their behalf. Neilson (2008) claims that lead firms located in distant locations have an important role to coordinate, even dictate coffee production and trade circumstances in rural Indonesia. Roasting companies are able to dictate the structure of governance, the modes of coordinating operations of foreign trading houses, the producers and governments of producing country, retailers and coffee consumers. This has led to the domination of consuming countries in the global coffee market (Ponte, 2002). The end of the ICAs led to a significant shift of power in the global coffee market. Previously, the coffee producing countries had relatively more power in relation to the consumer countries (Ponte, 2002). Recently, lead firms have developed closer relationships with consumers and have more understanding on the demand of consumers compared to other actors. In Indonesia, trust plays an important role in the relationships between buyers and coffee producers because commonly there is no formal contract. Therefore, direct involvement of smallholder farmers in the global coffee business presents a high risk. For example, one of the UPHs in Kintamani collapsed since the UPH sold coffee to exporter without a formal contract and the exporter did not pay for the coffee immediately, while the UPH was involved in commercial bank credit.

The end of the ICAs has led the growing foreign trading companies in Indonesia. This has weakened the function of the 'government and quasi government institutions' to govern the Indonesian coffee marketing chain. Generally, the global lead firms rely and directly coordinate with global trading houses, such as Ecom, Volcafe and Neumann Gruppe, and local exporters on sourcing coffee. Neilson (2013) states that about 50% of total Indonesian coffee exports are conducted by international trading houses instead of Indonesian-owned exporters. This is caused, at least partly, by the ability of these companies to access global market and to access cheaper financial compared to national exporters. Furthermore, the increasingly professionalization and complexity of supply chain management as a function on certification as an example has led the local exporters have less competitiveness in buying coffee in Indonesia. Moreover, this has been exacerbated with the implementation of foreign investment (*Penanaman Modal Asing*) policy in 1996 (11/MPP/SK/I/1996). This policy has encourages foreign trading houses to operate in Indonesia. This has led the international trading companies direct source coffee in several coffee producing areas. Further, this has led the new relationships between local traders with the 'foreign private sector'. However, foreign investment policy has been protested by the domestic exporters since the increasing foreign trading companies have been made the small and medium enterprises bankrupt (interview with Indonesian exporters association in 2013).

Recently, more international trading companies are engaging directly sources of coffee due to demands to secure high quality coffee from the farmers and to meet sustainability and traceability requirements. This direct sourcing brings benefits to farmers. For example, Ecom works in collaboration with IFC to provide regular training to standardize post-harvest coffee processing and supplies seedling in North Sumatra. In Kintamani, Five Senses, a roaster company provides new drying technology for smallholder farmers. Therefore, the global coffee market has led the smallholder farmers to obtain access to various new technologies facilitated by lead firms, thus guaranteeing the regular supply of coffee. Moreover, the international global trading companies allow their regular suppliers to witness the assessment of coffee. Through this transparent process, coffee producers have learnt about the various quality standards required by the company. This quality standards information is very useful for coffee producers in order to obtain higher farm-gate price.

Mostly roasters and retailers rely on the international trading companies because the roasters have little interest to directly integrate with producers and have more interest on branding. According to Ponte (2002), directly source coffee allows roasters to contend with global trading companies in strategic sources, to be less relying on other actors, and to be less susceptible shortage of coffee. In the Indonesian coffee sector, recently more roasters and retailers direct source coffee to producers. As an example, Nestlé direct source coffee from smallholder farmers in Lampung, Sumatera.

In the specialty coffee market, that emerging in the post of the ICA regime, the premium price of coffee began to be given to producers who produce both certified coffee and single origin coffee. This leads the global trading companies to direct source coffee. This is caused by mostly local traders in Indonesia blend several coffee producing areas that have good and inferior quality coffee. For example, local traders in South Sulawesi blend inferior Malakaji coffee with coffee from other areas. Further, this has marginalized the minor local traders in coffee business. The number of minor traders who marginalized may increase in the future (Ponte, 2002).

### **The Institutional Settings of the Indonesian Coffee Industry**

According to Neilson (2004), in the analyses of agri-food, understanding institutional settings are important. The institutions include the 'social rules, conventions and other elements of the structural framework of social interaction' (Bardhan, 1989: 3). 'Development practitioners', however, frequently interpret the 'institutional settings of the value chain as the business enabling environment', which is defined as the 'norms and customs, laws, regulations, policies, international trade agreements and public infrastructure that either facilitate or hinder the movement of a product or service along its value chain' (Neilson, 2014: 20).

The institutional settings of the coffee industry have shifted dramatically since the ends of the ICAs. Nowadays, the lead firms have more opportunities to understand the consumers' demand. This has led the growing of differentiated coffee products, such as certified coffee and 'single origin' coffee. The high demand of consumers on food quality and food safety increased significantly since over the last decades. This food quality and safety was initiated by consumers and formulated by lead firms and retailers (Challies and Murray, 2011), which aim to save consumers and sometimes workers and growers in undeveloped countries (Barrientos and Dolan, 2006). Moreover, sustainability that refers to social, economy and environmental also increased significantly as the demand of consumers in developed countries. The international standards and certification schemes are applied as guidance for all actors to access the global market International standards can be applied as guidance for all actors to participate in the global market (Nadvi and Wältring, 2004).

The certification schemes and product standards have shifted the production activities in developing countries (Ponte and Gibbon, 2005). Certification schemes are applied in coffee industry including organic, Fair Trade, UTZ certified, Café Practices and rainforest alliance. In Indonesia, the certification is driven by the coffee exporters instead of coffee farmers. The limitation of smallholder farmers led the exporter firms organize the farmers to be registered as certain certification supplier. As the certification coffee is become compulsory for accessing global market, this has changed the structure of value chain in Indonesia (Neilson, 2008). Neilson (2007) states that the quality requirements of the certification schemes are fulfilled by the coffee producers, this not means that the improved returns in the long term can be guaranteed.

The consumers' demands, through certification and international standards have improved the role of roasters and retailers in the coffee industry, while the role of government of producing countries decreased significantly. Nowadays, there is no significant role of the GoI in coffee supply chain, all of the coffee business aspects are controlled by private sectors. This has been exacerbated by the ends of the quota system on export-import coffee. Therefore, the institution settings of coffee

value chain in domestic have led 'the role of the government and quasi government institutions are eliminated' (Ponte, 2002, p. 1114).

### **Industrialization in the Indonesian Coffee Industry**

In Indonesia, we can consider there to be two basic types of industrialization in relation to coffee: i) the industrial processing of finished products, such as instant and roasted coffee; and ii) the enhanced use of processing equipment at the farm-level.

In value chain term, the first type of industrialization is commonly referred to as functional upgrading and is related to broader strategies of resource-based industrialization, where the national economy seeks to export processed products instead of raw materials. In addition, to being an important exporter of green coffee beans, the vast Indonesian market also consumes significant volumes of roasted coffee, and this market appears to be an important springboard for developing industrial capacity for the export market. This kind of industrialization is influenced by increasing domestic coffee consumption and changing lifestyles, particularly people living in the big cities. Since 2000s, the industrial processing of finished coffee in Indonesia has increased. In big cities, such as Jakarta, Medan and Surabaya, café shops have become popular places for the young generation to spend their time with colleagues and this has become a new lifestyle. The competition within cafes in the big cities is exacerbated with the rapid increase of instant coffee marketing in the domestic market. The huge population of Indonesia, which is about 240 million, has triggered roasted and instant coffee companies to trade their products in Indonesia. There are several leading coffee processing companies existing in Indonesia, such as *PT Nestlé Indonesia*, *Kapal Api Group* and *PT Mayora Indonesia*. These companies produce coffee powder and instant coffee, marketed with 'three in one' mixed between coffee, sugar and milk crème. These companies are the pioneer of the three in one coffee products' development. These coffee processing companies have increased the employment in Indonesia. However, this has increased the exporters' concern because of increased competition over coffee between the exporters and domestic processors (interview with Indonesian coffee exporters association in 2013).

This instant coffee has changed the Indonesian coffee drink culture. Previously, Indonesians drink *kopi tubruk* (making coffee without espresso or other tools), with the coffee is *kopi jitu* (coffee mixed with corn or rice and hulled together, by comparison one for coffee and seven for corn or rice). Meanwhile nowadays, more Indonesians drink instant coffee. Therefore, many brands of instant coffees are easily found in traditional markets, kiosks and supermarkets. This has affected the exporting sector since besides coffee processing companies has successfully marketed instant coffee in domestic market, the leading coffee processing companies have also successfully export the 'three in one coffee' to several countries, such as Malaysia, Singapore, the Philippines, Egypt and South Africa.

The second type of industrialization is derived by the GoI, donors and development agencies, and involves a rural development strategy that attempts to improve the farm-gate price and household income of coffee farmers, and is perhaps more accurately referred to as 'farm-level industrialization'. These activities have been mainly conducted in the Arabica coffee sector, as this type of coffee has more opportunities to engage with global and specialty coffee markets. The increasing specialty coffee market has also enhanced the use of processing equipment at the farm-level.

### **Coffee Smallholder Livelihoods in Indonesia**

Around 96% of the total coffee production area of 1.3 million hectares is cultivated by smallholder farmers, and the remaining 4% by private and government-owned plantations (PTP Nusantara). Therefore, Indonesia's coffee production highly depends on smallholder plantations. In Indonesia, coffee is a crucial commodity for about 1.88 million household farmers, with average

coffee farms ownership is about 0.6 hectare per household. If it is assumed that every household has three dependents, including one wife and two children, therefore, about eight million people in Indonesia depend on this commodity.

Indonesian smallholder coffee farmers live in very heterogenic geographical, social, economic and cultural conditions. Although coffee has become the basis of Indonesian farmers' livelihood, these farmers are not only relying on coffee crops. Most coffee farmers rely on several crops and off farm sectors as the livelihoods strategy. In one plot of coffee plantation, farmers are commonly also grown other crops, such as cocoa, banana and pepper that contribute to total households income. In several areas, such as Toraja and Enrekang, coffee farmers are commonly also growing rice and horticultural crops. In addition, Indonesian coffee farmers commonly rely on off-farm sectors' income, such as hired farm labor, craftsmen, and drivers and on remittances as their livelihoods strategy. It is very rare that coffee farmers focus on intensification on coffee plantation to improve their households' income. Moreover, most Indonesian coffees are produced by traditional agricultural systems, where the utilising of fertilizers and chemical inputs is minimal.

The majority of coffee farmers in Indonesia cultivate coffee as plants that inherited from their parents. In several areas agricultural land, including coffee plantations are owned by communal. For example, the majority of coffee plantations in Flores are owned by communal. In addition, in several coffee producing areas, coffee has been expanded into the Protection Forest. For example, in Bondowoso and Kayumas, farmers are allowed to grow Arabica coffee under shade trees of forest trees, such as teaks. There are some rules applied in this system. The farmers cannot cut off the forest trees but since the farmers do not have to pay the rent of land, the farmers have to share their coffee harvest to the *Perhutani* (Forestry official). Therefore, there is no clear system of coffee plantation ownership. This unclear ownership status of coffee plantations has led several conflicts, involving communities and local government.

Generally, traditional coffee farmers have limited access on knowledge and information related to agricultural and market access since the limitation of information and technology transfers provided by the government and other relevant actors. This has led farmers to obtain knowledge and information from informal access. Therefore, the significant growth of coffee production produced by smallholder farmers is mostly influenced by the increasing of coffee plantation instead of intensification or upgraded cultivation management systems (Neilson, 2008). Mostly smallholder coffee farmers in Indonesia grow coffee in very limited use of fertilizers and pesticides, limited pruning and soil maintenances. The absence of intensive coffee farming system in Indonesia has led the low productivity. According to Neilson et al., (2013), the coffee productivity produced by smallholder farmers in Sulawesi is low, at less than 200 kg per hectare per year.

In 2013, the coffee prices decreased significantly, while other commodity is raising price. This has led several coffee farmers across Indonesia convert their coffee into other commodities. For example, in Kintamani several coffee plantations have been converted into citrus plantation. Meanwhile, in Sumatera, farmers are more interested to cultivate palm oil or rubber than coffee. This has challenged and shifted the development of coffee sector in Indonesia.

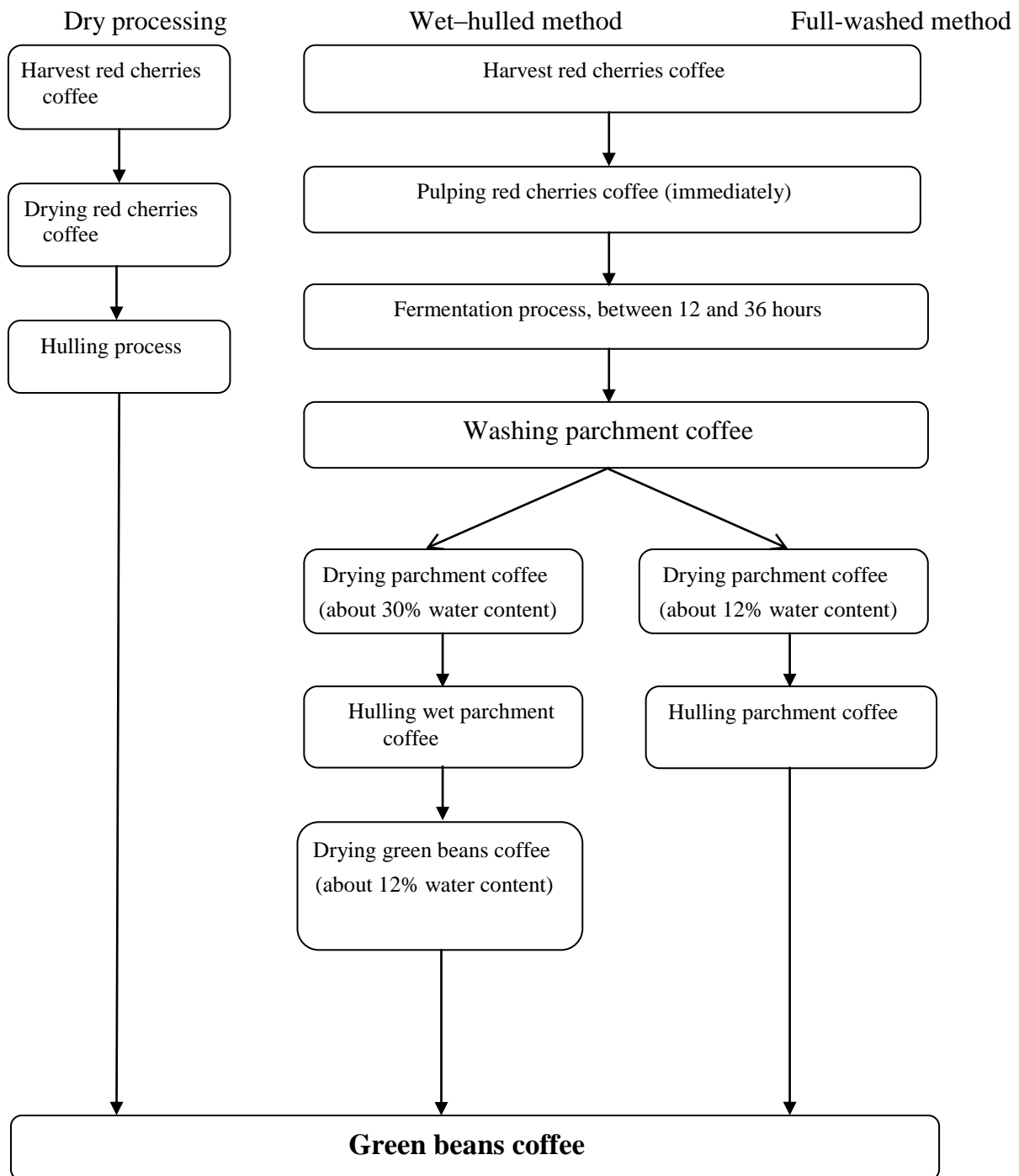
## **Conclusion**

On this note, the researcher has conclude that the value chain of Indonesian coffee involves various actors, including smallholder farmers, collectors, traders, processors, exporters, international trading companies, roasters and retailers. The structured of Indonesian coffee value chain has been influenced by the end of the ICAs. Lead firms have more power in dictating Indonesian smallholder farmers in coffee production as this actor has closer relationships with final consumers. Further, this leads the direct source coffee strategy applied by lead firm. In farm level, direct sourcing of coffee bring benefits in improving farmers' access to knowledge, technology and financial.

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**Appendix A**



Coffee processing methods